Political Change, Parties and Voters

by

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Abstract

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When trying to understand political change in democracies it is natural to think of voters as the driving force. But much political change—including the elections of Donald Trump and Boris Johnson—is as much a product of dynamics happening within existing parties—enabling such candidates to come close to power—as it is a product of voters voting for those parties. A complete understanding of political change thus requires understanding the behavior and role not only of voters, but also of parties.

This thesis studies political change and the roles of voters and parties in driving such change. In the first chapter I study the political consequences across and within parties of refugee migration. I combine Danish administrative data on local politicians from 1993-2013 with quasi-random refugee placements to show that refugee migration does not increase voters' support for the far right. Instead, it increases the propensity for candidates from lower social backgrounds to be elected. This effect is driven both by parties and voters: First, parties place candidates from lower social backgrounds higher on lists and switch to a party system, where individual candidate popularity, rather than party list position, determines election. Second, voters cast individual votes for these candidates from lower social backgrounds. In a nationally representative survey experiment I show that voters' preference for candidates from lower social backgrounds can in part be explained by refugee migration increasing their preferences for redistribution towards natives, preferences that are mirrored by candidates from lower social backgrounds.

In the second chapter of my thesis, I further explore the role of parties in responding to and driving political change. Specifically, I derive a theoretical framework to study how changes in the ideological bias favoring a party affect the propensity to run an open list, and how this in turn affects their support from voters. I find that parties run closed lists if the ideological bias is small. However, when voters become sufficiently biased towards one party, that party opens up its list. This switch to open lists in turn increases their support from voters beyond the effect of the ideological bias. The reason for this is that candidates in popular parties

exert more effort in open than closed lists. These results imply that large parties are more powerful in proportional representation systems where parties can choose their list structure compared to closed list systems.

Overall, this dissertation shows that when trying to understand political change, it is important to consider the role not only of voters, but also of parties in driving such change.

To Martin.

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Chapter 1

The Political Consequences of Immigration: Evidence from Refugee Shocks in Denmark

1.1 Introduction

Recent waves of immigration to Western countries have been accompanied by dramatic political change. New populist parties putting forth immigration as a key political issue have risen to success, in some cases gaining substantial political influence or governing power.[1] However, political change has also occurred within existing parties. Core party members have been replaced with populist candidates in both center-right and center-left parties. Striking examples of such changes include the political successes of Donald Trump and Boris Johnson. While the effects of immigration on the rise of new far-right parties has received much attention in the literature, how immigration transforms politics *within* existing parties is still largely unknown.

Studying the effects of immigration on within-party politics presents two empirical challenges. First, looking at dynamics within parties requires extensive data. While effects across parties can be studied by looking at vote shares, changes within parties must account for party strategy and who is mobilized, promoted, and ultimately elected for office. While data on vote shares are often easily accessible, demographic and socioeconomic data on political candidates and elected officials and data on party strategy are rarely accessible.[2] Second, the location choices of immigrants and refugees is often non-random. For example, immigrants often choose to move to areas with good employment opportunities. Such selection poses a problem to causal inference insofar as employment opportunities are correlated with the

[1] Recent examples of these phenomena include the far-right parties in Denmark and Italy. In Sweden and Germany, the rise of far-right parties has also caused difficulties in government formation.

[2] There are a few exceptions: Folke, Persson, and Rickne [2016]; Besley, Folke, Persson, and Rickne [2017]; Dal Bó, Finan, Folke, Persson, and Rickne [2017]; Dal Bó, Finan, Folke, Persson, and Rickne [2018]

political environment.

In this paper, I study how refugee migration over a quarter of a century has affected local politics in Denmark. I do so in the context of a refugee allocation policy that was in place in the 1980s and early 1990s. Denmark saw a mid-1980s surge in refugee migration that disproportionately impacted cities. Following these changes, the Danish government implemented a refugee allocation policy to equalize the dispersion of refugees across space. This policy instituted a quasi-random settlement pattern of refugees while it was in place. Moreover, I show that refugees who arrived after the policy was abolished predominantly settled in localities already populated with co-ethnics (Damm [2009]; Foged and Peri [2016]). Using this insight, I employ the quasi-random allocation policy to predict the settlement patterns of refugees even after the policy was abolished.

My data set comprises the full population of Denmark, including all candidates for municipal politics from 1993–2013. This period saw both substantial immigration and major reconfigurations of Danish politics. For local candidates, I use individual-level administrative data on socioeconomic characteristics, including detailed information on demographics, income, occupation, labor market histories, and education. I combine these data with official records of political party affiliation, list rank, electoral success, and preference votes, as well as political institutions at the municipality-party level.

Drawing on this data and the quasi-random allocation of refugees, I study how refugee migration affects who enters and is elected into politics. The political debate on immigration centers on economic and cultural concerns, mainly among voters from lower socioeconomic backgrounds. The anti-elitism of populist movements, as well as evidence from citizen candidate models,[3] suggests that many voters from lower socioeconomic backgrounds believe that only politicians from similar socioeconomic backgrounds can credibly address their concerns. Thus, I study whether refugee migration affects the entrance and election of less-represented socioeconomic strata of the population. I look at the roles played by parties and voters in changing who is elected by reordering party lists, changing party strategy, and voting for different candidates.

Surprisingly, I find that refugee migration has no effect across parties: Neither far-right nor established centrist parties experience a change in popularity. Instead, I find that immigration increases the share of candidates *within* existing parties with low education, lower labor market ability, and lower incomes—i.e., candidates of lower socioeconomic status (SES). I find that such candidates are placed higher on party lists, receive more votes, and end up being elected into municipal politics more frequently when immigration is higher. One key finding is that centrist parties drive the reconfiguration of the candidate pool. Moreover, centrist parties switch to a party system, where individual candidate popularity (open lists) rather than party list position (closed lists) determines election. I show two pieces of evidence supporting the hypothesis that threatened parties choose open lists to enable changes in political selection: First, I find that refugee migration decreases average socioeconomic status

[3]See for example Osborne and Slivinski [1996]; Besley and Coate [1997]; Pande [2003]; Jones and Olken [2005]; Washington [2008]; Besley, Montalvo, and Reynal-Querol [2011]; Meyersson [2014]

more among elected politicians in open lists than in closed lists. Second, I find that this is driven by parties promoting, and voters casting individual votes for, low-SES candidates in open but not closed lists. This suggests that replacing the party elite is more politically feasible in open than closed lists, and that open lists allow voters to signal changes in preferences. Overall, my results suggest that centrist parties respond strategically to declines in popularity by running and electing candidates similar to those at the extreme ends of the political spectrum and by increasing voter influence over candidate selection.

A natural question arising from these results is what the election of low-SES candidates tells us about the policy preferences of voters. To explore this, I run a survey experiment on a nationally representative sample in Denmark in which voters are randomly exposed to information suggesting high levels of future immigration. I find that voters exposed to immigration information choose fictional candidates who are in favor of increasing redistribution of wealth toward economically vulnerable natives. This mirrors the preferences of actual low-SES candidates, who are more in favor of redistribution than high-SES candidates. Voters who are themselves economically vulnerable also become more skeptical of traditional politicians. These findings suggest that having a low SES signals a credible commitment to redistribution.

This paper relates to an extensive literature showing that although immigration is economically neutral or beneficial,[4] it is politically difficult. Immigration is related to lower public spending and tax rates [Tabellini, 2019], lower preferences for redistribution [Dahlberg, Edmark, and Lundqvist, 2012], and the rise of anti-immigration parties (Otto and Steinhardt [2014]; Barone, D'Ignazio, de Blasio, and Naticchioni [2016]; Halla, Wagner, and Zweimüller [2017]; Mayda, Peri, and Steingress [2018] Harmon [2018]; see also Steinmayr [2016] for the reverse result).[5] One paper that is closely related to the present one is Dustmann, Vasiljeva, and Piil Damm [2018]. The authors utilize the same quasi-random allocation policy as the present paper to estimate how refugee migration affects the support for far-right parties. Specifically, they study how changes in the number of refugees during the period of the policy (1986-1998) affect changes in party vote shares. They show that refugee migration causally increases the support for far-right and center-right parties at the expense of left-leaning parties.

I contribute to this literature in several ways. First, while the bulk of the literature on immigration and politics uses a shift-share instrumental variable (IV) strategy similar to Altonji and Card [1991],[6] my paper makes use of quasi-random variation in the assignment of refugees to municipalities (see also Dustmann et al. [2018]; Foged and Peri [2016]). Second, I show that immigration affects politics *within* parties by changing who enters and who

[4] Alesina and Ferrara [2005] review the literature on immigration and economic outcomes; for Denmark in particular see Foged and Peri [2016])

[5] See also Lubbers, Gijsberts, and Scheepers [2002]; Golder [2003]; Gerdes and Wadensjö [2008]

[6] A recent literature (e.g., Goldsmith-Pinkham, Sorkin, and Swift [2018]) shows that the standard shift-share instrument suffers from potential endogeneity issues. In particular, shift-share instruments are biased insofar as the historic distribution of immigrants is correlated with other variables that directly affect the outcome of interest.

is elected. I also show that refugee migration does not affect vote shares in my setting.[7] This suggests that the response of political demand to immigration can manifest not only in support for the far right, but also in changes in political selection that may wash away changes in vote shares. Finally, to my knowledge, this paper is the first to study the role of party governance in political changes in response to immigration.

This paper also relates to a recent literature on party governance and political selection. This literature uses rich administrative data to study political selection (Folke et al. [2016]; Besley et al. [2017]; Dal Bó et al. [2017]; Dal Bó et al. [2018]), while a theoretical literature studies the effects of intraparty competition on incentives and platform quality (Caillaud and Tirole [2002]; Crutzen [2013]). Furthermore, research in political science relates the strategic behavior of mainstream parties to the success of niche parties (Meguid [2005]; Meguid [2008]; Bale, Green-Pedersen, Krouwel, Luther, and Sitter [2010]) and changes in public opinion (Adams, Clark, Ezrow, and Glasgow [2006]; Jensen and Thomsen [2013]). I contribute to this literature in two ways. First, this paper is the first to causally identify the effect of a change in voter demand on political selection. Second, it is the first to empirically assess parties' strategic use of intraparty competition.

The paper is organized as follows. Sections 1.2 and 1.3 describe the institutional details of local politics and refugees in Denmark, respectively. Section 1.4 describes the Danish administrative data. Section 1.5 describes the construction of the instrument for immigration, and Section 1.6 outlines the main results. Sections 1.7 and 1.8 consider the roles of parties and voters in driving the main results. Section 1.9 considers the robustness of the results, and Section 2.4 concludes.

1.2 Local Politics in Denmark

There are three administrative levels of government in Denmark: national, regional, and municipal. Since 2005, there have been five regions and 98 municipalities (13 and 275 before 2005, respectively). Elections for regional and municipal councils happen on the same day every fourth year, while national elections happen at least every four years but are usually called early by the prime minister. Turnout is around 80-90% in national elections and 65-85% in municipal/regional elections. This paper focuses on the latter.

Municipalities are the primary level of government in Denmark and are responsible for more than 50% of public spending, including expenditures on schools, social welfare, and elderly care. They occupy a central role in Danish politics (Lassen [2005]). Each municipality elects between 15-33 councilors, depending on size, with Copenhagen as an outlier at 55. Officials are elected by proportional representation, and seats are distributed via the D'Hondt Method. The mayor is elected among and by the members of the council. Historically, mayors have overwhelmingly come from the Social Democrat, Conservative, or Liberal parties.

[7] Note that the data period for the present paper is 1993-2013, while Dustmann et al. [2018] consider the period 1986-1998.

After the 2001 election, administrative reform reduced the number of municipalities from 271 in 2001 to 98 in 2009, with consequences for local democracy (Lassen and Serritzlew [2011]) and local public finances (Blom-Hansen, Houlberg, and Serritzlew [2014]). Post-reform, the average size of municipalities is about 57,000 inhabitants. In addition to Danish citizens, EU citizens and immigrants with more than three years of residence in Denmark can vote in municipal elections.

1.2.1 Distribution of Seats in the Municipal Council

Figure 1.1 shows part of the ballot in the 2013 election in the Slagelse municipality. The party name (e.g., "A. Socialdemokratiet") is followed by a list of candidate names. Voters have one vote that they can cast either for the party ("party vote") or a specific candidate ("preference vote"). In allocating the number of seats that a party receives in the municipal council, it is the sum of party votes and preference votes for candidates on the party list that matters. However, the distribution of seats among candidates on the list depends on whether the party runs an open or closed list.

Generally, half of all votes are preference votes, while the other half are party votes.[8] In open lists, the candidates are elected based solely on the number of preference votes. In closed lists, candidates are elected in the order they appear on the list, except in the rare cases where their preference votes exceed a high threshold.[9] As a result, preference votes matter little among closed-list parties, and preference votes are used more in open lists than closed lists. Note from Figure 1.1 that the type of list is not indicated on the ballot.

Table 1.1 illustrates the distribution of seats within a party. The total number of votes—in this example, 14,809—determines that the Social Democratic party receives 12 seats in the municipal council. To simplify the example, let us assume that the Social Democratic party received five seats. Had the party run a closed list, the candidates would have been elected in the order they were placed on the list—i.e., the first five candidates would have been elected. Had the party run an open list, candidates would have been elected in order of their preference votes, which implies that candidates number 3 and 5 would be replaced by candidates number 17 and 23. The Social Democratic Party did in fact run an open list in Slagelse in 2013.

1.2.2 Local Parties

There are six parties that have existed throughout my sample period (1993-2013). From left to right on the political spectrum, these parties are the Red Green Alliance (party letter Ø), Socialist People's Party (F), Social Liberal Party (B), Social Democrats (A), Liberal Party (V), and the Conservative People's Party (C). Moreover, I also consider the two far right parties, the Progress Party (Z, 1972-2001) and the Danish People's Party (O, 1995-).

[8] In 2013, only 0.2% of all candidates received no preference votes.

[9] As an example, if the party receives 3 seats, then the candidate would need more than 1/3 of all preference votes to qualify for this exception.

Throughout the analysis these parties are grouped in the following way: Left (Ø, F, B), center (A, V, C), right (O, Z), and other (mainly small, local parties).

All major parties in the national parliament are represented in municipal politics.[10] Most municipalities additionally have one or more local lists outside traditional party structures. All of these parties are self-governing at the local level and consist of a party board and local party members. There are usually no political candidates on the party boards.

Parties have at least two sets of tools they can use to affect election results: the set of candidates they mobilize and promote, and the type of list they run. Parties vary in how they organize these decisions, but a typical example is as follows.

A candidate committee and election committee are formed between 1.5 and 4 years prior to the municipal election. Both committees include members of the municipal council, party board, and members of other local organization affiliated with the party—e.g., the workers' union. The election board decides on whether to run as an open or closed list. It also calls for suggestions for potential candidates from the candidate committee and party members and recruits additional candidates if there is a shortage. The election board sends out a newsletter by mail with information on all potential candidates. Party members vote on potential candidates by mail, and the outcome of the election determines the order of candidates on the list. This is true for both open and closed lists. After the member election, all candidates become part of the election committee. The election committee is responsible for organizing the election, including budgets and campaigning efforts. Thus, a small organization within the party has control over whether the list is open or closed, the nomination of candidates, and campaign effort. While the order of candidates on the list is formally decided by party members, it is largely affected by the way the election committee structures the information the members receive about candidates.

From the perspective of the party, there are advantages and disadvantages to running a closed or open list. There are at least two advantages to running a closed list. First, because the party decides the election order in closed lists, party discipline is higher in closed lists. Second, the fact that the election order is determined prior to election in closed lists means that each candidate is incentivized to gain more votes for the party as a whole. This creates party cohesion. There are also at least two advantages to running an open list. First, in open lists candidates have the same incentive to gain more seats for the party as in closed lists—but because preference votes matter for individual election, there is an additional margin of intraparty competition. Second, the narrative about open lists in the public media is that they are more democratic, and thus they may be more attractive to voters, per se.

Overall, parties can respond in at least 3 different ways to changes in the political landscape. First, by recruiting different candidates. Second, by changing the list order of their candidates. And third, by choosing whether to run an open or a closed list.

[10] Parties A, V, and C are represented in all municipalities, while the remaining parties run in the majority of municipalities but not all.

1.3 Refugee Migration to Denmark

1.3.1 The Spatial Dispersal Policy, 1986-1998

The Danish Refugee Council is a private and international non-governmental organization that was established in 1956. Its main purpose within Denmark was to assist refugees with their asylum applications and residence permits [Dustmann et al., 2018].

The mid-1980s saw a surge in refugee migration to Denmark. Because refugees tended to locate in cities, the Danish Government urged the Refugee Council adopt a Spatial Dispersal Policy to equalize the responsibility for absorbing refugee populations across municipalities [Damm, 2009]. The policy was put in place in 1986 and abolished in 1998.

The goals of the policy were twofold. The first goal was to equalize the share of refugees across municipalities in order to equalize the responsibility across the country. The second goal was to create ethnic clusters, which were believed to help immigrant communities establish themselves in Denmark.

To understand how ethnic clusters were distributed across space, let us consider the process of allocating refugees to municipalities. Upon arrival in Denmark, refugees were assigned to one of 15 regions. The goal of the assignment was to equalize the inflow of refugees relative to the pre-existing population in the region. Within the region, the refugees were then assigned to a municipality.The long-term goal of the assignment to municipalities was also to create equal inflows of refugees relative to the pre-existing municipal population. At the municipal level, the goal was to equalize the relative inflows over a 3-5 year period, rather than instantaneously. To achieve this, the refugee had access to local immigration offices. These offices helped the refugees find housing, learn Danish, and otherwise integrate into Danish society, and so the refugees were assigned to housing close by. The immigration offices were mobile within the region, and each office moved to a different municipality every three years on average in order to equalize the relative inflow of refugees across municipalities.

Ethnic clusters arose at the municipal level because conflict in the refugees' home countries persisted over extended periods of time, and the immigration offices tended to stay in one municipal over a number of years. For example, if an immigration office was located in Esbjerg in 1992-1993, the onset of the Bosnian war, then we would expect a cluster of Bosnian refugees in Esbjerg. This implies that the location of ethnic clusters was based on an accident of timing between conflict abroad and the location of the mobile immigration office.

Although refugees were urged to stay in the area they were initially assigned to, they were free to move after their initial assignment. They could either submit a relocation request or move on their own. However, the refugees had many reasons to stay in their assigned municipality. If they stayed, they would receive free housing and Danish lessons for three years. The data shows that 90% of refugees stayed in the municipality they were initially assigned to [Damm, 2009]. Because refugees could affect their relocation, but not initial assignment, I consider only initial assignment in my analysis.

During the Spatial Dispersal Policy, municipalities had no say over how many refugees

they received. All allocation decisions were made by the refugee council. This means that municipalities could not affect the composition or number of refugees based on changes in their social, economic, or political climate. That neither municipalities nor refugees could affect assignment is important because my identification strategy relies on the location of ethnic clusters being independent of municipality-level changes in the political climate. Additionally, the refugee council only had access to information necessary to find appropriately sized housing (e.g., family size) and create the ethnic clusters (i.e., nationality). Importantly, they had no information on socioeconomic background.

1.3.1.1 Accomplishments of the SDP Goals

Did the Spatial Dispersal Policy achieve equal inflows of refugees across municipalities? Figure 1.2 shows the relationship between the number of immigrants and population size across municipalities. We see that when looking at both all municipalities (Figure 1.2a) and the 98% of smallest municipalities (Figure 1.2b), the number of allocated refugees is roughly proportional to the population size. Thus, the Refugee Council achieved the goal of equalizing the responsibility across municipalities.

To visually examine whether the location of ethnic clusters was indeed random, we consider the largest group of refugees during the Spatial Dispersal Policy—namely, Iranian refugees. Figure 1.3 shows the number of Irani refugees assigned to each municipality in 1986-1994 relative to the population in 1986. For example, in the municipalities marked with dark blue the Irani refugees assigned during the SDP made up between 0.1% and 0.6% of the 1986 population. The figure reveals no systemic concentration of Iranian refugees in certain areas, but instead that they were dispersed across Denmark. In Section 1.5 we will show formal evidence of this.

1.3.2 After the Spatial Dispersal Policy, 1999–today

The Spatial Dispersal Policy was abolished in 1998 and replaced with a new spatial dispersal policy that went into effect on January 1, 1999 and is still in place today. The new policy gave municipalities a say in the number and composition of refugees that they receive. Additionally, the refugees' preferences were now considered in decisions about allocating them across space.

The period following the Spatial Dispersal Policy saw high rates of refugee migration. Figure 1.4 shows stocks of refugees from the 8 largest refugee countries over time. The number of refugees is increasing throughout the 1990s. Especially dramatic is the increase from the mid-1990s through 2001, corresponding to the 1991 uprisings in Iraq and their aftermath.

Where did the refugees who arrived after the initial Spatial Dispersal Policy locate? Figure 1.5a revisits the example of Iranian refugees from Figure 1.3. In 2001, there was a concentration of Iranian refugees in the greater Copenhagen area, indicated with the rightmost red circle. This necessitates an instrument, as we might expect an urban area such as

Copenhagen to experience different changes in its political climate than other areas. Second, the red circle on the left indicates Southern Jutland, an area where Iranian refugees are over-represented, but the area is mostly rural, with no big cities. Comparing the map to Figure 1.3, we see that Southern Jutland was an area where many Iranian refugees were allocated during the Spatial Dispersal Policy. This implies that although the Spatial Dispersal Policy was abolished in 1998, migration patterns continued to mirror the patterns from the policy. Figure 1.5b shows that even in 2013, the location patterns of Iranian refugees continued to mirror the location patterns during the Spatial Dispersal Policy.

In this section, we saw that refugees were allocated randomly across space between during the 1986-1998 Spatial Dispersal Policy. We also found that location patterns in later years were not random, but mirrored the location pattern of the SDP. In Section 1.5, I will outline how I combine these two insights to construct a modified shift-share instrument.

1.4 Data

I have access to electronic administrative registers on the full population of Denmark between 1985 and 2013. This includes third-party reported income tax and employment registers, education data from Danish schools and universities, and demographic data from birth records. In the following section, I describe how I supplement this data with information on politicians and refugees.

1.4.1 Data on Candidates and Elected Officials

We merge the administrative data described above with information on every candidate running for municipal council from 1993-2013, totaling almost 120,000 candidate-years. We know party affiliation and whether the candidate was elected or not. We also observe (i) which half of the party list the candidate was on and (ii) which half of the preference vote distribution they were in within their party.

Our main outcome variables are the candidates' income rank, Mincer residual, and education level. We describe each below.

Income Rank We construct the candidate's income rank as their rank within the income distribution of their age group in the year before they run for office.The variable is uniformly distributed between 0 and 1, so its population average is 0.5 by construction.

Mincer Residual We follow Galasso and Nannicini [2011] and Besley et al. [2017] in measuring politicians' competence as the residual from a Mincer equation, which relates earnings before entering politics to education, age, sector, and the business cycle in a panel data setting. Besley et al. [2017] provide a partial validation of such a measure against data from Swedish military conscription tests, finding that the ability measure is positively

correlated with non-cognitive ability measures such as "leadership." The Mincer residual is zero in the population on average by construction.

Years of Education We construct years of education as the number of years it takes to complete the candidates' highest degree of education.[11]

I collapse the data for candidates and elected politicians to the municipal level for two reasons: First, the independent variable of interest—the refugee share—varies across but not within municipalities. Second, we are interested in how refugee migration affects the local election, which implies that municipalities are the unit of interest. Thus, all outcome variables in the sections on political selection should be interpreted as municipality-level averages of socioeconomic attributes for political candidates or elected officials. I consider the municipalities than can be consistently identified over time due to the 2005 municipal merger, namely the larger municipality definition.[12] This yields 98 municipalities.

1.4.2 Assignment of Refugees

In addition to the administrative records of the Danish population, we have information on refugees' country of origin, demographic information, and initial assignment to municipalities. Because refugees could apply to be relocated after their initial assignment, refugees' municipality of residence may be endogenous, which is why we only consider their initial assignment. We merge this information with third-party reported income tax and employment registers.

We restrict our attention to refugees who were arrived in Denmark during the 1986-1998 Spatial Dispersal Policy (see section 1.3). In constructing the instrument we restrict our attention to refugees in the working age, namely ages 18-65, and who are not permanently disabled. Migration of working-age refugees is plausibly more salient than migration of children and elderly.[13]

1.4.3 Public Data

We supplement the administrative records with public data from Statistic Denmark on party vote shares since (1986–2013) and whether the party ran an open or closed list (1989–2013). We also have public data on candidates running for municipal election in 2017, including their highest completed education, party, position on the list, preference votes, and answers to 25 questions on policies. The candidates could answer on a 1-5 scale.

[11] In Appendix Table A1 I additionally look at the candidate's gender, age, whether they were foreign born, and whether they were previously a candidate ("Incumbent (cand.)") or elected ("Incumbent (elected)") after 1993.

[12] The online appendix shows that the effects are, if anything, larger when using the smaller municipality definition during the period when those municipalities can be consistently identified–i.e. 1993-2001.

[13] With no restrictions on the refugee population, we find larger effects in magnitude, although they are slightly more noisily estimated.

1.4.4 Descriptive Statistics

Figure 1.6 shows average income rank and Mincer residuals for candidates by party. Candidates from center parties are on average from the 70th percentile, which the highest income rank among the group. This is followed by the parties at the left, among which the far left (Red-Green Alliance) have the lowest average income rank, namely the 50th percentile. Thus, candidates from the far left on average look similar to the population, whose average income percentile is 50 by construction. The income of candidates from the far left is only matched by candidates from the far right, whose income rank is on average the the 52nd percentile.

Figure 1.8a shows the share of parties that ran an open list for national elections between 1960-2001. The share has increased dramatically over time, from below 10% in 1960 to almost 90% in 2001. Figure 1.8b shows that there is not only variation in the propensity to choose open list at the national level, but also at the local level. Less than a quarter of municipalities have all open-list parties; in the remaining 75% of municipalities some proportion of parties run an open list, although in most municipalities that is true for fewer than half the parties. Finally, Figure 1.8c shows that there is not only variation within municipalities but also within parties. No party group always runs as open or closed. However, centrist parties run as open list more frequently than left or right parties do.

1.5 Empirical Strategy

To estimate the effects of refugee migration on local politics, I construct a modified shift-share instrument (e.g. Altonji and Card [1991]), following Foged and Peri [2016]. The intuition behind the instrument is as follows. From the late 1990s onward, Denmark saw a surge in refugee migration. These refugees largely located according to historic settlement patterns–or in other words, settled close to their co-nationals. Thus, the standard instrument predicts the location of refugees at the national level ("shifters") with historic settlement patterns ("shares"). But if we were to predict location today with historic settlement patterns, we might achieve bad variation if those patterns were determined by municipality-level changes. Instead, we use only part of the settlement patterns—namely, settlement during the Spatial Dispersal policy, where the location of ethnic clusters was determined through an accident of timing (Section 1.3). The instrument will have predictive power if refugees' location patterns from the mid 1990s onward largely mirrored the location pattern during the Spatial Dispersal Policy.

We can illustrate the intuition of the instrument with a fictional example. Say that half of refugees from Iran who arrived during the Spatial Dispersal Policy were allocated to Copenhagen, and half were allocated elsewhere. Say also that Copenhagen received no other refugees during this period. For the years in which Iranian refugees arrived in Denmark after the policy ended, the instrument would predict that half would go to Copenhagen and half elsewhere. The half that would go to Copenhagen would make up the entire predicted

inflow of refugees in Copenhagen for that year. In years where no Iranian refugees arrived in Denmark, the instrument would thus predict no inflow of refugees to Copenhagen.

To formally define the instrument, let stock_{imt} denote the stock of working immigrants from refugee country i in municipality m at time t. Let LF_{mt} be the labor force in municipality m at time t, $\widetilde{\text{s}_{im}}$ the share of immigrants from country i allocated in municipality m during SDP, and $\widetilde{\text{stock}}_{it}$ the national stock of immigrants of age 18-65 from refugee country i at time t. We construct the share of refugees in the labor force as

$$\text{share}_{mt} = \frac{\sum_{i \in \text{ref\_c}} \text{stock}_{imt}}{LF_{mt}}$$

and the instrument as

$$\text{share\_predict}_{mt} = \frac{\sum_{i \in \text{ref\_c}} \text{s}_{im} \widetilde{\text{stock}}_{it}}{LF_{m1986}}. \tag{1.1}$$

In the OLS specifications we run

$$y_{mt} = a_m + \beta \text{share}_{mt} + \eta_t + \epsilon_{mt}, \tag{1.2}$$

where y_{mt} is the outcome of interest, collapsed to the municipal level, a_m is a municipality-level fixed effect, and η_t is an election-year fixed effect. In the main IV specifications of Section 1.6 we run

$$\begin{aligned} y_{mt} &= \beta \text{share}_{mt} + a_m + \eta_t + \epsilon_{mt} \\ share_{mt} &= \gamma \text{share\_predict}_{mt} + c_m + \zeta_t + u_{mt}, \end{aligned} \tag{1.3}$$

where the first line is the structural equation and the second is the first stage. Here, a_m and c_m are municipality-level fixed effects and η_t and ζ_t are election-year fixed effects.

In Sections 1.7.1 and 1.8.1, we consider how refugee migration differentially affects the socioeconomic attributes of political candidates by their position on the party list and their preference votes. To this end, we run the 2SLS regression

$$\begin{aligned} y_{it} &= \delta_0 \text{share}_{mt} + \delta_1 \text{top}_{it} + \delta_2 \text{share}_{mt} \times \text{top}_{it} + a_m + \eta_t + \theta_p + \epsilon_{it} \\ \text{share}_{mt} &= \pi_0 \text{share\_predict}_{mt} + \pi_1 \text{top}_{it} + \pi_2 \text{share\_predict}_{mt} \times \text{top}_{it} \\ &\qquad + c_m + \zeta_t + \kappa_p + u_{mt}. \end{aligned} \tag{1.4}$$

Additionally, to study how the effects by list position and preference votes vary by open and closed lists in Section 1.7.2, we run

$$\begin{aligned} y_{it} &= \delta_0 \text{share}_{mt} + \delta_1 \text{top}_{it} + \delta_2 \text{open}_{pt} + \delta_3 \text{share}_{mt} \times \text{top}_{it} + \delta_4 \text{share}_{mt} \times \text{open}_{pt} \\ &\qquad + a_m + \eta_t + \theta_p + \epsilon_{mt} \\ \text{share}_{mt} &= \pi_0 \text{share\_predict}_{mt} + \pi_1 \text{top}_{it} + \pi_2 \text{open}_{pt} + \pi_3 \text{share\_predict}_{mt} \times \text{top}_{it} \\ &\qquad + \pi_4 \text{share\_predict}_{mt} \times \text{open}_{pt} + c_m + \zeta_t + \kappa_p + u_{mt}, \end{aligned} \tag{1.5}$$

where the first line is the structural equation and the second is the first stage. The variable top_{it} indicates candidate i's position on the party list or preference vote distribution at time t. The variable equals 1 if the candidate was in the top half and zero if the candidate was in the bottom half. The variable open_{pt} equals 1 is party p ran an open list at time t and 0 if it ran a closed list. Finally, a_m and c_m are municipality-level fixed effects, η_t and ζ_t are election-year fixed effects, and θ_p and κ_p are party fixed effects.[14] Note that collapsing the data to the municipality-year level, as in equations 1.2 and 1.3, yields the same coefficients as running the regressions at the candidate level if each observation is weighted by the inverse of the number of candidates in the municipality-year. Both ways of running the regression ensures that all municipality-years have equal weight. Furthermore, clustering the data at the municipal level in both types of regressions ensures that standard errors are also identical. Because party, party list, and preference votes vary at the individual level, we run regressions 1.4 and 1.5 at the candidate level, but we reweight the data to ensure that all municipalities have equal weight and cluster the standard errors at the municipal level.

1.5.1 Identifying Assumption

Because we are including municipality fixed effects in all regressions, it is a useful analogy to think of the regressions as first differences. The identifying assumption is then:

$$(\Delta\text{share\_predict}_{mt} \perp \Delta\epsilon_{mt}), \tag{1.6}$$

for which a sufficient condition is

$$\left(\frac{s_{im}}{LF_{m1986}}, \Delta\widetilde{\text{stock}}_{it} \perp \Delta\epsilon_{mt}\right). \tag{1.7}$$

In words, the inflow of refugees as a share of the local population during the SDP ($\frac{s_{im}}{LF_{m1986}}$) and the later national-level inflows of refugees ($\Delta\widetilde{\text{stock}}_{it}$) are independent of changes in omitted variables ($\Delta\epsilon_{mt}$) that also impact candidate and voter decisions in the municipality.

I test the necessary condition (equation 1.6) by following the suggestion of Goldsmith-Pinkham et al. [2018] to test for pre-trends. I test whether changes in refugee migration from 1993-2013, instrumented with changes in the instrument from 1993-2013, predict four-year pre-period changes in vote shares, unemployment, and gross income per capita.[15] If this was the case, we would be concerned that the instrument captured trends in the political

[14]Note that the party and municipality are both functions of the individual i—i.e., the notation is technically $p(i)$ and $m(i)$. For simplicity, the dependence on i has been suppressed from the notation.

[15]Because the Spatial Dispersal Policy begins in 1986, and most Statistics Denmark data begins in the mid-1980s, it is difficult to get pure pre-period data. For this reason, I have selected the pre-period changes to begin in the first data year, i.e. 1985 for vote shares, 1986 for unemployment, and 1983 for income. The results look similar no matter how we choose the initial year (e.g. 1985 for income). Because refugee migration was low in mid-to-late the 1980s compared to the late 1990s, the mid-to-late 1980s can arguably be considered a pre-period.

and economic climate that are correlated with predicted refugee migration rather than a causal effect of refugee migration. Table 1.2 shows that refugee migration does not predict pre-trends in political and economic climate. In terms of political variables, because data on candidate attributes exists only since 1993, I consider only vote shares in the pre-period. In terms of economic variables I consider unemployment and income per capita. Table 1.2 shows that the effects of refugee migration on past political and economic are statistically insignificant. Additionally, the effects are small in magnitude: a one standard-deviation increase in refugee migration between 1993-2013 affects the four-year pre-trends in the political variables by less than 1% of their means for most variables, and by less than 10% of their means for vote shares for left and other parties.

Next, I test the sufficient condition for identification (equation 1.7). The first part of the sufficient condition would be violated if refugees move to municipalities where the share of low-SES candidates in local office is increasing over time. One could imagine this to be the case if rising inequality both mobilizes low SES candidates and attracts refugees. Because refugees had no say over which municipality they were assigned to under the policy, however, this is not a concern in our setting. I follow the suggestion of Goldsmith-Pinkham et al. [2018] to formally test whether the assignment of refugees was affected by changes in the political and economic landscape. Table 1.3 shows that changes in political and economic variables do not predict the assignment of refugees of any nationality. The dependent variables are the inflows of refugees from each origin country during the SDP (1986-1998) as a share of the pre-period population (1986).[16] All numbers are in percentages, so the coefficients in Table 1.3 are all very close to zero, and no more coefficients are significant than what we would expect to happen by chance. Appendix Table A4 shows that controlling for interactions between year dummies and pre-period changes in the six political and economic variables hardly changes the main results.[17]

The second part of the identifying assumption would be violated if rising economic opportunity and inequality in specific municipalities made refugees move to Denmark, if these changes were correlated with political selection of low-SES candidates. However, we are considering refugees, who were drawn to Denmark because of push factors, rather than economic migrants, who may move to Denmark due to pull factors. We test whether the national-level refugee inflows were uncorrelated with changes in omitted variables in Section 1.9. We show that our main results are robust to leaving out information on national inflows in a GMM estimator using shares interacted with year dummies as instruments. Thus, the results do

[16]For ease of interpretation, the table reports the number of refugees from each origin country in the municipality relative to the population, rather than the number of refugees from each origin country in the municipality, relative to *both* all refugees from that origin country and the population. Because the total number of refugees does not vary by municipality, this choice only changes the scaling, and not the level of significance.

[17]Controlling for the pre-period changes in the political and economic variables in levels, without interacting with year fixed effects, would introduce collinearity with the municipality fixed effects. Interacting with year fixed effects allows for different time trends in political selection between municipalities that had different pre-trends in their economic and political conditions.

not rely on the national-level inflows.

1.6 The Effect of Refugee Migration on Politics

In this section, I apply the methodology developed in Section 1.5 to examine the impact of refugee migration on political outcomes along two margins: (i) party vote shares and (ii) socioeconomic characteristics of candidates and elected officials.

Party Vote Shares To relate to the previous literature, I begin by assessing the impact of refugee migration on vote shares. Figure 1.9 visualizes the effects for left, center, far-right, and local parties (as defined in Section 1.2.2). Light blue bars represent the parties' mean vote shares, and dark blue bars add the effect from a one-standard-deviation increase in the refugee share, as estimated from equation 1.3. The p-values indicated above the bars refer to the significance of the effects of refugee migration. All figures follow the same scheme.

In contrast to previous findings in the literature, Figure 1.9 reveals that refugee migration has no significant impact on the vote shares for any party group. Across all parties, the effects of refugee migration on vote shares are small and statistically insignificant. Notably, this includes far-right and centrist parties.

This precise null finding contrasts with existing studies assessing the effect of immigration on vote shares, which typically find increased support for far-right parties (Barone et al. [2016]; Halla et al. [2017]; Otto and Steinhardt [2014]; Harmon [2018]; an exception can be found in Steinmayr [2016]).

Most notably, the result is in contrast to Dustmann et al. [2018], who find that refugee migration increases support for the far right in Denmark. However, while Dustmann et al. [2018] study elections taking place during the spatial dispersal period (1989-1997), the present paper investigates elections between 1993 and 2013. I reconcile these divergent findings by confirming that refugee migration increases the support for far-right parties when restricting the sample period to 1989-1997 (see the online appendix). These findings underscore that refugee migration impacts voter demand, and that this manifests as increased support for far-right parties in the short run, but not necessarily in the medium run.

Does refugee migration affect other margins of politics than vote shares in the medium run? The results in the remainder of this section shed light on how refugee migration affects who enters and who is elected into politics.

Socioeconomic Characteristics of Candidates and Elected Officials Table 1.4 reports the impact of refugee migration on socioeconomic characteristics of political candidates and elected officials. I consider three outcomes: (i) income rank, (ii) the Mincer residual, and (iii) education. The income rank is defined as the candidate's rank in the income distribution within their age group in the year prior to running for office. The mincer residual is a quality measure, defined as the random effect in a regression of income on a number

of demographic and socioeconomic covariates. Education is measured in number of years.[18] Panel A shows the OLS (equation 1.2), and Panels B–D show the 2SLS results (equation 1.3). Throughout the paper, the means of the dependent variables, first stage F statistic, and number of observations are reported at the bottom of the table.

Refugee migration causes candidates of lower income, quality, and education—i.e., low socioeconomic status (SES)—to be elected to politics. The coefficient in column (1) of Panel B implies that a one-standard-deviation increase in refugee migration reduces average income rank among elected politicians by 5 percentage points. Given that average income rank among elected officials is 72%, the estimated effect corresponds to closing the gap between elected politicians and the population by almost a quarter. Coefficients in columns (2) and (3) of panel B imply that refugee migration also lowers the quality and education level of elected politicians by 27k and 0.3 years, respectively. Comparing to the general population, the reductions in the Mincer residual and average education is equivalent to closing the gap between elected politicians and the population by 20% and 15% percent, respectively.[19]

In sum, refugee influx increases election of low-SES candidates. Is this effect due to changes in political selection within or across parties? As shown in Figure 1.6, parties differ strongly in their candidates' average socioeconomic characteristics. For instance, political candidates in centrist parties tend to have higher levels of income than candidates in far-left and far-right parties. These patterns suggest two potential mechanisms behind the result in panel B of Table 1.4. First, parties that generally run candidates with low socioeconomic status might have a higher likelihood of getting their candidates elected. Second, average socioeconomic characteristics of elected officials *within* parties might decrease. I leverage the unique structure of my data to distinguish between these two mechanisms.

Panel C of table 1.4 replicates panel B, but considers only centrist parties. Coefficients in columns (1)–(3) reveal that the election of low-SES candidates takes place within centrist parties: Refugee migration reduces average income, quality and education among elected officials by 5%, 31k, and 0.4 years, respectively, which is similar to or even numerically larger than the overall effects presented in panel B. In the online appendix, I show that the effects for parties outside the center are smaller and statistically insignificant. In sum, the results in panel C provide evidence that centrist parties drive the reconfiguration of the pool of elected officials.

So far, we have documented a decrease in socioeconomic characteristics among elected officials in response to immigration. Are these effects driven by voters' demand for low-SES politicians or by the supply of political candidates? To shed light on this question and separate the demand and supply side of candidates, I next investigate candidate entry.

To understand whether the change in the pool of elected officials is in part or fully driven by candidate entry, panel D of Table 1.4 shows how refugee migration impacts the socioeconomic characteristics of candidates. The coefficient in column (1) of panel D shows

[18]Section 1.4 provides more detail on the definitions of each variable

[19]Recall from section 1.4 that average income rank in the population is 50%, average Mincer residual 0, and average education 11.7 years.

that the income rank of candidates is not impacted by refugee migration, as the coefficient is close to zero and insignificant. In contrast, refugee migration lowers the quality and education levels of candidates by 16,000 and 0.35 years, respectively. Because the coefficients on education are almost the same for candidates and elected officials, the lower education level of elected politicians in response to refugee migration may be driven by changes in the candidate pool. In contrast, the smaller effects on income and quality for candidates than elected officials may imply that either parties or voters push lower-SES candidates into election. I will return to this claim in the discussion of Figure 1.11 later in this section.

Refugee migration reduces *average* income among elected politicians. Is this pattern driven by low- or middle-income candidates being elected to political office? In Figure 1.10 I estimate the effect of refugee migration on the income distribution of elected officials. The outcome variables are indicators for quartiles of the income distribution. The mean of each outcome variable (light blue bars) is the share of elected officials whose income falls within the indicated quartile of the income distribution. If elected politicians were fully representative of the population, they would be drawn equally from all quartiles of the income distribution—i.e., all bars would have the same height of 0.25. Instead, the fourth light blue bar shows that, on average, 60% of elected politicians are from the top quartile (75-100%) of the income distribution. This comes at the expense of people from the other quartiles of the income distribution, especially those from the bottom quartile (0-25%), who make up only 8% of elected officials.

Figure 1.10 shows that refugee migration increases the share of elected politicians who are poor at the expense of wealthy politicians. The fourth dark blue bar shows that a one-standard-deviation increase in the share of refugees decreases the share of elected officials in the top quartile by 10 percentage points. At the same time, the first and second dark blue bars reveal that the share of elected politicians from the bottom and second quartiles of the income distribution both increase by 4 percentage points. To summarize, refugee migration increases the share of poor and (lower-) middle-income politicians at the expense of wealthy politicians.[20]

Table 1.4 documents that refugee migration lowers average income among elected officials more than among candidates. I next turn to the black box of what happens between candidacy and election to investigate two potential mechanisms behind this difference. First, the difference could be driven by a strong baseline preference for low-SES candidates. For instance, if voters (or parties) "thirst" for low-SES candidates in baseline, but few low-SES candidates enter politics, then small increases in the share of low-SES candidates can lead to large increases in the share of elected low-SES politicians. Second, the difference could be driven by refugee migration *increasing* the preference for low-SES candidates. If refugee migration increases voters' (or parties') preference for low-SES candidates, then higher refugee migration will increase the share of low-SES elected politicians more than the share of low-SES candidates.

[20]Table A2 shows the results in table format, and also shows the results for the mincer residual and education.

Figure 1.11 tests which of these mechanisms are at play. The outcome variable is the win rate in each quartile of the income distribution—i.e., the share of candidates from the indicated income quartile who were elected. The win rate is a measure of preference for politicians from the indicated income quartile among those who decide which candidate is elected—i.e., parties and/or voters. The figure shows two notable patterns. First, the first and second light blue bars indicate that the baseline win rate for low-SES candidates is weak: Only 17% of candidates from the bottom quartile and 19% from the second quartile are elected. In contrast, the fourth light blue bar indicates that 35% of candidates from the top quartile are elected. Second, the first and second dark blue bars show that a one-standard-deviation increase in refugee migration increases the win rates of candidates from the bottom and second quartiles by 8 and 5 percentage points. There is no such increase for the third and fourth quartiles of the income distribution.[21] These results provide evidence that the higher increase in share of low-SES elected politicians than candidates is not due to a higher baseline preference for low-SES candidates, but rather due to an increase in the preference for low-SES candidates in response to refugee migration.[22]

In sum, the results provide evidence that refugee migration does not favor the far right in the medium run. Instead, refugee migration causes low-SES candidates to enter and be elected. I show that the election of low-SES candidates can in part be explained by an increase in the win rate for low-SES candidates. In the next section, I disentangle the roles of parties and voters in electing these candidates.

1.7 Parties' Role in Electing Low-SES Candidates

This section considers the role of parties in increasing the win rate of low-income candidates. Parties can respond to changes in the political landscape in at least two ways. First, they can change the order of candidates on the party list. Second, they can decide between running a closed or open list of candidates. In a closed list, the precise order of candidates determines candidate election, while in an open list, voters can freely vote for the candidate of their choice. In the latter case, candidate popularity among voters determines election. How does refugee migration affect parties' chosen candidate order and list type?

1.7.1 Candidate Order on Party List

We begin by studying the effects of refugee migration on candidate order. In this regard, we assess whether parties respond by systematically changing the socioeconomic characteristics

[21] Note that unlike in Figure 1.10, the bars in Figure 1.11 do not add up to one. This is because the denominator differs between the bars: For example, for the first bar, the denominator is the number of candidates who are from the first quartile. The bars would sum to one if weighted by the number of candidates in the indicated quartile.

[22] Table A3 shows the results in table format, and also shows the results for the mincer residual and education.

of candidates at different list positions. Figure 1.12 shows the effect of refugee migration on average income rank for candidates in the top and bottom half of the party list.[23] The light blue bars show the mean income rank of candidates within each half of the party list. The dark blue bars add the effect of a one-standard-deviation increase in the refugee share. The indicated p-values relate to the treatment effect within each half of the party list. All figures follow the same scheme.

Parties tend to rank wealthier candidates higher on the list. Average income rank among candidates in the top half of the list is 69%, while it is 63% in the bottom half. However, refugee migration drastically reduces this difference in income rank between the top and bottom halves of the list. Average income rank at the top half of the list falls by 2 percentage points in response to a one standard deviation increase in refugee migration. In contrast, there is no change in average income rank in the bottom half of the list. In sum, in response to refugee migration, parties promote low-SES candidates by increasingly placing them at the top of the party list.

1.7.2 Party Institutions

Next, we study the impact of refugee migration on parties' decision to run an open or closed list. In open lists, candidates are elected in the order of their preference votes, while in closed lists they are elected in the order that their name appears on the party list. As a consequence, in open lists, voters decide who is elected, whereas in the case of a closed list, parties make the decision.

Figure 1.13 shows the effect of refugee migration on parties' propensity to run an open list.[24] Similarly to the regressions in Section 1.6, the 2SLS come from the baseline regression (equation 1.3), but with parties as the unit of observation. Relative to the baseline of 70% of parties using an open list (represented by the dark blue bars), a one-standard-deviation increase in refugee migration increases the propensity to run an open list by 17.8 percentage points (see the left-most light blue bar). This result could be driven either by parties that tend to run an open list entering at a higher rate or by an increase in existing parties' propensity to run an open list. To assess both mechanisms, the two right-most bars add party fixed effects. If the effects were driven entirely by within-party changes, then including party fixed effects would not change the coefficient. We find that parties' propensity to run an open list is 17.4 percentage points, an estimate almost identical to the overall effect. These findings indicate that refugee migration substantially increases parties' propensity to

[23]The regression behind the figure is similar to running the baseline 2SLS regression separately for each half of the party list. We pool the full candidate data and interact the refugee share with the top and bottom half of the list position to enable inference between the coefficients for each half of the list (equation 1.4).

[24]While the unit of observation in preceding sections was a municipality, because this section considers parties' decisions, parties are the unit of observation here. To allow this, I restrict the sample of estimation to the years 1993-2001. The 2005 election coincided with the municipal reform described in Section 1.2, which caused not only municipalities, but also parties, to merge. This makes it impossible to follow the pre-2005 parties after 2005.

run an open list, and that this change is driven by existing parties rather than the entry of new parties.

1.7.2.1 Replacing the Elite

Why do parties respond to refugee migration by running open lists? I propose the following mechanism of political selection. Under closed-list rules, candidates with a low rank on the party list stand nearly zero chance of being elected. For this reason, a party elite at the top of the list may not agree to being ranked lower in response to the public opinion change that follows immigration. In contrast, under open-list rules, only preference votes determine candidate election. This implies that candidates with low list ranks can get elected if they ensure they will receive enough preference votes. For this reason, a party elite may more easily agree to a low rank under open than closed lists.

If open lists enable changes in political selection, it follows that political selection should respond more to refugee migration in open than closed lists. The results in Table 1.6 support this claim. The table shows the effect of refugee migration on income rank within open lists (panel A) and closed lists (panel B). I consider the effects on income rank for both political candidates (column 1) and elected politicians (column 2).[25] Note that because list type is itself an outcome variable, it is a bad control. Thus, the results should be taken as suggestive evidence.

Panel A of Table 1.6, column (1) documents that refugee migration has no effect on candidate income rank in open lists. Similarly, refugee migration does not affect income rank within closed lists, and the difference in the effect between the two list types is insignificant (panel B, column 1). Turning to elected politicians, refugee migration reduces the average income rank in open lists by 6.5 percentage points (panel A, column 2). In contrast, refugee migration reduces average income rank among elected politicians only by 4.4 percentage points within closed lists (panel B, column 2). Although this is a sizable effect, the second row of panel B shows that this effect is statistically different from the effect in open lists at the 10% level. These results show that open lists allow low-SES candidates to be elected at a higher rate than closed-list parties do, and that this difference is not driven by candidate entry. Because parties and voters decide political selection between candidacy and election, this result implies that either parties or voters are promoting low-SES candidates more in open-list systems than closed-list ones.

Do voters or parties drive the difference in how political selection responds to refugee migration between open and closed lists? Figure 1.15 shows that parties and voters promote low-SES candidates in open but not closed lists. The table shows the effects of refugee

[25]The regression behind the figure is similar to running the baseline 2SLS regression separately for open and closed list. I expand the baseline specification in equation 1.3 with an interaction term between refugee migration and indicators for the party running a closed (panel A) or open list (panel B). I also include list and party fixed effects in all regressions to interpret the results as the effects of within-party changes in the list type.

migration on income rank by list position (panels a-b), preference votes (panels c-d), and whether the list was open (panels a and c) or closed (panels b and d).[26]

Figure 1.15 reveals that both parties and voters drive the changes in political selection in open lists. On the party side, Figure 1.15a shows that average income rank is 6 percentage points higher in the top half of the list than the bottom half in open lists. This difference falls by 2.5 percentage points in response to refugee migration. This implies that parties running an open list increasingly promote low-SES candidates in response to refugee migration. Figure 1.15b studies instead how parties respond to immigration in closed lists. In contrast to open lists, closed list parties do not change who is at the top of the party list, but instead place low-SES candidates at the bottom. On the voter side, Figures 1.15c and 1.15d reveal voters only increase their propensity to vote for low-SES candidates within open-list parties. In closed lists, voters follow the party list ranking, even though their preference vote is inconsequential in closed lists. Thus, both voters and parties drive the higher promotion of low-SES candidates in response to refugee migration in open than closed lists.

The results that parties open up and reorder their lists in response to immigration cannot be explained by the model presented in Chapter 2 of this thesis. In Chapter 2, parties choose their list structure based on voters' ideological bias. Majority parties are predicted to open up lists when the ideological bias in their favor grows, while minority parties maintain a closed list no matter the size of the bias. This means that the empirical result that immigration causes majority parties to open up their lists can only be explained by Chapter 2 if immigration makes voters more biased in favor of majority parties. Although this cannot be tested empirically,[27] it is unlikely to be the case. Immigration increases voter support for far right parties the short run, and has no effect on support for any party in the longer run. This means that it is unlikely that immigration increases the bias in favor of majority parties, implying that Chapter 2 cannot explain the empirical patterns presented here.

There may be a couple of reasons why Chapter 2 cannot explain the empirical findings in the present chapter. First, Chapter 2 assumes that the only tool that parties have at hand is list structure. However, the present chapter shows that parties couple opening up lists with changing the order of candidates on the lists. Extending the model to allow for endogenous candidate order may change the predictions of the model. Second, Chapter 2 assumes that ideological bias is homogeneous across voters. However, immigration may change voters' bias in a heterogeneous way, e.g. by changing the bias only of some voters. If that is the case, parties may open up lists not (only) to increase the effort of candidates, but (also) to give voters more power over which candidates are elected. This way parties may both encompass voters whose ideological bias has and has not changed. Allowing for the ideological bias to be heterogeneous across voters may also change the predictions of the model.

[26]The regression is similar to running the baseline 2SLS regression separately for each half of the party list (or preference vote distribution), as well as by type of list. I pool the full candidate data and interact the refugee share with party list position (panels a-b) or preference votes (panels c-d), as well as the list type (equation 1.5).

[27]As discussed previously, voter support for a party does not measure ideological bias insofar as parties can change their platform.

In sum, the results in this section provide evidence that parties play a role in the change of political selection: first by reordering the candidates, and second by switching to open lists (and through that switch, enabling changes in candidate order). The next section considers the role of voters in driving the changes in political selection.

1.8 Voters' Role in Electing Low-SES Candidates

In this section, I consider voters' role in increasing the win rate of low-SES candidates in response to refugee migration. Section 1.8.1 looks at how refugee migration changes which candidates voters vote for. Section 1.8.2 employs a survey experiment to study what this change in preferences over candidates tells us about changes in voters' policy preferences.

1.8.1 Preference Votes

Section 1.7.1 showed that parties respond to refugee migration by placing low-SES candidates at the top of party lists. In this section, I consider whether this pattern is driven by a change in voter preference for low-SES candidates in response to refugee migration.

As discussed in Section 1.2.2, voters can influence which candidate is elected through their preference vote. This implies that we can study how refugee migration impacts voter preferences by studying how it impacts who voters cast their preference votes for. Figure 1.16 shows that refugee migration increases voters' propensity to vote for low-SES candidates. The figure shows the effect of refugee migration on candidate income rank in the top and bottom half of the preference vote distribution.[28]

Voters tend to prefer wealthier candidates at baseline. Average income rank among candidates in the top half of the preference vote distribution is 69% (left-most light blue bar), while it is 63% in the bottom half (right-most light blue bar). However, refugee migration drastically reduces the difference in income rank between the most and least popular candidates. Average income rank among the most popular half of candidates falls by 2 percentage points in response to a one-standard-deviation increase in refugee migration (left-most dark blue bar). In contrast, there is no change in average income rank among the least popular half of candidates (right-most dark blue bar). In sum, refugee migration makes low-SES candidates more popular among voters.

1.8.2 Understanding the Results with a Follow-Up Experiment

What does the increase in popularity of low-SES candidates tell us about changes in voters' policy preferences? To understand this, we first consider whether low- and high-SES candi-

[28]The regression behind the figure is similar to running the baseline 2SLS regression separately for each half of the preference vote distribution. We pool the full candidate data and interact the refugee share with the top and bottom half of the preference vote distribution to enable inference between the coefficients for each half of the preference vote distribution (equation 1.4).

dates have differing political views. Table 1.7 shows that within parties, low-SES candidates are more opposed to immigration and more in favor of redistribution than high-SES candidates. The data behind that table comes from an opinion survey during the 2017 municipal election, described in Section 1.4. The outcome variables (displayed in rows) are survey items that are first transformed to z-scores, and then averaged within the indicated groups of items.[29] The independent variable is education group, which ranges from 1 (completed middle school) to 7 (completed Ph.D.).

Column (1) of Table 1.7 shows that candidates with a higher education level are more in favor of immigration and redistribution overall. Moving up one education group lowers opposition to immigration by 0.27 standard deviations (row 1) and increases support for redistribution by between 0 and 0.11 standard deviations depending on the item (rows 2-4). However, these differences in political opinion between education groups may reflect differences in average education across parties. For instance, far-right parties tend to have lower-educated candidates and platforms that oppose immigration. To understand whether voters can elect a politician with different political views without switching parties, column (2) replicates column (1) but includes party fixed effects. Within parties, lower education is still associated with higher opposition to immigration, but also with higher *support* for redistribution. Moving up one education group reduces opposition to immigration by 0.061 standard deviations (row 1), but it also reduces support for redistribution by 0.025-0.085 (rows 2-4). The effect is quite large: Moving from a PhD to middle school education level increases the candidate's opposition to immigration by 0.37 standard deviations and support for redistribution by 0.15-0.51 standard deviations within the party. These results suggest that there is a wide range of candidate choice even within parties. If voters increasingly oppose immigration or favor redistribution, they can thus satisfy this preference by electing low-SES candidates without switching parties.

So far, we have established that low-SES candidates are both more opposed to immigration and more in favor of redistribution than high-SES candidates. Does refugee migration increase voters' preference for low-SES candidates by increasing voters' opposition to immigration, their support for redistribution, or both? In the remainder of this section, we answer this question in the context of a survey experiment.

1.8.2.1 Survey Experiment

To investigate how immigration impacts policy preferences, I designed an information treatment that upwardly adjusted respondents' beliefs about future immigration from non-Western countries to Denmark. The control group saw projections about future population growth.[30] After the treatment, subjects chose between fictional political candidates who differed on either their redistribution or immigration platforms. The wordings of policy platforms were

[29] Z-scores are calculated by standardizing each survey item to exhibit a mean of zero and standard deviation of one.

[30] When migrants are from non-Western countries, it is nearly impossible to relocate to Denmark without seeking refugee status. The treatment can thus be interpreted as an increase in refugee migration.

adapted from real candidates. Because voters elect politicians rather than policies, this outcome variable should mimic voters' actual political choices more closely than asking directly about policy preferences. Subjects were also asked about their opinions over a range of redistribution and immigration policies, as well as trust in politicians.

I ran the experiment on a nationally representative sample in Denmark in the summer of 2019 through YouGov. I collected information on gender, age, region (of which there are 5), urban/rural, income, occupation, ethnic origin, party identification, and position on a left-right economic scale. $N = 768$ respondents passed the attention check and were included in the analysis.

Figure 1.17 shows that the immigration treatment has a positive first stage effect on expected future immigration, but also increased pessimism about the future economy. The outcomes variables are beliefs about different aspects of Denmark's society and economy in the next 10 years: immigration (first coefficient), the national economy (second coefficient), the amount of welfare Denmark can afford (third coefficient), and life in Denmark (fourth coefficient). All variables take the values -1 (less/worse), 0 (the same), and 1 (more/better). In all figures, dots indicate coefficient estimates, thick error bars indicate significance at the 10% level, and thin error bars indicate significance at the 5% level.

The immigration information increased subjects' propensity to believe that immigration will increase in the next 10 years by 0.24, which is over 10% of the range of the variable. The immigration information also reduced subjects' propensity to believe that the national economy will improve by 0.14—i.e., 7% of the variable's range. These results imply that the information succeeded in adjusting subjects' beliefs about future immigration upward, but it also made them more pessimistic about the future national economy.

Does increased pessimism about the economy and life in Denmark translate into political choices? Figure 1.18 shows that immigration information surprisingly does not make voters choose candidates who oppose immigration, but that they instead choose candidates who favor redistribution. The outcome variables are choices of candidates who vary on immigration platform (left-most coefficient) or redistribution platform (right-most coefficient). They take values -1 (choose the pro-immigration / anti-redistribution candidate), 0 (indifferent), and 1 (choose the anti-immigration / pro-redistribution candidate). The immigration platforms are about refugees, while the redistribution platforms are about redistribution toward the unemployed. Immigration information increases the propensity to choose the candidate who favors redistribution toward the unemployed by .12 (6% of the range), and if anything, makes voters favor immigration by 0.06. However, only the coefficient for redistribution is statistically significant.

The result that immigration increases pro-redistribution views contrasts with findings by Alesina, Miano, and Stantcheva [2018] and Dahlberg et al. [2012]. They find that immigration and immigration salience, respectively, *decrease* preferences for redistribution. One reason for this difference in results may be that subjects' perceptions of who benefits from redistribution differs between these two papers and the present paper. This may in part be because the present paper considers (i) other types of redistribution, and (ii) a different setting than the two papers. While the authors argue that subjects believe that immigrants

benefit from redistribution, in Denmark, the vast majority of those who actually benefit from unemployment insurance are native Danes. To investigate whether immigration more generally increases preferences for redistribution policies that benefit native Danes, I next consider subjects' preferences over a wider array of redistribution policies.

Figure 1.19 shows that immigration information increases preferences for early retirement, but not for financial aid in college. The outcome variables are preference for more generous early retirement (first coefficient), social welfare (second coefficient), financial aid (third coefficient), and subjects' trust in politicians (fourth coefficient). The variables again take values -1 (less generous), 0 (the same), and 1 (more generous). Immigration information increases the preference for more generous early retirement by 0.11 (6% of the range), which is significant at the 10% level. Preferences for a more generous social welfare scheme increases by 0.06, although the effect is insignificant. There is no effect on preferences for more generous financial aid. Finally, immigration information reduces trust in politicians by 0.08, although the effect is insignificant.

Why does immigration information increase preferences for some items of redistribution, but not others? One hypothesis is that the immigration treatment increases subjects' in-group bias, and for that reason, they want more generous redistribution only if it benefits native Danes. This hypothesis cannot explain the difference in responsiveness across redistribution items. All redistribution items considered in this paper mostly benefit native Danes. Qualification for early retirement in Denmark requires 40 years of work, and so this policy effectively only benefits native Danes. For unemployment insurance, social welfare, and university stipends, 90%, 80%, and 90% of recipients are native Danes, respectively. This implies that variation in which ethnicity benefits from the policy does not explain the variation in effects of immigration information on the policy.

Another hypothesis is that immigration information increases economic anxiety among, or on behalf of, economically vulnerable subjects. The difference in responsiveness is consistent with this hypothesis. Early retirement, unemployment insurance, and social welfare benefit low-skilled, older, and unemployed workers, who are all economically vulnerable. In contrast, university stipends benefit college students, who are generally not from low-income backgrounds. This implies that immigration increases preferences for redistribution through an effect on economic anxiety among or on behalf of economically vulnerable subjects.

Immigration can increase voters' preference for low-SES candidates not only by changing policy preferences, but also by reducing trust in traditional politicians. Recall from Figure 1.19 that immigration reduces trust in politicians, but that the effect is insignificant. However, splitting this result by economic vulnerability shows a striking picture. Figure 1.20b shows that immigration information decreases trust in politicians among economically vulnerable voters. Trust falls by 0.55, 0.22, and 0.17 among poor, less-educated, and rural voters, respectively. These effects make up 28%, 11%, and 9% of the range of the variable, and they are all statistically significant. Interestingly, the effects for non-poor, highly educated, and urban subjects are zero or slightly positive. This shows that immigration information has polarizing effects on trust in politicians depending on social background.

In sum, this section showed that immigration information increases pessimism about

the future economy and preferences for redistribution toward economically vulnerable native Danes. Furthermore, immigration information decreases trust in politicians among economically vulnerable subjects. Because low-SES candidates are in favor of redistribution toward economically vulnerable voters, and because they are different from the traditional politician, these findings rationalize why low-SES candidates become more popular among voters in response to refugee migration.

1.9 Robustness

Are the main results sensitive to leaving out information about national-level inflows? Goldsmith-Pinkham et al. [2018] show that running regressions using shift-share instruments is equivalent to running a GMM estimation with many instruments. When using panel data, the GMM estimator uses the shares s_{im} interacted with year dummies as instruments and the shifters $\widetilde{stock}_{it}$ as weights. Thus, to check whether the results are sensitive to national-level inflows, we can run GMM with shares s_{im} interacted with year dummies as instruments, but without using weights. This allows us to parse out the part of the effect that is driven solely by the Spatial Dispersal Policy. Table 1.8 shows the results. Panel A repeats the effect of a one-standard-deviation increase refugee migration on attributes for elected officials from Table 1.4. Panel B shows the results of the GMM. We see that the effects of refugee migration on income rank are robust to leaving out information on national-level stocks of refugees.

Table 1.9 looks at whether the main result is sensitive to dropping specific origin countries from the instrument. The table shows the for every country that we drop, the estimated effect of refugee migration on income rank among elected officials remains that same. Thus, no one origin country is driving the results.

1.10 Conclusion

Immigration plays an important role in the political debate in countries all over the Western world. In this paper, I show that immigration affects party governance through the mobilization, promotion, and election of candidates of low socioeconomic status, as well as through changing party institutions by increasing within-party competition. I also show that voter support for candidates of low socioeconomic status can in part be explained by increased preferences for redistribution toward economically vulnerable natives and increased distrust of politicians.

There two aspects of the Danish context to consider when thinking of the broader implications of the findings in this paper. First, Denmark has a long history of far-right politics. The first far-right party was established in 1972, and the far right has grown dramatically, at the expense of established parties, since the mid-1990s. As such, the established parties have had many years to adapt. Thus, the findings may more easily extend to countries with a slightly longer history of far-right movements (e.g., the Tea Party in the U.S.), while in

countries where far-right parties are younger (e.g., Germany, Sweden), established parties may adapt only in the future. Second, Denmark has an extensive government with universal benefits. This may imply that if immigration increases economic anxiety in other settings, it may affect policy preferences differently. But while refugee migration in other countries may not increase votes' preferences for governmental redistribution programs, preferences for other types of redistribution may be affected. For example, recent political discussions in the US about lowering health care costs and adopting restrictive trade policy to keep American jobs can be seen as examples of redistribution toward economically vulnerable natives.

An important implication of this paper is that established parties are not necessarily powerless when it comes to changes in public opinion arising from changes such as refugee migration. Although established parties cannot easily change their political brand, they may be able to counteract the far right by changing their mix of candidates and thereby their policy positions. My results also suggest that established parties may be able maintain generous immigration policies if they address voters' economic concerns in regards to immigration.

Finally, the fact that immigration does not impact vote shares for far right parties in the setting of this papers, but has effects *within* parties, underlines the importance of considering changes not only across, but also within parties, to fully understand political change.

1.10.1 Transition to Chapter 2: Strategic Choice of Party List Structure

This paper has shown that parties respond to immigration in ways that are consistent with strategic behavior. Specifically, parties' promotion of popular candidates and switch of list structure from closed to open are behaviors consistent with maximizing electoral success. Whereas in the present setting the change of list structure can best be understood as a way to increase the flexibility of the list order under elite capture, in the next chapter I study another motivation for strategically changing list structure: Maximizing candidates' effort provision.

Table 1.1: Example of election result

Position	Name, Town	Preference votes	Election order:	
			Closed	Open
1	Lis Tribler, Slagelse	5,683	1	1
2	Helle Blak, Slagelse	877	2	3
3	Jørgen Andersen, Slagelse	522	3	N/A
4	Steen Olsen, Slagelse	804	4	4
5	Søren Horn Petersen, Slagelse	185	5	N/A
...				
17	Ali Yavuz, Slagelse	562	N/A	5
...				
23	John Dyrby Paulsen, Slagelse	1,163	N/A	2
Total preference votes				12,825
Total party votes				1,984
Total votes				14,809

Notes: The table shows part of the municipal election results for the Social Democrats in the Slagelse municipality in 2013. Column 1 shows the position on party list, and column 2 the name and town of the candidate as displayed on the ballot. Column 3 is the number of preference votes received by the candidate. Columns 4 and 5 are the order in which candidates are elected, assuming that the party received 5 seats. Column 4 shows the election order had the party run a closed list, and column 5 had it run an open list. The bottom three rows show the parties total preference votes, total party votes, and the sum of the two.

Tables

Table 1.2: Testing for pre-trends in vote shares

	ΔVote Shares					
	Center	Left	Right	Other (small)	Unemp.	Income /cap.
	(1)	(2)	(3)	(4)	(5)	(6)
Refugee share (std)	-0.00827	-0.00832	0.000440	0.0161	0.0198	0.149
	(0.0113)	(0.00551)	(0.00432)	(0.0102)	(0.139)	(0.110)
Mean of dep. var.	0.699	0.112	0.0551	0.134	9.154	15.00
First stage F	35.86	35.86	35.86	35.86	35.86	35.86
Observations	98	98	98	98	98	98

Notes: This table reports the effect of refugee migration on pre-1993 changes in political and economic variables. The unit of observation is a municipality. Each number reports the estimate and standard error of a separate instrumental variables regression. Dependent variables are pre-period changes in vote shares for the indicated party group (columns 1-4), the unemployment rate (column 5), and gross income per capita (column 6). These changes are for a 4-year period beginning in the first year of data, i.e. 1985, 1986, and 1983 for vote shares, unemployment, and income, respectively. Independent variable, Δ*Refugee Share 1993-2013*, is change in the number of refugees as a share of the population between 1993 and 2013. The instrument for refugee share is predicted refugee share between 1993-2013. Predicted refugee migration is defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. The means indicate average vote share for each party group. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.3: Balance of initial refugee allocations

	Dependent variable: Refugees to mun. m as a percent of all refugees in 1986-1998, by origin country						
	Somalia (1)	Afghanistian (2)	Sri Lanka (3)	Iraq (4)	Iran (5)	Lebanon (6)	Vietnam (7)
Independent variable: ΔVote Share 1985-89 for:							
Left	-0.00129	-0.00115	0.0100	-0.00979*	-0.00995**	-0.00122	0.000452
	(0.00633)	(0.00215)	(0.00759)	(0.00521)	(0.00432)	(0.0117)	(0.00539)
Center	-0.00301	-0.000629	-0.00196	-0.000652	0.000291	-0.0216***	-0.00297
	(0.00322)	(0.00110)	(0.00391)	(0.00271)	(0.00227)	(0.00557)	(0.00274)
Right	0.000574	-0.000846	0.0199**	0.00203	-0.000733	0.0126	0.00636
	(0.00841)	(0.00286)	(0.00997)	(0.00704)	(0.00589)	(0.0155)	(0.00714)
Other	0.00379	0.00123	-0.00420	0.00338	0.00281	0.0233***	0.00222
	(0.00347)	(0.00118)	(0.00420)	(0.00290)	(0.00243)	(0.00601)	(0.00297)
Independent variable: Pre-period change in:							
Unemp.	-0.00862	0.0137	-0.0238	0.0336	-0.0134	0.0264	-0.0153
	(0.0262)	(0.00880)	(0.0316)	(0.0216)	(0.0183)	(0.0484)	(0.0222)
Income/cap.	-0.0193	0.0224**	-0.0543*	0.0267	0.0104	-0.0561	-0.0349
	(0.0271)	(0.00897)	(0.0324)	(0.0226)	(0.0190)	(0.0500)	(0.0229)
Mean of dep. var	0.141	0.0365	0.138	0.154	0.119	0.214	0.0714
Observations	98	98	98	98	98	98	98

Notes: The table reports a test for whether prior changes in political and economic conditions predict allocations during the Spatial Dispersal Policy (SDP, 1986-1998). The unit of observation is a municipality. Each number reports the estimate and standard error of a separate regression. Dependent variables are the number of refugees from the indicated origin country i allocated to municipality m during SDP, as a percent of the population in municipality m in 1986. Independent variables are pre-period changes in vote shares for the indicated party group, the unemployment rate, and gross income per capita. These changes are for a 4-year period beginning in the first year of data, i.e. 1985, 1986, and 1983 for vote shares, unemployment, and income, respectively. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.4: Effect of refugee migration on political selection

	Income rank (1)	Mincer residual (2)	Education (yrs) (3)
	Elected officials		
Panel A. OLS			
Refugee share (std)	-0.0245***	-14008.8***	-0.161**
	(0.00716)	(4321.9)	(0.0742)
Panel B. IV			
Refugee share (std)	-0.0521***	-27309.4**	-0.310*
	(0.0160)	(10950.7)	(0.159)
Panel C. IV (Center parties)			
Refugee share (std)	-0.0505***	-30868.3***	-0.364*
	(0.0185)	(11689.9)	(0.203)
Mean of dep. var.	.72	125864	13.7
	Candidates		
Panel D. IV			
Refugee share (std)	-0.00991	-16601.4***	-0.348***
	(0.00906)	(4875.0)	(0.0946)
Mean of dep. var.	.65	69576	13.5
First stage F	16.22	16.22	16.22
Municipalities	98	98	98
Observations	588	588	588

Notes: This table reports the effect of refugee migration on socioeconomic characteristics for political candidates and elected officials. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression and the mean of the dependent variable. Dependent variables are municipality-year-level averages of various elected official (panels A–C) and candidate (panel D) characteristics. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. Panels A presents OLS results. In panels B–D, the refugee share is instrumented with predicted refugee share. Predicted refugee share is defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. In panel C the sample is restricted to the 3 centrist parties (section 1.2.2). Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. Results for additional attributes are reported in Table A1. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.5: Effect of refugee migration on vote shares (1993-2001)

	Vote share			
	Left (1)	Center (2)	Right (3)	Other (small) (4)
Panel A. Party open list in 1989				
Refugee Share (std)	0.00301	0.0963*	-0.00488	0.0994*
	(0.0103)	(0.0512)	(0.0133)	(0.0527)
Mean of dep. var.	0.0246	0.391	0.0151	0.0577
Panel B. Party closed list in 1989				
Refugee Share (std)	-0.0116	-0.0192	-0.0118	-0.00937
	(0.0110)	(0.0359)	(0.00828)	(0.0132)
Mean of dep. var.	0.0515	0.268	0.00518	0.0180
First stage F	13.47	13.47	13.47	13.47
Municipalities	268	268	268	268
Observations	804	804	804	804

Notes: This table reports the effect of refugee migration on vote shares by list type (open/closed) in 1989. Sample is restricted to 1993-2001 due to the municipal merger in 2005. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression and the mean of the dependent variable. Dependent variables are vote shares for a party group-1989 list structure combination. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population. Panel A (B) reports the effect of refugee migration on vote shares among parties that run an open (closed) list in 1989. Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. Additional outcomes are shown in Table A6. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.6: Effect of Refugee Migration on Income Rank by List Type

	Dependent variable: Income rank	
	(1)	(2)
	Candidates	Elected
Panel A. Base level: Open list		
Refugee share (std)	-0.0105	-0.0645***
	(0.00933)	(0.0154)
Panel B. Base level: Closed list		
Refugee share (std)	-0.0135	-0.0437**
	(0.00884)	(0.0173)
Refugee share (std) × Open list	0.00292	-0.0208*
	(0.00769)	(0.0125)
List type interactions	X	X
Party FE	X	X
First stage F	13.01	12.37
Mean of dep. var.	0.659	0.724
Municipalities	98	98
Observations	60296	17633

Notes: This table reports the effect of refugee migration on income rank by list type. The unit of observation is a political candidate (column 1) or elected official (column 2). Each column-panel reports the estimate and standard error of a separate regression. Dependent variable is income rank within one's age group in the year before running for office. Independent variable *refugee share (std)* is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. Panel A (B) reports the results of a regression where *refugee share (std)* is interacted with an indicator for the party running an closed (open) list. Independent variable *refugee share (std)* is the base level and *refugee share (std)*×*Open list* is the interaction term with the open list indicator. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population. Each municipality is weighed equally—i.e., each observation is weighted by the inverse of the number of candidates (column 1) and elected officials (column 2) in the municipality-year. Municipality, year and list fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.7: Correlation between education and political opinion (2017)

	Independent variable: Education	
Dependent variable:	(1)	(2)
Anti Immigration	-0.266***	-0.0617***
	(0.0150)	(0.0112)
Pro Redistribution: Tax/Revenue	0.108***	-0.0246*
	(0.0220)	(0.0143)
Pro Redistribution: Elderly	0.0385*	-0.0279*
	(0.0198)	(0.0149)
Pro Redistribution: Children	0.00174	-0.0846***
	(0.0167)	(0.0152)
Pro Infrastructure	-0.0551***	-0.0513***
	(0.0130)	(0.0135)
Pro Culture	0.147***	0.0483***
	(0.0140)	(0.0115)
Pro Environment	0.357***	0.0351
	(0.0328)	(0.0245)
Pro Health	0.0286***	0.0202*
	(0.0104)	(0.0107)
Party fixed effects		X
Observations	6608	6608

Notes: This table reports the (descriptive) effect of education on political opinion. The data is an opinion survey from 2017. The unit of observation is a political candidate. Each number reports the estimate and standard error of a separate regression. Dependent variables are indices calculated as average z-scores within each group of survey questions. Independent variable is an index of education groups, where 1=Completed middle school and 7=Completed PhD. Column (1) reports the results of a univariate regression of political opinion on education. Column (2) replicates column (1) but also includes party fixed effects. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.8: Robustness to excluding shifter variation

	Elected officials		
	Income rank	Mincer res.	Avg. education
Panel A. Main results			
Refugee share (std)	-0.0521***	-27324.3**	-0.310*
	(0.0160)	(10950.2)	(0.159)
First stage F	16.22	16.22	16.22
Panel B. Shares as instruments			
Refugee share (std)	-0.0456***	-45503.2***	-0.0850
	(0.0141)	(10998.0)	(0.166)
First stage F	12.67	12.67	12.67
Mean of dep. var.	.72	125864	13.7
Observations	588	588	588

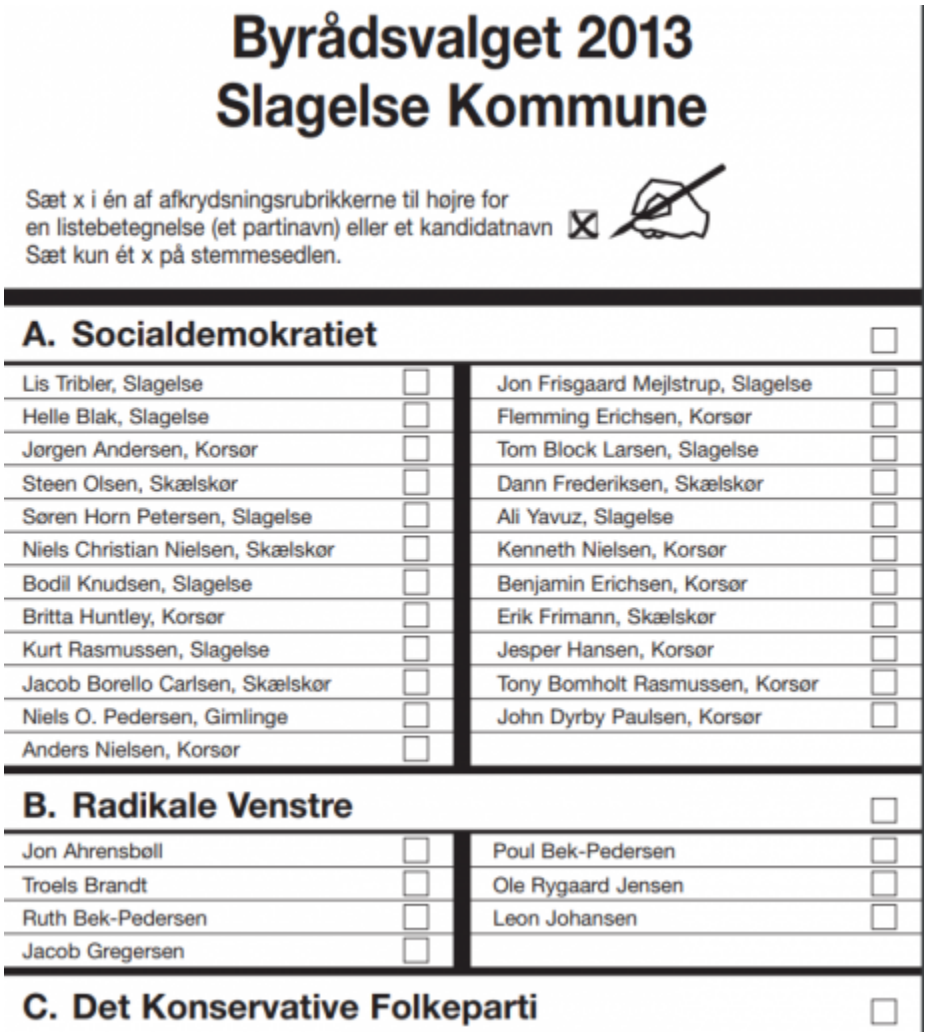
Notes: This table reports the effect of refugee migration on socioeconomic characteristics for elected officials using two sources of variation. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression. Dependent variables are municipality-year-level averages of various elected official characteristics. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. In Panel A, the instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population (same as panel B of table 1.4). In Panel B, the instruments for refugee share are refugee allocations during the Spatial Dispersal Policy (1986-1998) by origin country interacted with year dummies in a GMM regression. Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1.9: Robustness to dropping origin countries

	Dependent variable: Income rank among elected officials							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Refugee share (std)	-0.0495***	-0.0441***	-0.0688***	-0.0513***	-0.0475***	-0.0501***	-0.0462***	-0.0492***
	(0.0143)	(0.0143)	(0.0199)	(0.0148)	(0.0154)	(0.0146)	(0.0136)	(0.0146)
Country left out	Ethiopia	Somalia	Afghanistan	Sri Lanka	Iraq	Iran	Lebanon	Vietnam
First stage F	10.91	9.71	13.5	10.75	8.71	10.34	10.84	10.02
Municipalities	98	98	98	98	98	98	98	98
Observations	588	588	588	588	588	588	588	588

Notes: This table reports the effect of refugee migration on socioeconomic characteristics for elected officials leaving out one origin country at a time. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression. Dependent variable is the municipality-year-level average income rank among elected officials. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one, but leaving out the indicated origin country. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population, again leaving out the indicated origin country. Mean income rank is 0.72. Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure 1.1: Snapshot of ballot from 2013 election in the Slagelse municipality



Byrådsvalget 2013
Slagelse Kommune

Sæt x i én af afkrydsningsrubrikkerne til højre for
en listebetegnelse (et partinavn) eller et kandidatnavn
Sæt kun ét x på stemmesedlen.

A. Socialdemokratiet

Lis Tribler, Slagelse	☐	Jon Frisgaard Mejlstrup, Slagelse	☐
Helle Blak, Slagelse	☐	Flemming Erichsen, Korsør	☐
Jørgen Andersen, Korsør	☐	Tom Block Larsen, Slagelse	☐
Steen Olsen, Skælskør	☐	Dann Frederiksen, Skælskør	☐
Søren Horn Petersen, Slagelse	☐	Ali Yavuz, Slagelse	☐
Niels Christian Nielsen, Skælskør	☐	Kenneth Nielsen, Korsør	☐
Bodil Knudsen, Slagelse	☐	Benjamin Erichsen, Korsør	☐
Britta Huntley, Korsør	☐	Erik Frimann, Skælskør	☐
Kurt Rasmussen, Slagelse	☐	Jesper Hansen, Korsør	☐
Jacob Borello Carlsen, Skælskør	☐	Tony Bomholt Rasmussen, Korsør	☐
Niels O. Pedersen, Gimlinge	☐	John Dyrby Paulsen, Korsør	☐
Anders Nielsen, Korsør	☐		

B. Radikale Venstre ☐

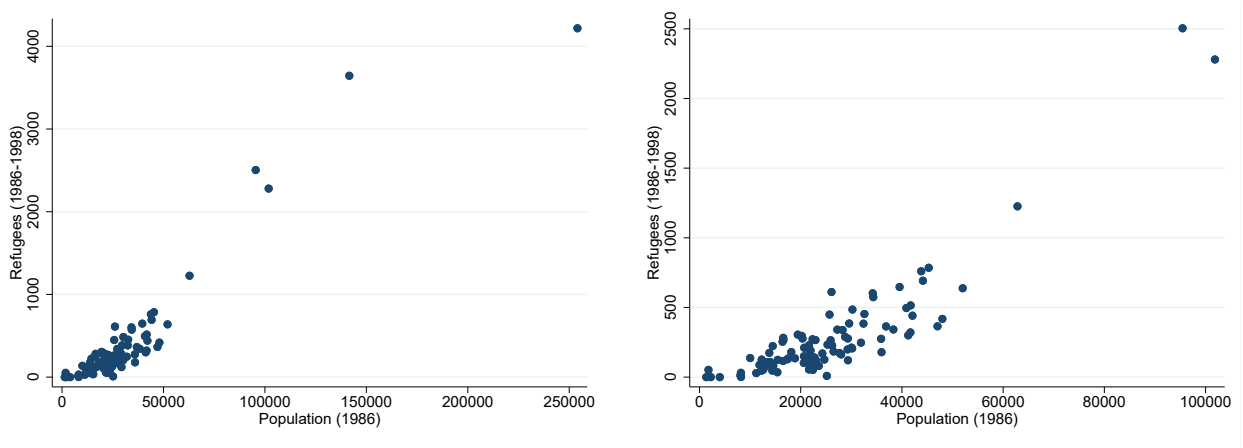
Jon Ahrensbøll	☐	Poul Bek-Pedersen	☐
Troels Brandt	☐	Ole Rygaard Jensen	☐
Ruth Bek-Pedersen	☐	Leon Johansen	☐
Jacob Gregersen	☐		

C. Det Konservative Folkeparti ☐

Notes: This figure shows part of the ballot from the 2013 election in the Slagelse municipality. The title translates to "Municipal election 2013 Slagelse Municipality." The text beneath the title translates to "Place an x in one of the boxes to the right of a party name or a candidate name. Place only one x on the ballot." Party letter and names are in bold face, and candidate names are listed beneath the party name.

Figures

Figure 1.2: Relationship between allocated refugees and population size

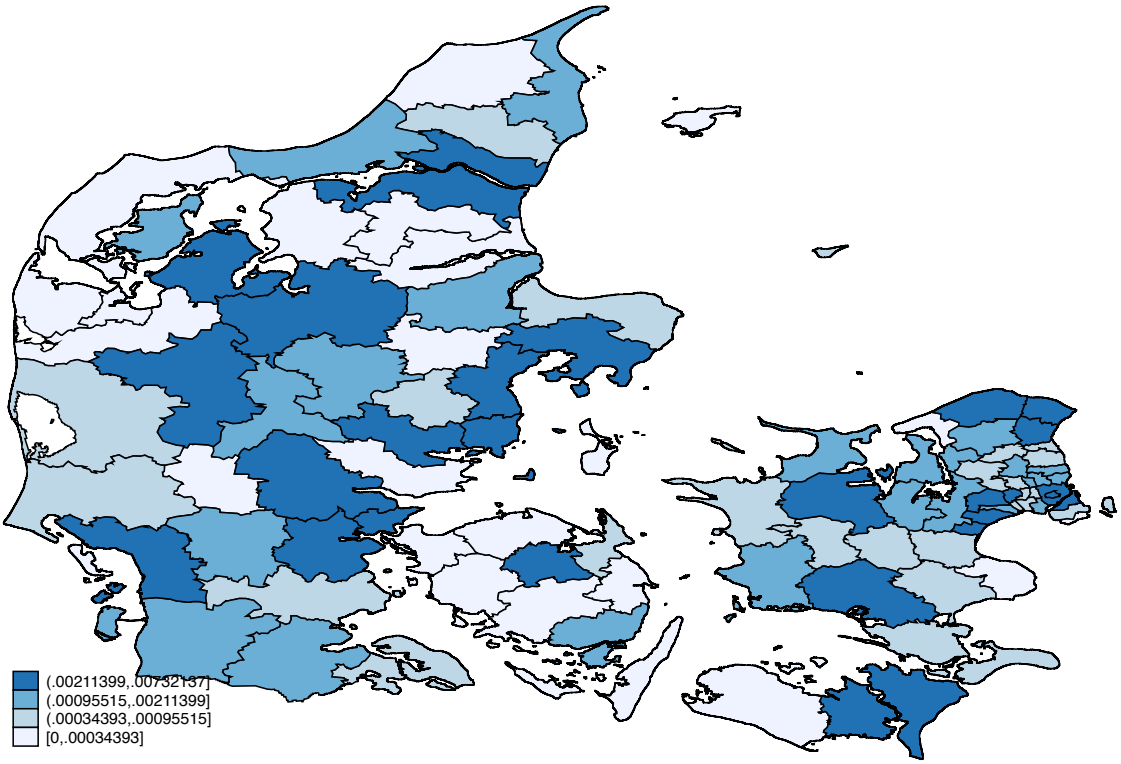


(a) All municipalities

(b) 98% smallest municipalities

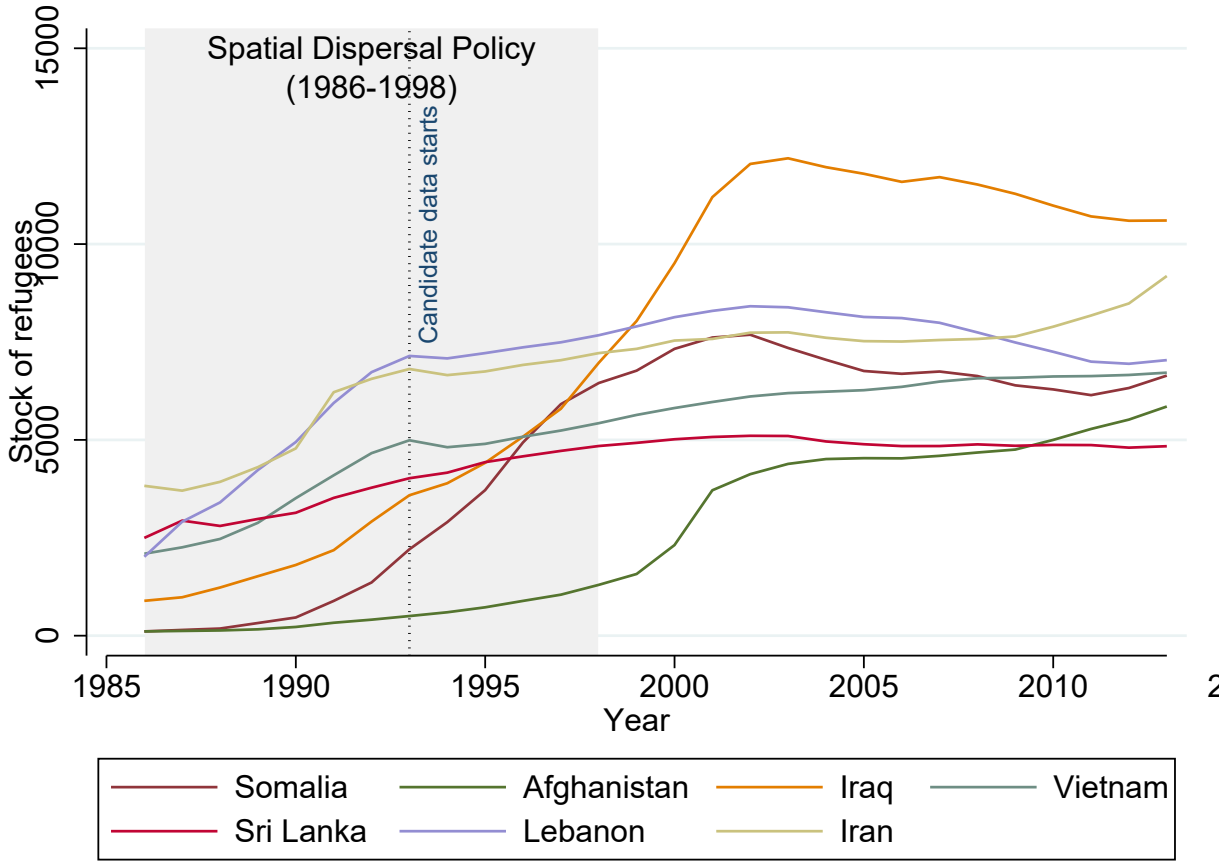
Notes: This scatterplot depicts the relationship between the number of allocated refugees during the Spatial Dispersal policy (1986-1998) and the 1986 population size. Each dot represents a municipality. The x-axis is the municipal population in 1986, and the y-axis is the total number of refugees allocated to the municipality between 1986-1998. Panel A shows all municipalities. Panel B shows all but the two largest municipalities in Denmark—namely, Copenhagen and Aarhus.

Figure 1.3: Initial allocation of Iranian refugees



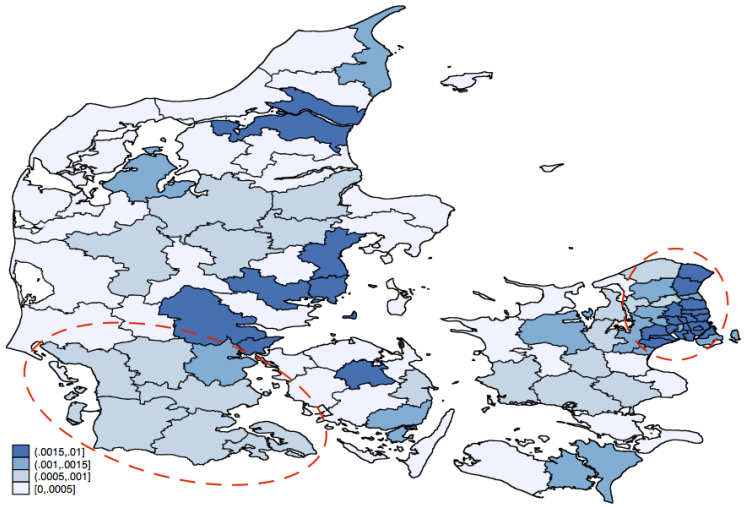
Notes: This map depicts the allocation of Iranian refugees during the Spatial Dispersal Policy relative to population size across municipalities. The map shows all of Denmark except Bornholm. The bins represent the number of Irani refugees allocated to the municipality between 1986-1998 as a share of the total population in 1986. Lighter colors represent municipalities with fewer Iranian refugees as a share of the population. For example, the darkest colored bins are municipalities where allocated Iranian refugees made up between 0.2–0.7% of the 1986 population.

Figure 1.4: Stocks of refugees over time

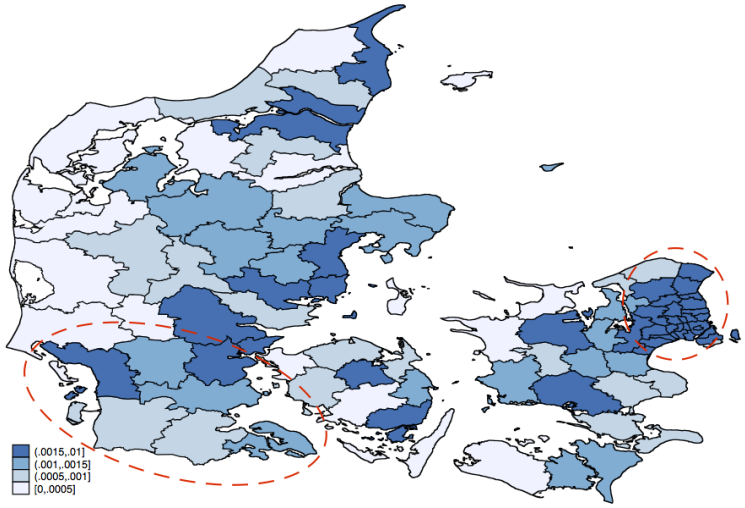


Notes: This figure depicts the evolution of the stock of refugees by origin country from 1985-2013. The y-axis is the stock of refugees from each origin country. The x-axis is the year. The shaded area depicts the period of the Spatial Dispersal Policy (1986-1998). The dotted line depicts the beginning of the data on political candidates.

Figure 1.5: Distribution of Iranian Refugees



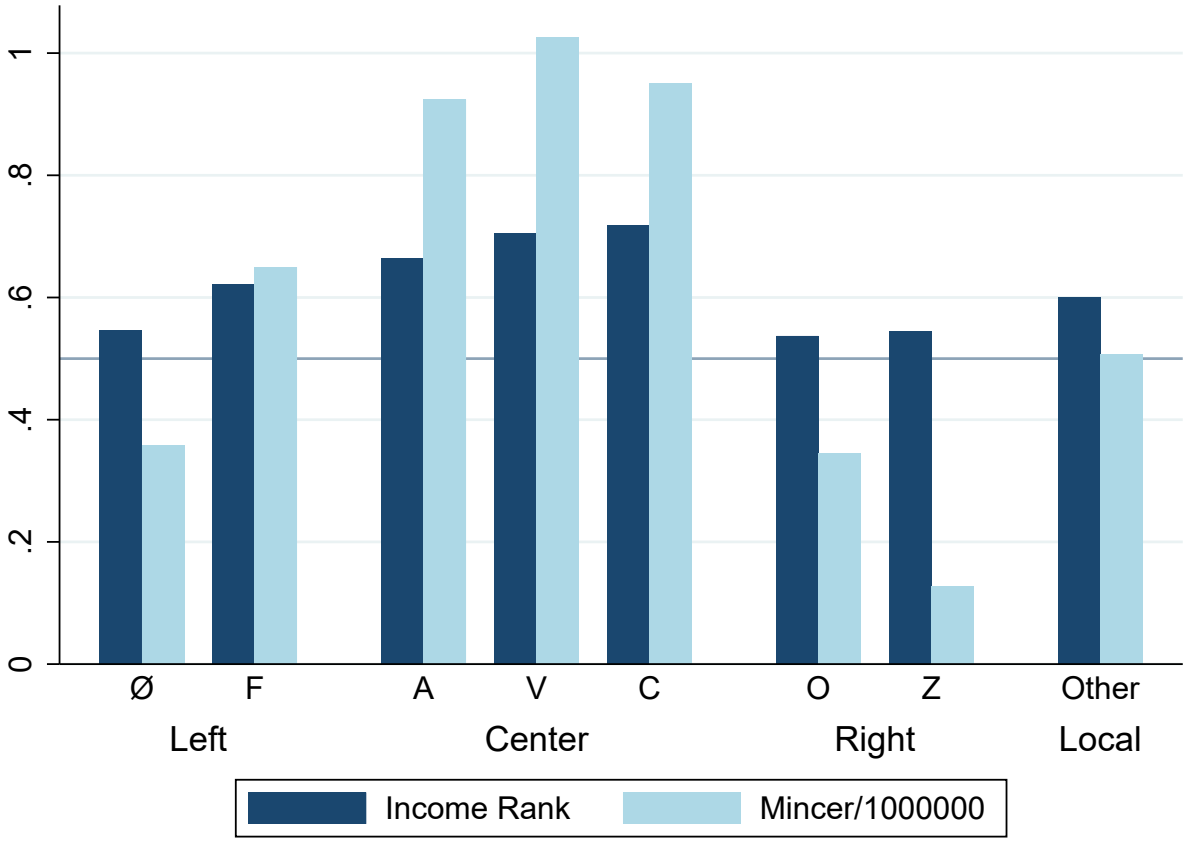
(a) 2001



(b) 2013

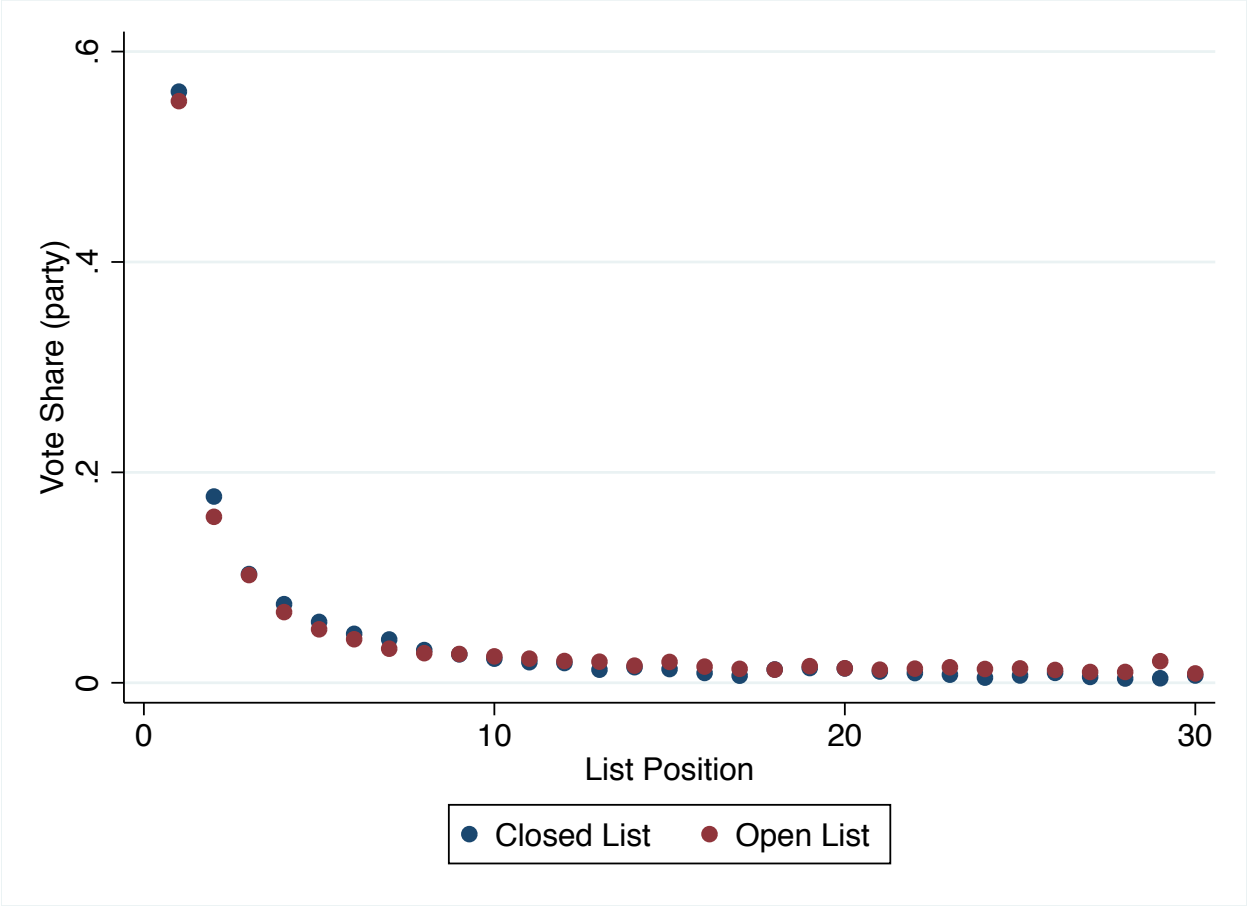
Notes: This map depicts the stock of Iranian refugees relative to population size across municipalities after the Spatial Dispersal Policy was abolished. The map shows all of Denmark except Bornholm. The bins represent the number of Iranian refugees living in the municipality in 2001 (panel a) and 2013 (panel b) as a share of the total population. Lighter colors represent municipalities with fewer Iranian refugees as a share of the population. For example, the darkest colored bins are municipalities where Iranian refugees made up between 0.15–1% of the population.

Figure 1.6: Income rank and mincer residuals of candidates by party



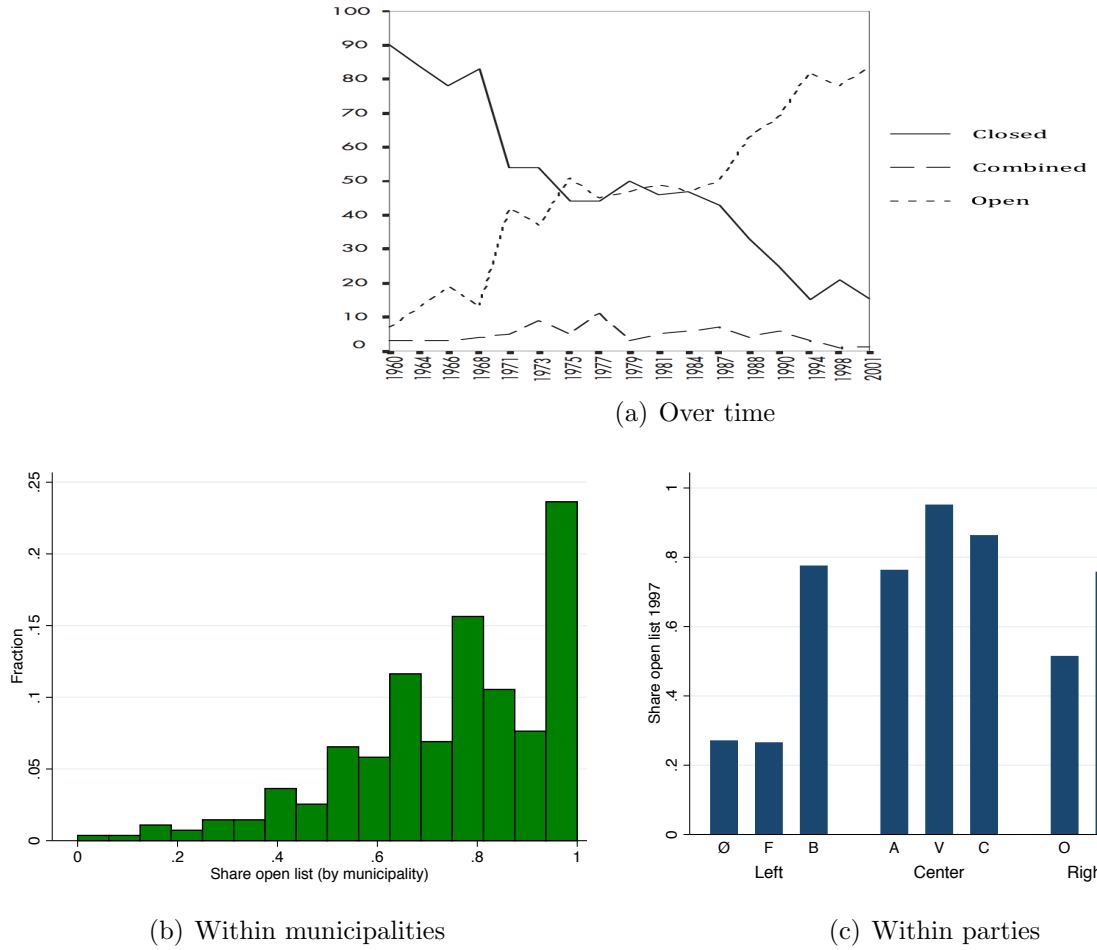
Notes: This figure depicts the average income rank and mincer residual of candidates by party. Each bar is the mean of candidate characteristics by party in 1997. Dark blue bars are income ranks, and light blue bars are mincer residuals divided by 100000. The parties are ordered from left to right in terms of their social policies. The parties are (in the order displayed in the figure): Ø. Red–Green Alliance, F. Socialist People's Party, B. Social Liberal Party, A. Social Democrats, V. Liberal Party, C. Conservative People's Party, O. Danish People's Party, Z. Progress Party, and all other (small) parties.

Figure 1.7: List position predicts candidate popularity in both open and closed lists



Notes: This binned scatterplot depicts the share of the party's preference votes received by candidates within each position of the party list. The y-axis depicts the share of the party's preference votes received by the candidates. The x-axis depicts the party list position. Blue dots are for closed list parties, and red dots are for open list parties. The bin size is one list position.

Figure 1.8: Variation in propensity to use open lists



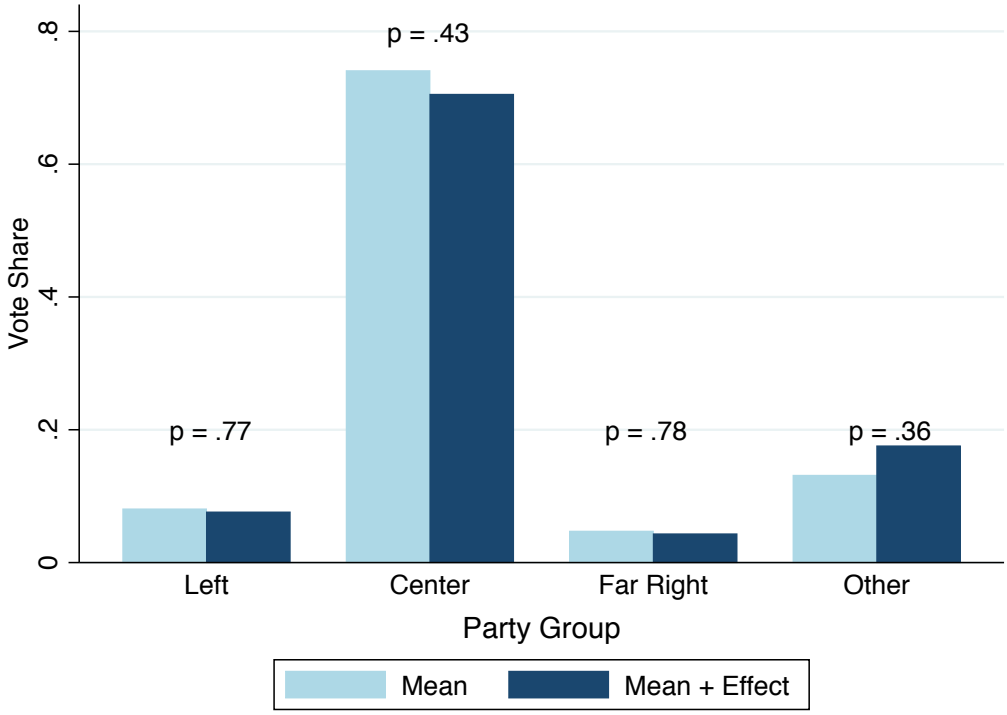
(a) Over time

(b) Within municipalities

(c) Within parties

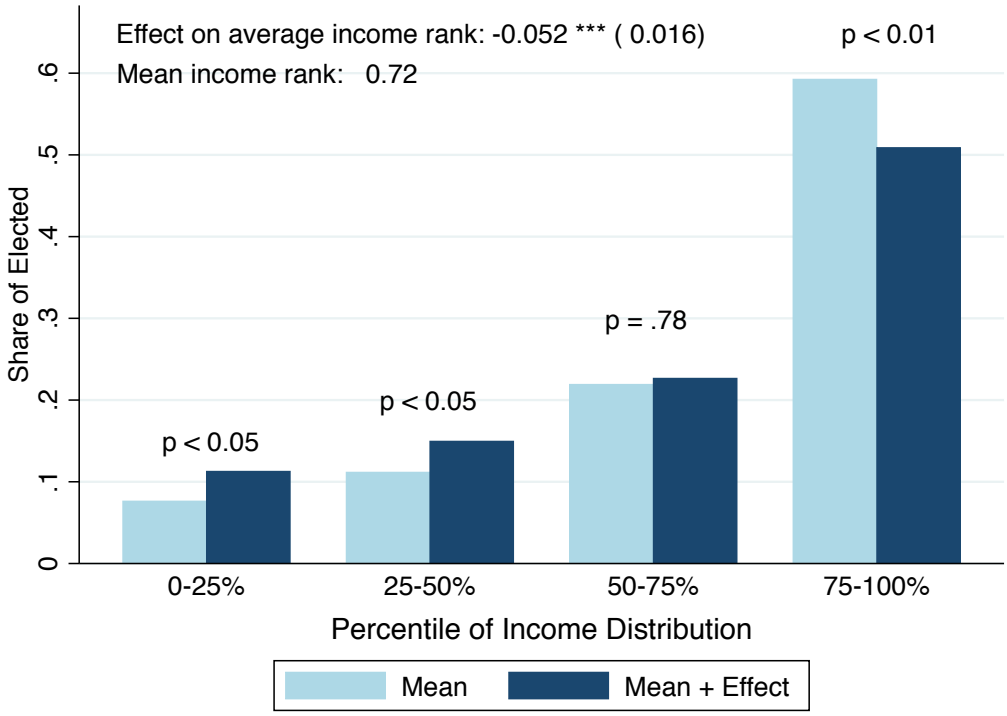
Notes: This figure depicts the variation in the propensity to use open lists over time, within municipalities, within parties. The line graph in **panel a** depicts the evolution of the share of parties running for national election by list type from 1960-2001. The list types are open (dotted), closed (solid), or combined list (dashed). *Source: De Danske Folketingsmedlemmer (Aarhus Universitetsforlag)* The histogram in **panel b** depicts the variation in the share of parties within each municipality running an open list. The unit of observation is a municipality, $N = 275$. The plotted variable is the share of parties within the municipality that ran an open list in 1997. The bar graph in **panel c** depicts the variation in the share of municipalities in which each party runs an open list. Each bar represents a party. The height of each bar represents the shares of municipalities in which the party ran an open list in 1997. The parties are (in the order displayed in the figure): Ø. Red–Green Alliance, F. Socialist People's Party, B. Social Liberal Party, A. Social Democrats, V. Liberal Party, C. Conservative People's Party, O. Danish People's Party, Z. Progress Party, and all other (small) parties.

Figure 1.9: Effect of refugee migration on vote shares



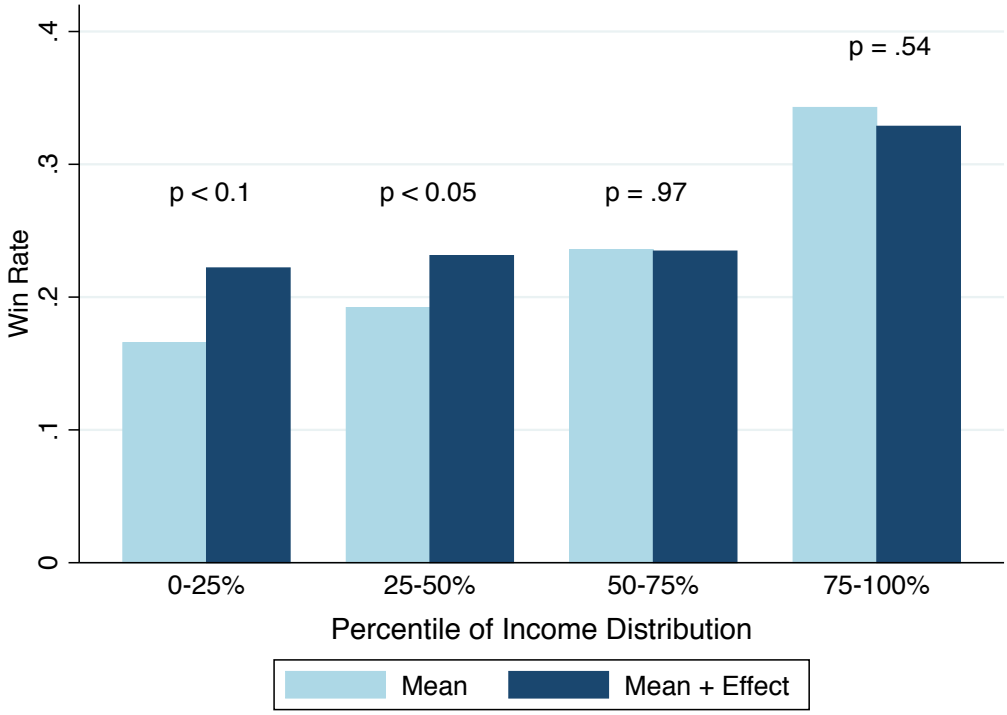
Notes: This bar graph depicts the effect of refugee migration on party vote shares. The unit of observation is a municipality-year, $N = 588$. Dependent variables are the vote share for the party grouping within each municipality-year. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable, and are based on municipality-level clustered standard errors. The first stage F-stat is 16.26. Municipality and year fixed effects are included in all regressions.

Figure 1.10: Effect of refugee migration on income distribution for elected officials



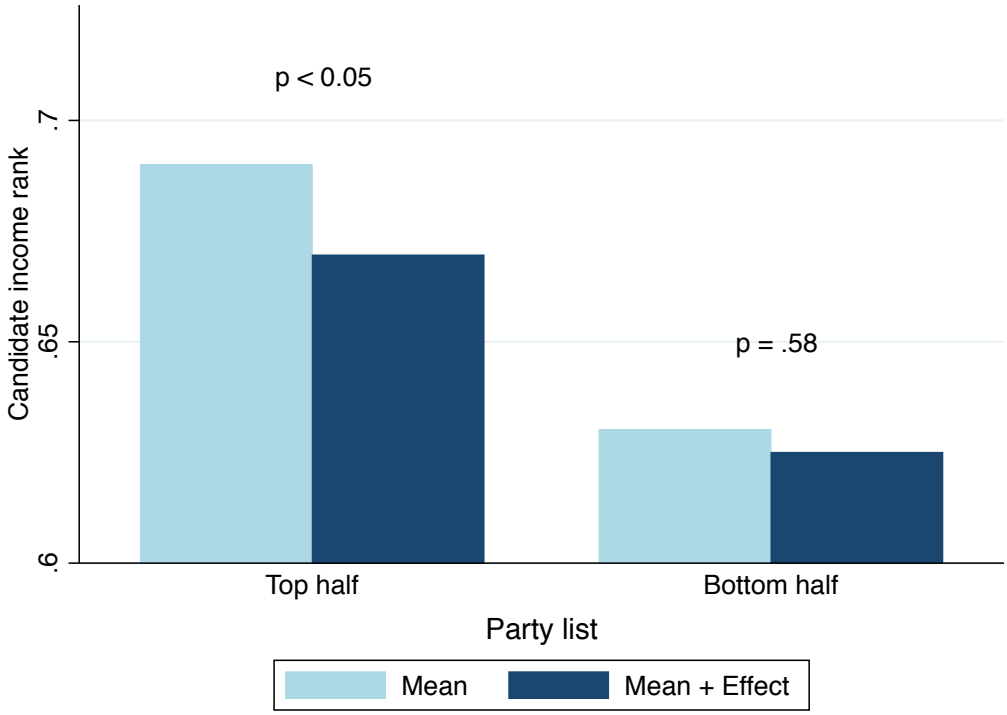
Notes: This bar graph depicts the effect of refugee migration on the income distribution of elected officials. The unit of observation is a municipality-year, $N = 588$. Dependent variables are the share of elected officials in each quartile of income distribution within each municipality-year. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable, and are based on municipality-level clustered standard errors. The first stage F-stat is 16.26. Municipality and year fixed effects are included in all regressions.

Figure 1.11: Effect of refugee migration on election probability conditional on candidacy by income quartile



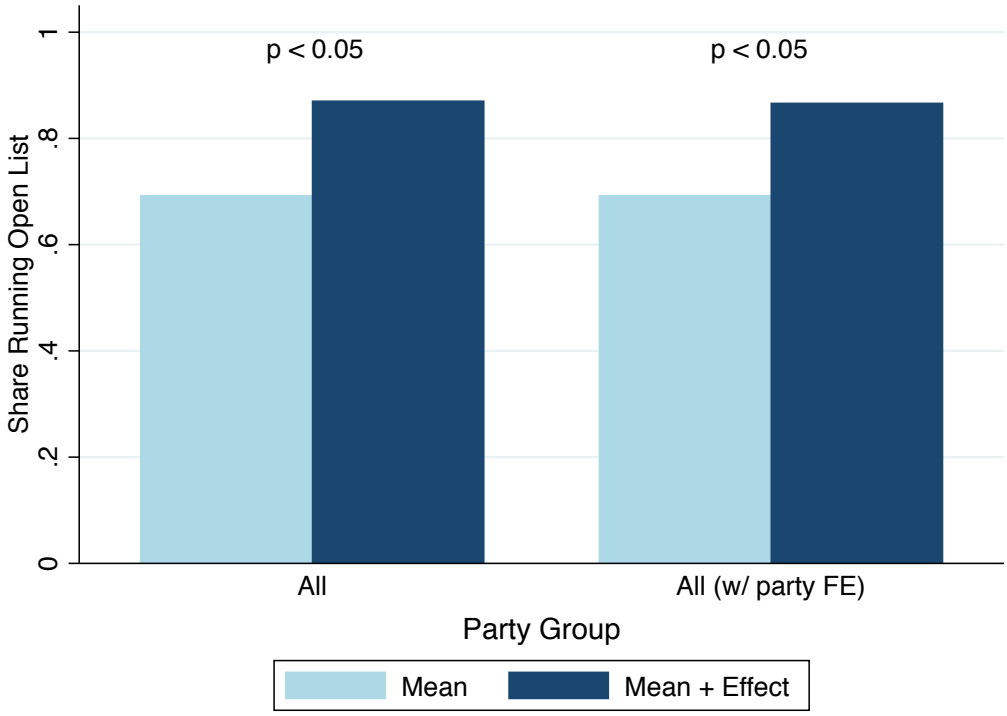
Notes: This bar graph depicts the effect of refugee migration on election probability conditional on candidacy for each quartile of the income distribution. The unit of observation is a municipality-year, $N = 588$. Dependent variables are the share of candidates in each quartile of income distribution that were elected within each municipality-year. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable, and are based on municipality-level clustered standard errors. The first stage F-stat is 16.26. Municipality and year fixed effects are included in all regressions.

Figure 1.12: Effect of refugee migration on income rank (party responses)



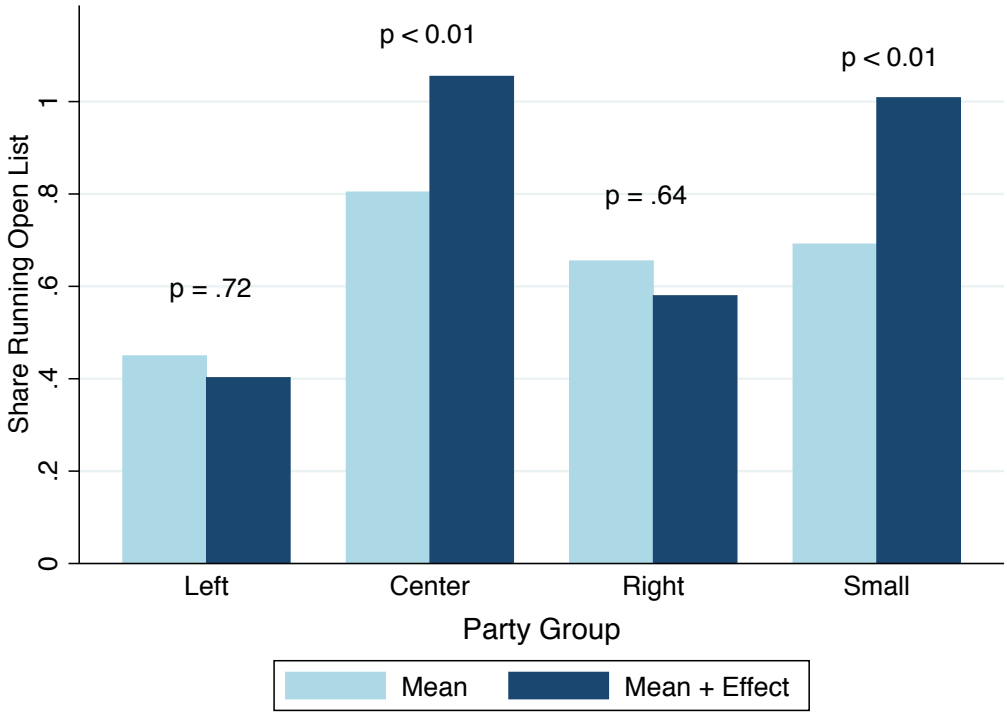
Notes: This figure reports the effect of refugee migration on income rank within each half of the party list. The unit of observation is a political candidate, $N = 60,296$. Data is divided into top and bottom half of the party list—i.e., the figure reports the results of two different regressions. Dependent variable is income rank within one's age group in the year before running for office. Independent variable *refugee share (std)* is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable within each half of the party list. The p-values are based on municipality-level clustered standard errors. Each municipality is weighed equally—i.e., each observation is weighted by the inverse of the number of individuals in the municipality-year. All regressions use the full data. Interaction terms between refugee shares and an indicated closed list are absorbed. In the first (second) dark navy bar an interaction term between bottom (top) half of the list is absorbed. The first stage F-stat is 3.05. Municipality, party, list type and year fixed effects are included in all regressions.

Figure 1.13: Effect of refugee migration on propensity to run an open list



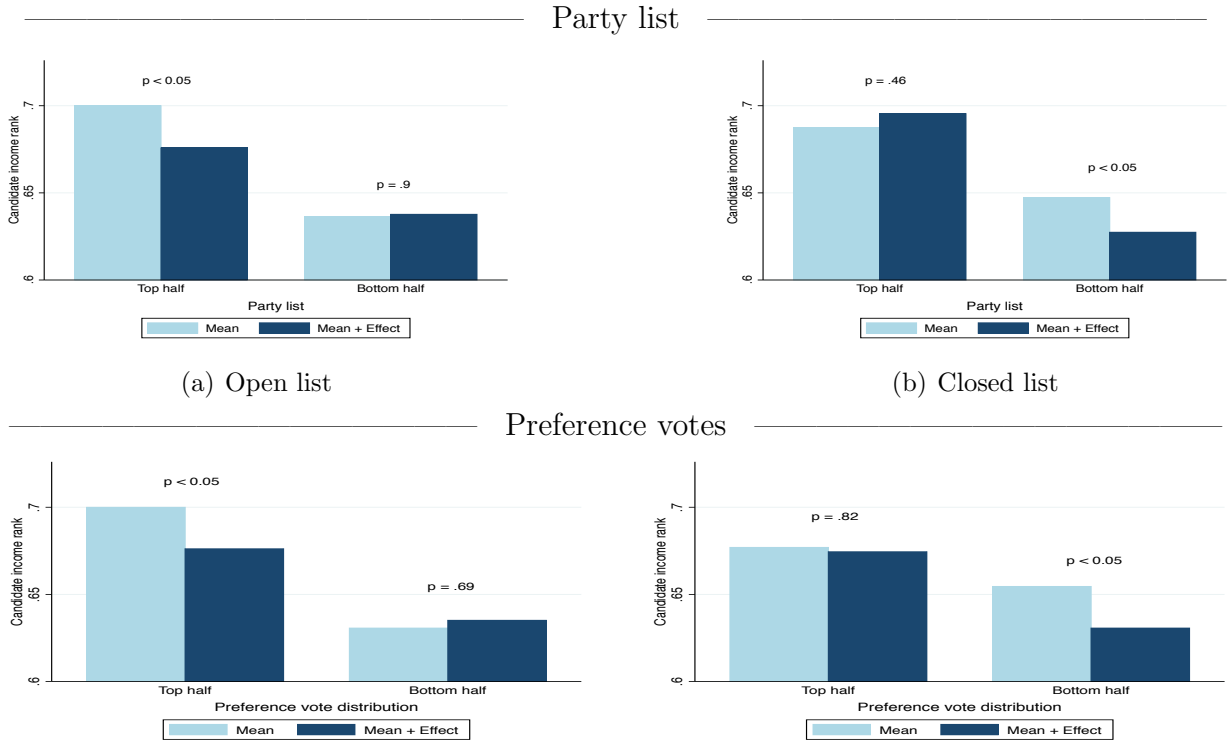
Notes: This bar graph depicts the effect of refugee migration on parties' propensity to run an open list. The unit of observation is a party-year, $N = 6349$ (set 1) and $N = 5376$ (set 2). Dependent variable is an indicator for running an open list. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. The first set of bars report results from the baseline regression (equation 1.3). The second set of bars replicates the first set of bars, but also include party fixed effects. P-values are for the effect of refugees on the dependent variable, and are based on municipality-level clustered standard errors. The first stage F-stats are 13.93 and 14.08, respectively. Municipality and year fixed effects are included in all regressions.

Figure 1.14: Effect of refugee migration on propensity to run an open list (by party)



Notes: This bar graph depicts the effect of refugee migration on each party groups' propensity to run an open list. The unit of observation is a party-year, $N = 2540, 1980, 1061, 778$, respectively. Dependent variable is an indicator for running an open list. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable, and are based on municipality-level clustered standard errors. The first stage F-stats are $13.11, 12.96, 10.63$ and 8.96, respectively. Municipality and year fixed effects are included in all regressions.

Figure 1.15: Party and voter responses to immigration in open & closed lists



(a) Open list

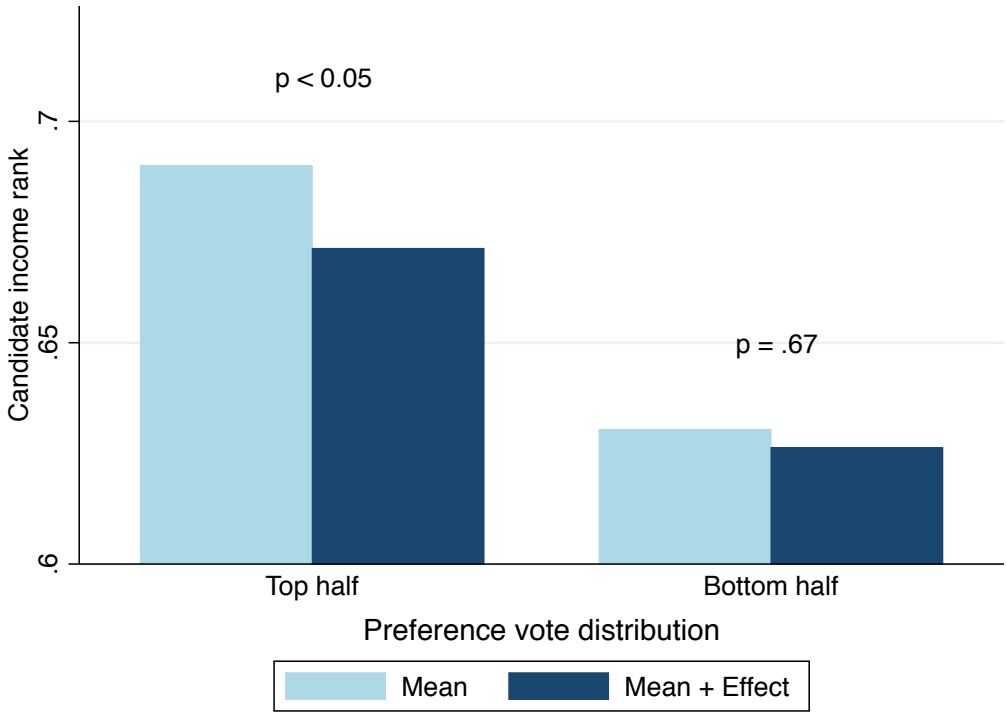
(b) Closed list

(c) Open list

(d) Closed list

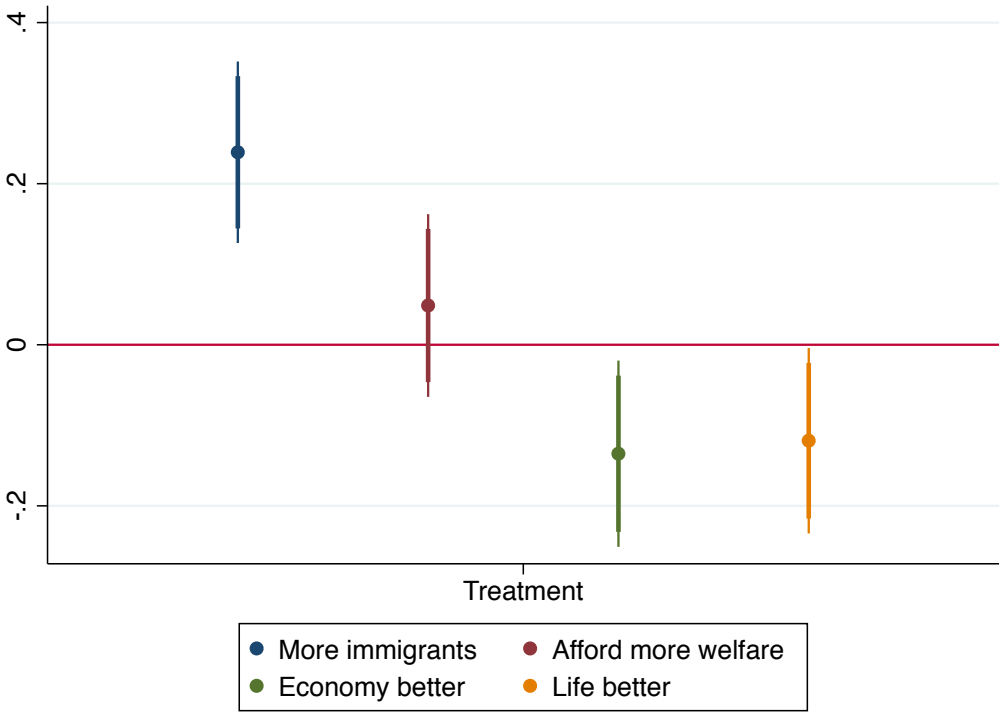
Notes: This figure reports the effect of refugee migration on income rank within each half of the party list and preference vote distribution, by list type (open/closed). The unit of observation is a political candidate, $N = 60,296$. Dependent variable is income rank within one's age group in the year before running for office. Independent variable *refugee share (std)* is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share (equation 1.1). Panel a shows the effect of refugee migration on income rank within each half of the party list in open lists. Panel b replicates panel a but considers closed instead of open lists. Panel d shows the effect of refugee migration on income rank within each half of the *preference vote distribution* in open lists. Panel d replicates panel c, but considers closed instead of open lists. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable within each half of the preference vote distribution. The p-values are based on municipality-level clustered standard errors. Municipalities is weighed equally—i.e., each observation is weighted by the inverse of the number of individuals in the municipality-year. All regressions use the full data. Interaction terms between refugee share and list type, as well as refugee share and party list half (panels a-b) or preference vote distribution half (panels c-d), are absorbed. The first stage F-stat is 3.05. Municipality, party, list type, party list half (panels a-b) or preference distribution half (panels c-d), and year fixed effects are included in all regressions.

Figure 1.16: Effect of refugee migration on income rank (voter responses)



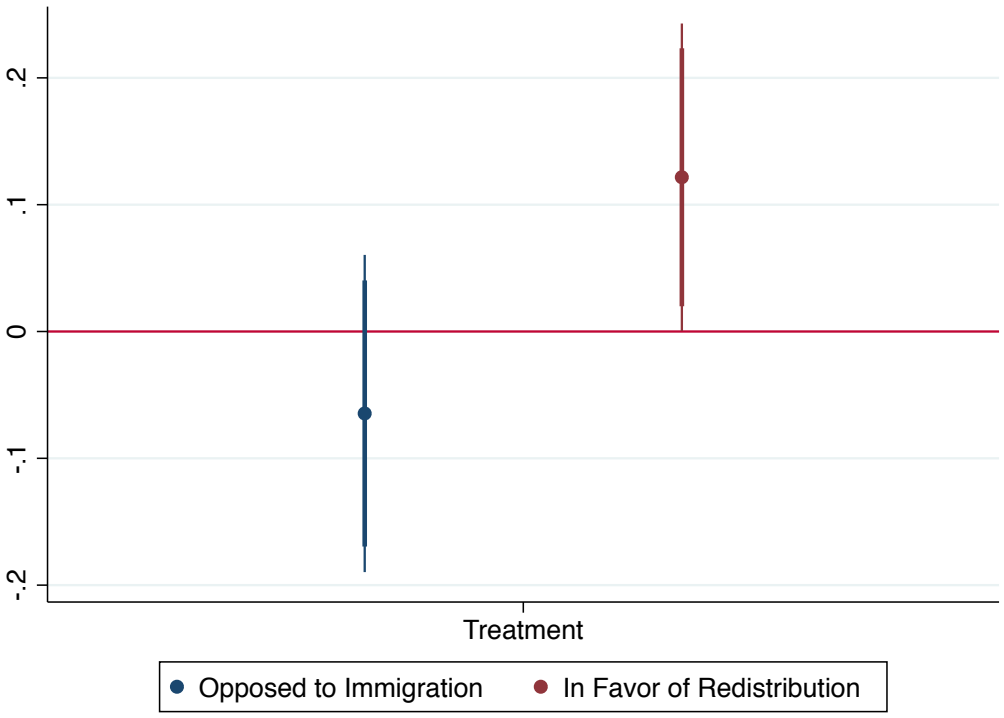
Notes: This figure reports the effect of refugee migration on income rank within each half of the preference vote distribution. The unit of observation is a political candidate, $N = 60,296$. Data is divided into top and bottom half of the preference vote distribution—i.e., the figure reports the results of two different regressions. Dependent variable is income rank within one's age group in the year before running for office. Independent variable *refugee share (std)* is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population. Light blue bars are the mean of the dependent variable. Dark blue bars are the mean of the dependent variable plus the effect of a one standard deviation increase in the refugee share. P-values are for the effect of refugees on the dependent variable within each half of the preference vote distribution. The p-values are based on municipality-level clustered standard errors. Each municipality is weighed equally—i.e., each observation is weighted by the inverse of the number of individuals in the municipality-year. All regressions use the full data. Interaction terms between refugee shares and an indicated closed list are absorbed. In the first (second) dark navy bar an interaction term between bottom (top) half of the preference vote distribution is absorbed. The first stage F-stat is 3.05. Municipality, party, list type, and year fixed effects are included in all regressions.

Figure 1.17: Effect of immigration treatment on beliefs about the future



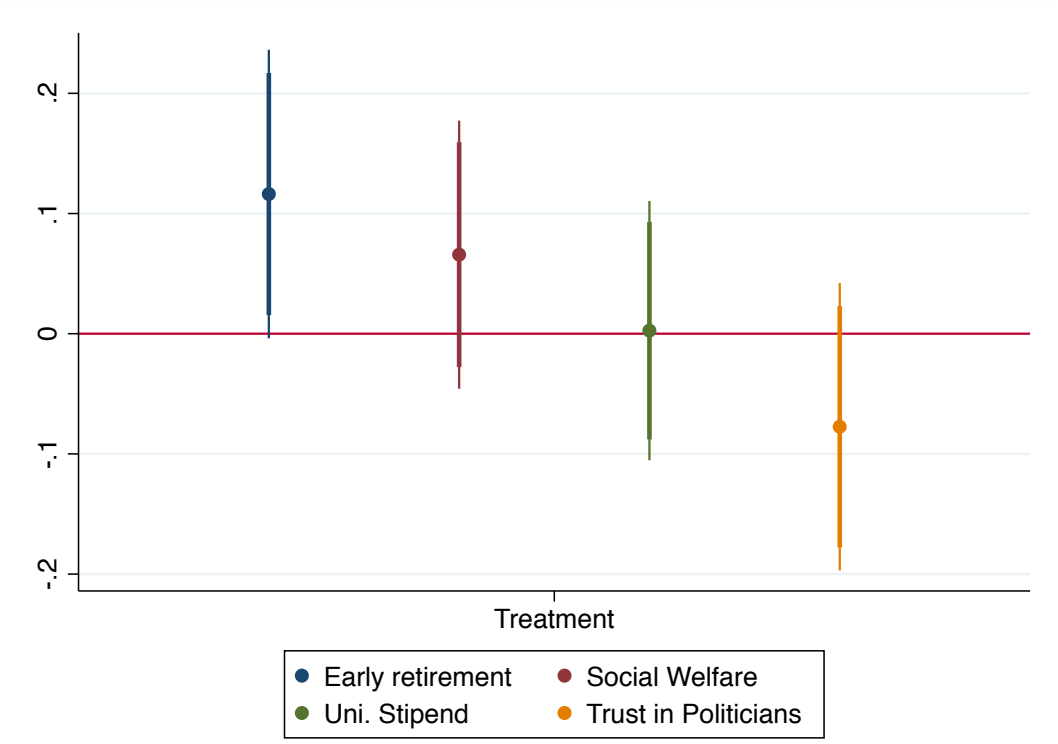
Notes: This plot depicts the effect of immigration information on beliefs about the future economic and social situation. The unit of observation is a respondent, $N = 768$. Each object represents the estimate and confidence intervals of a separate regression. Dependent variables are projections for the next 10 years for immigration, how much welfare Denmark will be able to afford, the national economy, and the quality of life. Dependent variables take the values -1 (worse/fewer), 0 (the same), and 1 (better/more). Independent variable is an indicator for immigration information treatment. Dots are coefficients, thick lines are 90% confidence intervals, and thin lines are 95% confidence intervals. Details are shown in Table A7.

Figure 1.18: Effect of immigration treatment on choice of candidate by policy preferences



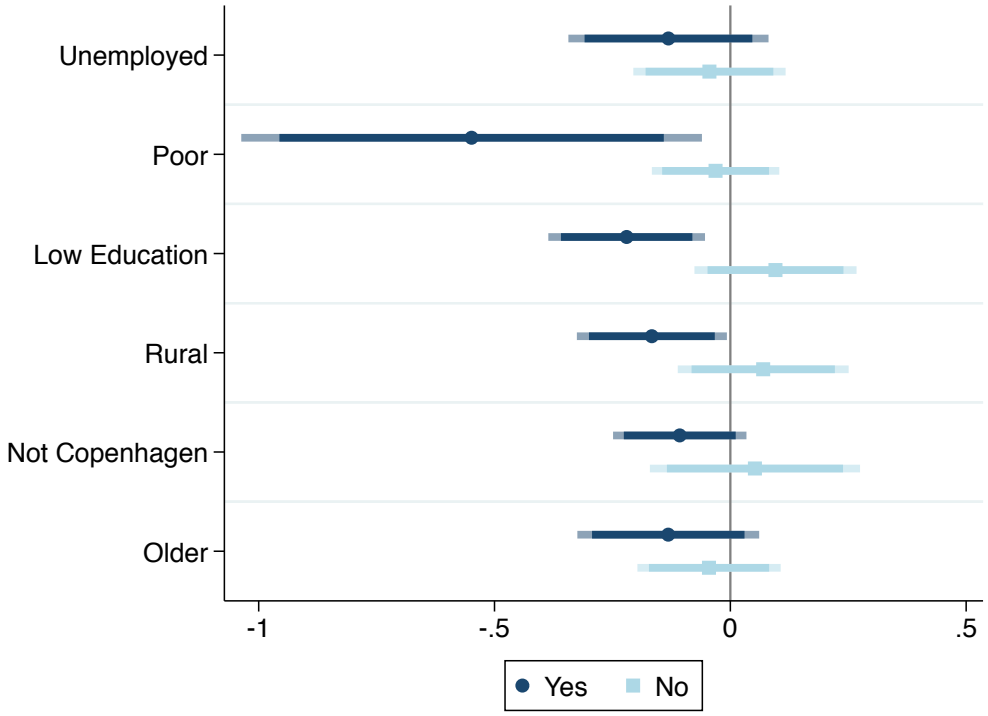
Notes: This plot depicts the effect of immigration information on choice of fictional candidates by the candidates' political stance. The unit of observation is a respondent, $N = 768$. Each object represents the estimate and confidence intervals of a separate regression. Dependent variables are choices of fictional candidates that vary only on the policy issue in question. Dependent variables take the values -1 (prefer the candidate in favor of immigration / opposed to redistribution), 0 (indifferent between the two candidates), and 1 (prefer the candidate opposed to immigration / in favor of redistribution). Independent variable is an indicator for immigration information treatment. Dots are coefficients, thick lines are 90% confidence intervals, and thin lines are 95% confidence intervals. Details are shown in Table A8.

Figure 1.19: Effect of immigration treatment on redistribution preferences and trust in politicians



Notes: This plot depicts the effect of immigration information on preferences over redistribution and trust in politicians. The unit of observation is a respondent, $N = 768$. Each object represents the estimate and confidence intervals of a separate regression. Dependent variable is respondents preferences for early retirement, social welfare, university stipends, and beliefs about whether politicians serve the interests of citizens over their own. The dependent variables take the values -1 (less generous policy / serve own interests), 0 (no change in policy / serve both interests equally), and 1 (more generous policy / serve citizens' interests). Independent variable is an indicator for immigration information treatment. Dots are coefficients, thick lines are 90% confidence intervals, and thin lines are 95% confidence intervals.

Figure 1.20: Effect of immigration treatment on trust in politicians



Notes: This plot depicts the effect of immigration information on preferences for the candidate in favor of redistribution and trust in politicians. The unit of observation is a respondent, $N = 768$. Each object represents the estimate and confidence intervals of a separate regression. Dependent variable is the respondent's belief that politicians serve the interests of citizens over their own. The dependent variables take the values -1 (serve own interests), 0 (serve both interests equally), and 1 (serve citizens' interests). Independent variable is an indicator for immigration information treatment. Dots are coefficients, darker colored line segments are 90% confidence intervals, and lighter colored line segments are 95% confidence intervals. Details are shown in Table A9.

Appendix A. Tables

Table A1: Effect of refugee migration on political selection

	Independent variable: Refugee share (std)					
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Mean	OLS	IV	IV	Mean	IV
Income rank	.72	-0.0245***	-0.0521***	-0.0505***	.65	-0.00991
		(0.00716)	(0.0160)	(0.0185)		(0.00906)
Mincer residual	125864	-14008.8***	-27309.4**	-30868.3***	69576	-16601.4***
		(4321.9)	(10950.7)	(11689.9)		(4875.0)
Education (yrs)	13.7	-0.161**	-0.310*	-0.364*	13.4	-0.348***
		(0.0742)	(0.159)	(0.203)		(0.0946)
Incumbent cand	.73	0.0142	-0.00702	-0.0298	.49	0.0138
		(0.0152)	(0.0377)	(0.0389)		(0.0256)
Incumbent elect	.61	-0.00129	-0.00512	-0.0316	.22	-0.00266
		(0.0131)	(0.0291)	(0.0321)		(0.0127)
Female	.29	-0.0231**	0.00612	0.0236	.3	0.0145
		(0.00917)	(0.0224)	(0.0242)		(0.0111)
Foreign born	.027	0.0206***	0.0276***	0.0281**	.03	0.0133**
		(0.00568)	(0.0106)	(0.0136)		(0.00588)
Age	50	-0.649	-0.409	-1.154	49	-1.246***
		(0.402)	(0.809)	(0.883)		(0.406)
Elected officials	X	X	X	X		
Candidates					X	X
Only center parties				X		
First stage F	.	.	16.22	16.22	.	16.22
Municipalities	98	98	98	98	98	98
Observations	588	588	588	588	588	588

Notes: Each number reports the estimate and standard error of a separate regression and the mean of the dependent variable. The dependent variables are municipality-year-level averages of various elected official (columns 1-3) and candidate (column 4) characteristics. The independent variable, *refugee share (std)*, is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. Columns (1) and (2)-(4) present OLS and IV results for the baseline specification (equations 1.2 and 1.3). In columns (2)-(4), the refugee share is instrumented with predicted refugee share (equation 1.1). In column 3, the sample is restricted to the 3 centrist parties (section 1.2). Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A2: Effect of refugee migration on attributes of elected politicians

	(1)	(2)	(3)	(4)
Panel A. Income rank	0-25%	25-50%	50-75%	75-100%
Refugee share (std)	0.0365**	0.0380**	0.00748	-0.0836***
	(0.0154)	(0.0170)	(0.0266)	(0.0315)
Mean	.076	.11	.22	.59
Panel B. Mincer residual	0-25%	25-50%	50-75%	75-100%
Refugee share (std)	0.0690**	0.0305*	-0.0276	-0.0719**
	(0.0330)	(0.0161)	(0.0317)	(0.0324)
Mean	.11	.14	.24	.51
Panel C. Education	Basic	Short	Medium	Long
Refugee share (std)	0.0509**	-0.0567*	0.00399	-0.00696
	(0.0257)	(0.0303)	(0.0203)	(0.0190)
Mean	.21	.4	.25	.13
First stage F	16.22	16.22	16.22	16.22
Municipalities	98	98	98	98
Observations	588	588	588	588

Notes: This table reports the effect of refugee migration on socioeconomic characteristics for elected officials. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression and the mean of the dependent variable. Dependent variables are municipality-year-level averages of various elected official characteristics. These include indicators for income quartile (Panel A), mincer residual quartile (Panel B), and highest completed education (Panel C). Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The refugee share is instrumented with predicted refugee share, which is defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: Effect of refugee migration on win rates by socioeconomic characteristic

	(1)	(2)	(3)	(4)
Panel A. Income rank	0-25%	25-50%	50-75%	75-100%
Refugee share (std)	0.0563*	0.0392**	-0.00106	-0.0142
	(0.0289)	(0.0198)	(0.0253)	(0.0230)
Mean	.17	.19	.24	.34
Panel B. Mincer residual	0-25%	25-50%	50-75%	75-100%
Refugee share (std)	0.0371	0.0435**	-0.0284	0.0290
	(0.0261)	(0.0220)	(0.0355)	(0.0257)
Mean	.13	.17	.26	.45
Panel C. Education	Basic	Short	Medium	Long
Refugee share (std)	0.0106	-0.00196	0.0317	0.0138
	(0.0233)	(0.0159)	(0.0261)	(0.0409)
Mean	.23	.27	.29	.27
First stage F	16.22	16.22	16.22	15.56
Municipalities	98	98	98	98
Observations	588	588	588	585

Notes: This table reports the effect of refugee migration on the win rate of candidates by socioeconomic characteristic. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression and the mean of the dependent variable. Dependent variables are win rates of candidates by social background, i.e. the number of elected officials with that attribute divided by the number of candidates with that attribute. These attribute include indicators for income quartile (Panel A), mincer residual quartile (Panel B), and highest completed education (Panel C). Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The refugee share is instrumented with predicted refugee share, which is defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows, normalized by the 1986 population. Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Robustness to controlling for potential pre-trends

	Income rank (1)	Mincer Res. (2)	Education (3)
Refugee share (std)	-0.0509***	-22542.4*	-0.221
	(0.0185)	(11641.2)	(0.166)
Mean of dep. var	0.723	125864.3	13.68
First stage F	13.74	13.74	13.74
Municipalities	98	98	98
Observations	588	588	588

Notes: This table reports the main results from table 1, but additionally controlling for potential pre-trends in economic and political variables. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression. Dependent variables are municipality-year-level averages of various elected official characteristics. Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. Instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population (same as panel B of table 1.4). Municipality and year fixed effects are included in all regressions. Interactions between year fixed effects and pre-1990 four-year changes in vote shares, unemployment, and income per capita are also included (see notes for Table 1.2). Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: Effect of Refugee Migration on Income Rank by List

	Candidates		Elected	
	Dependent variable: Income rank			
	(1)	(2)	(3)	(4)
Panel A. Base level: Open list				
Refugee share (std)	-0.00547	-0.0105	-0.0611***	-0.0645***
	(0.0105)	(0.00933)	(0.0168)	(0.0154)
Panel B. Base level: Closed list				
Refugee share (std)	-0.0256**	-0.0135	-0.0540**	-0.0437**
	(0.0103)	(0.00884)	(0.0195)	(0.0173)
Refugee share (std) × Open list	0.0202*	0.00292	-0.00712	-0.0208*
	(0.0111)	(0.00769)	(0.0153)	(0.0125)
List type interactions	X	X	X	X
Party FE		X		X
First stage F	12.41	13.01	12.35	12.37
Mean of dep. var.	0.659	0.659	0.724	0.724
Municipalities	98	98	98	98
Observations	60296	60296	17633	17633

Notes: This table reports the effect of refugee migration on income rank by list type. The unit of observation is a political candidate (columns 1-2) or elected official (columns 3-4). Each column-panel reports the estimate and standard error of a separate regression. Dependent variable is income rank within one's age group in the year before running for office. Independent variable *refugee share (std)* is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. Panel A (B) reports the results of a regression where *refugee share (std)* is interacted with an indicator for the party running an closed (open) list. Independent variable *refugee share (std)* is the base level and *refugee share (std)*×*Open list* is the interaction term with the open list indicator. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population. Each municipality is weighed equally—i.e., each observation is weighted by the inverse of the number of candidates (columns 1-2) and elected officials (columns 3-4) in the municipality-year. Municipality, year and list fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Effect of refugee migration on vote shares (1993-2001)

	Vote share			
	Center (1)	Left (2)	Right (3)	Other (small) (4)
Panel A. Overall				
Refugee Share (std)	-0.0346	-0.00348	-0.00555	0.0437
	(0.0452)	(0.0160)	(0.0145)	(0.0489)
Mean of dep. var.	0.741	0.0810	0.0473	0.131
Panel B. Party open list in 1989				
Refugee Share (std)	0.0963*	0.00301	-0.00488	0.0994*
	(0.0512)	(0.0103)	(0.0133)	(0.0527)
Mean of dep. var.	0.391	0.0246	0.0151	0.0577
Panel C. Party closed list in 1989				
Refugee Share (std)	-0.0192	-0.0116	-0.0118	-0.00937
	(0.0359)	(0.0110)	(0.00828)	(0.0132)
Mean of dep. var.	0.268	0.0515	0.00518	0.0180
Panel D. Party established after 1989				
Refugee Share (std)	-0.112**	0.00508	0.0112	-0.0464*
	(0.0437)	(0.00653)	(0.0115)	(0.0276)
Mean of dep. var.	0.0820	0.00498	0.0270	0.0552
First stage F	13.47	13.47	13.47	13.47
Municipalities	268	268	268	268
Observations	804	804	804	804

Notes: This table reports the effect of refugee migration on vote shares overall and by list type (open/closed/did not exist) in 1989. Sample is restricted to 1993-2001 due to the municipal merger in 2005. The unit of observation is a municipality-year. Each number reports the estimate and standard error of a separate regression and the mean of the dependent variable. Dependent variables are vote shares for a party group-1989 list structure combination, i.e. the 12 means (coefficient estimates) in panels B–D sum to 1 (0). Independent variable is the number of refugees as a share of the population, standardized to have a mean of zero and standard deviation of one. The instrument for refugee share is predicted refugee share, defined as the interaction between refugee allocations during the Spatial Dispersal Policy (1986-1998) and post-1993 national-level refugee inflows and normalized by the 1986 population. Panel A reports the overall effects of refugee migration on vote shares. Panels B-D replicate the analysis from panel A, but restricting to parties that ran an open list (panel B), closed list (panel C), or did not exist (panel D) in 1989. Municipality and year fixed effects are included in all regressions. Municipality-level clustered standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: Beliefs about the Future

	(1) Life	(2) Economy	(3) Welfare	(4) Immigrants
Treatment	-0.119**	-0.135**	0.0487	0.239***
	(0.0586)	(0.0589)	(0.0578)	(0.0574)
Constant	-0.0488	0.133***	-0.415***	0.255***
	(0.0423)	(0.0425)	(0.0416)	(0.0414)
Observations	768	768	768	768

Standard errors in parentheses

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

Table A8: Choice of Fictional Candidates

	Anti Imm	Pro Red.	Low SES new	Low SES
Treatment	-0.0647	0.122**	0.0339	0.0570
	(0.0637)	(0.0618)	(0.0650)	(0.0617)
Constant	0.160***	0.249***	-0.184***	0.00813
	(0.0459)	(0.0445)	(0.0469)	(0.0445)
Mean of dep. var.	0.126	0.312	-0.167	0.0378
Observations	768	768	768	768

Standard errors in parentheses

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

Table A9: Trust by Economic Covariates

	(1) Unemployed	(2) Employed	(3) Poor	(4) Not Poor	(5) Low Ed.	(6) High Ed.
Interest	-0.131	-0.0443	-0.549**	-0.0313	-0.220***	0.0957
	(0.108)	(0.0821)	(0.243)	(0.0688)	(0.0845)	(0.0874)
Trust	0.148	-0.0896	0.0625	0.0278	-0.0470	0.0573
	(0.0914)	(0.0725)	(0.222)	(0.0598)	(0.0758)	(0.0759)
Observations	253	423	52	600	396	371

Standard errors in parentheses

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

Table A10: Trust by Economic Covariates (cont.)

	(7) Rural	(8) Urban	(9) Not Cph.	(10) Cph.
Interest	-0.166**	0.0697	-0.107	0.0522
	(0.0809)	(0.0921)	(0.0720)	(0.113)
Trust	0.0296	-0.0233	0.0224	-0.0211
	(0.0734)	(0.0771)	(0.0636)	(0.0966)
Observations	446	322	565	203

Standard errors in parentheses

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

Chapter 2

Strategic Choice of Party List Structure

2.1 Introduction

Electoral rules matter for who gets governing power. This is known to be especially true in first-past-the-post systems, where electoral rules governing vote aggregation can affect who is elected. For example, in the U.S. and the UK, redistricting or changing to proportional representation could have flipped governing power to the opposing party in recent history.[1]

But electoral rules that do not change vote aggregation may also affect who gets governing power, for example by changing who voters choose to vote for. One example of such a rule is list structure. In many proportional representation systems candidates are selected from within parties either directly by voters (open lists) or parties (closed lists). Because open lists have been shown to be associated with higher individual accountability and lower corruption [Persson, Tabellini, and Trebbi, 2003], open lists may increase voter support insofar as voters value low corruption. Similarly, we might think that open lists can affect parties' electoral success by changing the room for within-party disagreements, the flexibility of the party list order, and candidate effort.[2] This implies that when parties have discretion over their list structure, they can possibly use it strategically to maximize their electoral success.

In this chapter, I develop a theoretical framework to understand parties' choice of list structure, i.e. open or closed lists. I allow list structure to affect voter support for parties by allowing candidates' effort levels to be endogenous, assuming that voters get utility from electing hard-working politicians. In order to study how the desirability of running an open list varies between majority and minority parties, I study two parties and allow for an ideological bias to favor one of them. Assuming that parties seek to maximize their seats in the council, I study the parties' chosen list structure and show how it depends on the

[1] For example, in the 2016 U.S. presidential election and the 2010 UK general election, liberal parties won the popular vote but conservative parties won the presidency/prime minister positions.

[2] See section 2.1.1 for a more thorough discussion

ideological bias.

I find that both parties run closed lists when the ideological bias is sufficiently low. If the ideological bias in favor of one party is high, that party chooses instead to run an open list, assuming that the returns to holding office are sufficiently low.[3] The candidates in this majority open list party exert more effort than in a closed list, causing the party to gain more support from voters. This happens at the expense of the minority party. These patterns imply that a system where parties can choose their list structure helps majority parties and harms minority parties compared to a system where all parties must run closed lists. I also show that a system where all parties must run open lists helps majority parties and harms minority parties more than both the choice system and the closed list system.

While Denmark is the only country to my knowledge that has a choice system, Europe as a whole has seen a tendency to move from closed- to open-list PR systems since 1949 [Renwick and Pilet, 2016]. Today, there is still much variation: in 2011, half of European countries used a variant of the open-list system and one-third of countries uses a closed-list system.[4] In order to understand why European countries have moved towards open lists since the middle of the 20th century, this chapter thus suggests looking at whether majority parties have become more powerful over this period.

This chapter relates to a literature on the strategic use of electoral rules. Gul and Pesendorfer [2010] show that strong parties benefit from the ability to redistrict in the context of the U.S. House of Representatives. In the setting of list structure, open lists have been shown to be electorally beneficial for parties with a high degree of internal disagreement [Blumenau, Eggers, Hangartner, and Hix, 2017]. More closely related to the present chapter, when candidates' effort levels are assumed to be endogenous, open primaries have been theoretically shown to benefit parties when they are electorally strong [Caillaud and Tirole, 2002] or voters are poorly informed [Crutzen, Castanheira, and Sahuguet, 2010].

Similarly to Caillaud and Tirole [2002] and Crutzen et al. [2010], I hypothesize that the effect of within-party competition goes through candidates' effort provision. I complement this literature by studying open lists rather than open primaries, and by considering two parties and an ideological bias favoring one party in one unified framework. This allows the parties' behaviors to be dependent on one another, and the ideological bias introduces asymmetry between the parties and thus allows for asymmetric equilibria in parties' chosen list structures. This generalization is helpful in rationalizing the observed variation in list structure between parties in Denmark.

2.1.1 Discussion: Reasons to choose open or closed lists

While this chapter focuses on candidates' effort provision, there are a number of possible reasons why parties may choose to run an open or closed list. Assuming that parties have at

[3] If the returns to holding office are high, there is no equilibrium when the ideological bias is high.

[4] The remaining sixth use either mixed or first-past-the-post system. Source: The website of the Electoral System Change in Europe (ESCE) project: Pilet and Renwick (2014)

least two objectives–getting their policies through and getting support from voters–a couple of reasons come to mind.

Party cohesion and platform commitment in closed lists Under closed lists, the fact that the election order is determined by the party may cause greater commitment to the party platform in office as well as greater party cohesion. When the party determines who gets elected, it can create stronger incentives to adhere to the party platform, e.g. by rewarding this with higher positions on the list. This adherence to the platform may result in greater party cohesion. These two mechanisms may have a couple of benefits to the party. First, it creates greater commitment ability of candidates vis-a-vis voters to adhere to the party platform once in office [Levy, 2004], attracting more voters to the party. Second, the resulting cohesion can make it easier for parties to get policies through once elected, because the party works as a united front. This clout may in turn attract additional voters to the party.

Room for within-party disagreement in open lists Open list parties also have a number of features that may attract voters to them. For example, parties with a high extent of within-party disagreement among both candidates and voters may favor running an open list [Blumenau et al., 2017]. Under a closed list voters who disagree with the top candidates may choose to switch to other parties, even if they agree with candidates at lower positions on the list. This is because they understand that candidates at the bottom of the list will never get elected in a closed list. However, under an open list, the list position does not matter for election per se.[5] Because candidates at any position can get elected in open lists, parties with within-party disagreement may benefit in terms of voter support by running an open list.

List order flexibility in open lists Open lists may also enable parties to more easily change the order of candidates on their lists. If the top of the party list is captured by a party elite, and some voters want to remove these candidates from office, parties may be better off as an open than closed list. Under closed lists, the elite at the top of the list may not agree to be moved to the bottom of the list because they will have virtually no chance of reelection. But under open lists, all positions on the list in principle have the same chance of election, and so the party elite may more easily agree to be moved down the list. An open list can thus allow parties to promote candidates that have more voter support, while at the same time allowing the party elite to get elected. This is the theory most in line with the results in Chapter 1. In Chapter 1, immigration causes parties to open up lists as well as reorder candidates on their lists. This is consistent with majority parties using open lists to increase the flexibility of their list order when the ideological bias is in their disfavor. By focusing on open lists as a tool to increase candidate effort rather than list flexibility, I thus abstract from the findings in Chapter 1 in the present chapter.

[5]List position may matter indirectly if parties promote their top candidates more.

Candidate effort in open lists Finally, under open lists candidates may exert more effort than under closed lists. Under open lists, candidates compete not only with candidates from other parties, but also with candidates from their own party. This may lead them to work harder during their campaigns, leading them to attract more voters. The purpose of this chapter is to develop a theoretical framework to understand under which conditions this is true.

The chapter proceeds as follows. Section 2.2 derives the parties' equilibrium choice of list structure under endogenous candidate effort. Section 2.3 studies the parties' vote shares under closed-list systems, open-list systems and the choice system studied in section 2.2. Section 2.4 concludes.

2.2 Model

Similarly to Crutzen [2013], consider a democracy with a continuum of voters of measure 1. Two parties, A and B, compete over one seat in the local council. Each party has two candidates. The party that gets the most votes gets the seat.

As a result, for party A the probability of winning the seat is equal to:

$$Pr(\text{seats}_A = 1) = Pr(\text{votes}_A > \text{votes}_B)$$

A candidate i exerts effort e with a utility cost of $c(e) = \frac{1}{2}e^2$. If elected they get a payoff of V. This amounts to an expected utility of

$$U_i(e) = Pr(\text{i is elected}) \cdot V - \frac{1}{2}e^2.$$

Voters' derive utility from three attributes of the elected candidate: (1) the candidate's effort, (2) their popularity from the perspective of the voter, and (3) an ideological bias favoring or disfavoring their party. Because voters make pairwise comparisons between parties or candidates when deciding who to vote for, we define the popularity shock, σ_{jkm}, as the difference in popularity between candidates k and m for voter j. This popularity shock follows the distribution $\sigma_{jkm} \sim \mathcal{U}(-\frac{1}{2}, \frac{1}{2})$. We assume that all voters have the same ideological bias b such that $b > 0$ iff their bias favors party B.

Assuming that voters' utility is additive in these three parameters, this implies that if a voter j decides between two candidates k and m from the same party M, she votes for candidate k iff $e_k^M + \sigma_{jkm} > e_m^M$. If she decides between two candidates that come from different parties, she votes for candidate k from party A over candidate m from party B iff $e_k^A + \sigma_{jkm} > e_m^B + b$. Finally, if she decides between two *parties*, she will choose the party where the candidate she expects to get the seat within the party has the highest effort plus popularity. If, for example, she has no prior on which candidate will be elected within the party, this implies that she will vote for party A iff $\overline{e_i^A} + \xi_{jkm} > \overline{e_i^B} + b$, where $\overline{e_i^M} \equiv \frac{1}{2}e_1^M + \frac{1}{2}e_2^M$ is expected, or average, effort among the two candidates in party M and $\xi_{jkm} \sim \mathcal{U}(-\frac{1}{2}, \frac{1}{2})$ is a party-level popularity shock.

The timing of the game is as follows.

1. Parties choose their list structure (open or closed).
2. The candidates on the parties' lists choose their effort provision.
3. Voters observe candidates' effort provision and cast their vote.
4. The seat is allocated to a candidate.

In the remainder of this section I will solve the game through backwards induction.

2.2.1 Candidate optimization problem by list type

In this section, I separately specify how the seat allocation to candidates differs by list types. This allows me to formalize candidates' optimization problem in each list type. I then incorporate the voters' problem in order to write the candidates optimization in terms of their effort levels and exogenous parameters. Finally, I solve for the candidates' optimal effort levels.

2.2.1.1 Closed lists

In closed lists, the order in which candidates are elected is predetermined by the party. This implies that the first candidate on the list of party M gets elected if party M gets the seat. For the first candidate in party A, their expected utility is then

$$U(e_1^A) = P(\text{seats}_A = 1) * V - \frac{1}{2}(e_1^A)^2 \tag{2.1}$$

Voters understand that the second candidates on the party lists are not relevant, since they have a zero chance of winning. For this reason voters only compare the effort, popularity and ideology of the first candidates on the two party lists. Voter j then votes for party A iff $e_1^A + \sigma_{j1_A1_B} > e_1^B + b$. Substituting this into (2.1), the utility function for candidate 1 in party A is then

$$\begin{aligned} U(e_1^A) &= P(e_1^A + \sigma_{j1_A1_B} > e_1^B + b) * V - \frac{1}{2}(e_1^A)^2 \\ &= \left(\frac{1}{2} + e_1^A - e_1^B - b\right) * V - \frac{1}{2}(e_1^A)^2 \end{aligned}$$

Taking the derivative with respect to e_1^A yields

$$e_1^{A*} = V$$

Because the second candidate on the party A's list has no probability of election, their utility function is

$$U(e_2^A) = -\frac{1}{2}(e_2^A)^2,$$

which implies that

$$e_2^{A*} = 0.$$

Conditional on party B getting a seat, this yields an expected effort level among voter j of

$$\mu^{A*} \equiv E_j[e_i^{A*}|\text{seats}_A = 1] = V, \tag{2.2}$$

since voters know that only the first candidate on the list can get elected. Note that effort for each candidate does not depend on the effort level of candidates from the other party. This implies that effort in closed lists does not depend on the chosen list structure of the other party.

Similarly, for the two candidates in party B the optimal effort levels are

$$\begin{aligned} e_1^{B*} &= V \\ e_2^{B*} &= 0 \\ \mu^{B*} \equiv E_j[e_i^{B*}|\text{seats}_B = 1] &= V. \end{aligned} \tag{2.3}$$

2.2.1.2 Open lists

In open lists, which candidate is elected from within the party is determined by the number of individual votes that the candidate gets. In other words, candidate k from party M gets elected if party M gets the seat in the local council, AND candidate k receives more votes than their within-party competitor n. The utility of candidate k in party M is then

$$U(e_k^M) = (P(\text{seats}_M = 1) * P(votes_{kM} > votes_{nM})) * V - \frac{1}{2}(e_1^A)^2$$

For simplicity, we assume that voters cast two votes: A "preference vote" for an individual candidate, and a "party vote" for a party as a whole.[6] When casting their party vote, voter j chooses a party based on expected effort within party M if party M gets the seat, $\mu^M \equiv E_j[e_i^M|\text{seats}_M = 1]$. If the party runs an open list, we assume that voters have no priors on which candidate will get elected, and so they choose based on average effort within the party, $\mu^M = \overline{e_i^M}$. If the party runs a closed list, voters know that only the first candidate on the list can get elected, so they choose based on the effort level of this candidate,

[6]This is similar to the German electoral system. In a system like the Danish, we might think that voters would vote for the party A if one of party A's candidates has the highest effort level of all candidates. The algebra would be more complicated in this case, as the probability of voting for party A would amount to $(\frac{1}{2} + e_1^A - e_1^B - b) * (\frac{1}{2} + e_1^A - e_2^B - b) + (\frac{1}{2} + e_2^A - e_1^B - b) * (\frac{1}{2} + e_2^A - e_2^B - b) - (\frac{1}{2} + e_1^A - e_1^B - b) * (\frac{1}{2} + e_1^A - e_2^B - b) * (\frac{1}{2} + e_2^A - e_1^B - b) * (\frac{1}{2} + e_2^A - e_2^B - b)$. I will consider this in a future extension of the model.

$\mu^M = e_1^M$. Furthermore, they consider their ideological bias when choosing between parties. This implies that voters cast their party vote for the open list party A iff $\overline{e_i^A} + \xi_j > \mu^B + b$, where $\xi_j \sim \mathcal{U}\left(-\frac{1}{2}, \frac{1}{2}\right)$ is the party-level popularity shock, and $\mu^B = \overline{e_i^B}$ if B is open and $\mu^B = e_1^B$ if B is closed. When casting their preference vote, voters will choose the candidate for whom the sum of the effort and popularity shock is highest within the party for which they cast their party vote, consistently with the discussion in section 2.2. The utility function for candidate $k = 1, 2$ in party A under an open list is then

$$\begin{aligned} U(e_k^A) &= \left(P(\overline{e_i^A} + \xi_j > \mu^B + b) * P(e_k^A > e_m^A + \sigma_{jk_Am_A})\right) * V - \frac{1}{2}(e_k^A)^2 \\ &= \left(\left(\frac{1}{2} - b + \overline{e_i^A} - \mu^B\right) * \left(\frac{1}{2} + e_k^A - e_m^A\right)\right) * V - \frac{1}{2}(e_k^A)^2 \end{aligned} \tag{2.4}$$

The first derivative is:

$$U'(e_k^A) = \left(\frac{3}{4} - b + e_k^A - \mu^B\right) * V - e_k^A$$

and the second derivative

$$U''(e_k^A) = V - 1$$

which is only negative if $V < 1$, i.e. to avoid corner solutions we assume $V < 1$.

Setting the first derivative equal to zero:

$$e_k^{A*} = \left(\frac{3}{4} - b - \mu^B\right) * \frac{V}{1 - V}, \tag{2.5}$$

where $\mu^B = \overline{e_i^B}$ if B is open and $\mu^B = e_1^B$ if B is closed. Repeating the same steps for candidates k in party B yields

$$e_k^{B*} = \left(\frac{3}{4} + b - \mu^A\right) * \frac{V}{1 - V}, \tag{2.6}$$

where $\mu^A = \overline{e_i^A}$ if A is open and $\mu^A = e_1^A$ if A is closed.

2.2.2 Open list effort levels in terms of exogenous variables

In section 2.2.1 we derived candidates' optimal effort in closed and open lists. We saw that effort in closed lists only depends on V, while in open lists it additionally depends in b and expected effort in the competing party. In order to analyze comparative statics, we want to express effort levels only in terms of exogenous variables, i.e. plug in the expected effort level of the opposing party. But expected effort in the opposing party depends on *their* chosen list structure. This implies that we must solve for effort in open lists in two cases: one where the opposing party runs an open list and one where it runs a closed list.

Case 1: Parties A and B run open lists

If both parties A and B run open lists, then the optimization problem is symmetric for both candidates within a party. We can then set $e_1^{A*} = e_2^{A*}$ and $e_1^{B*} = e_2^{B*}$ in (2.5) and (2.6) to get that

$$e_1^{A*} = e_2^{A*} = \left(\frac{3}{4} - b - e_1^{B*}\right) * \frac{V}{1-V} \tag{2.7}$$

$$e_1^{B*} = e_2^{B*} = \left(\frac{3}{4} + b - e_1^{A*}\right) * \frac{V}{1-V}. \tag{2.8}$$

We can solve for effort levels in parties A and B by substituting (2.8) into (2.7). Appendix 2.4 shows that this yields:

$$e_1^{A*} = e_2^{A*} = \frac{3}{4}V - \frac{V}{1-2V} * b$$
$$e_1^{B*} = e_2^{B*} = \frac{3}{4}V + \frac{V}{1-2V} * b,$$

where $V \neq \frac{1}{2}$.

Case 2: One party is open and one closed.

If party A is open and B closed, then the payoffs for party A can be found by substituting (2.3) into (2.5). Because both candidates' choose the same effort levels in open lists, we can again set $e_1^{A*} = e_2^{A*}$ to get that

$$e_1^{A*} = e_2^{A*} = \left(\frac{3}{4} - b - V\right) * \frac{V}{1-V}.$$

Similarly, if party B is open and A closed, then we can set $e_1^{B*} = e_2^{B*}$ to find that

$$e_1^{B*} = e_2^{B*} = \left(\frac{3}{4} + b - V\right) * \frac{V}{1-V}$$

2.2.3 Parties' choice of open and closed lists

Up until now, we have found candidates' optimal effort levels in terms of exogenous variables by party list type. Next, we consider the parties' problem, i.e. step 1 in the game under the assumption that parties maximize electoral success. For example, party A's objective is to choose the list structure in order to maximize $Pr(\text{seats}_A = 1) = Pr(votes_A > votes_B)$. Recall that in closed lists $Pr(\text{seats}_A = 1) = \frac{1}{2} + e_1^{A*} - \mu^B - b = \frac{1}{2} + e_1^{A*} - e_1^{B*} - b$, whereas in open lists $Pr(\text{seats}_A = 1) = \frac{1}{2} + \overline{e_1^A} - \mu^B - b = \frac{1}{2} + e_1^{A*} - e_1^{B*} - b$. This implies that Party

A will choose the list structure in order to maximize $e_1^{A*} - e_1^{B*}$, while party B will choose it to maximize $e_1^{B*} - e_1^{A*}$.

Table 2.1 builds on the results in section 2.2.2 and shows the pay-offs to party A (boldface) and party B (non-boldface), which are functions of their own and the other parties' choice of list structure. Party A's chosen list structure is shown in rows and party B's in columns.

Table 2.1: Payoffs from running an open and closed list

		B			
		Closed		Open	
A	Closed	$\mathbf{0}$	0	$-\left(\mathbf{b}-\frac{\mathbf{1}}{\mathbf{4}}\right)*\frac{\mathbf{V}}{\mathbf{1-V}}$	$\left(b-\frac{1}{4}\right)*\frac{V}{1-V}$
	Open	$-\left(\mathbf{b}+\frac{\mathbf{1}}{\mathbf{4}}\right)*\frac{\mathbf{V}}{\mathbf{1-V}}$	$\left(b+\frac{1}{4}\right)*\frac{V}{1-V}$	$-\frac{\mathbf{2V}}{\mathbf{1-2V}}*\mathbf{b}$	$\frac{2V}{1-2V}*b$

To find the Nash equilibria, I will first find the conditions under which each party chooses an open list conditional on the opposing party's chosen list structure. Then, for each possible value of b and V I will find the equilibria by considering whether any party will deviate at each possible equilibrium.

Party A choosing open conditional on B choosing closed

Are there conditions where party A chooses open under the condition that B chooses closed? It would require that

$$-\left(\frac{1}{4}+b\right)*\frac{V}{1-V}>0$$
$$\Leftrightarrow b<-\frac{1}{4}.$$

Party A choosing open conditional on B choosing open

Are there conditions where party A chooses open conditional on B also choosing open? From table 1, this would require that

$$-\frac{2V}{1-2V}b>-(b-\frac{1}{4})\frac{V}{1-V}$$
$$\Leftrightarrow \begin{cases} b<-\frac{1}{4}(1-2V) & \text{if } V<\frac{1}{2} \\ b>\frac{1}{4}(2V-1) & \text{if } \frac{1}{2}<V<1. \end{cases}$$

Party B choosing open conditional on A choosing closed

What about party B? If party A chooses a closed list, party B will choose an open list if $b>\frac{1}{4}$.

Party B choosing open conditional on A choosing open

If party A chooses an open lists, party B will choose an open list if

$$\begin{cases} b > \frac{1}{4}(1-2V) & \text{if } V < \frac{1}{2} \\ b < -\frac{1}{4}(2V-1) & \text{if } \frac{1}{2} < V < 1. \end{cases}$$

Note that $-\frac{1}{4} < -\frac{1}{4}(1-2V) < \frac{1}{4}(1-2V) < \frac{1}{4}$ if $V < \frac{1}{2}$, and $-\frac{1}{4} < -\frac{1}{4}(2V-1) < \frac{1}{4}(2V-1) < \frac{1}{4}$ if $\frac{1}{2} < V < 1$. This implies that there are 5 cases–or intervals–for ideological bias b for each of the two intervals of the value of holding office V.

Table 2.2: Equilibria when $V < \frac{1}{2}$

	A closed B closed	A open B closed	A closed B open	A open B open
$b < -\frac{1}{4}$	No (A)	**Yes**	No (A&B)	No (B)
$-\frac{1}{4} < b < -\frac{1}{4}(1-2V)$	**Yes**	No (A)	No (A&B)	No (B)
$-\frac{1}{4}(1-2V) < b < \frac{1}{4}(1-2V)$	**Yes**	No (A)	No (B)	No (A&B)
$\frac{1}{4}(1-2V) < b < \frac{1}{4}$	**Yes**	No (A&B)	No (B)	No (A)
$b > \frac{1}{4}$	No (B)	No (A&B)	**Yes**	No (A)

Notes: Parties that deviate noted in parentheses.

Table 2.3: Equilibria when $\frac{1}{2} < V < 1$

	A closed B closed	A open B closed	A closed B open	A open B open
$b < -\frac{1}{4}$	No (A)	No (B)	No (B)	No (A)
$-\frac{1}{4} < b < -\frac{1}{4}(2V-1)$	**Yes**	No (A&B)	No (B)	No (A)
$-\frac{1}{4}(2V-1) < b < \frac{1}{4}(2V-1)$	**Yes**	No (A)	No (B)	No (A&B)
$\frac{1}{4}(2V-1) < b < \frac{1}{4}$	**Yes**	No (A)	No (A&B)	No (B)
$b > \frac{1}{4}$	No (B)	No (A)	No (A)	No (B)

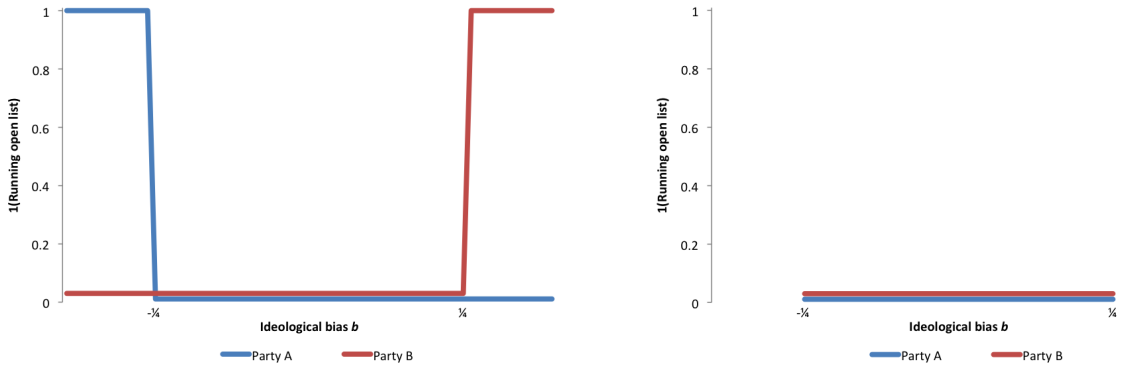
Notes: Parties that deviate noted in parentheses.

The equilibria are summarized in tables 2.2, 2.3 and figure 2.1. In tables 2.2 and 2.3, if a party deviates it is written in parenthesis, and if no party deviates it is an equilibrium

marked with "Yes". For example, the cell in the first column and row shows that A closed and B closed is not an equilibrium when $b < -\frac{1}{4}$. This is because party A will deviate–i.e. open up their list–if party B runs a closed list and $b < -\frac{1}{4}$. Table 2.2 shows that when $V < \frac{1}{2}$, there is one unique equilibrium for all values of b. On the other hand, table 2.3 shows that when $V < \frac{1}{2}$, then there are only unique equilibria when $-\frac{1}{4} < b < \frac{1}{4}$, while outside of that interval there are no equilibria.

What are these equilibria? Figure 2.1 shows the propensity to run an open list (y-axis) as a function of the ideological bias b (x-axis). The figure shows that when $V < \frac{1}{2}$ (leftmost figure), party A (blue line) runs an open list iff $b < -\frac{1}{4}$ while party B (red line) runs an open list iff $b > \frac{1}{4}$. This implies that party B, the majority party, will run an open list only if the ideological bias is sufficiently in their favor. Meanwhile, party A, the minority party, will run a closed list as long as they are the minority. If $\frac{1}{2} < V < 1$ (rightmost figure), then both parties will run a closed list if the ideological bias is sufficiently small, $-\frac{1}{4} < b < \frac{1}{4}$. If the ideological bias is sufficiently large, i.e. it is outside of this interval, then there is no equilibrium.

Figure 2.1: Propensity to run an open list as a function of b



(a) $V < \frac{1}{2}$ (b) $\frac{1}{2} < V < 1$

To summarize, when $V < \frac{1}{2}$, the majority party opens up their list is the ideological bias become sufficiently large, while the minority party keeps their list closed. When $\frac{1}{2} < V < 1$, both parties also keep their lists closed when the bias is small, but if the bias becomes sufficiently large there is no equilibrium.

Table 2.4 tests the hypothesis that in a system where parties can choose between open and closed lists, popular parties are more likely than less popular parties to run open lists. The data is public data from Denmark on local parties' vote shares and list structure between 1989-2013. The dependent variable is an indicator for running an open list, and the independent variable is vote share.

Table 2.4 shows that the is a large and significant correlation between party vote share and propensity to run an open list. When pooling all the data (column 1), a 10 percentage

Table 2.4: Correlation between running open list and vote share in Denmark

	Dependent Var: 1(Open list)		
	(1)	(2)	(3)
Vote share	0.417***	0.430***	0.581***
	(0.0485)	(0.0501)	(0.105)
Constant	0.632***	0.631***	0.675***
	(0.0121)	(0.0123)	(0.0201)
Years	1989-2013	1989-2013	2013
Year FE		X	
Mean of Y	0.684	0.684	0.729
Observations	11251	11251	1042
R-squared	0.0143	0.0290	0.0222

Standard errors in parentheses

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

point increase in the party vote share is associated with a 4.2 percentage point increase in the propensity to run an open list. The coefficient changes very little when including year fixed effects (column 2). Finally, when focusing only on cross-sectional variation in the most recent available year–2013–the coefficient stays similar and even rises slightly to 5.8 percentage points.

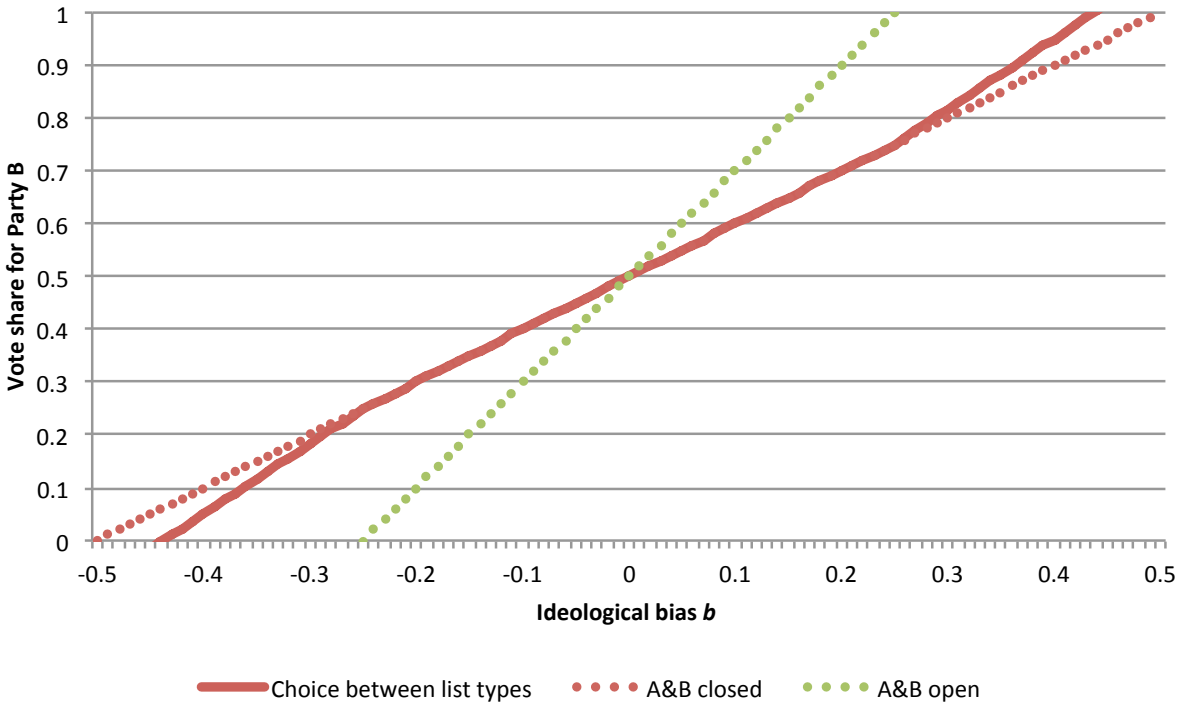
In sum, when the value of holding office is sufficiently low, only parties with a large ideological bias in their favor will run an open list. This prediction is supported by the data, where there is a positive correlation between party vote share and running and open list.

2.3 Party vote shares

Which party benefits most from the ability to choose between open and closed lists, compared to a system where all parties must run the same type of list? Figure 2.2 shows the vote share for party B as a function of the ideological bias b when $V = \frac{1}{4}$.[7] If parties must run closed lists (dotted red line), then the vote share for each party would be half of all votes, plus the size of the bias b in their favor. This is because there is no effort difference between parties in closed lists. If instead parties can choose which list type to run (solid red line), then the minority party always runs a closed list, while the majority party runs an open list iff $b > \frac{1}{4}$. This implies that the vote shares are the same as when both parties must choose closed lists when $-\frac{1}{4} < b < -\frac{1}{4}$. However, if the ideological bias in favor of the majority party becomes sufficiently large ($b > \frac{1}{4}$), then party B opens its list. As a result, effort in party B exceeds

[7]Recall that the vote share for party B is defined as $Pr(seats_B = 1) = \frac{1}{2} + b + e_1^{B*} - e_1^{A*}$.

Figure 2.2: Vote share for party B as a function of ideological bias



effort in party A, and their vote share advantage becomes larger than had they kept a closed list. Finally, if both parties must run open lists (dotted green line), then the gain to the majority party is even larger than when parties can choose. This is because effort is higher (lower) in the majority (minority) party when both parties run open lists than when they both run closed lists.

The patterns imply that if the majority party decides on the list system, they will prefer a choice system to a strict closed list system, and an open list system to a choice system.

2.4 Conclusion

I study the relationship between ideological bias and the propensity for parties to run open lists under endogenous candidate effort. I show theoretically that when parties can choose between running open and closed lists, minority parties will always run closed lists while majority parties will run open lists if the bias in their favor is sufficiently large. I find empirical support for this finding using data from Denmark.

To understand the political economy of list structure legislation, I additionally consider party vote shares under three systems: The choice system, an all-open-list system, and an

all-closed-list system. I find that majority parties gain the most under all-open-list systems, followed by choice system, at the expense of small parties. A promising direction for future research could thus be to study cross-country variation in list structure legislation: Are the countries with all-open-list systems the ones where the majority party has more power?

Appendix B. Effort levels if parties A and B run open lists

Substituting (2.6) into (2.5) yields

$$\begin{aligned}
e_1^{A*} &= \left(\frac{3}{4} - b - \left(\frac{3}{4} - e_1^{A*} + b\right) * \frac{V}{1-V}\right) * \frac{V}{1-V} \\
&= \left(\frac{3}{4} - \frac{3}{4}V - b(1-V) - \left(\frac{3}{4} - e_1^{A*} + b\right) * V\right) * \frac{V}{(1-V)^2} \\
&= \left(\frac{3}{4} - \frac{6}{4}V - b + e_1^{A*} * V\right) * \frac{V}{(1-V)^2} \\
e_1^{A*} &= \left(\frac{3}{4}(1-2V) - b\right) * \frac{V}{1-2V} \\
&= \frac{3}{4}V - \frac{V}{1-2V} * b \\
e_1^{B*} &= \frac{3}{4}V + \frac{V}{1-2V} * b,
\end{aligned}$$

where we assume that $V \neq \frac{1}{2}$ in line 4.[8]

[8]Note that if $V = \frac{1}{2}$, then any effort level $e_1^{A*} \in [0, 1+b]$ and $e_1^{B*} = 1 + b - e_1^{A*}$ would solve (2.5) and (2.6)

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