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Discussion paper

Trading off Welfare and Immigration in Europe

BY

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Trading off Welfare and Immigration in Europe

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Abstract

In this paper, we explore the trade-off Europe faces when choosing between immigration from poor countries and welfare spending. Using data from the European Social Survey on sixteen countries from 2002–2012, we document that voter preferences shifted in favor of redistribution but polarized over low-skill immigration. Notably, there is a sharp increase in the share of individuals supporting the welfare state but heavily opposing immigration. In order to provide an economic explanation for these phenomena, we present a model where support for both immigration and redistributive policies are potentially motivated by altruism. Using this model, we show how rising unemployment rates, shares of foreign-born citizens and aggregate education can explain observed shifts in policy preferences.

JEL Classification: F22, H2, O15

Keywords: Redistribution, Immigration, Unemployment, Inequality

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1 Introduction

Debates about immigration and the welfare state are growing in importance across Europe. The 2015 Eurobarometer, for example, shows that immigration, economic conditions, and unemployment are ranked as the main concerns among European citizens. For the first time in the survey's 42-year history, Eurobarometer finds immigration to be at the top of voters' concerns.¹ As a result of both the financial and the Euro crisis, many European countries have experienced particularly high unemployment rates and stagnating economies. Not surprisingly, this has spurred discussions about welfare benefits. Weakening economic conditions, however, have also affected individual views on immigration. And while discussions about the welfare system appear to often find a consensus, immigration issues are fiercely debated as seen in the case of the ongoing wave of Syrian refugees arriving in Europe. Established 'populist' right-wing parties such as *Front Nationale* or *UKIP* achieved notable successes in recent elections while new political movements such as the *Alternative for Germany* have emerged. These parties differ from 'traditional' right-wing movements in their support for the welfare state. Instead of opposing any government intervention, new populist parties want to keep the welfare system but restrict access to natives.² However, their remarks on immigration have faced severe criticism from other established parties.

In this paper, we argue that these trends in European politics are the result of altered political preferences among voters. But how can we explain these shifts in preferences? Are individual views on immigration and the welfare state determined by ideology or can they be explained by economic factors? In general, when considering welfare and immigration from an economic point of view, it is important to note that the two policy dimensions are intertwined. A generous welfare state is irreconcilable with open immigration because supply of low-skilled immigrants would become infinite. And since low-educated natives are more likely to benefit from social expenditures, there is ample evidence showing that this group supports welfare spending but opposes immigration (e.g. Hainmueller and Hiscox, 2007).

¹For the U.S., the Polling Report shows that in December 2014, economic concerns and immigration ranked first and second in the list of most important issues that Congress should be dealing with in 2015. Recent press coverage by *The Economist* in an article entitled 'Looking for a home' (published August 29, 2015) emphasizes the importance of the topic.

²This is illustrated by an article in *The Guardian*, entitled 'Marine Le Pen emerges from father's shadow', published March 21, 2011: "Her father led a movement of anti-system, extremist outsiders, [...] who railed against the state and loathed the public sector. But [Marine] Le Pen now styles herself as a defender of the republic, its benefits and welfare state, "the state as protector", she calls it. But not benefits for all. French people must come first."

Using data from the European Social Survey on sixteen countries from 2002–2012, we first document that voter preferences shifted in favor of redistribution but polarized over low-skill immigration. There is a notable increase in the share of individuals supporting the welfare state but heavily opposing immigration. In the second step, we provide empirical evidence that individual characteristics as well as macroeconomic conditions are correlated with time trends in policy preferences. Our findings largely support prior results in the literature on redistribution and immigration. However, much of the literature assumes some form of xenophobia to explain why some natives reject immigration while the support for immigration is usually explained by labor market effects.

In our paper, we argue that neither xenophobia nor labor market effects from immigration are necessary to obtain a polarization in preferences over immigration. Moreover, in contrast to the literature asking the question why we see *opposition* to immigration in the absence of labor market effects, we ask why anyone *supports* immigration in the absence of wage and employment effects. To explain this, our theoretical model allows individuals to support low-skill immigration as well as transfers to the native poor potentially out of altruistic reasons.³ For the simulation of our model, we use the ESS data to directly estimate the parameters of the utility function. Using these estimated preference parameters, we find that a higher share of foreigners in the country shifts native preferences towards preferring less redistribution. A higher unemployment rate, in contrast, increases support for income redistribution among natives. The effect on preferences for immigration, however, depends on educational status. While the high-educated support immigration amid high unemployment rates, the low-educated natives show increased opposition to immigration. Finally, a more educated population shifts aggregate preferences towards less redistribution and more immigration. In total, our model replicates qualitatively the overall changes in policy preferences observed in the sixteen European countries between 2002 and 2012.

The estimation of utility preferences depends on strong assumptions, particularly on the approximation to the utility function and behavior the government. Hence, it is reassuring to find that a flexible multinomial logit model—controlling for country- and year-fixed effects and other characteristics—yields similar results as in the structural model. A larger foreign-born population lowers support for redistribution while high unemployment is associated with more favorable views towards redistribution and a polarization over immigration.

³Note that our model allows for a different interpretation as well: Individuals could simply value diversity in the composition of the population. This is, however, not the focus of our study.

Our study provides several novelties. First, we document important trends in policy preferences among European citizens. Among others, this adds to prior work by Mudde (2007) who discusses populist right-wing parties in Europe. By means of a novel theoretical model, we then illustrate the importance of considering preferences along both policy dimensions simultaneously. Only a few prior papers take into account both policies (Facchini and Mayda, 2008, 2009). Furthermore, our results support the idea that economic motives have in fact strong explanatory power for voter preferences. Finally, our paper indicates why support for ‘populist’ right-wing parties can arise in times of high unemployment rates. If individuals perceive a trade-off between free immigration and generous welfare spending, low-income voters tend to support anti-immigration but pro-redistribution movements. We argue that this trade-off, at times of high unemployment and increasing shares of foreign-born populations throughout Europe, is crucial for explaining observed changes in policy preferences over redistribution and immigration in recent years.

The paper proceeds as follows. In Section 2, we describe the data sources and provide summary statistics. Next, Section 3 documents that policy preferences over redistribution and immigration changed between 2002 and 2012. We investigate which macroeconomic variables account for such a change. Our theoretical model and its implications are shown in Section 4. We simulate voter preferences using the model’s structure and parameters estimated based on the ESS data. Next, in Section 5 we discuss alternative explanations for the political trends in Europe. Finally, Section 6 concludes.

2 Data

For the empirical analysis we employ data from the European Social Survey (ESS). We can use survey responses from all six biannual waves that took place between 2002 and 2012. Table 1 shows all sixteen countries which participated in each wave of the ESS.⁴ For each country and year, we indicate the number of observations.⁵

— Table 1 about here —

⁴The set of countries includes Belgium, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Netherlands, Norway, Poland, Portugal, Sweden, Slovenia, Switzerland, United Kingdom.

⁵Note that we show the twenty countries which did not participate in each wave in Table A.7 in the Appendix.

Political preferences are measured along two dimensions. First, survey participants are asked about their views on immigration. We are particularly interested in the question focusing on migrants from poorer countries outside Europe. This is chosen to reflect low-skill immigration, including refugees and asylum seekers. The second question concerns government redistribution. Each survey participant is asked whether the government should reduce differences in income levels. For both questions, the participants are provided a list of possible answers. These are shown in Table 2. In addition, we indicate the total number of respondents choosing each possible answer.

— Table 2 about here —

In order to illustrate the distribution of policy preferences, we plot the total number of observations for each cell in Table 2. These statistics are based on the pooled data set for all periods from 2002 to 2012. Note that we define both immigration (L) and redistribution (z) as ranging from 1 to 4, with lower values indicating support and high values rejection. For example, the cell ($z = 1$ and $L = 1$) represents individuals who agree strongly with redistribution and would like to allow many poor immigrants to enter the country.

We observe that about two thirds of survey respondents agree or agree strongly with income redistribution (44.43 + 26.52 percent). In contrast, less than fifteen percent disagree with equalizing the income distribution. With respect to the question, how many poor non-European immigrants should be allowed to enter the country, we observe that two in three survey respondents want ‘some’ or ‘few’ immigrants. About thirteen percent are completely hostile towards such immigration.

In the econometric specification we can exploit the fact that each survey participant is asked a large array of additional questions covering education, work, income, and many further individual characteristics. In Table 3, we provide summary statistics for each variable employed in the empirical analysis.

— Table 3 about here —

The table shows that, on average, survey participants are 47 years old.⁶ Roughly half of them are male, 26 percent have a higher education, six percent are on welfare benefits, 26 percent are retired, and 56 percent earn a positive wage. We enrich the ESS data by

⁶We deleted one observation where the recorded age was 123 years. Our findings are not sensitive to this deletion.

several macroeconomic variables, taken from the OECD, World Bank, and UNU WIDER. In the sixteen countries of our sample, during the time period 2002–2012, the unemployment rate was on average about eight percent. The share of foreign-born population was seven percent and the Gini coefficient was 40 percent. Trends in these macroeconomic variables are discussed in the next section.

3 Explaining Trends in Policy Preferences

In this section, we use our data set to show that, in fact, political preferences with respect to redistribution and immigration changed between 2002 and 2012. Moreover, we discuss which macroeconomic variables could explain such a change. Several econometric exercises explore whether education, unemployment, and the share of foreigners can account for altered political preferences.

3.1 Time Trends in Policy Preferences

Using biannual data from the European Social Survey (ESS) on sixteen countries over the period 2002–2012, we investigate voter preferences over redistribution and low-skill immigration. Figure 1 shows aggregate trends for both policy dimensions. The plot is based on data for all sixteen countries that participated in every wave. We compute the difference between the share of individuals choosing a particular answer—either on immigration or redistribution—in 2012 and 2002.⁷

— Figure 1 about here —

We find a general trend towards more demand for redistribution. In particular, the share of survey participants who agree strongly with government redistribution increased by 6.7 percentage points (or 29.3 percent). This is notably different from trends observed in the United States (Kuziemko et al., 2015). Over the same time period, however, we find a polarization in attitudes towards low-skill immigration with a significant increase in the

⁷In Figures C.17 and C.18 in the Appendix we plot the share of survey participants selecting each possible answer for both questions in each year. Moreover, in Figures C.19 and C.20 in the Appendix we plot the share of survey participants selecting each possible answer to the immigration and redistribution question. We do this for each country separately.

share of individuals heavily opposed to immigration. A striking finding in the ESS data is the large increase (+4.9 p.p. or 50.6%) in the share of individuals who answer ‘none’ when asked how many poor people from outside should be allowed to enter their country. The observed polarization supports the hypothesis that after an economic crisis—in our case the 2008 financial crisis followed by the Euro crisis—ideological preferences become more polarized (Mian, Sufi and Trebbi, 2014).

3.2 Macroeconomic Factors and Policy Preferences

Having documented the shift in political preferences, we now investigate why these shifts occurred. In particular, we examine whether the observed shifts in policy preferences can be reconciled with aggregate trends in macroeconomic variables.⁸ To identify crucial macroeconomic factors, we take into account findings of prior work in the literature on the determinants political preferences. A large number of studies has investigated why people support or oppose redistribution and immigration. Several papers conclude that economic motives have influence on policy preferences with respect to income redistribution. However, non-economic factor have also been shown to play a significant role (Corneo and Grüner, 2002).

Only a few papers consider both immigration and redistribution simultaneously. Facchini and Mayda (2008) document that in most countries only a small minority favors open immigration. The authors investigate which factors shape voters preferences and find that economic concerns such as labor market competition play a key role.⁹ In a subsequent paper, Facchini and Mayda (2009) address the question how the welfare state affects attitudes towards immigration. Using data on 18 high-income countries from 1995, the authors find that in the presence of low-skill immigration, income is negatively correlated with support for immigration while skill is positively correlated. In countries with skilled immigration, the relationships are reversed.

Education — A general finding in the literature is that low-educated individuals are more likely to oppose low-skill immigration (Hainmueller and Hiscox, 2007, 2010; Hatton,

⁸We are not the first to link time trends in public opinion to macroeconomic conditions. Wilkes and Corrigan-Brown (2011) investigate twenty years of data from Canada and find that individuals change their mind in response to altered economic conditions.

⁹They also examine how attitudes translate into policy outcomes. Given the tiny fraction of supporters, the authors argue it is puzzling to find any immigration at all. Facchini and Mayda use a model with interest groups to explain this observation.

2014). Usually this is driven by fears of competition in the labor market. This public fear has not been reduced by research showing that migrants typically are a weak substitute for natives (Card, 2009). However, low-educated natives could also oppose low-skill immigration due to the expected fiscal costs (Scheve and Slaughter, 2001). Another explanation for why anti-immigration sentiments are more prevalent among low-income natives is that poor immigrants usually reside in the neighborhood of low-educated natives (Halla, Wagner and Zweimüller, 2012). Finally, several prior studies suggest that higher education affects values and thus the way natives view immigrants (Hainmueller and Hiscox, 2007).¹⁰

Economically, highly educated natives may benefit from low-skill immigration since their skills are complementary. Moreover, they have more financial means to support poor immigrants. However, they also pay the lion share of taxes and low-skill immigration comes at a fiscal cost. In terms of social values, it is often hypothesized that education positively affects individuals attitudes towards foreigners. This may explain why even in the absence of wage or employment effects—as suggested in by Hatton (2014)—highly educated natives favor low-skill immigration. In our model, we argue that altruism could provide an explanation for observed policy preferences among individuals with high incomes. Supporting poor immigrants might be motivated by a range of social considerations, including social pressure, guilt, sympathy, or a simple warm glow (Andreoni, 1990). However, doing so comes at a twofold cost: the government faces additional expenses and either has to increase taxes (on the rich) or cut welfare spending for natives.

Unemployment Rate — The time window of our analysis, from 2002 to 2012, covers both the financial and the Euro crisis. Hence, the rise in unemployment rates is a natural candidate to explain changes in political preferences, especially for the increasing demand for redistribution (Cusack, Iversen and Rehm, 2006). Most of the literature concludes that support for redistribution is decreasing with individual income. However, there are also studies which explain why wealthy individuals actually support the welfare state. Piven and Cloward (1971), for instance, argue that support for redistribution may arise from the idea that it prevents crime and other forms of social unrest.¹¹

¹⁰In addition, Bechtel, Hainmueller and Margalit (2014) use survey data from German voters to explore determinants of support for *international* redistribution. In the wake of the European bailout program, the authors find that individuals' own economic status provides limited explanatory power in comparison with social attitudes such as altruism and cosmopolitanism.

¹¹Furthermore, religious beliefs and social norms have also been found to explain voting behavior. In our

Share of Foreign-Born Population — Several studies suggest that a high share of foreign-born population affects natives' attitudes towards both immigration and redistribution. Razin, Sadka and Swagel (2002) discuss the explanatory power of standard theory on taxation and redistribution. This theory predicts a positive correlation between pre-tax income inequality and the amount of redistribution. They add to this model a fiscal leakage from native-born individuals to immigrants. With this modification, low-skill immigration can lead to less redistribution even though migrants would join the pro-tax coalition. The reason for this is that immigration might shift the general attitude of natives against taxation because a larger fraction of transfers ends up in the pockets of immigrants. This shift can be larger than the effect of migrants voting for high taxes. Razin, Sadka and Swagel use data from eleven European countries from 1974-1992 to support their model's predictions.

Similarly, Luttmer (2001) argues that attitudes toward welfare spending are driven by interpersonal preferences. In particular, he argues that there is a negative exposure effect: individuals lower their support for redistribution if the welfare reciprocity rate in their community increases. Moreover, there is evidence of a racial group identity: support for redistribution increases in the share of local recipients from their own racial group. This result is supported empirically by Dahlberg, Edmark and Lundqvist (2012). The authors find that increased low-skill immigration reduced support for redistribution in Sweden, especially among high-income natives.

Low-skill immigration, however, has not only been found to affect attitudes towards redistribution but also towards migrants themselves. According to a study by Halla, Wagner and Zweimüller (2012), the residential proximity to poor immigrants increases the support for right-wing parties which reject immigration. Conditional on education (which raises pro-immigration attitudes), income has been found to reduce support for immigration. This might reflect concerns about high tax rates as a result of immigrants' welfare dependency. Hatton (2014) also points out that anti-immigration sentiments are often diffuse while support is usually concentrated.

Macroeconomic Trends in Europe — Based on the discussion of the literature, in our main analysis we focus on three explanatory variables: (i) higher education, (ii) unem-

theoretical model, we follow this idea and assume income redistribution to have a general benefit similar to public goods.

ployment rate, and (iii) share of foreign population. For each variable, we show time trends between 2002 and 2012 in Figure 2.

— Figure 2 about here —

The data is based on the sixteen countries which participate in each wave of the ESS between 2002 and 2012. We observe a monotone, positive trend in both the share of individuals with higher education as well as the fraction of foreign population. The numbers increase from 21.3 to 32.6% and from 5.9 to 8.2%, respectively. For the unemployment rate, we observe a decrease prior to the 2007/08 financial crisis but a steep increase afterwards. In 2012, the average unemployment rate was 9.6 percent compared to its 2002 level of 7.0 percent. To link these macroeconomic trends to political views, we present a theoretical model in Section 4 which shows how individual characteristics and macroeconomic variables affect voter preferences over redistribution and immigration.

3.3 Empirical Analysis

Before turning to our theoretical model, we first investigate whether observed time trends in education, unemployment rates, and the share of foreigners are empirically associated with trends in policy preferences. For the sake of brevity our analysis here is focused on two observations from Figure 1. First, we want to explain the increased opposition to immigration. This is measured by the fraction of survey participants choosing ‘none’ when being asked how many poor non-European people should be allowed to immigrate. Second, we test whether rising support for income redistribution is a result of trends in education, unemployment rates, and the share of foreigners.

3.3.1 Econometric Approaches

We use several econometric approaches to investigate the relationship between macroeconomic variables and individual political preferences. First, a pooled regression model sheds some light on correlations in the data. Second, we explore whether a country’s time trends in macroeconomic variables correlates with its trend in policy preferences. Third, we use the full set of answers to the survey questions and run a multinomial logit regression.

Pooled Regressions — In order to explore the determinants of policy preferences, we first run several pooled regressions. For each individual i located in country c who participated in the ESS survey at time t , we know whether he or she revealed a certain policy preferences $\text{POLPREF}_{i,c,t}$. We fit the linear model

$$\text{POLPREF}_{i,c,t} = \alpha_c + \gamma_1 \text{EDU}_i + \gamma_2 \text{U}_i + \delta \mathbf{X}_i + \mu_1 \text{UR}_c + \mu_2 \text{FPOP}_c + \varepsilon_{i,c,t} \quad (1)$$

where EDU_i and U_i indicate whether individual i has a higher education and is unemployed, respectively. Other individual characteristics such as age, gender, or being retired are summarized by \mathbf{X}_i . Finally, UR_c and FPOP_c denote country c 's unemployment rate and share of foreigners, respectively. Note that we add country-fixed effects because we are interested in within-country time trends, not cross-country differences. The standard error $\varepsilon_{i,c,t}$ is clustered at the country level.

Trend Correlations — The two most striking findings in Figure 1 are the surge in support for redistribution and in heavy opposition to immigration. For both policies, we estimate the time trend in each country:

$$\text{SP}_{c,t} = \alpha_c + \beta_c \text{YEAR}_t + \varepsilon_{c,t} \quad (2)$$

where $\text{SP}_{c,t}$ refers to the share of people in country c at time t who strongly oppose immigration (or strongly agree with redistribution). In each country, we also obtain a time trend for both macroeconomic variables by fitting the linear regression

$$\text{MACROVAR}_{c,t} = \gamma_c + \delta_c \text{YEAR}_t + \mu_{c,t} \quad (3)$$

where $\text{MACROVAR}_{c,t}$ is either the unemployment rate or the stock of foreigners. In the Figures shown below, we then plot δ_c against β_c . This serves as suggestive evidence for the explanatory power of each macro variable with respect to observed time trends in policy preferences.

Flexible Estimation — In addition to the aforementioned analyses, we estimate a flexible model using a multinomial logit estimator. We use as a dependent variable all of the

sixteen possible answer combinations in the redistribution–immigration–space. Omitting the subscripts emphasizing that it is unique to each policy mix, we fit the following equation:¹²

$$\begin{aligned}
V = & I(HighEdu) [\beta_{H,t}t + \beta_{H,f}f + \beta_{H,u}u] + \\
& I(LowEdu) [\beta_{L,t}t + \beta_{L,f}f + \beta_{L,u}u] + \\
& I(Retired) [\beta_{R,t}t + \beta_{R,f}f + \beta_{R,u}u] + \\
& \beta_{Minority}I(Minority) + \sum \beta_{C=c}I(C = c) + e
\end{aligned}$$

where $I(\cdot)$ is an indicator function taking the value one if the survey participant has a high education (*HighEdu*), low education (*LowEdu*), is retired (*Retired*), or belongs to an ethnic minority (*Minority*). Years are denoted by t and $I(C = c)$ are country-fixed effects. We estimate separate coefficients for each outcome using a total of 153,129 observations. Standard errors are clustered at the country level.

3.3.2 Findings

In a first step, we run pooled OLS regressions described in equation (1). The results shown in Table 4 suggest that higher educated people are less likely to support redistribution, more likely to support low-skill immigration and less likely to heavily oppose immigration. This confirms prior research in the literature (Hainmueller and Hiscox, 2007).

— Table 4 about here —

We also find that older survey participants support redistribution but oppose low-skill immigration.¹³ Being a welfare recipient is associated with similar political preferences. Finally, at the country level we find that support for redistribution increases if the unemployment rate is higher (Cusack, Iversen and Rehm, 2006). Overall, we do not interpret these findings as evidence of causal relationships but as correlations which motivate further research. In addition, it strengthens our confidence in the survey data from the ESS as the results confirm several patterns documented in the related literature. We continue by investigating in more detail how education, unemployment, and the share of foreigners affect policy preferences.

¹²The error term e is assumed to satisfy the usual requirements of multinomial logit model, i.e. the independence of irrelevant alternatives and having a Gumbel distribution. Further, one of the equations must be normalized to zero.

¹³Ideological biases as well as age have been found to be significantly correlated with anti-immigration sentiments (O’Rourke and Sinnott, 2006).

Education and Policy Preferences — We investigate the impact of education on how individuals answer the two questions on redistribution and immigration in the ESS survey. Figure 3 shows how clearly education affects preferences along the two policy dimensions.¹⁴ Among those survey participants that disagree with redistribution but want to allow many immigrants, almost fifty percent have a high education. In contrast, 85 percent of people opposed to any immigration but strongly in favor of redistribution have a low education.

— Figure 3 about here —

The pattern revealed in Figure 3 is remarkably stable over time. In Figure 4, we separate the 2002 and 2012 wave. The plots suggests a substantial stability of the education-preferences nexus. We also find the same pattern when using only data from a single country.

— Figure 4 about here —

This implies that education has a lot of predictive individual policy preferences. The share of highly educated is highest in the top-left corner, opposing redistribution but supporting low-skill immigration. In contrast, very few people with high education choose a ‘populist’ right-wing policy mix in favor of redistribution but against immigration. The fact that highly educated are less likely to support redistribution is not surprising and in line with previous cross-country evidence provided by Guillaud (2013).

Unemployment and Policy Preferences — One of the major macroeconomic trends in Europe between 2002 and 2012 was the surge in unemployment rates as a consequence of both the financial and the Euro crisis. Using our data set, we test whether a positive trend in unemployment rates is associated with (i) increasing opposition of immigration and (ii) support for redistribution.

— Figure 5 about here —

We observe a positive gradient when plotting a country’s time trend in unemployment against its trend in the share of people opposed to immigration. This suggests that increasing unemployment rates in Europe could be one reason for the recent anti-immigration

¹⁴For a comparison, we show the same figures for individuals with low and high *incomes* in Figure B.16 in the Appendix.

movements. With respect to support for redistribution (Figure 5, right-hand side), we see a positive correlation between trends in unemployment and support for redistribution. Using the detailed survey responses from the ESS, we explore these correlations using a multinomial logit regression. In order to illustrate the results, in Figure 6 we plot marginal effects at mean values of all other variables. We do this separately for high- and low-educated individuals.

— Figure 6 about here —

The results indicate that both educational groups are more in favor of redistributing income if the unemployment rate increases. Moreover, there is some shift in preferences over immigration. When unemployment rates increase, opposition to low-skill immigration becomes more prevalent. Overall, less people favor a ‘moderate’ political position (some immigration, agree with redistribution). In line with findings by Mian, Sufi and Trebbi (2014), we observe that political preferences become more diverse and extreme.

Share of Foreigners and Policy Preferences — In the next step, we test whether an increasing share of foreigners in a country’s population is correlated with (i) increasing opposition of immigration and (ii) support for redistribution. Figure 7 suggests that anti-immigration sentiments increased in those countries that have had a positive trend in the share of foreign population (left-hand side).

— Figure 7 about here —

With respect to redistribution, we do not observe a clear correlation (right-hand side). The small gradient is largely driven by some outliers, including Ireland (IE). Except for these, if anything, we see a weak positive correlation. This would imply that a larger fraction of foreigners in the population is associated with less support for redistribution. Concerns about ‘fiscal leakage’ could be one explanation behind this correlation (Facchini and Mayda, 2009).

As before, we can also use the detailed survey data provided by the ESS and estimate the impact of increasing the share of foreign-born individuals in the population on preferred policy combinations. To illustrate the multitude of regression estimates, we plot marginal effects at mean values of covariates in Figure 8.

— Figure 8 about here —

In line with Luttmer (2001), we find that both high- and low-educated individuals become more hostile towards redistribution when the stock of foreigners increases. Furthermore, opposition to immigration increases among low-educated individuals which is similar to findings by Halla, Wagner and Zweimüller (2012).

Concluding the Empirical Findings — Overall, we find evidence that individual characteristics as well as macroeconomic variables are in fact correlated with political preferences. We can confirm three central patterns and mechanisms suggested by the literature. First, education has strong predictive power for preferences over redistribution and immigration. The more educated an individual, the more likely he is to support immigration but oppose redistribution. Second, we find that rising rates of unemployment are associated with more opposition to low-skill immigration and more support for redistribution. Our third finding is that increasing the share of foreign-born population leads highly educated individuals to reject the welfare state and low-educated individuals to oppose immigration.

While these findings are not new, they raise several questions. If labor market effects of immigration on natives' wages and employment are negligible (Ottaviano and Peri, 2012), why does anyone support low-skill immigration which comes at a significant fiscal cost? And why would rational voters reject immigration despite this empirical evidence? Much of the literature assumes some form of xenophobia in order to explain why a fraction of the native population rejects immigration. But could it not just be economic constraints that explain the surge in anti-immigration attitudes? The purpose of our theoretical model is to answer these questions, testing how much of the trends in policy preferences observed in Europe we can explain using solely economic rationales.

4 Theoretical Model

In order to understand how unemployment rates, shares of foreign-born population and the average education level affect preferences over immigration and redistribution, we develop a new model featuring both policy dimensions. The setup of our model is intended to follow the related literature. We model preferences split up by educational status and focus primarily on how the government budget ties together the different policies. The government

redistributes income from all employed individuals, both high and low skilled, to the unemployed as well as a group of permanently poor. Consistent with prior empirical research on the fiscal effects of low-skill immigration, we assume poor immigrants to be recipients of transfers. We also take into account a large body of empirical research on the labor market effects of immigration (Ottaviano and Peri, 2012; Manacorda, Manning and Wadsworth, 2012; Hatton, 2014). The general conclusion from this literature is that labor market effects on natives are small and largely negligible. In our model, we thus abstract from any impact on wages or employment of natives.¹⁵

The absence of labor market effects, however, necessitates a new explanation for why some people support low-skill immigration. If highly-educated individuals do not benefit from migrants providing labor that is complementary to their labor, why would they support such immigration? In addition, if low-skill natives are not xenophobic and do not face disadvantages in the labor market resulting from immigration, why do some of them reject immigration? To answer these questions, it is important that our model features both policy dimensions, immigration and income redistribution. In a first step, we assume that an individual's utility is increasing in his own consumption. Given an exogenous risk of being unemployed, the individual will then prefer at least some redistribution as a hedge against losses to personal income. In a second step, we allow individuals to derive utility directly from immigration and from income redistribution. Hence, we allow voters to be motivated partly by altruism towards poor natives as well as (potential) immigrants. This is based on the idea that income redistribution through the government can be considered a public good from which all individuals benefit. One motivation for this concept is a reduction in crime.¹⁶ We then argue that consumption is weakly decreasing in immigration through the negative fiscal effect. Any given level of transfers to the poor foreigners requires a higher tax rate in the model.

In what follows, we first explain the setup of the model in more detail. Thereafter, we estimate the preference parameters in Section 4.2. We use these estimates and simulate the model to show static preferences in Section 4.3. Then, in Section 4.4 we illustrate how changing macroeconomic variables alters political preferences in our model. Finally, Section 4.5 provides an out-of-sample prediction for aggregate preferences in the hypothetical

¹⁵A detailed discussion of how such price effects would alter our results is presented in Section 5.

¹⁶It is worth noting that we do not model the utility function such that individual i 's happiness increases simply with other individuals' income. This would potentially violate empirical findings by Luttmer (2005).

case where Europe returns to a low unemployment rate but experiences continuing increases in education and foreign-born population.

4.1 Setup

Consider an economy populated by three groups: high- and low-skilled wage earners as well as welfare recipients (henceforth referred to as poor). The poor earn a small non-taxed income of $\phi^2 + z$ each period, where ϕ^2 is income with $\phi \in (0, 1)$ and z is a non negative transfer from the government. There are two types of poor: Some individuals are permanently poor and will always remain in this group. The second group are those high- and low-skilled individuals who experienced a negative employment shock. Following Alesina and La Ferrara (2005), wage earners face a probability $u > 0$ of being unemployed and joining the group of welfare recipients. In contrast, with probability $(1 - u)$ this negative shock does not occur and they earn an income of $1 - \tau$ and $\phi - \tau$, respectively. We use τ to denote a lump sum tax imposed by the government. The government does nothing but redistribute income from wage earners to the poor. It must balance its budget each period. The budget constraint is given by

$$(1 - u)(N_h + N_l)\tau = z(u(N_h + N_l) + N_p) \quad (4)$$

where N_h , N_l , and N_p denote the number of high- and low-skilled natives as well as the permanently poor in the economy, respectively. For simplicity, we assume that there are no natives which permanently receiving welfare benefits. Hence, let the number of permanently poor be given by the sum of foreign-born immigrants from poor countries $N_p = L + F$ where L is the number of admitted immigrants and F is the number of already migrated foreign-born individuals.¹⁷ It is crucial to emphasize that we focus exclusively on the immigration of poor people. First and foremost this is to match the respective question from the European Social Survey. Participants are asked how many *poor* people from outside Europe should be allowed to enter their country. Implicitly, the focus on poor immigrants implies that each migrant comes at a fiscal cost. The assumption that there is a net government loss is supported by prior research.¹⁸ Letting lower case letters denote shares of the total population, we can

¹⁷Note that while native voters cannot determine F , the number of additional poor immigrants, L , is a choice variable.

¹⁸Storesletten (2003) finds that in a European welfare state, an average immigrant represents a total net loss to the government of about 20,000 US dollar. In contrast, the estimates are generally positive for the United States where there is a much smaller welfare state (Storesletten, 2000).

re-write equation (4) to get

$$\tau = z \frac{u[1 - l - f] + l + f}{(1 - u)(1 - l - f)} \quad (5)$$

where $[1 - l - f]$ is the fraction of natives in the population. Note that equation (5) pins down the relationship between taxes, transfers, and population shares. To satisfy the incentive constraint, it must further hold that transfers are such that disposable income for low skilled is at least as high as income of the poor:¹⁹

$$z \leq \phi(1 - \phi)(1 - u)(1 - l - f). \quad (6)$$

Following empirical studies by Ottaviano and Peri (2012), Dustmann, Frattini and Preston (2013), or Docquier, Ozden and Peri (2013), we assume that labor market effects on employment or wages of natives are small enough that we can neglect them. This raises the question why anyone in the model would support low-skill immigration. Following Olsen (1965), Becker (1974) and Andreoni (1990), we assume that individual i 's utility does not only depend on his own consumption. Instead, each individual also cares about the well-being of others. This altruism, however, is not limited to natives but extends to foreigners as well. The way we model altruism—like prior work by DellaVigna, List and Malmendier (2012)—allows for pure altruism (i.e., caring about the total amount of charity), impure altruism (i.e., warm-glow motives), and prestige (Harbaugh, 1998). In principle, we also allow for spiteful behavior or negative social preferences (Levine, 1998). Moreover, irrespective of whether an individual receives welfare benefits himself, we assume him to benefit from the presence of a welfare state. This is motivated by prior research by, for example, Piven and Cloward (1971). In particular, support for redistribution may arise from the idea that it prevents crime and other forms of social unrest.

We focus our analysis to the political preferences of natives. Let utility be given by $V(c, z, l)$ where c denotes private consumption and we allow z and l to enter as separate arguments. We will not take a stand on the exact functional form of the utility function, but rely instead on Taylor approximations. A first-order approximation to utility around the policy with no redistribution nor immigration (i.e., $z = l = 0$) is given by

¹⁹As after tax income of the low-skilled must be at least as high as the after-transfer income of the poor, we have $\phi - \tau \geq \phi^2 + z$. Using (4) to substitute for τ and solving for z gives (6).

$$V(c, z, l) = V(w, 0, 0) + V_c(c - w) + V_z z + V_l l + e \quad (7)$$

where w is disposable income before any transfers or taxes and e captures higher-order terms as well as country differences in marginal utility.²⁰ Note that we follow this approach of using a first-order approximation around the ($z = l = 0$) policy combination to match the answer in the ESS questionnaire.²¹ Using this first order approximation, expected utility for an individual of type $i \in \{h, l\}$ is thus

$$\begin{aligned} EV_i &= (1 + u) [V(w_i, 0, 0) - V_c(w_i, 0, 0)\tau + V_z(w_i, 0, 0)z + V_l(w_i, 0, 0)l] \\ &\quad + u [V(w_p, 0, 0) + V_c(w_p, 0, 0)z + V_z(w_p, 0, 0)z + V_l(w_p, 0, 0)l] \\ &\quad + (1 + u)e_{i,1-u} + ue_{i,u}. \end{aligned}$$

In the equation above, w_p is disposable income for the poor, and $(1 + u)e_{i,1-u} + ue_{i,u}$ is a linear combination of the higher order terms of the first order approximations to the utility functions in the employed and unemployed states, respectively. Let $\beta_{k,j}$ denote marginal utility from k (i.e. immigration) in state j relative to marginal utility of consumption in the employed state, $V_c(w_i, 0, 0)$. We can then transform the equation above, by dividing by $V_c(w_i, 0, 0)$ and subtracting the constant terms:

$$\tilde{E}V = (1 + u) [\tau + \beta_{z,1-u}z + \beta_{l,1-u}l] + u [(\beta_{c,u} + \beta_{z,u})z + \beta_{l,u}l] + \tilde{e} \quad (8)$$

where \tilde{e} is a positive linear transformation of the higher-order terms e_u and e_{1-u} . We then obtain the convenient property that expected utility in the given no-redistribution and no-immigration state is zero:

$$\tilde{E}V(z = 0, L = 0) = 0 \quad (9)$$

Explaining the Model Dynamics — Before we simulate the model, we first discuss

²⁰In a study by Eugster et al. (2011), the authors discuss differences in demand for social insurance across countries in Europe.

²¹Survey participants in the European Social Survey (ESS) can respond ‘none’ and ‘disagree’ when asked how many poor immigrants should be allowed to enter their country and how they think about income redistribution, respectively.

its mechanics in more detail. First of all, it is important to note that the tax rate required to finance a given level of transfers (z) is increasing in the level of immigration (l), the share of foreigners (f), and the unemployment rate (u):

$$\frac{\partial \tau}{\partial u} = \frac{z}{1-u} \left(1 + \frac{u(1-l-f) + l + f}{(1-u)(1-l-f)} \right) > 0 \quad (10)$$

$$\frac{\partial \tau}{\partial l} = \frac{\partial \tau}{\partial f} = \frac{z}{1-l-f} \left(1 + \frac{u(1-l-f) + l + f}{(1-u)(1-l-f)} \right) > 0 \quad (11)$$

Second, we see that the maximum feasible transfer, defined as the transfer that makes the incentive constraint (equation 6) hold with equality, is decreasing in both the unemployment rate and the share of foreigners:

$$\frac{\partial z^{max}}{\partial u} = -\phi(1-\phi)(1-l-f) < 0 \quad (12)$$

$$\frac{\partial z^{max}}{\partial f} = \frac{\partial z^{max}}{\partial l} = -\phi(1-\phi)(1-u) < 0. \quad (13)$$

In other words, we see that both unemployment and a high share of foreign-born population have two effects on fiscal policy. First, the tax rate required to finance a given level of transfers increases. This makes income redistribution more costly for tax payers in the economy. Second, the policy space shrinks in the sense that the maximum feasible transfer decreases.

4.2 Simulation of the Model

The model can be simulated by transforming it into a standard discrete choice framework. In a first step, let utility be given by the $\tilde{E}V_i(z, L)$, as defined by equation (8), and a stochastic term ε :

$$U_i(z, L) = \tilde{E}V_i(z, L) + \varepsilon \quad (14)$$

where ε has a Gumbel distribution. This implies that the probability of an individual preferring a particular policy is given by

$$P_i(z = z^*, L = L^*) = \frac{\exp(\tilde{E}V_i(z = z^*, L = L^*))}{\sum_{z,L} \exp(\tilde{E}V_i(z, L))} \quad (15)$$

where the numerator is the exponentiated, deterministic part of utility for a given outcome, and the denominator is the sum of these exponentiated deterministic utilities over all possible policy combinations. Following Berry (1994), equation (15) can be linearized by taking logs:

$$\ln P_i = \tilde{E}V_i(z = z^*, l = L^*) - \ln \sum \exp(EV_i). \quad (16)$$

As the deterministic part of utility in the $(z = 0, L = 0)$ policy case is zero, we use $\ln P(0, 0) \equiv -\ln \sum \exp(\tilde{E}V)$ as the base outcome. We can then replace the last term on the right hand side of equation (16) by the log of the choice probability of policy $(z = 0, L = 0)$:

$$\ln P_i = \tilde{E}V_i(z = Z, L = l) + \ln P(z = 0, L = 0). \quad (17)$$

The log of the choice probability for a given outcome is the deterministic part of utility added to the log of the choice probability in the $(0, 0)$ policy outcome. The left hand side of (17) is now the log of the share of respondents reporting that they prefer policy mix $(z = Z, l = L)$. We must take into account the restrictions implied by this setup, in particular that the log of the choice probability in the $(z = 0, L = 0)$ as well as marginal utility of consumption enters with coefficients equal to unity. To take these restrictions into account, we define a transformed dependent variable as the log of the choice probability, subtracted log of the choice probability in the $(z = 0, L = 0)$ state, and subtracted the difference in consumption relative to the base outcome:

$$\Psi \equiv \ln P - \ln P(0, 0) + \tau(1 - u) \quad (18)$$

Substituting equation (8) into equation (16) and collecting terms equal to the right hand side of equation (18), we then have a linear expression that can be estimated:

$$\Psi_{i,c,t} = \beta_{z,1-u_{c,t}}(1 + u)z_{i,c,t} + \beta_{l,1-u}(1 + u_{c,t})l_i + [\beta_{c,u} + \beta_{z,u}]u_{c,t}z_{i,c,t} + \beta_{l,u}u_{c,t}l_i + \tilde{e}_{i,y,t} \quad (19)$$

where i denotes each of the sixteen possible policy combinations over redistribution and immigration, c denotes the country and t is the year. Recall that \tilde{e} is a positive transformation

of the higher order terms of the utility function. We define the possible policy space as $L = \{0, 0.05/3, 0.05 * 2/3, 0.05\}$, which is the same for all countries and years.²² The redistributive policy space is similarly defined over four points with the extremes $z_{min} = 0$ and $z_{max} = \phi(1 - \phi)(1 - u)(1 - l - f)$.²³ We estimate this for all ESS waves for different educational levels where we have complete saturation (i.e., where all observed probabilities are strictly greater than zero). The results are provided in Table 5.

— Table 5 about here —

These parameter estimates show the marginal utility from higher z and L relative to c in the two states. The coefficients vary significantly between high- and low-skilled individuals. In particular, high-skilled people receive far less utility from z relative to low skilled types, and similarly, high skilled types receive greater utility from L relative to the low skilled and those on benefits.²⁴

4.3 Static Preferences

In the first part of our simulation of the model, we illustrate policy preferences over redistribution and immigration in the static case. For this, we assume the share of immigrants and the unemployment rate to be at their average level between 2002 and 2012.²⁵ We use this information and plot the probability distribution over the policy space.

— Figure 9 about here —

Part (a) of Figure 9 shows the preferences of those with high education. We observe a large mass at the bottom left corner. This implies full support for income redistribution and immigration. However, there is also a ‘tail’ towards less redistribution. In Part (b) of Figure 9, we show the distribution of probabilities for the low-skilled natives. These individuals have a strong preference for redistribution but appear more indifferent with respect to

²²Defining the upper limit of the policy space with respect to immigration is necessarily somewhat arbitrary. We decided to set 5% of the current population as reflecting *many* immigrants.

²³For our specification, we assume $\phi = 0.5$. Using varying parameter values based on inequality data from UNU Wider yields similar results.

²⁴This latter result is consistent with findings by Card, Dustmann and Preston (2012) who document that higher levels of immigration reduce welfare from compositional amenities to which low skilled types are more exposed.

²⁵For the sixteen countries in the European Social Survey, these numbers are given by 7.2% unemployment and 7.6% foreign-born population.

immigration. Finally, in Part (c) we show the probability ratio between high- and low-skilled individuals at each policy point.

Notably, we obtain a pattern that is very similar to Figure 4 which was based on ESS survey results. Among those individuals that prefer no redistribution but open immigration, the share of highly educated peaks. In contrast, primarily low-educated individuals choose a policy combination of heavy redistribution and no immigration.

4.4 Effects of Macroeconomic Trends

We now investigate how altered macroeconomic circumstances like higher shares of foreign-born people or unemployment affect political preferences in our model. Moreover, we investigate the impact of a compositional change in the population by increasing the share of natives with high education.

Higher Share of Foreign-Born Population — Increasing the share of foreign-born citizens in our model is equivalent to increasing the share of permanently poor. This has the consequence of lowering the maximum feasible transfer (z). At the same time, it implies that the government, to balance its budget, must increase the tax required to finance a given level of transfers.

— Figure 10 about here —

A simulation of our model is shown in Figure 10. Quantitatively, we follow real-world changes and increase the share of foreigners from 5.7% to 8.2%, as it happened in the sixteen European countries of the ESS. We observe that both high- and low-educated individuals become more opposed to income redistribution if the share of foreigners increases. However, it is important to understand that their motivations differ. In the presence of a large poor foreign population, the highly educated individuals decide to maximize their utility (equation 7) from charitable activity through immigration instead of redistribution. Essentially, they support free immigration while reducing the welfare state to a minimum. For the low educated, the situation is different. They also turn against the welfare state if the share of foreigners is high. This is again because transfers to the poor (z) are increasingly expensive. However, their preferences over immigration do not change.

Higher Unemployment Rate — For the second macroeconomic variable, the unemployment rate, we can also simulate the effects on voter preferences. Again, we mimic the true time trends in European countries and change the unemployment rate from 6.9% to 9.5%. This sharp increase reflects the impact of the financial and the Euro crisis.

— Figure 11 about here —

Figure 11 reveals that under these circumstances all individuals are more in favor of income redistribution. If the unemployment rate in the economy increases, both high- and low-skilled native voters become more favorable to income redistribution. However, while the low-skilled reduce their support for immigration, the high-skilled increasingly support immigration. In order to understand this difference, we can refer to equation (8). At times of high unemployment, both groups of natives face an increased risk of losing their job and join the group of welfare recipients. Hence, they put more weight on this outcome and show increased support for income redistribution.²⁶ At the same time, preferences over immigration are also affected by the economy's unemployment rate. Highly educated natives do not significantly alter their support support for immigration while low educated natives become more likely to choose a 'populist' right-wing policy combination of opposing immigration but supporting the welfare state. The latter occurs because the low-educated are facing both higher tax rates to maintain a given transfer, thus reducing consumption in the employed state, at the same time as they face a higher probability of becoming unemployed. Therefore, stuck between a rock and a hard place, the low educated choose to reduce their support for immigration.

Higher Educational Attainment — The final dynamic we consider is a compositional change in the population. The fraction of respondents in the ESS sample who possess a high level of education increased from 20% in 2002 to 28.5% in 2012.

— Figure 12 about here —

Not surprisingly, higher educational attainment shifts preferences towards more immigration and somewhat less redistribution. As shown in Figure 12, all policy combination

²⁶Our finding is in line with a study by Alesina and La Ferrara (2005) who argue that individuals' preferences for redistribution are driven by expectations about future incomes.

that support immigration become more favorable. Notably, the ‘populist’ right-wing policy combination loses most in support.

Total Changes from 2002 to 2012 — After we simulated separately the effects of rising shares of foreigners, increasing rates of unemployment, and a larger share of highly educated individuals, we can now simulate the combined effect. In particular, we can simulate how policy preferences for native voters change if we alter several parameters at the same time. For the simulation, we again match true changes in macroeconomic variables between 2002 and 2012. Figure 13 indicates how the distribution of preferences changes.

— Figure 13 about here —

We observe that changing the macroeconomic parameters of the economy like it happened between 2002 to 2012 leads to more individuals supporting income redistribution. Overall, there is a total increase in those who strongly agree that the government should redistribute income by 2.9 percentage points. Qualitatively, the model also captures the trend of increased polarization along the immigration dimension. Both the share of respondents supporting high and very low immigration levels increase. There are less individuals with ‘moderate’ preferences over immigration. Underestimating quantitatively the changes is not surprising given the linear approximation to utility. In Section E of the appendix, we show that using a quadratic utility function gives similar qualitative predictions but increases the quantitative predictive power of the model.

— Figure 14 about here —

In Figure 14, we provide a comparison of the quantitative results of the simulation to observed changes in the ESS data. The latter were also shown in Figure 1. For the preferences over income redistribution our model yields somewhat smaller changes (2.9 percentage points) than observed in the ESS (6.7 percentage points). The predicted polarization in preferences over immigration is also smaller than what we observe in the ESS data.

4.5 Prediction for the Year 2024

A final question that we address in the simulation is how aggregate preferences might change in the future. This prediction is based on the assumption that the share of foreign-born

population continues to increase linearly. Similarly, the average educational level continues to grow at the same rate as between 2002 and 2012.. However, we assume that the unemployment rate reverts to a low level.

— Figure 15 about here —

Figure 15 shows the estimated change in preferences from 2012 to 2024 when unemployment drops from the mean 2012 level of 9.4% to 4%, and the share of highly educated as well as the share of foreign-born individuals increase to a level of 37% and 10.7%, respectively. Based on these figures, our prediction is that immigration will be a less controversial issue in the future. It will be more common to have a favorable attitude towards immigration. However, due to the reduced unemployment rate there is also a significant reduction in support for redistribution. About 11 percent of voters move towards indifference or opposition to redistribution.

In a broader picture, our model sketches the key trade-off Europe faces in the current migration debate. According to Kagan (2003), Europeans have long followed Immanuel Kant’s idea of a ‘perpetual peace’ which is achieved through consensually agreed rules, transnational negotiation, cultural conventions and a large redistributive welfare state. In contrast, the United States is built on the concept of Thomas Hobbes with security and a liberal order depending on the possession and use of military force. If the current immigration flows from poor countries continue, European governments will have to significantly shrink the welfare state. This is predicted by our model. Alternatively, European countries must find a way—including foreign aid or the use military power—to limit the migration flows.²⁷

5 Alternative Explanations

In this section, we address several concerns and discuss additional findings. First, we explore differences in policy preferences across the sixteen European countries. Then we discuss the role of income inequality. Third, we provide a discussion of how labor market effects from immigration or xenophobia would alter our findings. Finally, we shed some light on how support for low-skill immigration reflects charitable activity.

²⁷The trade-off is discussed in more detail in the article ‘Farewell to the Era of No Fences’ by Bret Stephens, published on September 7, 2015 in *The Wall Street Journal*.

5.1 Differences Across Countries

For the empirical analysis in this paper, we use data from sixteen European countries. An interesting question is how policy trends differ across countries or whether trends are largely similar. In Figures C.19 and C.20 in the appendix, we show the share of survey participants supporting any of the four answers to the question on immigration and redistribution, respectively. We plot separately the share for each year and country. The key observation is that—despite large differences in levels—the support for redistribution increased in almost every country. Simultaneously, the share of survey participants hostile towards immigration increased substantially in many countries, including Great Britain, Ireland, Portugal, Spain, or Hungary. At the country-level aggregate, however, the increase in opposition to immigration is not a universal phenomenon. Notably, we observe that in Germany opposition to poor immigration declined. In a study by Lubbers, Gijsberts and Scheepers (2002), the authors find that there are several explanations for why extreme right-wing parties gain significant support only in some European countries. The single most important factor is the right-wing parties themselves, their specific policies and leaders. In addition, public opinion on immigrants and democracy plays a relevant role as well.

5.2 Income Inequality

One of the most significant concerns among European voters in the past decade has been income inequality. Hence, we discuss how it affects our findings both theoretically and empirically. In the framework of our model, increases in income inequality can be reflected by lowering ϕ , which determines how much the low-skilled earn relative to the high-skilled natives. It is straightforward to see how this would affect policy preferences. With the gap between high- and low-skilled natives widening, the difference shown in Figure 9 would become more pronounced.

Empirically, we can also investigate whether trends in a country's income distribution are correlated with (i) increasing opposition of immigration and (ii) support for redistribution. Following a simple median voter model (e.g., Meltzer and Richard, 1981), widening income gaps could increase the support for redistribution.²⁸ The analysis, however, provides little

²⁸Theoretically this prediction becomes less clear if one takes into consideration beliefs on the role of effort and luck in shaping the income distribution (Fong, 2001; Alesina and Angeletos, 2005) or individual expectations about future incomes (Benabou and Ok, 2001).

evidence of a correlation between the two. Using the Q4/Q5 ratio or other measures of income inequality—including the Gini coefficient, the P90/P50, P90/P10, or P50/P10 income ratio—we find no significant correlation with the two policy outcomes. One reason for this could be the rather small variation in the inequality measures. Given that we consider a time period of only ten years and a selected set of European countries, this might not be surprising. Furthermore, experimental evidence by Kuziemko et al. (2015) shows that individuals do not in general increase their support for redistribution if they are provided with information about rising income inequality.

5.3 Labor Market and Price Effects

Throughout our analysis we assumed away any impact of immigration on the labor market. In particular, native workers' wages and probability of unemployment are not altered by the magnitude of immigration. Moreover, in our model high-skilled natives do not benefit from low-skill immigration through other price effects. This may include immigrants to provide household services at low cost.

We justify the absence of such effects by the fact that we focus on poor immigrants from outside Europe who often come as refugees or asylum seekers. As such they usually lack a work permit. Even if they are allowed, their labor market participation rates are fairly low. Moreover, empirical research documented the negligible wage and employment effects of immigration (Ottaviano and Peri, 2012). One could, however, use our framework and allow low-skill immigration to have wage effects. Assuming poor immigrants to compete with low-skill natives, we could allow their wages to be depressed by competition in the labor market: $\partial\phi/\partial l < 0$. Fears of such effects would obviously reduce support for immigration among low educated natives. However, the purpose of our model is to show opposition to (and support for) immigration arising in the absence of labor market effects.

Concerning price effects, one can think of low-skill immigrants reducing the costs of domestic services like gardening. In addition, foreigners might offer new varieties of non-tradeable goods and services. Our model could be extended to allow for such ramifications. However, adjusting the utility function to include diversity would be somewhat adhoc and also significantly complicate the analysis.

5.4 Xenophobia

In order to discuss the impact of xenophobia, we can follow prior work by Luttmer (2001) and extend our model to feature two groups of natives. First, individuals with the type of utility function we so far assumed for everyone. Second, a group of individuals who are (latent) xenophobic. These people receive no utility from immigration.²⁹ Moreover, the utility they receive from redistribution (as public good) is multiplied with a factor φ which is defined as

$$\varphi = \frac{\text{Natives on welfare}}{\text{Foreigners on welfare}}. \quad (20)$$

Thus they support the welfare state but less so if the welfare benefits are increasingly received by foreigners. In other words, with an increasing share of foreign-born population, xenophobic individuals show reduced support for redistribution. It is, however, important to note that our model can already capture the key idea by Luttmer (2001). We do not need to assume anyone to be xenophobic in order to have some individuals turn against redistribution if the share of foreigners is high.

An alternative way to model xenophobia would be to include costs from immigration that are heterogeneous across natives. Following Card, Dustmann and Preston (2012), immigration can change the composition of the local population, reducing the utility natives receive from compositional amenities like neighborhoods, schools, or workplaces. If poor immigrants primarily move to areas populated by poor natives, an increase in anti-immigration preferences among low-skilled natives is expected. Empirically, this hypothesis is supported by Halla, Wagner and Zweimüller (2012).

5.5 Support for Immigration as a Form of Charity

In our theoretical model, we consider each individual to be potentially altruistic. Moreover, we assume there are no price, wage, or employment effects from immigration. Hence, supporting low-skill immigration can only be the result of humanitarian considerations. Allowing poor people to enter the country and receive welfare benefits increases the utility of natives only insofar as they are altruistic. In our results, we find that being poorer—or expecting to be poorer or unemployed in the future—lowers the support for low-skill immigration. This

²⁹It makes little sense to assume they receive utility from L and are xenophobic with respect to redistribution. An alternative setup following Benabou and Tirole (2006) would have several groups of natives with different utility from contributions to social goods.

finding suggests that altruism is increasing in income. In other words, richer individuals are more altruistic because they can afford to be so.³⁰

— Table 6 about here —

We can use the ESS data to further investigate whether other forms of altruistic behavior are also more prevalent among wealthier individuals. In Table 6, we use charitable work and money donations to humanitarian organizations as proxy variables for altruism. For both variables and varying years, we find that income is positively correlated with altruistic behavior. Furthermore, those individuals that support (reject) low-skill immigration show the same positive (negative) attitude towards charitable activities that might primarily benefit natives. Unfortunately, the questions on charitable activity vary from one ESS round to the next. Hence we cannot provide evidence of time trends in charity. Nevertheless, the estimation results shown in Table 6 favor our idea of considering support for low-skill immigration as a form of charitably behavior. Those natives that support immigration of poor people also contribute to humanitarian organizations through charitable work and donations.

6 Conclusion

This paper addresses recent trends in European politics. In particular, we provide an economic explanation for why immigration has become a dividing concern among voters and why populist right-wing parties—supporting redistribution but heavily opposing immigration—have surged in polls. In a first step, we document two important shifts in voter preferences. Based on data from the European Social Survey on sixteen countries for the period 2002–2012, we show that there is a general trend towards more demand for income redistribution. At the same time, we observe a polarization with respect to preferences over low-skill immigration. In particular, there is a growing share of the native population that is strongly opposed to any immigration while showing support for the welfare state.

Having documented these trends, we examine potential economic explanations for these shifts. Guided by a theoretical model, we investigate how individual education as well as macroeconomic trends such as unemployment rates and the share of foreign-born population

³⁰Prior research by Hoffman (2011) reaches a similar conclusion.

affect voter preferences. With respect to education, our model predicts that highly educated individuals are more likely to support free immigration but reject income redistribution. In contrast, low-educated individuals oppose immigration but strongly support welfare spending. These predictions find strong support in the data. In fact, for all sixteen countries and in virtually all years we find a clear pattern in the data which resembles simulated outcomes of our model.

Over the period from 2002 to 2012, European countries experienced a sharp increase in the share of foreign-born population. In addition, unemployment rates rose significantly as a result of the financial crisis. We find that these macroeconomic trends are correlated with observed shifts in policy preferences. In line with our model's predictions, an increase in unemployment leads to higher demand for income redistribution. Furthermore, opposition to immigration grows among low-educated natives. An increase in the share of foreign-born population is associated with less support for redistribution as the mass of individuals eligible for transfers increase and hence taxes required to finance a given transfer will be higher. Both high- and low-skilled natives become less in favor of income redistribution. However, we simultaneously observe a polarization in their preferences over immigration, with low-skilled increasingly hostile to immigrants.

The main purpose of our study is to investigate the explanatory power of economic forces in shaping political trends observed in Europe in past decade. Hence we abstract from any form of xenophobia and also take into account the empirical evidence that labor market effects on wages and employment of natives are negligible. Our model's assumption that support for low-skill immigration is motivated by altruism—and therefore is akin to a 'public good'—to some extent legitimizes that individuals with lower and uncertain income prioritize own needs rather than potential immigrants. In the trade literature, one can devise transfers across groups to achieve Pareto improving policies. Such policies are less feasible here, as not only natives but also immigrants will be eligible for said transfers. Hence, treating all poor in a country equally has the consequence that more poor immigrants warps the policy space. Therefore, we expect all feasible policies to involve difficult trade-offs between the well-being of different groups.

While we can confirm many patterns established in the political economy literature, we offer new insights why some natives support and some reject low-skill immigration. Our model abstracts from both xenophobia and price effects which so far have been predominantly

used to explain voter preferences over immigration. It is important to note that we do not rule out the existence of xenophobic views or labor market effects from immigration. But we argue that voters do not have to be xenophobic to vote for a populist right-wing party. Xenophobia helps but it is not necessary to reject immigration. Quantitatively at least, we find that economic motives alone do not explain the full surge of anti-immigration attitudes. Hence more research should be done to uncover the additional causes of political trends in Europe.

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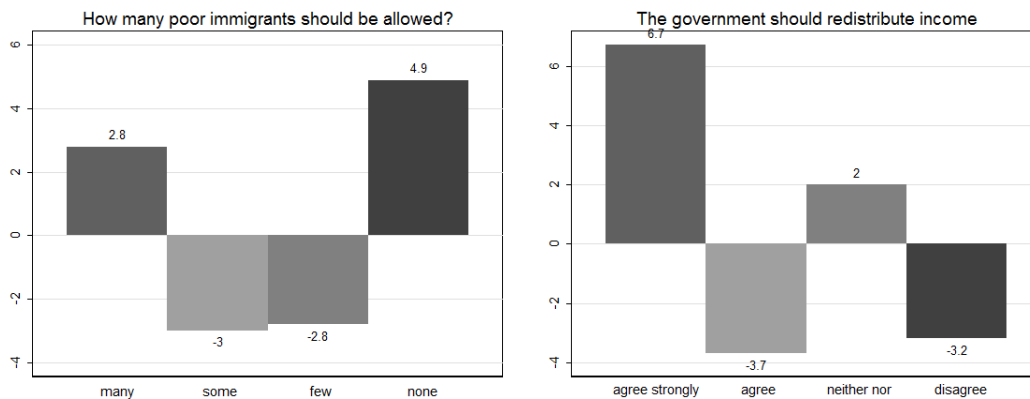
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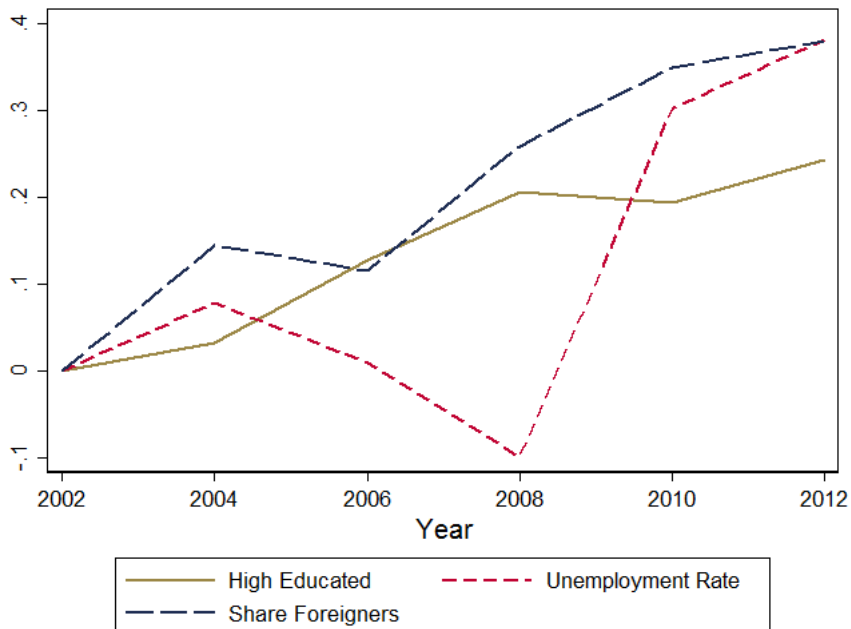
Figures and Tables

Figure 1: Changes in Policy Preferences between 2002 and 2012



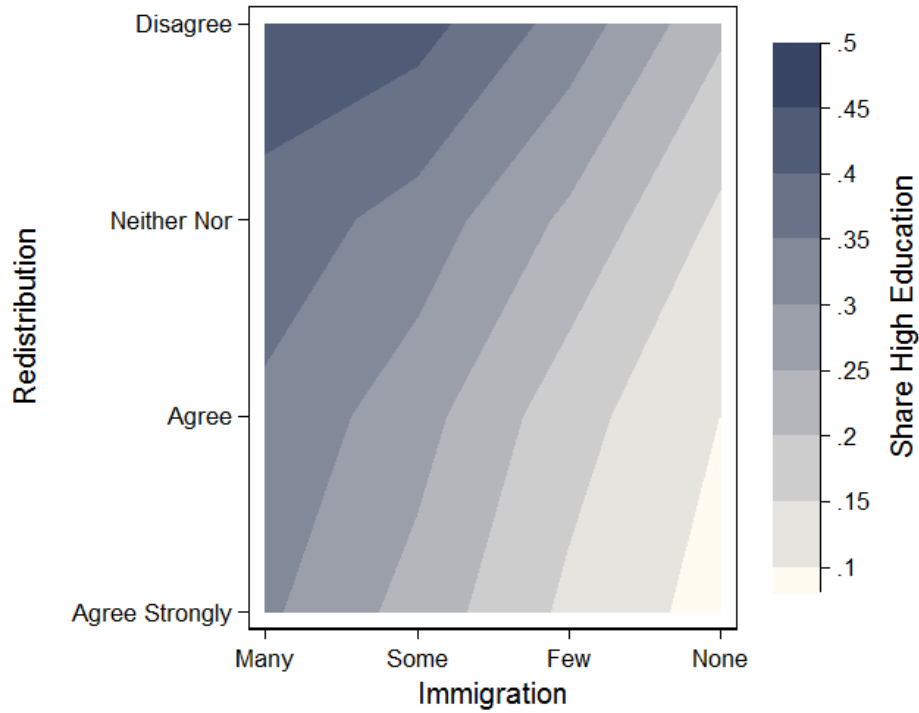
Note: The figure shows changes in the share of survey participants selecting each possible answer to (a) the immigration and (b) the redistribution question in the ESS. The scale is such that, for example, the share of individuals who ‘agree strongly’ with redistribution rose by 6.7 percentage points. The sample is restricted to those sixteen countries which participated in each wave. We do not report changes in respondents who responded “Do not know” or “Refuse to answer”.

Figure 2: Macroeconomic Trends between 2002 and 2012



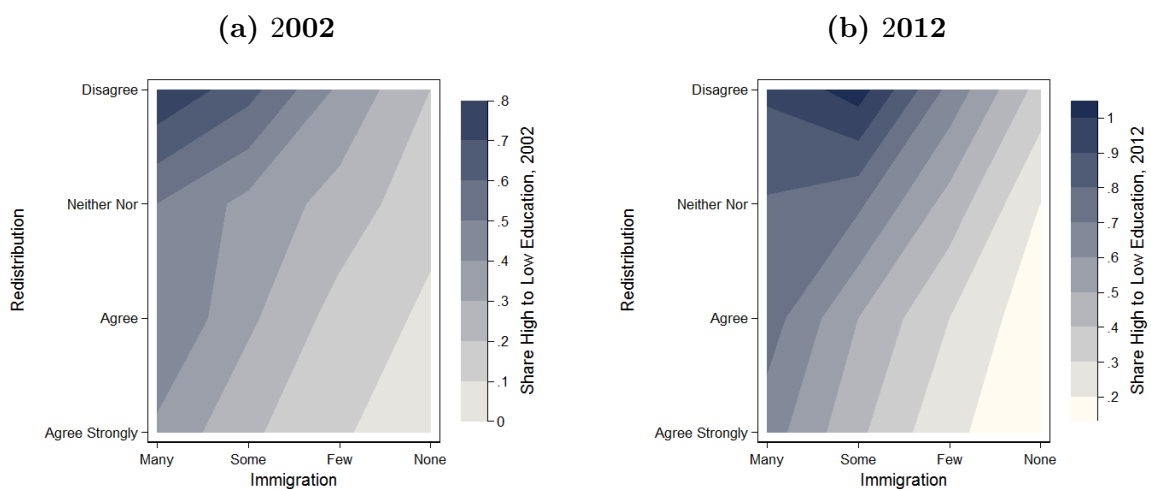
Note: The figure shows accumulated (percent) changes in the share of highly educated individuals, unemployment rate, the share of foreigners, and the Q3/Q5 income ratio. The sample is restricted to those sixteen European countries which participated in each wave of the ESS.

Figure 3: Policy Preferences by Education



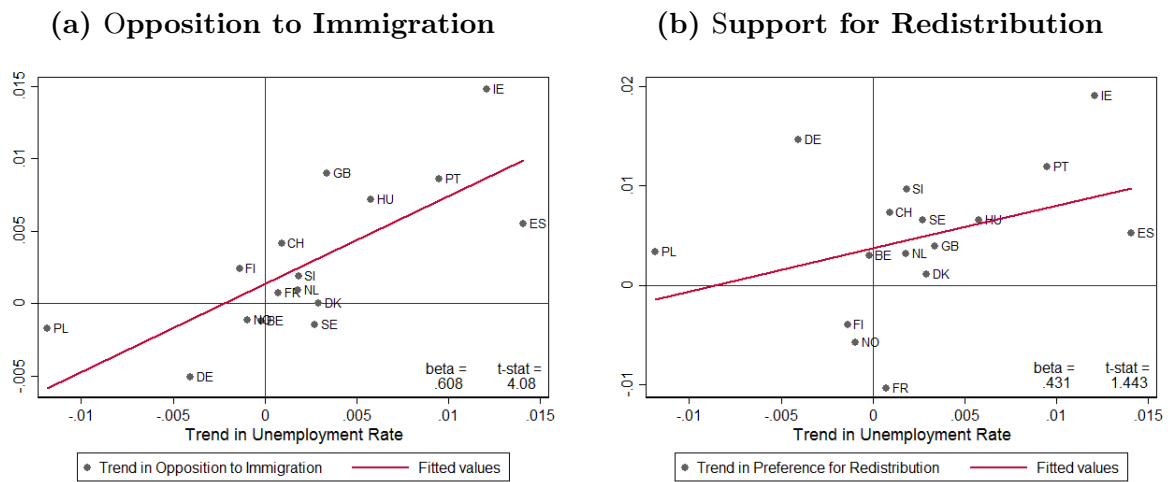
Note: The figure shows the fraction of individuals with high education for each combination of an answer to the question on immigration (x axis) and income redistribution (y axis). We use the ESS data from those sixteen countries that participated in each wave between 2002–2012 and pool the data.

Figure 4: High-to-Low Education Ratio Over Time



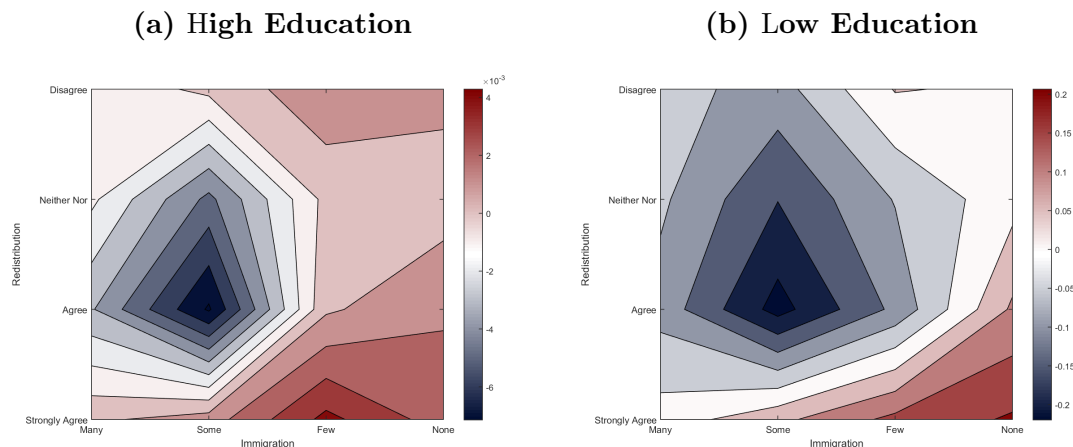
Note: The figures show the ratio of the share of highly educated individuals relative to the share of low-educated individuals in the two-dimensional map. While preferences over immigration are on the horizontal axis, views on redistribution are shown on the vertical axis. On the left, ESS data from 2002 are shown and on the right the 2012 sample is applied.

Figure 5: Trends in Unemployment and Policy Preferences



Note: The figure shows the correlation between each country’s trend in unemployment (horizontal axis) and the share of its survey responds who oppose immigration (left figure) or support redistribution (right figure).

Figure 6: Marginal Effects of Higher Unemployment Rates



Note: The figures show the estimated marginal effects of a higher unemployment rate from a multinomial logit regression, using as a dependent variable the probability of a survey participant choosing one of the sixteen policy combinations. On the horizontal (vertical) axis, there are four possible answers to the question on immigration (redistribution). On the left, results for highly educated individuals are shown and on the right the results for low-educated are plotted.

Figure 7: Trends in Foreign Population and Policy Preferences

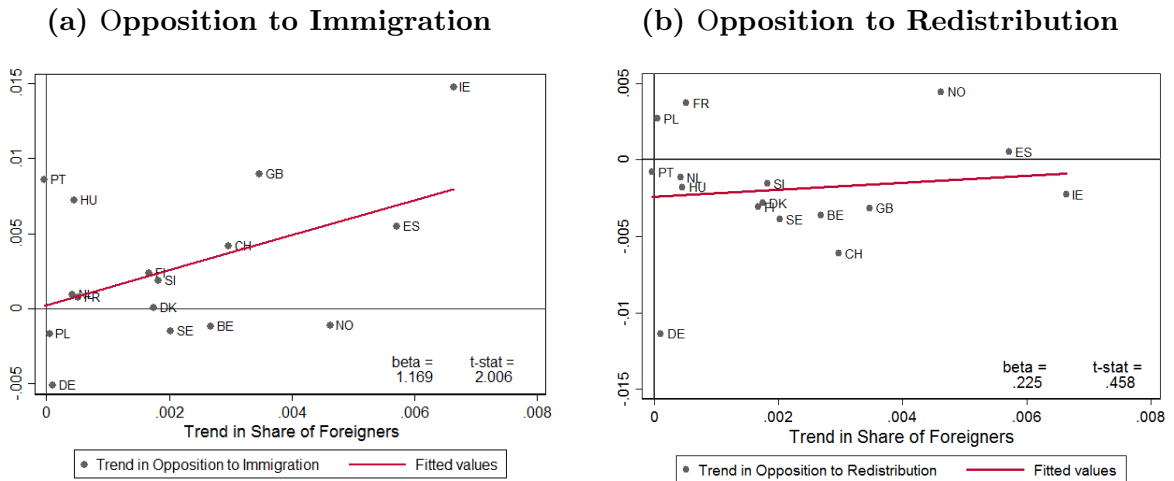


Figure 8: Marginal Effects of Higher Foreign-Born Population

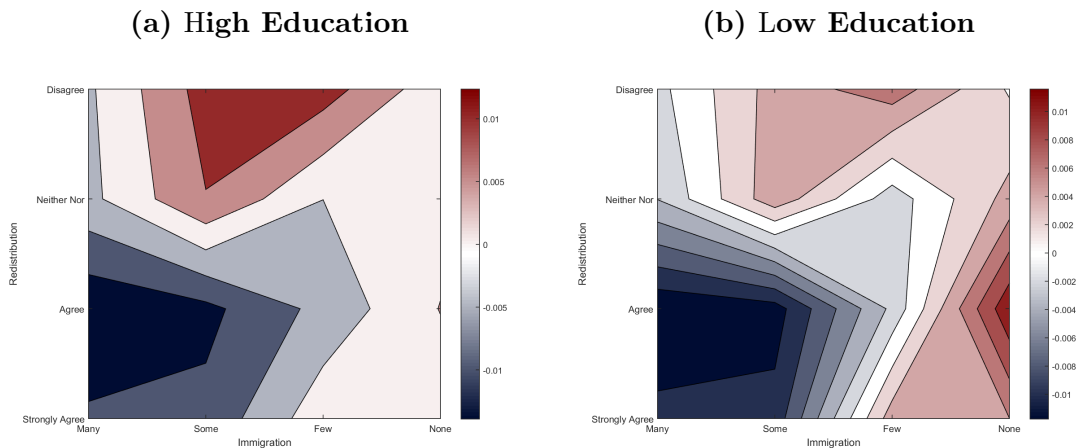
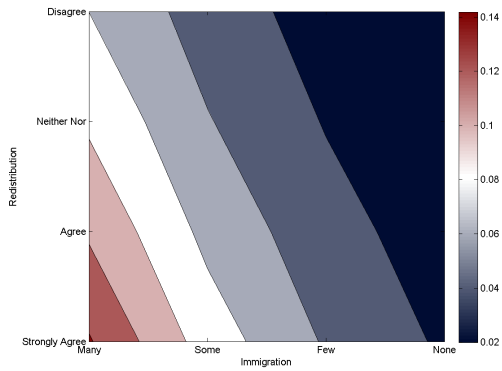
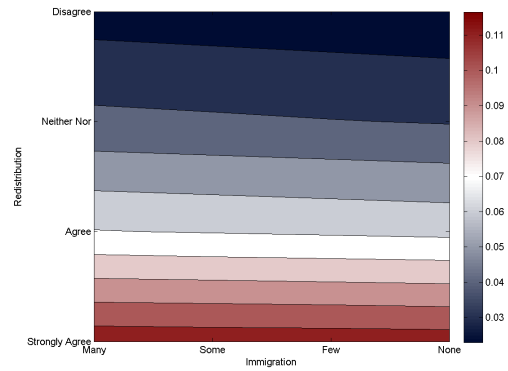


Figure 9: Predicted Policy Preferences by Education

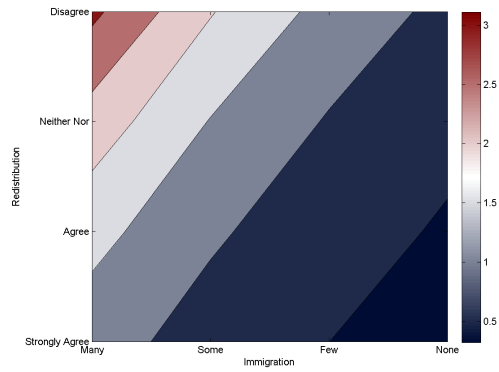
(a) Highly Educated



(b) Low Educated

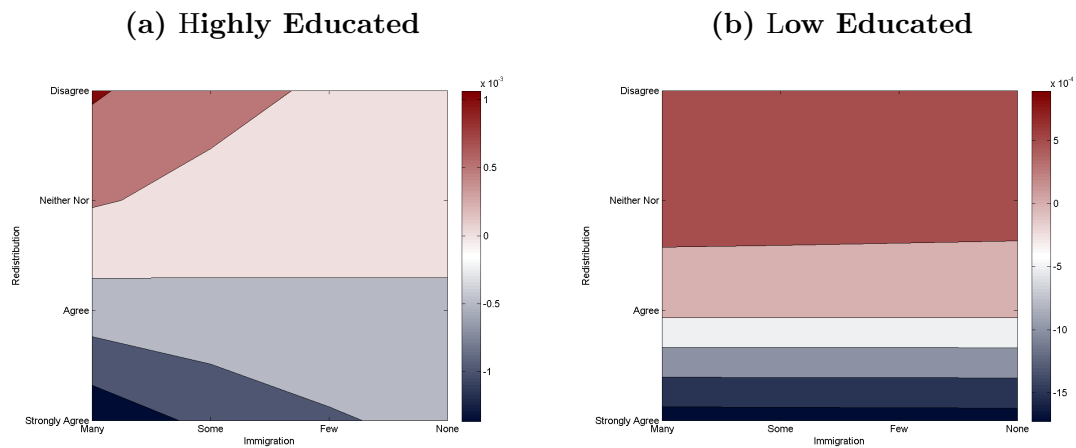


(c) Ratio High-to-Low



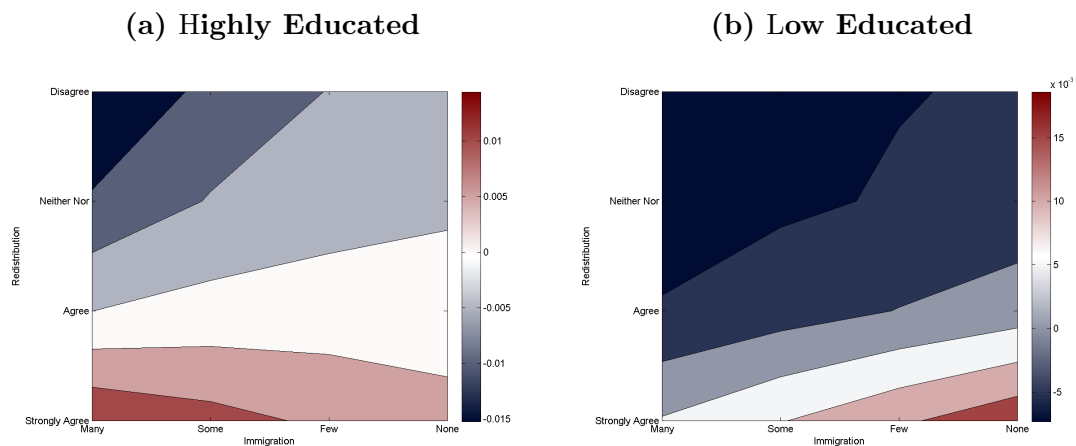
Note: The figures show the model's predicted probability of choosing the different outcomes for those with a high education (Panel a) and low education (Panel b). We also plot the probability ratio of high-to-low educated (Panel c).

Figure 10: Changes in Policy Preferences with High Stock of Foreigners



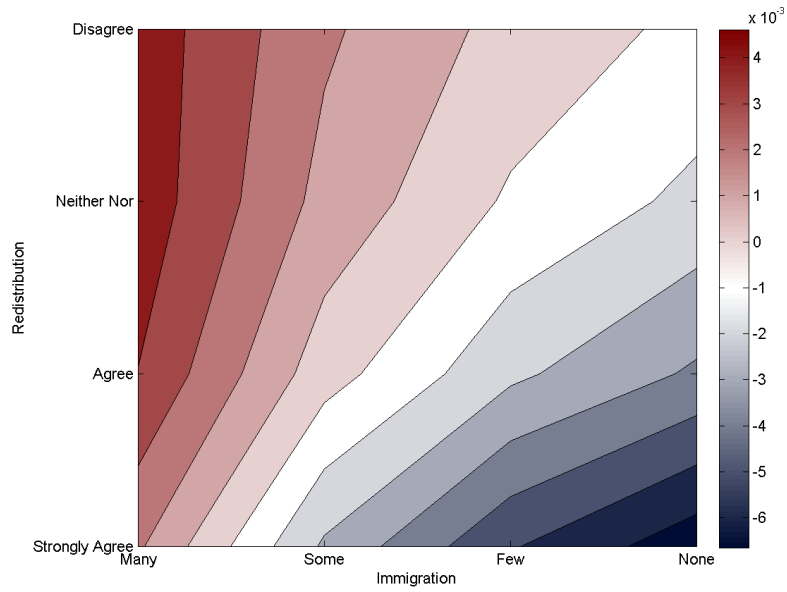
Note: The figures show the model's predicted changes in policy preference when the share of foreign-born citizens increases. The simulated increase mimics the empirically observed change from 5.68% to 8.19%. We show the effect on highly educated individuals in Panel (a) and on low-educated in Panel (b).

Figure 11: Changes in Policy Preferences with High Unemployment



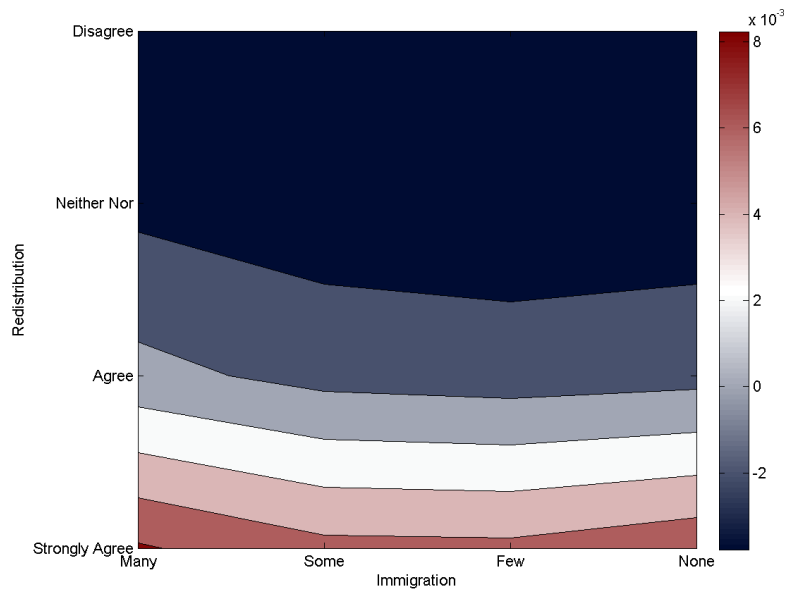
Note: The figures show the model's predicted changes in policy preference when the unemployment rate increases. The simulated increase mimics the empirically observed change from 6.94% to 9.5%. We show the effect on highly educated individuals in Panel (a) and on low-educated in Panel (b).

Figure 12: Total Change in Policy Preference by Higher Education



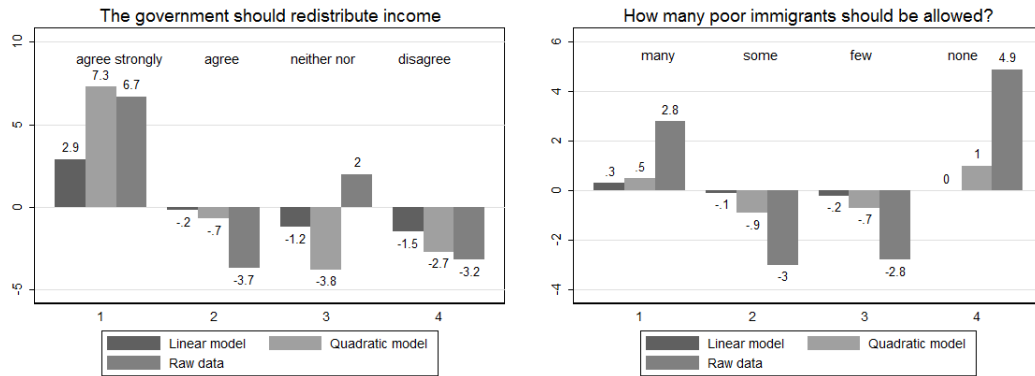
Note: The figure shows the model's predicted changes in policy preference when the share of highly-educated individuals increases. The simulated increase mimics the empirically observed change from 20% to 28.5%.

Figure 13: Simulated Change in Preferences between 2002 and 2012



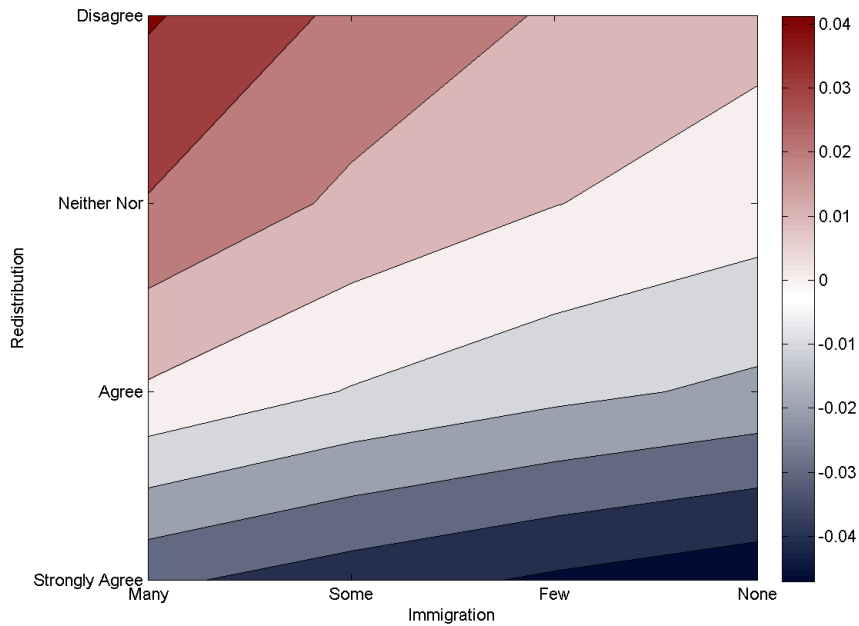
Note: The figure shows the model's predicted changes in policy preference when the share of foreign-born citizens increases from 5.85% to 8.19%, unemployment increases from 6.94% to 9.5% and the share of highly educated individuals increases from 21.38% to 32.60%.

Figure 14: Changes in Policy Preferences: Model versus Data



Note: The figures show changes in the shares of voters who support one of the four possible answers to the question on redistribution (Panel a) and immigration (Panel b). The first bar shows the results from simulating the linear model. The second bar is based on the simulation of a quadratic model. And the third bar shows the observed trends in the ESS data which are also shown in Figure 1.

Figure 15: Simulation of Future Policy Preferences



Note: The figure shows a prediction for the change in total probabilities of choosing policies over immigration and redistribution. For the simulation, we assume average education to follow a linear trend and increase from 28.5% to 37%; the share of foreign born citizens to increase from 8.19% to 10.7%, and the unemployment rate to drop from 9.4% to 4%.

Table 1: Countries and Number of Observations

Country	Total Observations	Observations in Year					
		2002	2004	2006	2008	2010	2012
Belgium	10,808	1,899	1,778	1,798	1,760	1,704	1,869
Denmark	9,334	1,506	1,487	1,505	1,610	1,576	1,650
Finland	12,188	2,000	2,022	1,896	2,195	1,878	2,197
France	11,064	1,503	1,806	1,986	2,073	1,728	1,968
Germany	17,445	2,919	2,870	2,916	2,751	3,031	2,958
Great Britain	13,403	2,052	1,897	2,394	2,352	2,422	2,286
Hungary	9,820	1,685	1,498	1,518	1,544	1,561	2,014
Ireland	13,100	2,046	2,286	1,800	1,764	2,576	2,628
Netherlands	11,586	2,364	1,881	1,889	1,778	1,829	1,845
Norway	10,267	2,036	1,760	1,750	1,549	1,548	1,624
Poland	10,815	2,110	1,716	1,721	1,619	1,751	1,898
Portugal	12,453	1,511	2,052	2,222	2,367	2,150	2,151
Sweden	11,048	1,999	1,948	1,927	1,830	1,497	1,847
Slovenia	8,383	1,519	1,442	1,476	1,286	1,403	1,257
Spain	11,618	1,729	1,663	1,876	2,576	1,885	1,889
Switzerland	10,803	2,040	2,141	1,804	1,819	1,506	1,493

Note: The table shows the number of observations for each country and year. The selection of countries shown here is restricted to those that participated in each of the biannual ESS waves between 2002 and 2012.

Table 2: Distribution of Policy Preferences

Government should redistribute income	How many poor immigrants				Σ
	many	some	few	none	
disagree	2,961	10,408	9,327	3,071	25,767
in %	1.68	5.91	5.29	1.74	14.62
neither nor	2,899	10,911	8,961	2,662	25,433
in %	1.64	6.19	5.08	1.51	14.42
agree	9,113	33,127	26,536	9,530	78,306
in %	5.17	18.79	15.06	5.41	44.43
agree strongly	5,874	16,040	15,947	8,890	46,751
in %	3.33	9.10	9.05	5.04	26.52
Σ	20,847	70,486	60,771	24,153	176,257
in %	11.82	39.99	34.48	13.70	100.00

Note: The table shows how many survey participants preferred each of the sixteen possible policy combinations over immigration ('How many poor people from outside Europe should be allowed to enter the country?') and redistribution ('Do you agree with the statement: The government should reduce differences in income levels?'). In addition to the total number of observations, we also show the share of people choosing a policy combination. We combine the answers 'disagree' and 'disagree strongly' on the redistribution question. The sample covers all biannual surveys from 2002 to 2012.

Table 3: Descriptive Statistics

Variable	Mean	SD	Min	Max	Obs.
Age	47.75	18.56	14	105	183,477
Male	0.47	0.50	0	1	183,982
High Education	0.26	0.44	0	1	183,107
Retired	0.26	0.44	0	1	179,287
Wage Earner	0.59	0.49	0	1	179,287
Benefits Recipient	0.06	0.24	0	1	179,287
Share of Foreigners	0.07	0.05	0.00	0.23	85
Unemployment Rate	0.08	0.04	0.03	0.25	96
Gini Coefficient	0.40	0.10	0.22	0.54	72
Income Ratio P90/P50	2.30	0.33	1.83	3.20	63
Income Ratio P10/P50	0.39	0.06	0.17	0.50	63

Note: The table shows summary statistics for each variable we use in the empirical part. The top part shows data taken from all ESS biannual surveys between 2002 to 2012. In the lower part, we show macroeconomic variables based on data from OECD, World Bank, and UNU WIDER.

Table 4: Determinants of Policy Preferences in ESS Data

Mean of Dep. Var.	Income Redistribution				How Many Immigrants			
	Agree Strongly (0.265)		Disagree (0.710)		Many (0.118)		None (0.137)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Male	-0.024*** (0.006)	-0.022*** (0.006)	0.055*** (0.007)	0.054*** (0.007)	-0.005 (0.005)	-0.006 (0.005)	-0.003 (0.005)	-0.002 (0.005)
Age	0.001*** (0.000)	0.002*** (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
High Education	-0.068*** (0.011)	-0.054*** (0.009)	0.086*** (0.006)	0.080*** (0.007)	0.071*** (0.012)	0.069*** (0.010)	-0.086*** (0.012)	-0.079*** (0.008)
Benefits Recipient	0.080*** (0.013)	0.098*** (0.010)	-0.040*** (0.012)	-0.055*** (0.012)	0.013 (0.008)	0.024*** (0.006)	0.054*** (0.013)	0.047*** (0.011)
Retired	0.017 (0.012)	0.002 (0.006)	-0.030*** (0.007)	-0.024*** (0.005)	-0.003 (0.007)	0.002 (0.004)	0.019** (0.008)	0.011** (0.005)
Unemployment Rate	1.337*** (0.417)	0.490* (0.238)	-0.928*** (0.295)	0.048 (0.105)	0.217 (0.156)	-0.075 (0.284)	0.487 (0.317)	0.457* (0.240)
Share Foreigners	-0.535 (0.454)	0.312 (0.408)	0.136 (0.237)	-0.346 (0.293)	0.170 (0.188)	-0.001 (0.343)	-0.525 (0.371)	0.558* (0.303)
Country FE	-	Yes	-	Yes	-	Yes	-	Yes
Observations	153,745	153,745	153,745	153,745	153,745	153,745	153,745	153,745
R-squared	0.034	0.082	0.033	0.075	0.022	0.060	0.040	0.091

Note: The table shows the results of eight separate OLS regressions. The dependent variable is a dummy variable taking the value one according to the survey answer indicated in the second row of the table. In columns (3) and (4) the dependent variable takes the value one for all individuals who either ‘agree strongly’ or ‘agree’ with redistribution. Unemployment rate and share of foreigners are measured at the country level, all other variables at the individual level. We use sampling weights based on year and country’s population size. Standard errors (in parentheses) are clustered at the country level. Significance at the 10% level is indicated by *, at the 5% level by **, and at the 1% level by ***.

Table 5: Estimation of the Model

	β / (T-stat)
Low Education $\times z \times (1 - \text{Unemployment Rate})$	1.947** (2.75)
High Education $\times z \times (1 - \text{Unemployment Rate})$	-1.679* (-2.02)
Low Education $\times z \times \text{Unemployment Rate}$	76.97*** (9.45)
High Education $\times z \times \text{Unemployment Rate}$	60.61*** (6.53)
Low Education $\times L \times (1 - \text{Unemployment Rate})$	7.563** (2.67)
High Education $\times L \times (1 - \text{Unemployment Rate})$	31.41*** (9.55)
Low Education $\times L \times \text{Unemployment Rate}$	-63.36* (-2.05)
High Education $\times L \times \text{Unemployment Rate}$	-16.53 (-0.48)
Observations	2,336

Note: The table shows the coefficients from an estimation of equation (19). We indicate t-statistics in parentheses and significance at the 10% level are denoted by *, at the 5% level by **, and at the 1% level by ***.

Table 6: Determinants of Charity in the ESS Data

Mean of Dep.Var.	Doing Charitable Work				Donating Money	
	(0.139)		(0.130)		(0.113)	
	(1)	(2)	(3)	(4)	(5)	(6)
Income Decile	0.005*** (0.002)	0.005*** (0.002)	0.004*** (0.001)	0.004*** (0.001)	0.010*** (0.002)	0.010*** (0.002)
Log Age	0.039*** (0.010)	0.043*** (0.011)	0.028** (0.011)	0.034*** (0.011)	0.007 (0.005)	0.013** (0.006)
Male	0.013** (0.006)	0.011* (0.006)	0.002 (0.007)	0.002 (0.007)	-0.031*** (0.007)	-0.032*** (0.007)
High Education	0.062*** (0.006)	0.058*** (0.006)	0.053*** (0.007)	0.051*** (0.006)	0.103*** (0.011)	0.096*** (0.010)
Retired	0.039* (0.020)	0.036* (0.019)	0.023*** (0.007)	0.023*** (0.008)	0.003 (0.006)	0.004 (0.007)
Wage Earner	-0.011 (0.009)	-0.012 (0.009)	-0.016* (0.008)	-0.015* (0.008)	-0.002 (0.008)	-0.002 (0.009)
Benefits Recipient	-0.004 (0.011)	-0.002 (0.011)	-0.020** (0.008)	-0.017* (0.009)	-0.010 (0.011)	-0.008 (0.011)
Support Immigration		0.028** (0.010)		0.028*** (0.007)		0.069*** (0.017)
Reject Immigration		-0.024*** (0.007)		-0.014** (0.006)		-0.038*** (0.012)
Year of Data	2006	2006	2012	2012	2002	2002
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	27,711	26,494	43,066	40,774	25,739	24,339
R-squared	0.072	0.071	0.077	0.077	0.079	0.083

Note: The table shows the results of six separate OLS regressions. The dependent variable is a dummy variable taking the value one if the survey participant does charitable work at least once a month (columns 1-4), or donates money to a humanitarian organization (columns 5-6). Support (reject) immigration is a dummy variable taking the value one if the survey participant chooses many (none) when asked how many poor immigrants should be allowed to enter the country. We use sampling weights based on year and country's population size. Standard errors (in parentheses) are clustered at the country level. Significance at the 10% level is indicated by *, at the 5% level by **, and at the 1% level by ***.

Appendix

A Additional Countries in the ESS

Throughout our paper, we only use data from the European Social Survey (ESS) on those sixteen countries which participated in each of the biannual waves between 2002 and 2012. The table below shows those twenty countries which participated only in some of the six ESS waves. For each country and year, we show the total number of observations available.

Table A.7: Additional Countries and Number of Observations

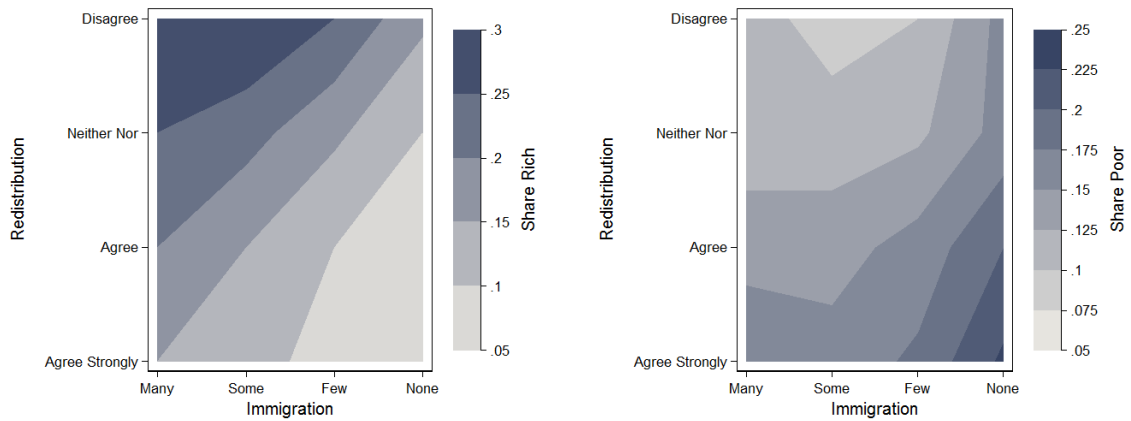
Country	Total Observations	Observations in Year					
		2002	2004	2006	2008	2010	2012
Albania	1,201	0	0	0	0	0	1,201
Austria	6,918	2,257	2,256	2,405	0	0	0
Bulgaria	8,324	0	0	1,400	2,230	2,434	2,260
Croatia	3,133	0	0	0	1,484	1,649	0
Cyprus	4,409	0	0	995	1,215	1,083	1116
Czech Republic	10,799	1,360	3,026	0	2,018	2,386	2,009
Estonia	9,340	0	1,989	1,517	1,661	1,793	2,380
Greece	9,759	2,566	2,406	0	2,072	2715	0
Iceland	1,331	0	579	0	0	0	752
Israel	9,791	2,499	0	0	2,490	2,294	2,508
Italy	2,167	1,207	0	0	0	0	960
Kosovo	1,295	0	0	0	0	0	1,295
Latvia	1,980	0	0	0	1,980	0	0
Lithuania	3,786	0	0	0	0	1,677	2,109
Luxembourg	3,187	1,552	1,635	0	0	0	0
Romania	2,146	0	0	0	2,146	0	0
Russia	10,028	0	0	2,437	2,512	2,595	2,484
Slovakia	8,791	0	1,512	1,766	1,810	1,856	1,847
Turkey	4,272	0	1,856	0	2,416	0	0
Ukraine	9,987	0	2,031	2,002	1,845	1,931	2,178

Note: The table shows the number of observations for each country and year. The selection of countries shown is restricted to those that did not participate in each of the biannual ESS waves between 2002 and 2012.

B Policy Preferences by Income

We show policy preferences in the two-dimensional space by education in Figure 3. For each combination of answers to the question on redistribution and immigration, we calculate the share of high-to-low educated individuals. In the figure below, we plot again the shares but now for individuals with high or low *income*. As before, we show the share choosing a particular combination of preferences over immigration and redistribution.

Figure B.16: Policy Preferences by Income

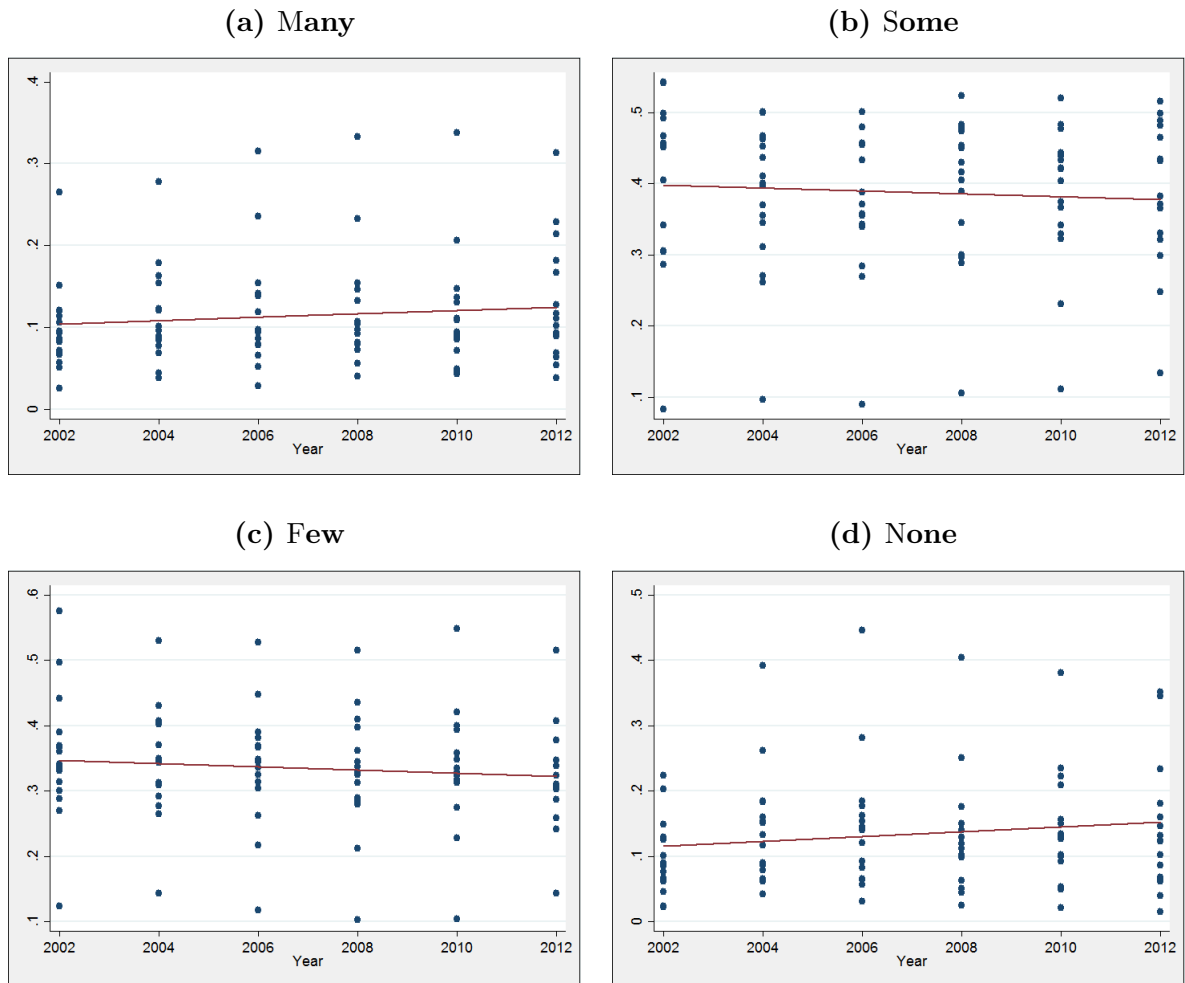


Note: The figures show the ratio of the share of highly educated individuals relative to the share of low-educated individuals in the two-dimensional map. While preferences over immigration are on the horizontal axis, views on redistribution are shown on the vertical axis. On the left, the frequency of individuals with high income, on the right individuals with low income are shown.

C Trends in Policy Preferences

In Figure 2, we show how policy preferences changed in the sixteen countries that participated in each of the ESS waves between 2002 and 2012. This provides information on the trend aggregated over all countries and the entire time period. In Figures C.17, C.18, C.19 and C.20 below, we show how policy preferences changed year-by-year and in each country.

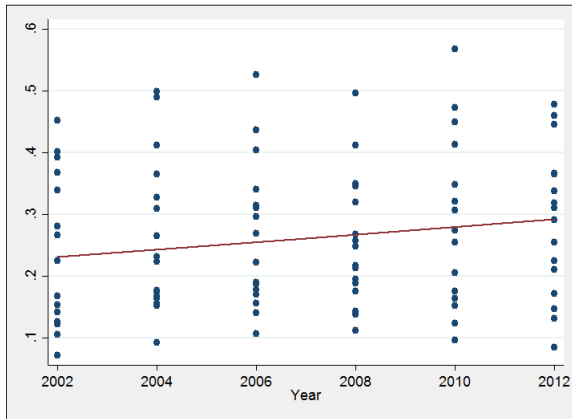
Figure C.17: Trends in Policy Preferences over Immigration by Year



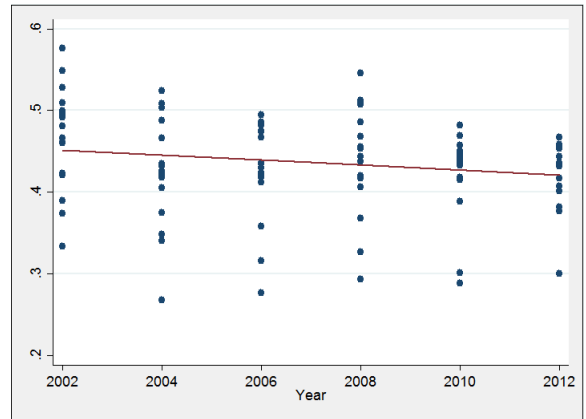
Note: The figure shows the share of survey participants selecting a given answer to the question on immigration. Each dot refers to one country-year observation.

Figure C.18: Trends in Policy Preferences over Redistribution by Year

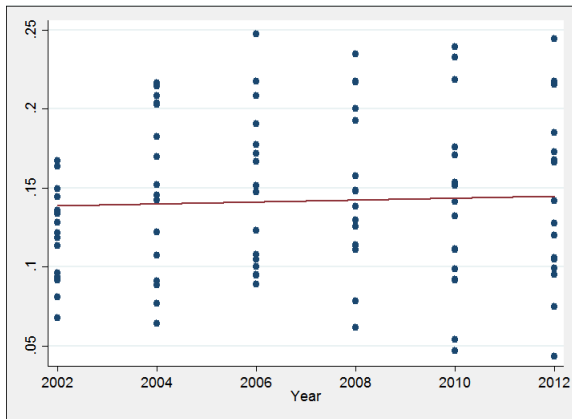
(a) Agree Strongly



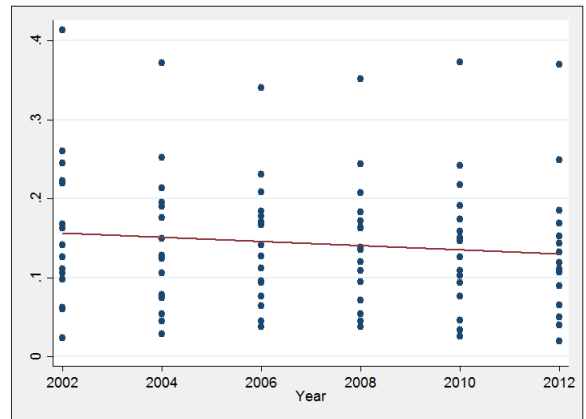
(b) Agree



(c) Neither Nor

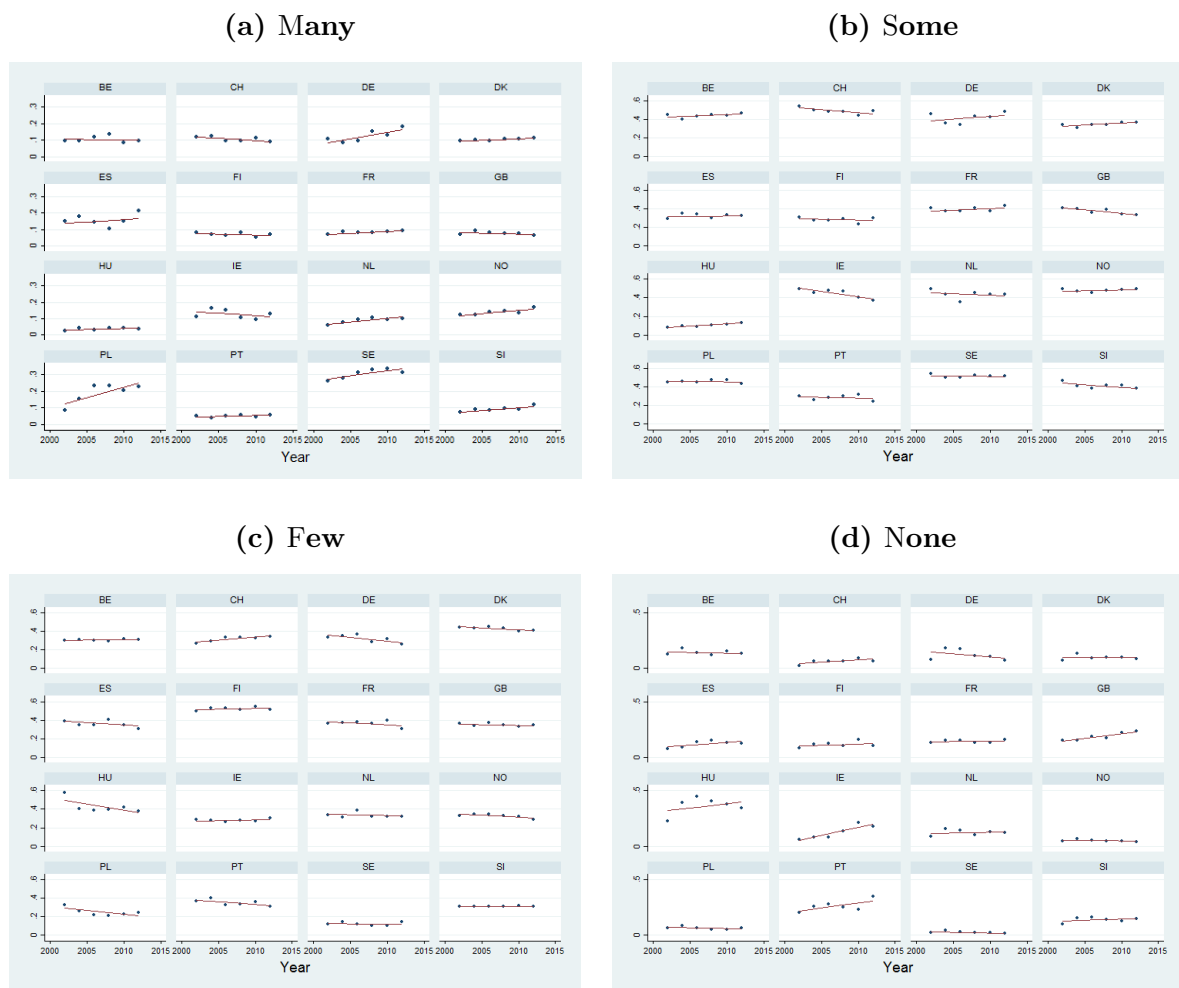


(d) Disagree



Note: The figure shows the share of survey participants selecting a given answer to the question on income redistribution. Each dot refers to one country-year observation.

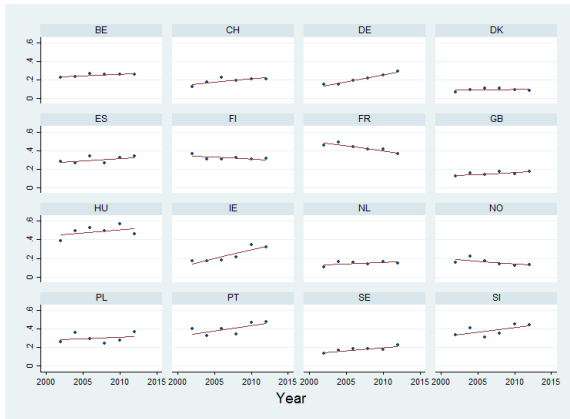
Figure C.19: Trends in Preferences over Immigration by Year and Country



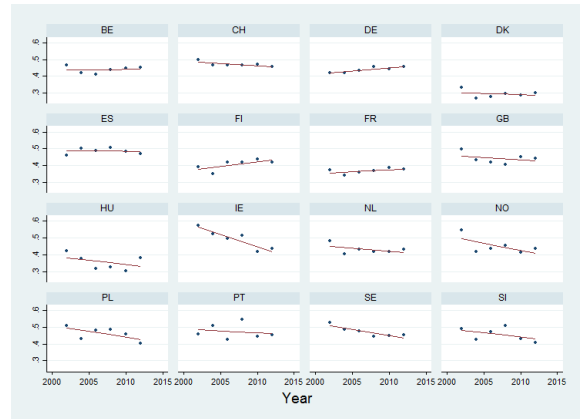
Note: The figure shows the share of survey participants selecting a given answer to the question on immigration.

Figure C.20: Trends in Preferences over Redistribution by Year and Country

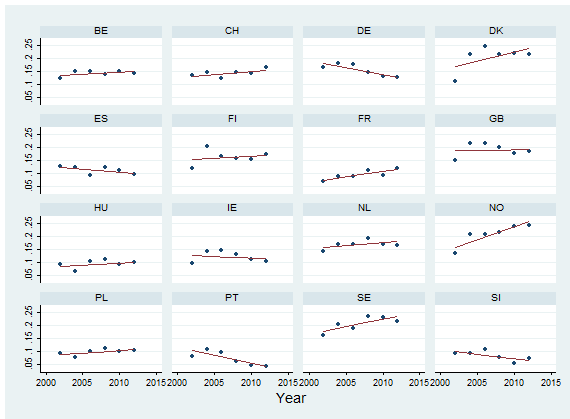
(a) Strongly Agree



(b) Agree



(c) Neither Nor



(d) Disagree

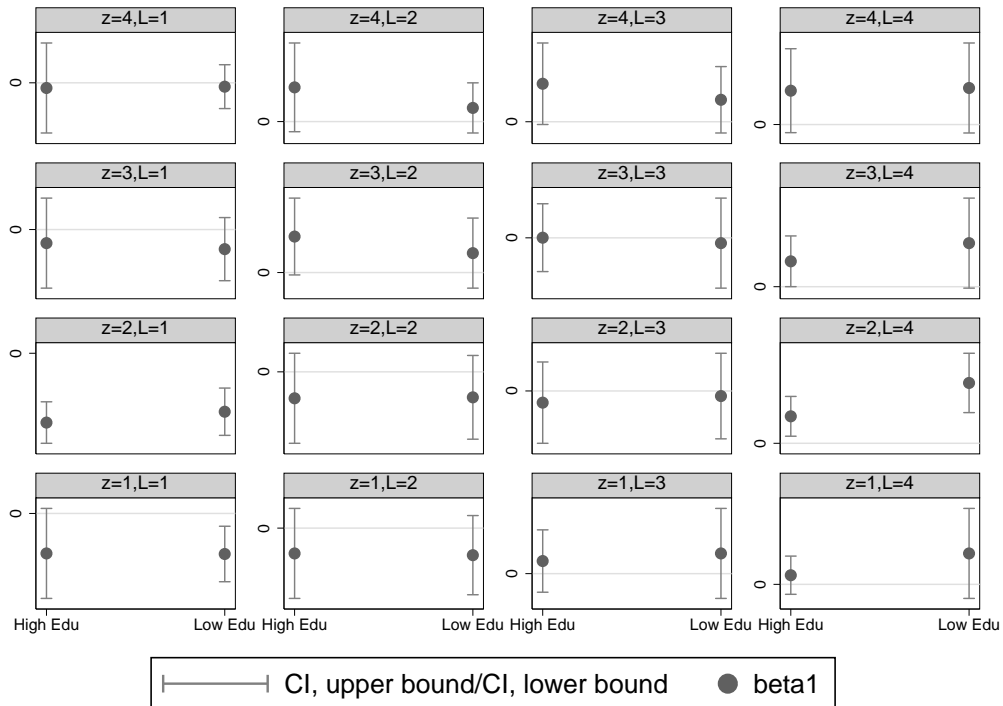


Note: The figure shows the share of survey participants selecting a given answer to the question on income redistribution.

D Regression Output from the Multinomial Logit

Figures 8 and 6 illustrate the estimated marginal effects of a higher share of foreign-born population and a higher rate of unemployment from multinomial logit regressions, using as a dependent variable the probability of a survey participant choosing one of the sixteen policy combinations. In order to provide the point estimates as well as the confidence intervals, we show the regression output in Figures D.22 and D.22 below.

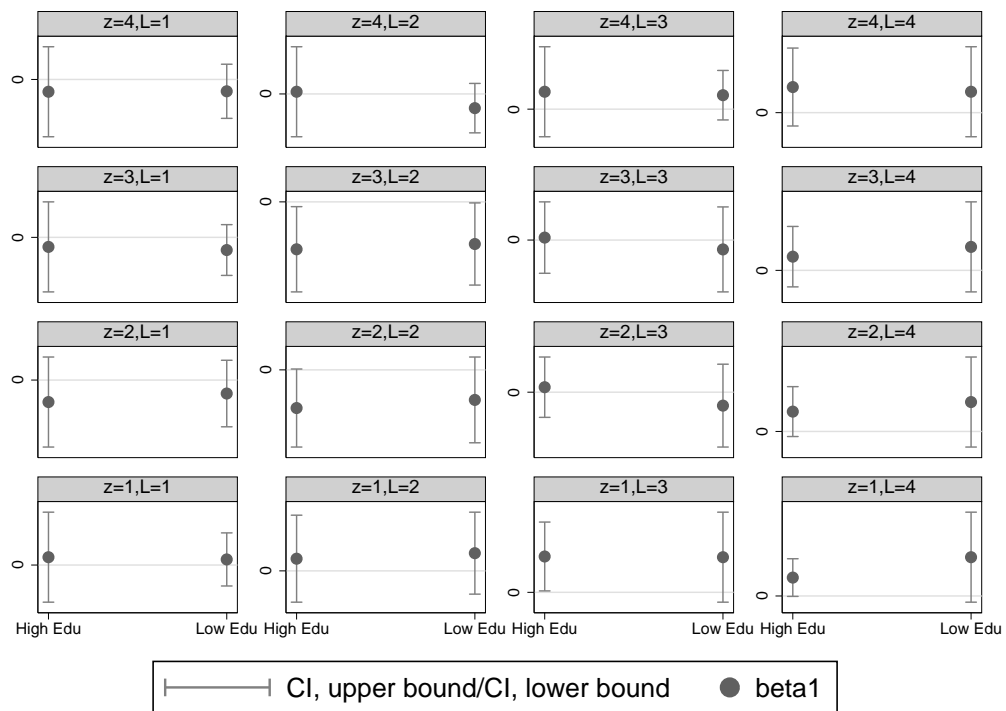
Figure D.21: Marginal Effects of Higher Share of Foreigners



Graphs by Policy Preference

Note: The figure shows the estimated marginal effects (at mean values of covariates) from the multinomial Logit regressions. On the horizontal (vertical) axis, there are four possible answers to the question on immigration (redistribution). The vertical bars indicate 95% confidence intervals.

Figure D.22: Marginal Effect of Higher Unemployment Rate



Graphs by Policy Preference

Note: The figure shows the estimated marginal effects (at mean values of covariates) from the multinomial Logit regressions. On the horizontal (vertical) axis, there are four possible answers to the question on immigration (redistribution). The vertical bars indicate 95% confidence intervals.

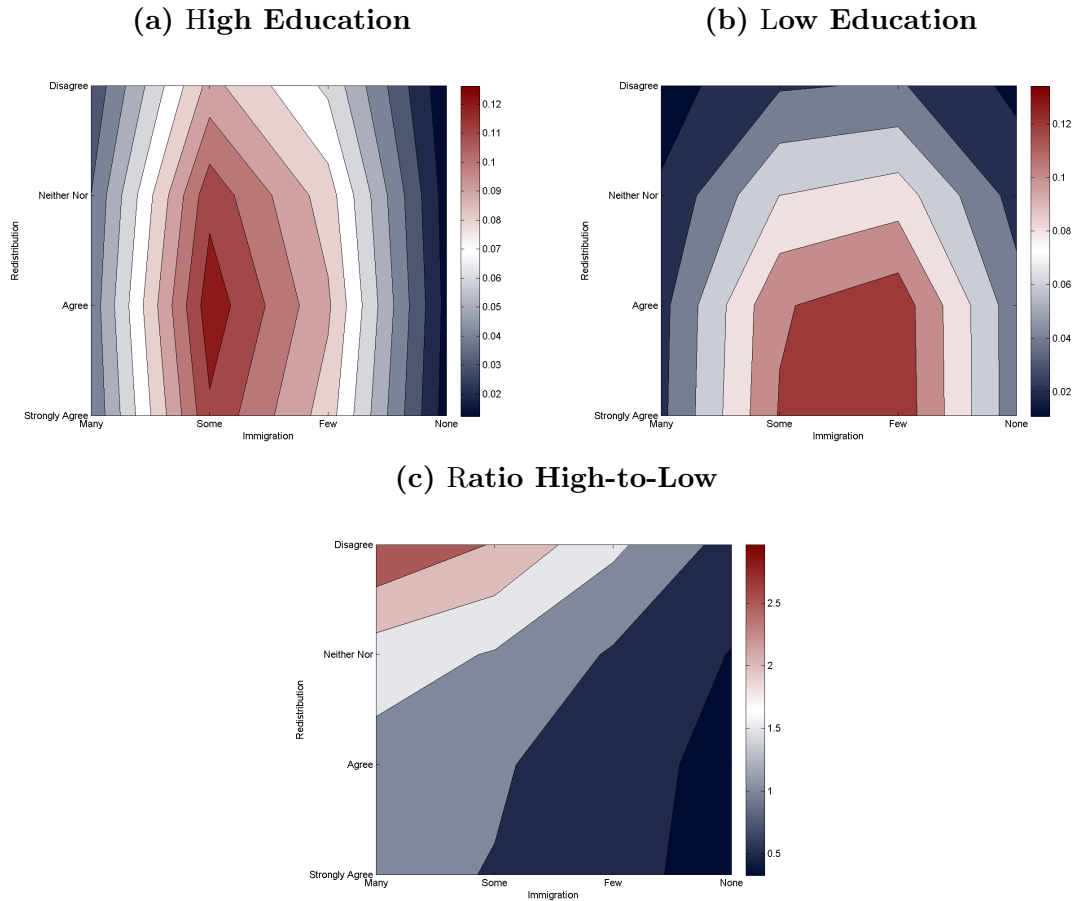
E Quadratic Utility Function

The model in section 4 use a linear approximation to utility, which might be seen as a too simple approach. As a robustness check, the following sections redo the analysis using a quadratic approximation of utility. In general, the quadratic gives a quantitatively better fit, but the qualitative results are similar. In total, the quadratic model gives predicts an increase in L4 by 1.05 percentage points, and an increase in L1 by .55 percentage points. Finally, the quadratic version of the model predicts a 7.27 percentage point increase in Z1, i.e. the most favorable preference towards redistribution.

E.1 Static Preferences

Similar to Figures 9 which is based on the linear model, we show static preferences over immigration and redistribution in the figure below.

Figure E.23: Predicted Policy Preferences by Education

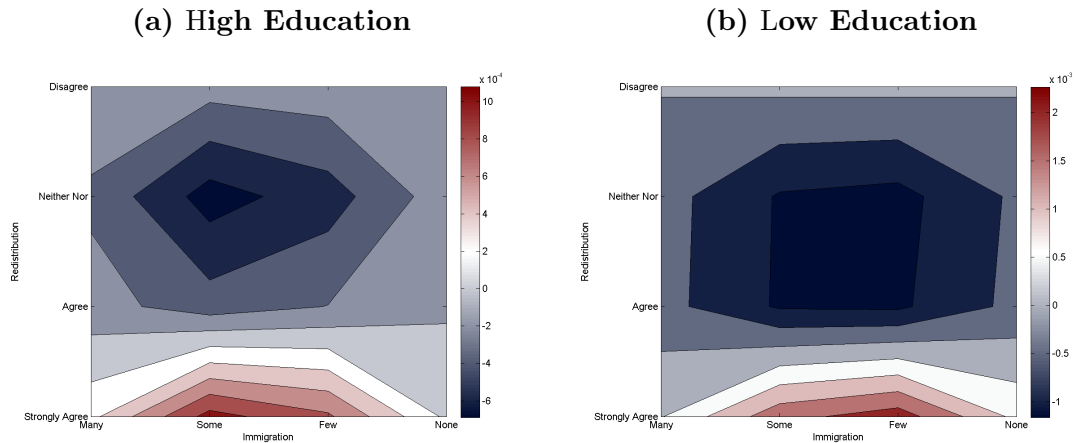


Note: The figures show the model’s predicted probability of choosing the different outcomes for those with a high education (a) and low education (b). We also plot the probability ratio of high-to-low educated (c). The simulation is based on a quadratic version of our model.

E.2 Effects of Macroeconomic Trends

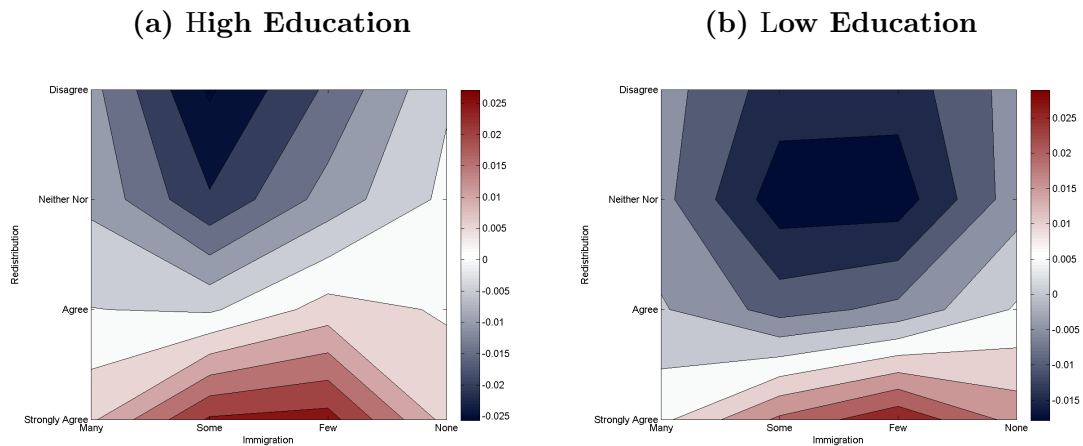
Adding to the simulation of the linear model show in Figures 10, 11, and 12, below we show how policy preferences change in the quadratic model if the share of foreign-born population, the unemployment rate, or the share of highly educated increases. In addition, following Figure 13 which is based on the linear model, we show the total effect of all macroeconomic variables using a quadratic model in the figures below.

Figure E.24: Changes in Policy Preferences with High Stock of Foreigners



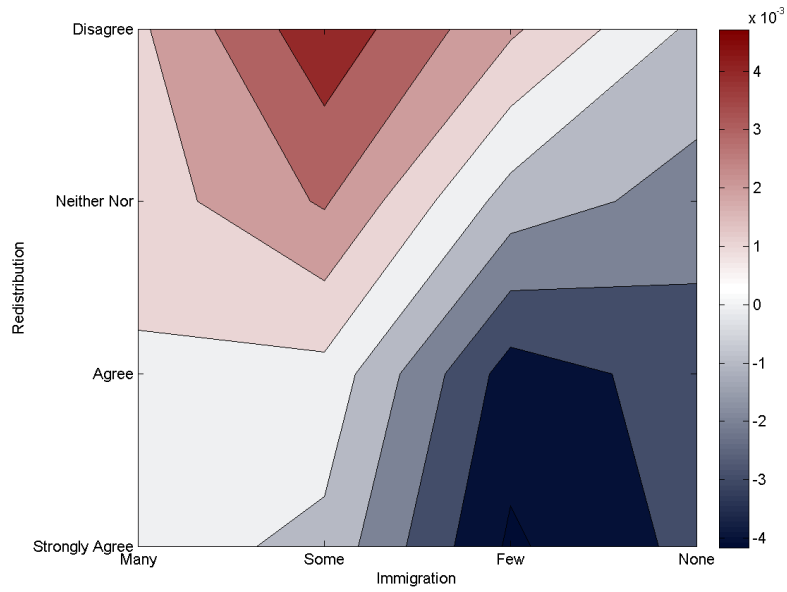
Note: The figures show the model's predicted changes in preference probabilities when the stock of foreign born citizens increases from 5.68% to 8.19%. High education on left panel and low education on right panel. The simulation is based on a quadratic version of our model.

Figure E.25: Changes in Policy Preferences with High Unemployment



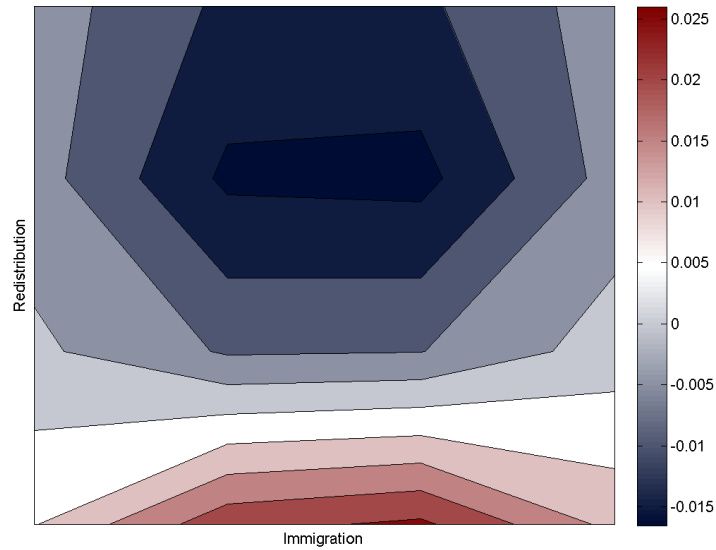
Note: The figures show the model's predicted changes in preference probabilities when the unemployment rate increases from 6.94% to 9.5%. High education on left panel and low education on right panel. The simulation is based on a quadratic version of our model.

Figure E.26: Change in Policy Preference with Increasing Education



Note: The figure shows the change in total probabilities when average education increases from 20% to 28.5%. The simulation is based on a quadratic version of our model.

Figure E.27: Simulated Change in Preferences between 2002 and 2012



Note: The left panel show the change in total probabilities when stock of foreign born citizens increases from 5.85% to 8.19%, unemployment increases from 6.94% to 9.5% and average education increases from 21.38% to 32.60%. The simulation is based on a quadratic version of our model.

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