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Master Degree Project in Economics

Explaining Support for Radical Right-wing Parties

The Swedish case

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Abstract

In this study panel data on the three latest Swedish elections is used to empirically analyze the effect of unemployment rate and income on vote shares for the radical right-wing party, *Sweden Democrats* (SD). While high income levels are associated with low support for SD at national level elections, high unemployment rate is associated with high support for SD at municipality level elections. Differences in political responsibilities between the national government and the local ruling municipality, can potentially explain the different patterns observed at national and municipality level elections. The results also show high proportion of arriving refugees in the municipality is associated with high support for SD at national level elections.

Keywords: Radical Right, Nationalism, Modernization Losers' Thesis

JEL classification: D720, A130

1   Introduction

Xenophobia is growing in Europe and Sweden is not an exception; Sweden Democrats grew with 7,16 % from the last national election and is now the third largest party in Sweden. The modernization losers' thesis and the ethnic competition thesis are two popular explanations for this phenomena. The former predict as the country goes from industrial to postindustrial society a new underclass will be created and the voters for the radical right-wing party are unemployed people, low educated and unskilled workers with fear of losing jobs in the near future (Betz, 1994). The latter predicts that the radical right-wing party find support among individuals who feel threatened by immigrants, because they see them as competitors over scarce resources in for example the labor or housing market (Olzak, 1992; Kriesi, 1999; Koopmans, Statham & Giugni, 2005). Sweden was, for a very long time, one of a few exceptions where radical populist parties stayed highly marginalized in elections. This ended during the national election in 2006, when SD passed the threshold for receiving government funded party provisions and in 2010, when they received seats in the national parliament.

The current study uses panel data on the 290 Swedish municipalities during the three most recent election years, which leads to 870 municipality-year observations. The aim is to empirically investigate the effect of unemployment rate and income level on vote shares for the radical right-wing party in Sweden, The Sweden Democrats (SD). Other explanatory variables, suggested by theory as factors for explaining the popularity of radical right-wing parties, are used as a control variables and further provide interesting insights on the topic.

Similar studies on support for radical right-wing party in Sweden are Rydgren & Ruth (2011) and its sequel Rydgen & Ruth (2013). The former study analyzes the electoral support for SD in the 2006 and 2010 local and national elections using cross-municipality data (N=290) and they find that support for SD is positively correlated with the unemployment rate. The latter repeats the analysis for 2010 using electoral district data (N=5668) and they once again find a positive correlation between unemployment rates and voter support for SD and also negative correlations for average income within the voting district and support for SD.

The current study has three main contribution in relation to the existing studies in the area. First, there are few studies on support for radical right-wing parties with main focus on the two economic explanatory variables; unemployment rate and income level. Second, the methodology used in this study enables the use of municipality fixed effects to control for unobserved heterogeneities, which yields a unique opportunity to properly test different theories and hypotheses. Third, other estimation issues such as differences between radical right-wing parties across countries and highly aggregated data with limited information, commonly found in cross-country analyses, are also avoided in this setting.

It is found that high income levels are associated with low support for SD in the national election. On the other hand, higher unemployment rate is associated with higher support for SD in *the municipality election*. These two separate findings give support for the modernization losers' thesis: unemployed people and individuals in low-skilled occupations are more likely to vote for the radical right-wing party. The explanation for these separate results at different electoral levels is probably due to differences in political responsibilities and opportunities between the national government and the local rule in the municipality. In line with the ethnic competition thesis it if found that municipalities with high share of immigrants and/or refugees are associated with high support for SD.

The rest of this paper is structured as follows. Section 2 reviews relevant literature in the area and also provides brief historical background of SD and information on elections and decision making in Sweden. Section 3 discusses the data and provides some descriptive evidence. Section 4 discusses the methodology used. Section 5 presents the main results together with robustness checks and Section 6 concludes.

2 Literature Review

There are many possible explanations for the increased voter support for radical right-wing parties throughout Europe. In line with Rydgren (2007) this section will be divided into two major parts. The first part involves the so-called supply-side factors such as party leader characteristics and party organizational factors. The second part involves the so-called demand side factors, such as changing attitudes, preferences and beliefs among voters.

2.1 *Supply-Side Factors*

Kitschelt and McGann (1995) argues that a convergence in the political positions between the main moderate left and right wing parties is a pre-condition for the radical right-wing party to be successful in the post-industrial society. The empirical literature shows mixed results for this theory. Norris (2005) uses cross-country data covering thirty-nine countries in her study and find no support for the convergence thesis, while Abedi (2002) who studies sixteen advanced-industrial democracies, most of them European, finds supporting evidence for the hypothesis. These two studies do not only differ in countries studied but also in the period covered, which make it difficult to compare them.[1] Another issue that might explain this mixed result could be that it is not always clear where to put a party on the scale from the left to the right, since voters perception and experts' opinion about the party might differ (Rydgren, 2007).

Another political climate that could explain the success of radical right-wing parties is shown by Arzheimer and Carter (2006); they find that in a political climate where a grand coalition government exists before the election increases the odds for the radical right-wing party to be successful in the election. The possible explanation for this is that the mainstream right party in a coalition will not be able to enact all of its preferred policies and thus will some supporters feel distant from the party. These voters may then rather vote for the radical right-wing party, which is not in a coalition and has right-wing policies.

Party organization and charismatic leaders are vital factors in order to mobilize voters (Kitschelt & McGann, 1995; Eatwell, 2003). Lubbers, Gijsberts and Scheepers (2002) find that in countries where radical right-wing parties have more favorable party characteristics, such as organizational strength, support for these parties is larger.

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[1]Norris study includes many (not all) Western European countries and Anglo-American democracies, Latin American countries and also some post-Communist states. These countries are collected from the European Social Survey 2002 and the Comparative Study of Electoral Systems 1996-2001. While Abedi use data sets from three different time periods, 1945–1974, 1982 and 1993.

2.2 *Demand-Side Factors*

The social breakdown thesis is one of the earliest explanations of the emergence of radical right-wing parties and it states that as traditional structures disappears, such as class or religion, many individuals will get the feeling of not belonging to anywhere in the society. Some of these individuals will find affiliation in ethnic nationalism (see, e.g., Kornhauser, 1959). There is, however, little empirical support for this theory and it is thus difficult to conclude that the voters for radical right-wing parties will mainly be found among isolated individuals who feel that they do not belong in the society (Eatwell, 2003).

Similar to the social breakdown thesis, the relative deprivation thesis states that voter support for radical right-wing parties emerges from frustration among individuals who have feelings of relative deprivation. Disappointing comparisons with one's own past (sudden change in one's life that causes a deviation from the expected) or with other social reference groups causes these feelings (see, e.g., Runciman 1966). Werts, Scheepers, and Lubbers (2012) find that individuals who perceive deprivation in their present socio-economic situation have a higher degree of political distrust and are thus more likely to vote for the radical right-wing party.

The protest vote theory states that people vote for the radical right-wing party out of political dissatisfaction; the voter does not necessarily share the political point of view with the radical right-wing party but rather want to make a statement against the ruling power (Mudde, 2007). It has been found that this theory can explain at least some of the variation in radical right-wing voting (Ivarsflaten, 2005; Lubbers et al., 2002).

The modernization losers' thesis is a more popular theory for explaining the emergence of voter support for new radical right-wing parties and is more or less a combination of the social breakdown thesis and the relative deprivation thesis. The idea is that there will be losers when a country goes from industrial to postindustrial society, since some individuals are unable to cope with the fast changing economic, social, and cultural modernization. These individuals form a new underclass and they are characterized as unemployed people, low educated and unskilled workers with fear of losing their job in the near future (Betz, 1994).

Minkenberg (2000) argues for a broader definition of the modernization losers' theory where 'welfare chauvinists' should be included; individuals who are rather secure, in terms of employment and wealth, but perceive that they still can lose something. Language skills, education etc. are increasingly essential in the postmodern society and thus individuals from this stratum can feel that their social and cultural

capital is shrinking. In order to defend themselves, these 'welfare chauvinists' tend to rigid thinking and traditional values; characteristics other radical right-wing voters share.

In line with the modernization losers theory, Ivarsflaten (2005) finds that owners of small businesses and blue-color workers in Denmark and France are the two most likely occupational groups to vote for radical right-wing parties. On the other hand Lubbers and Scheepers (2000) find, in their multilevel analysis, that manual workers, lower white collar workers, and people with lowest level of education are more likely to vote for radical right-wing parties in Germany. They also find that unemployed people are more likely to vote for radical right-wing parties. However, on the regional level they find a negative relationship between unemployment and votes for the radical right-wing party. This mixed evidence for the modernization losers theory was also found by Lubbers et al. (2002) who investigate differences in extreme right-wing voting behavior among 16 Western European countries. Interestingly, Lubbers and Scheepers (2000), find that as the unemployment rate increases in an area the likelihood for voting for the radical right-wing party increases.

Lubbers et al. (2002) also find that people with lower level of education are over-represented in number of voters for radical-right wing parties. Unlike the Betz version of the modernization losers' thesis, there are several studies suggesting that the new radical right receives its strongest support from the mid-school educated stratum (Arzheimer and Carter, 2006; Jocelyn, 2005). The explanation for this could be that the 'welfare chauvinists' described by Minkenberg, who are rather secure in terms of employment, are more likely to be in this stratum.

The Ethnic Competition Thesis is another theory explaining why radical right-wing parties gain popularity among voters. Some people feel threatened by immigrants and see them as competitors over scarce resources in for example the labor or housing market. People who are unskilled and have lower level of education are most likely the ones to face this kind of competition. The thesis also suggests that radical right-wing parties will be more successful in areas with many immigrants, since the competition will be larger there (Olzak, 1992; Kriesi, 1999; Koopmans et al., 2005).

Several studies have found that the voter support for radical right-wing parties is positively correlated with the number of immigrants in a country (Knigge, 1998; Lubbers et al., 2002) and with the number of asylum seekers (Swank & Betz, 2003). Rydgren (2007) argues, however, that these studies only give a weak support for ethnic competition since it is difficult to conclude from country-level data that voters living in ethnically heterogeneous countries also live in ethnically heterogeneous local areas.

An example of a more fine grained analysis, which looks at more local settings, is given by Rydgren and Ruth (2011) who investigated the electoral success of Sweden Democrats in 2006 and 2010 elections in Sweden. They found a positive correlation between the total proportion of immigrants in a municipality and the electoral support for the Sweden Democrats. However, when dis-aggregating by country of origin, they found that the results are mainly driven by immigrants from EU/EFTA.

Rydgren and Ruth (2011) further argue about the importance of including crime rate in the analysis, since crime do not only generate feeling of insecurity but also worsen the sense of being left behind (i.e., feeling socially marginalized). Law and order is also one of Sweden Democrats' profile areas.

Rydgren and Ruth (2013), a sequel to *Rydgren and Ruth (2011)*, go even one step further to analyze the electoral support for the Sweden Democrats in the 2010 local and national elections at the electoral district level. Their findings suggest a positive correlation between unemployment rates and voter support for the Sweden Democrats and negative correlations for average income within the voting district and support for Sweden Democrats. Furthermore they confirm their previous results, it is the number immigrants from Nordic countries and EU/EFTA and not the number of immigrants from non-European that is associated with higher vote support for SD.

2.3 *Background*

Sweden Democrats was formed in 1988 and is the only right-wing populist party to gain national significance in Sweden, besides the party New Democracy which obtained 6.7 percent of the votes in the 1991 parliamentary election. However, in 1994 the New Democracy only received 1.5 percent of the votes in the national election and disappeared shortly thereafter. Sweden Democrats originates from Swedish fascism and in the beginning there were clear parallels between them and openly Nazi, anti-democratic, and fascist group formations (Larsson and Ekman, 2001). In the second half of the 1990s, the party started to work on establishing a better image. In 1996 the new party leader, Mikael Jansson, put a ban on wearing uniforms and in 1999 the Sweden Democrats openly disassociated themselves from Nazism.

The encouragement of a more moderate political view did not happen without friction. In 2001, the party split when the more strict members of Sweden Democrats founded the National Democrats (Rydgren and Widfeldt, 2004). The National Democrats have, however, stayed electorally marginalized, while the Sweden Democrats have continued to grow. In 2006 they received 2.9 percent of the vote shares in the national election and in 2014 the shares increased to 12.9 percent. The increased popularity is

largely attributed to Jimmie Åkesson, who replaced Jansson as party leader in 2005 and continued to reform the party to make it more similar to successful radical right-wing parties in Western Europe, such as The Danish Peoples Party (Rydgren and Ruth, 2011).

Elections and Decision making in Sweden

Every four year on the third Sunday in September, Swedish citizens go to the polls and cast their votes in elections at three administrative levels: the national, regional and local election. The highest level of decision making takes place in the national parliament, while regional level decision making is divided into twenty-one county councils. Local authority is in turn divided into 290 municipalities.[2] The county councils' main responsibility is to provide health care, while the municipalities are mainly responsible for providing social services, such as primary and secondary schooling, elderly and child care, civil protection and waste disposal. County councils and municipalities are further allowed to engage in non-profit economic activities and take measures such as promoting business in the municipality or county council (SFS 1991:900).

Most voters choose to vote for the same party in the different levels (Oscarsson and Holmberg, 2008). It has, however, become increasingly popular to vote for different parties at the different electoral levels in the most recent elections. There are several possible explanations for this. Voters might hesitate to vote for a party that face electoral marginalization in for example the municipality election, then it could be more beneficial to only vote for the party in the national election. Another explanation could be that the election manifesto for a party can seem more attractive at one electoral level than another.

3 Data and Descriptive Statistics

The panel data set used for this paper includes information on election results and various socio-economic variables at the municipality level for the election years of 2006, 2010 and 2014 in Sweden. The data set is highly balanced, because all 290 municipalities in Sweden are covered with no missing observations and this is one of the major advantages in this analysis.

Data on election results is obtained from the Swedish Election authority and contains information about the amount and shares of votes for all parties in Sweden in all three elections. In Table 1 it is seen that the dependent variable of interest, vote share

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[2]It is further possible to divide the 290 municipalities into about 5700 electoral districts.

for Sweden Democrats in the national election, has a big variation; it ranges from the minimum of 0.32 percent to the maximum of 29.96. Over the past three elections in the 290 municipalities the average support for the Sweden Democrats is about 8.3 percent in vote shares.

As shown in Table 1, vote share for SD at municipality level election is lower than the share at the national elections. To further investigate this I look at the mean difference in vote shares for SD between the national and municipality level elections over time. In 2006 the difference was only 0.6 percent, while in 2014 the difference in vote shares is 5.3 percent. In other words some individuals want to see SD rule in the government, but not in their local city council.

In Table A1 in the appendix an even more detailed summary statistics is shown and in this table it is possible to observe where most of the variation in variables of interest originates from; either between municipalities or within the municipality. For example the vote share for the Sweden Democrats, has a bigger standard deviation within the municipality than between. This indicates that there are bigger differences within municipalities over the election years than between them in the support for Sweden Democrats. The opposite is found for unemployment rate of young, education, median income and total amount of crimes in the municipality. This is expected since these variables are not likely to change drastically over the years, but rather vary between the different municipalities.

Data on unemployment is obtained from the Swedish Public Employment Service and it contains information about total unemployment rate in the population for ages 16-64, as well as the unemployment rate for young people (age 18-24). For both age groups it is possible to further disaggregate the variables by gender. It is observed in Table 1 that the unemployment rate for young people and especially young males is very high with an average of 11.10 and 12.31 percent respectively. The change in unemployment rate from the year prior to the election is included in order to verify or dismiss the findings of Lubbers and Scheepers (2000) that unemployment rate yield insignificant results, while change in unemployment rate have an effect on vote shares for the radical right-wing party. All four measures of change in unemployment rate have a negative minimum and a positive maximum, indicating that there are both municipalities that experienced a decrease or an increase in unemployment rate.

Data on the second explanatory variable of most interest, income, is obtained from Statistics Sweden. Mean and median income in the municipality are included in the data in thousands of Swedish crowns and mean income is noticeable larger than median income suggesting that the income distribution is right skewed. This is not an

unexpected finding, since it is often the case that there exist a small rich elite in the society driving the mean income upwards. It is also seen that on average, about 48.9 percent of the population in a municipality earn below the national median income level.[3]

Data on immigration and foreign born population is obtained from Statistics Sweden and data on refugees is obtained from The Migration Board. Due to data limitation, the variable for immigration will not distinguish between Nordic, EU and non-EU immigrants as in Rydgren and Ruth (2011). Data on immigration by country of origin would have been useful in testing whether there are some sort of discrimination against certain types of immigrants. Non-European immigrants are often the target of radical right-wing propaganda (especially immigrants from Islamic countries). However, data on arriving refugees to the municipality could work as a proxy for non-European immigrants, since the majority of refugees coming to Sweden are from countries outside of Europe.[4] All variables for immigration and refugees are in percent of the population in the municipality to account for the fact that municipalities differ in size.[5] It can be seen in Table 1 that the proportion of arriving refugees in the average municipality is only 0.38 percent, while the proportion of population born abroad is 11 percent.

Another interesting variable obtained from Statistics Sweden is population density, which enables me to investigate whether or not the support for Sweden Democrats varies between rural and urban areas. Population density varies a lot across municipalities ranging from a minimum of 0.2 up to the maximum of 5703.6 inhabitants per square kilometer. Three indicators of education level were also obtained from Statistics Sweden, to capture the proportion of individuals with low, mid and high level of education. Most of the population in the average municipality is found in the stratum of middle level of education (62 percent), i.e., those having more than pre-secondary education, but less than 3 years of post-secondary education. The education level varies a lot in the sample. The share of people with higher level of education is lower than 6 percent in some municipalities, while in other municipalities the share exceeds 40 percent of the total population.

Data on crime is obtained from the Swedish National Council for Crime Prevention. It is observed in Table 1 that the number of crimes observed per 1000 residents

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[3]In 2006 the national median income was 209,3 thousands of Swedish crowns and the numbers for 2010 and 2014 were 232,9 and 252,5 respectively

[4]According to statistics from The Migration Board, in 2014 were 82 percent of the newly arrived refugees in the municipality from non-European countries.

[5]Except for the immigration surplus variable, which is calculated as immigration minus emigration.

varies a lot in the sample; from a minimum of 36 crimes to the maximum of 232 crimes reported. The most common crimes reported seems to be theft, robbery and receiving crimes with an average of 41 offenses per 1000 residents reported.

The sum of vote shares for Social Democrats and the Left party in the municipality in the previous election is also included, since ethnic competition can be assumed to be more prominent in smaller towns, and that strong support for the left may work as protection against radical right-wing parties' attempts to find support among the working-class stratum (Coffé, 2009).

A dummy variable for right-wing coalition in power in the municipality before the election is also included in order to control for the positive effect of a grand coalition found by Arzheimer and Carter (2006). This measure is built from data on electoral mandates from Statistics Sweden. The national coalition of interest is the right-wing coalition between the parties: Moderates, Christ Democrats, Peoples Party and Center party; the so-called "Alliansen" (The Alliance). It is assumed that the parties in The Alliance cooperate at the municipality level, even if they are not obliged to do so. The dummy is equal to one when The Alliance have the majority, i.e., more than half of the mandates in the municipality, otherwise it is equal to zero. The Alliance was formed in 2004 and because of this the variable is coded to be equal to zero in year 2006, because the cooperation between the parties only covers about half of the term of office.

Figure 1 displays geographic variation in unemployment rate, median income and SD vote shares in 2014 across municipalities in Sweden. The support for SD is mostly located in the lower half of Sweden, with a few concentrated high vote shares in the far south. High unemployment rates seem to be located more in the upper half of Sweden. Median income seem to have more spread throughout the country, with a big cluster in the capital of Sweden, Stockholm.

In Table A2 in the appendix, I run some simple t tests for some of the variables by dividing the sample into two groups; municipalities with high SD vote share (i.e. those with above the median vote share) and municipalities with low SD vote share. Municipalities with high SD vote share are characterized by high unemployment rate, high concentration of refugees and immigrants but significantly lower median income and education status. As shown in Table A2 in the appendix, these differences are statistically significant at one percent.

4 Empirical Strategy

The objective of this study is to empirically investigate how unemployment and income levels are linked to support for the radical right-wing party Sweden Democrats during the three most recent elections. The following baseline model of vote share for SD is estimated using OLS.

$$\text{Vote shares}_{it} = \alpha_0 + \alpha_1 \text{unemp}_{it} + \alpha_2 \text{inc}_{it} + \sum_{j=1}^{K} \beta_j X_{jit} + \eta_t + \varepsilon_{it} \quad (1)$$

where the dependent variable is vote share for SD in municipality i at election year t. $unemp_{it}$ is the unemployment rate and inc_{it} is the median income level in municipality i at election year t. X_{jit} is a vector of socio-economic control variables such as population density, crime rate, average age and education level at municipality i in election year t. η_t are included time dummies and ε_{it} is the error term.

The variables for unemployment rate, income, crime rate, education and immigration all have several different measures, which makes it possible to vary the OLS specification in many different ways. To avoid any form of specification search I choose to work with the explanatory variables most strongly suggested by theory and intuition, namely: grand right-wing coalition in power before the election, education, amount of violent offenses[6] and arriving refugees in the municipalities.[7] Equipped with these various socio-economic variables, I test which of the various hypotheses explaining increased support for radical right-wing parties outlined in Section 2.

A negative coefficient for median income in the municipality, $\alpha_2 < 0$, gives support for the modernization losers' thesis, because individuals with fear of losing their job are more likely to be found in low-paid occupations, which is more commonly found in municipalities with low median income. A positive coefficient for unemployment rate, $\alpha_1 > 0$, also gives support for the modernization losers' thesis. Unemployed individuals may feel frustrated and have a feeling of being left out of the society and thus wanting a radical change; Sweden Democrats promise to provide this. However, a negative α_1 will support the findings of Lubbers et al. (2002) and Lubbers and Scheepers (2000), that is unemployment rate is negatively correlated with support for the radical right-wing party.

The baseline OLS specification faces some identification issues namely unobserved heterogeneity and reverse causality, which will bias the results. Since the same

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[6]These crimes are most likely to be covered in the news.

[7]The alternative measures will, however, be used for robustness check.

units are observed repeatedly it is no longer appropriate to assume that different observations are independent and unobserved municipality-specific characteristics will be omitted. I extend the baseline specification to account for unobserved municipality-specific heterogeneities using the following panel data econometric model:

$$\text{Vote shares}_{it} = \alpha_0 + \alpha_1 \text{unemp}_{it} + \alpha_2 \text{inc}_{it} + \sum_{j=1}^{K} \beta_j X_{jit} + \eta_t + \gamma_i + u_{it} \qquad (2)$$

where η_t and γ_i are time and municipality fixed effects respectively. This model have the advantage of being able to explain both why the support for Sweden Democrats vary across municipalities and why the support for a given municipality differ at different time periods.

Reverse causality is another identification issue, which could bias the analysis. However, for most of the variables this should not be a major problem, since Sweden Democrats cannot make decisions or change policies on their own in any municipality. This is due to the lack of own majority[8] and the fact that no other party cooperates with the Sweden Democrats. They can of course have a big impact on polices and decisions in municipalities where no party or alliance have a majority. In those cases Sweden Democrats hold the balance of power, i.e., when the other parties cannot come to an agreement Sweden Democrats have the final and determining vote.

Another issue related to reverse causality is the case where SD campaigns extra hard in some municipalities than others due to factors such as high unemployment rate or low living standards. If this is true then there will be a problem with omitted variable bias in the estimates.

There is also a concern with the national level collaboration between the Alliance and the Swedish Green Party, which began in Mars 2011, to shut out the Sweden Democrats on migration issues (Ministry of Justice, 2012). This resulted in a more liberal immigration policy than if the alliance had been able to form a majority government on their own. It is likely that the collaboration has favored SD in two ways. First, some voters will be displeased with the Alliance's cooperation with the Green Party and may choose to vote for the Sweden Democrats instead. Second, the number of immigrants and refugees is probably larger than in the scenario where the Alliance has majority rule and thus the effect of ethnic competition increases. Since I cannot control for this collaboration there will exist a problem with omitted variable bias in the estimates.

One of the biggest concerns for this study is, however, heterogeneity within munic-

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[8]Maximum vote share they have at the municipality level is 23.9 percent.

ipalities, i.e, local differences in social-economic variables for the voters. For example, immigrants can often be concentrated to live in a few neighborhoods and thus will the feeling of competing over scarce resources in the labor and housing market not be equally distributed over the municipality. This will put a downward bias on the effect of immigration on vote shares for SD and dilute the effect of several other measures on vote shares for SD as well. This problem will especially be present in the large municipalities such as Gothenburg with an average population of over 5 hundred thousands individuals over the three elections. Estimating equation (2) at electoral district level (i.e., the 290 municipalities divided into about 5700 smaller districts) would be the natural next step in addressing these sources of heterogeneities for future research.[9]

Finally, as Mudde (2010) highlights the importance of supply-side factors when explaining the success and emergence of radical right-wing parties; the organization and ideology of the radical right-wing party, as well as the political climate during the election. I will not be able to control for such supply-side explanatory variables, since variation in party structure, for instance, across municipalities is difficult to observe. Furthermore, it is not possible to obtain data on election campaign expenditure in order to investigate if SD focus their publicity in some districts than others. This will be one of the caveats in this study.

5   Result

In Table 2 the baseline pooled OLS and fixed effects regressions at the national level are shown. The OLS results suggest that a higher level of unemployment rate is associated with lower support for SD. The coefficient for unemployment rate is at first insignificant, but becomes significant at 5 percent when the variables for refugees and violent crimes are included. The significance level is even stronger in Column 3, when additional controls are included for coalition in power before the election and average age in quadratic form.

For my other explanatory variable of interest, median income, the OLS results consistently suggest that the support for SD is larger in municipalities with lower level of income. The estimate is strongly significant, at 1%, in all specifications. This result supports the modernization losers' thesis, since it is more likely to find individuals in low skilled occupations in municipalities with lower median income. The proportion of population with more than 3 years of post-secondary education

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[9]The funds needed to get the explanatory variables of interest were not feasible to obtain at the time of the study.

is significantly related to lower vote support for SD. This finding also supports the modernization losers thesis, because high level of education can be assumed to be correlated with high skilled professions.

Population density does not seem to have significant effect on vote share for SD. The coefficient for age is statistically significant at 1% and from Columns 1-2 it are suggested that a high average age in the population is associated with low support for SD. Interestingly, when adding age squared in Column 3, I find that the vote share for SD increases with average age, but only up to a certain age group where the effect wears off.

In line with the ethnic competition thesis, the amount of arriving refugees in the municipality is positively associated with higher vote share for SD. This is expected and similar results are found in Knigge (1998). The regression result in Column 3 Table 2 further suggests that the amount of violent offenses in the municipality have a positive relationship with voter support for SD, though the significance is only at 10%. I do not find any significant relationship between right coalition in power before the election and support for SD.

As discussed earlier, there is a concern about unobserved heterogeneity in the OLS specifications, when assuming observations to be independent of each other in panel data. The Breusch-Pagan Lagrange multiplier (LM) test is used to test if the variances across units (i.e., municipalities) in pooled OLS and random effect model is different from zero. The test rejected the null hypothesis of no significant difference across municipalities, thus there exists a panel data effect and a panel data model will provide more reliable estimates. Furthermore, the Hausman specification test favored the fixed effect model against the random effects model.

The fixed effects model suggests that high unemployment rate is associated with high support for SD. This is in line with the modernization losers thesis; contrary to the results in the OLS specifications. However, the coefficient decreases and gets insignificant as additional control variables are included, indicating that unemployment rate in the municipality is not significantly associated with vote shares for SD.

The general pattern of the OLS results results hold for median income and arriving refugees when I control for municipality fixed effects. The only difference observed is that the effect is slightly larger (in absolute terms) for both estimates in the fixed effects (FE) model. Similarly, the interpretation of the coefficient for education does not change, it is, however, significantly larger (in absolute terms) in the FE model than in the OLS specification.

The amount of violent offenses in the municipality becomes more significant in

the fixed effects model. This result is not unexpected, since law and order is one of Sweden Democrats profile areas. The magnitude of this coefficient can, however, be slightly upward biased since it is possible that SD focus their election campaign in municipalities with high crime rate in order to maximize votes. It is also possible that this estimate captures violent offenses made by far-right wing party supporters and this could further increase the bias.

The coefficient for population density is now significant at 1% and the estimate suggests that vote support for SD is stronger in rural areas, i.e., SD seems to get higher vote shares in municipalities which are less densely populated. Average age in the municipality and age squared does, however, not seem to affect vote shares for SD in this setting.

The variable for right coalition in power before the election is expected to be positive and this can be seen in the fixed effect model (Column 6) but the coefficient is insignificant. There are three plausible explanations for this. First, it is uncertain how much the parties cooperate at the municipality level. The party coalition is primarily made to be at the national level and thus collaborations between parties can greatly vary at municipality level compared to collaborations at the national level. Second, it may not matter who is in power in the municipality, since the power is limited to local decisions and thus will vote shares for the national election not be affected.[10] Third, it is not certain that supporters of the Alliance see SD as a plausible substitute, because SD is not purely a right-wing party.[11] It is also very likely that this kind of hypothesis cannot be tested within a country, i.e., a cross-country analysis is needed, because the collaboration between parties are more certain at this level.

Furthermore the dummies for the election years are positive and statistically significant at 1%. The vote share for SD is on average 16.77 percentage (using the value in Column 5) larger in the election year 2014 compared to the base election year 2006. This is a significant increase and may indicate a shift in the attitudes of the Swedish voters towards SD.

The regression in Column 5 of Table 2 is chosen to be the baseline robust specification, since adding the explanatory variables for right coalition in power before the election and age square, which are both insignificant, does not change the estimates

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[10]Vote shares for SD in the municipality level election, on the other hand, are more likely to be affected by this measure.

[11]In Chapel Hill's expert surveys on party positioning SD only receive 5.5 on a scale from 0 (= extreme left) to 10 (= extreme right) in economic political stance. However, in the general political ideology standing they received 8.4 out of 10 (Bakker et al., 2012). It is thus uncertain how voters perceive the political standing of SD; it is very likely that individuals have different opinions in the matter.

significantly. This baseline robust specification suggests that when median income in the municipality increase by 1 unit (i.e. 1 thousand Swedish crowns) the vote share for SD decreases by about 0.07 percent. This effect is quite substantial since an increase of 26.66 thousands of crowns (one standard deviation) in median income decrease vote shares for SD by 1.87 percent. Unemployment rate has a positive effect on vote shares for SD, but since this result is insignificant I cannot conclude that unemployment rate has an effect on vote shares for SD.

5.1   Robustness checks

In Table 3, I further analyze unemployment rate on vote shares for SD by using different measures for unemployment rate.[12] In Column 2, the unemployment rate for young people, aged 18-24, is alternatively used. I find no statistically significant relationship between youth unemployment and support for SD. The variable for change in unemployment rate, in Column 3, also yields insignificant results.[13] Finally, in Column 4, I include the unemployment rate in the municipality 1 year prior to the election. The estimate is still insignificant, however, when instead using the unemployment rate for young people 1 year prior to the election the estimate suddenly becomes significant at 5% (Column 5). This finding suggests that unemployment rate for young people in fact have a positive effect on vote shares for SD.

Why did not the estimate in Column 2 show significant results then? The measure of unemployment rate in a given year is based on averages of the monthly/weekly unemployment rates in the municipalities. Since the elections are held in September, unemployment rate for the election year contains information about unemployment rates for a few months after the election, i.e., non-relevant info for the analysis. Furthermore, unemployment rate one year prior to the election is more likely to contain information about long-term unemployed people. Frustration and the feeling of being left outside the society is likely to be even more present in this group and thus they are likely to vote for SD in line with the modernization loser thesis and the protest vote theory. In any case this finding is believed to be robust, because the inclusion of this lag does not significantly change the other estimates. This model suggest that a 1 percent increase in youth unemployment rate 1 year prior to the election increases vote shares for SD by 0.08 percent. This is arguably is a small effect since an increase of 4.40 (one standard deviation) only increases vote shares for SD by 0.352 percent.

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[12]For the sake of comparison, the first row of the remaining tables contains the baseline specification from Column 5 Table 2.

[13]The results found for unemployment rate and change in unemployment rate also hold when disaggregating by gender. The results are available upon request.

In Column 2 Table 4, proportion of people with income below national median income is used as an alternative income measure. The coefficient for this estimate is expected to be positive in order for the effect of income levels on vote shares for SD to be consistent. However, this variable is statistically insignificant with a negative sign. In Columns 3-5 of Table 4, alternative measures of immigration are used. The proportion of arriving refugees in the population one year prior to the election has a positive and statistically significant effect on vote shares for SD. This is expected since this variable should be a good proxy for how many refugees there are in the municipality at the election year.

The proportion of new immigrants is also positive and statistically significant at 1%, suggesting that in the average municipality a 1 percent increase in the number of newly arriving immigrants in the population increases the vote shares for SD by 0.515 percent. This effect is smaller than the one found for refugees on vote shares for SD and the reason for this could be that the measure for newly arriving immigrants consists of both Nordic (including returning Swedes), European and non-European immigrants. It is most likely the case that voters will not perceive all individuals captured in this measure as immigrants. A complementary explanation for this difference could be that refugees and newly arriving immigrants do not put equal pressure on government expenditure; in terms of welfare needs and benefits.

To further test the ethnic competition thesis the interaction effect between unemployment rate and arriving refugees in the year before the election[14] is included in Column 5, since the feeling of competing in terms of jobs with immigrants should be stronger in areas with both high immigration and unemployment rate. In Column 5 it can be seen that the inclusion of this interaction term lowers the significance of the coefficient for arriving refugees, but almost doubles its magnitude. The coefficient for the interaction term is statistically insignificant. Collinearity could, however, be a problem here since it is very likely for the interaction term to be highly correlated with its components.[15]

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[14]Refugees that have been in the municipality for some time are more likely to compete in terms of jobs.

[15]Calculated VIFs, *Variance Inflation Factor*'s, for each election year individually (2006, 2010 and 2014) and are equal to 18.58, 11.95 and 12.20 respectively. A VIF value equal or greater than 10 indicates that collinearity is a problem and thus I should not put too much trust into the estimates in Column 5.

5.2 Heterogeneities

In Table 5, heterogeneities of the vote support for SD across different education levels is investigated. The estimation suggests that SD finds most support in municipalities with high proportion of people with medium level of education. In this category it is likely to find individuals according to Minkenberg's version of modernization losers thesis. The reasoning for this is that even if they are rather secure in terms of unemployment and wealth, they might still fear that they can lose something in the fast changing postmodern society. The variable for proportion of population with medium level of education is, however, very broadly defined in this paper; it captures individuals with more than pre-secondary schooling to individuals with less than 4 years of post-secondary education. Thus, this result will arguably give only a weak support for Minkenberg's version of this theory and the findings of Arzheimer and Carter (2006) and Jocelyn (2005).

In line with Rydgren and Ruth (2011), the sum of vote shares for Social Democrats and the Left party in the previous election have a negative and strongly significant effect, at 1%, on vote shares for SD (Column 4). A strong presence of left-wing parties could work as a shield against the establishment of radical right-wing parties. However, inclusion of this variable might cause an identification issue, namely reverse causality. This is due to the fact that vote shares for any party in an election is likely to be correlated with the vote shares in a following election; attitudes and preferences change slowly over time. In other words the summation of vote shares for S and V at time t-1 will contain much information about vote shares for S and V at time t. The inclusion of this variable thus creates reverse causality, because a high support for S and V (or any other party for that matter) directly in turn imply that there are fewer votes for the other parties to get a hold of.

An alternative measure for strong left support is to include a dummy variable that is equal to one when a left coalition/party rules in the municipality before the election, i.e., the coalition/party has majority in mandates, zero otherwise. This estimate has a negative sign as expected, but it is insignificant. Nevertheless, just like with the measure for right coalition in power before the election, it is uncertain how much the behavior of the local authority can affect the national election results since their power is limited.[16] In order to see if this is a robust result I also run the specification in Column 5 when the dummy variable is based on vote shares for S and V in the previous

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[16]See Section 5.3 for a follow up on this dummy variable effect on vote shares for SD in the municipality election.

national election and find that the result holds and the estimate is insignificant.[17]

The effect of the dummy for municipalities in which SD has the decisive voice before the election, i.e when none of the other parties individually or their coalition can have majority without SD in the municipality, is shown in Column 6. Vote shares for SD is 0.642 percent higher for municipalities in which SD has balance of power. This finding suggests that SD will be successful in municipalities where they already have a strong local presence. This dummy variable can be seen as a proxy for estimating the model with the lagged dependent variable as an additional explanatory variable. It is very likely that the attitude for SD improve from one election to another in areas where they gain better ground. This is similar to the dynamic panel approach where the lagged dependent variable is included as additional explanatory variable. Thus it would be an interesting topic for future research to do GMM analysis (where lags can be more properly included).

The estimate for violent crimes is also substituted with the total amount of crimes and it is also statistically significant, but with lower magnitude. This is probably due to the fact that the total amount of crimes captures many offenses that will go unnoticed for most of the citizens in the municipality.[18] Furthermore, I perform the analysis at county level to control for cross-municipality concentration of vote supports. It was found that coefficients for population density, amount of violent crimes and the time dummy for 2014 all yield statistically significant results.[19]

5.3 Vote share for SD in the municipality elections

The main focus of this study has been to investigate the national election results for SD. In this Section, I look at the municipality election to see if there are any differences in explanatory variables between elections at different administrative levels. It is observed in Table 6 that the coefficient for unemployment rate becomes positive and highly significant, while median income level no longer has an effect on vote shares for SD in the municipality level election. The estimates suggest that a one percent increase in unemployment rate increases vote shares for SD by about 0.46 percent. This is a larger effect than what was found in the national election results for unemployment rate for young individuals 1 year prior to the election, because an increase

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[17]It is not entirely clear what counts as a strong presence of left; I create the dummy to be equal to one when vote shares for S and V is more than or equal to 50 percent of the votes. The results are available upon request.

[18]Results are available upon request.

[19]Regression results at the county level are available upon request.

of 2.10 (one standard deviation) increases vote shares for SD by 0.966 percent.[20]

A possible explanation for this could be that employment or job opportunities are more related to local settings in which the rulers of the municipality actually can make a difference. For example they can try to create a good business environment in the municipality and thus attract big employers. SD is expected to receive stronger support in municipalities where officials do not successfully create new jobs. Median income is of course also related to local settings, however, while unemployment rate tend to fluctuate over time income level tend to slowly increase. Furthermore, I would argue that median income captures the living standard in the municipality in a better way than unemployment rate. Income level captures the effect of high unemployment rate (high unemployment rate will lower the income level) at the same time, it gives an approximation about how many individuals who are in low-payed occupations. Living standards will be influenced more by decisions made by the government than by officials at the local council level.

Unlike what was found in Table 3, the measure of unemployment do not improve when using the unemployment rates for one year prior to the election.[21] This is unexpected and yields a natural research question for further studies on the topic.

The coefficient for median income is not alone in becoming insignificant in this setting. The variables for proportion of high education and refugees do not seem to have an effect on vote shares for SD in the municipality election. The latter can be explained by the same logic as before; political decisions regarding immigration and refugees are made at the national level and therefore will not matter that much for votes for SD at the municipality level elections.

Furthermore, the variables for a right coalition and left in power before the election should be more related to vote shares for SD in the municipality than in the national level vote shares. They are, however, insignificant. As before, the variable that indicates whether or not SD has a decisive voice in the municipality before the election is statistically significant with an even larger magnitude than before.

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[20]Recall that a one standard deviation increase of young unemployment rate 1 year prior to the election increases vote shares for SD by 0.352 percent (in the national level election).

[21]Results are available upon request.

6   Conclusions

In this study, I have used panel data on the three latest elections in Sweden to empirically analyze the effect of unemployment rate and income level on vote shares for the radical right-wing party, Sweden Democrats. The study has three major contributions to the literature on support for right-wing parties. First, there are few studies on support for radical right-wing parties with main focus on the two economic explanatory variables; unemployment rate and income level. Second, by controlling for municipality fixed effect, unobserved municipality-specific effects are accounted for. Third, unlike cross-country studies, this study do not have concerns of comparing right-wing parties that differ in structure and using highly aggregated data which lack important information about local heterogeneities within countries.

It is found that high income levels are associated with low support for SD in the national elections, while high unemployment rate is associated with high support for SD in the municipality elections. Differences in political responsibilities between the national government and the local ruling municipality, can potentially explain the different patterns observed at national and municipality level elections. Job opportunities are, for example, more related to local settings in which the rulers of the municipality actually can make a difference by creating a good business environment.

Another interesting finding in the national level election is that SD finds higher support in municipalities with high share of refugees and crime rates. The former is in line with the ethnic competition thesis. Less densely populated areas are also associated with strong support for SD, while municipalities with a big proportion of population with high level of education are associated with low support for SD. This finding together with what was found for unemployment rate and income level give a strong support for the modernization losers' thesis. The results further indicate that SD will be successful in municipalities where they already have a strong local presence.

Even if this setting controls for both time and municipality fixed effects, there still exist a problem with heterogeneity within municipalities. This applies especially to big municipalities. It would thus be interesting to run the analysis on an even lower level in Sweden, which naturally would be the electoral district. Furthermore, the results are maybe only applicable to Sweden so the natural next step for future research is to do the analysis in other settings.

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Figure 1: Patterns in vote shares and economic variables in 2014

Support for SD 2014	Unemployment rate 2014	Median income 2014
(20.7,30.0]	(8.8,11.7]	(277.4,346.2]
(18.2,20.7]	(7.9,8.8]	(255.0,277.4]
(16.8,18.2]	(7.1,7.9]	(247.3,255.0]
(15.8,16.8]	(6.6,7.1]	(242.2,247.3]
(14.7,15.8]	(5.9,6.6]	(237.4,242.2]
(13.2,14.7]	(5.2,5.9]	(232.6,237.4]
(12.2,13.2]	(4.7,5.2]	(227.3,232.6]
(10.1,12.2]	(3.8,4.7]	(219.5,227.3]
[5.3,10.1]	[1.7,3.8]	[206.9,219.5]
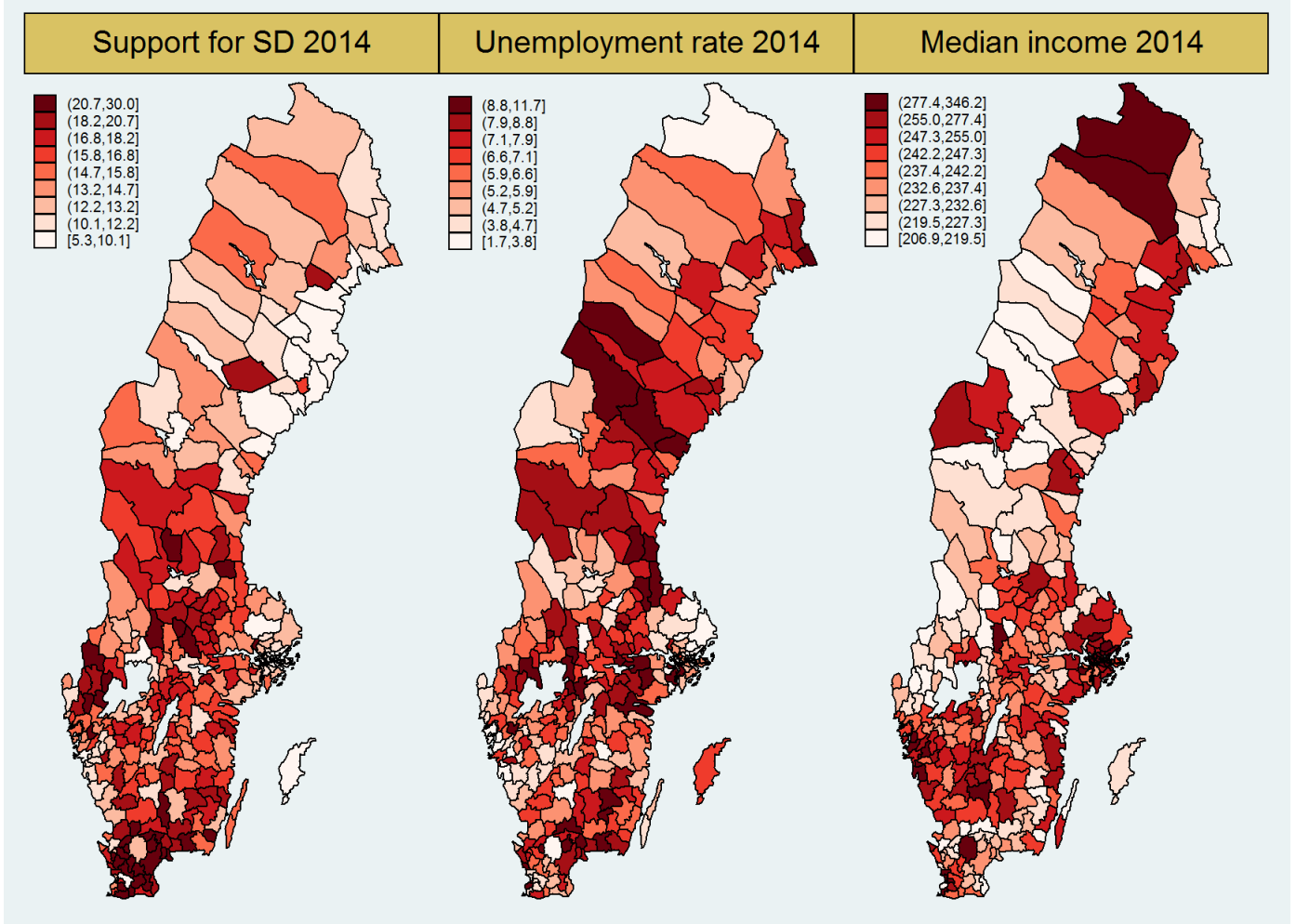
Table 1: Summary statistics

VARIABLES	Mean	Std. Dev.	Min.	Max.
Dependent Variables				
Vote shares for Sweden Democrats	8.278	6.03	0.32	29.96
Vote shares for Sweden Democrats in the municipality election	5.792	4.854	0	23.9
Unemployment				
Unemployment rate	6.219	2.095	1.7	14.3
Unemployment rate for young people (age 18-24)	11.095	4.585	1.2	29.8
Unemployment rate for young females (age 18-24)	9.725	4.192	1.1	25.4
Unemployment rate for young males (age 18-24)	12.309	5.153	1.3	33.3
Change in unemployment rate from the year prior to the election	-0.084	0.814	-2.6	3.1
Change in unemployment rate for young people from the year prior to the election	-0.499	1.749	-6.4	6.9
Change in unemployment rate for young females from the year prior to the election	-0.123	2.131	-7.600	7.100
Change in unemployment rate for young males from the year prior to the election	-0.815	1.964	-10.9	7.3
Income				
Mean income in thousands of Swedish crowns*	240.756	35.706	185.7	503
Median income in thousands of Swedish crowns*	224.915	26.657	175.8	346.2
Proportion of people with income below national median income in the election year	48.921	5.734	32.665	60.883
Immigration				
Proportion of new immigrants in the population	1.022	0.737	0.14	8.569
Immigration surplus (difference between amount of immigrants and emigrants)	202.895	504.844	-146	7220
Proportion of population born abroad	11.018	5.614	2.953	40.16
Proportion of arriving refugees by population	0.377	0.424	0	3.719
Proportion of arriving refugees by population in the year prior to the election	0.251	0.291	0	2.071
Other control variables				
Population Density	137.176	476.403	0.2	5073.6
Population	32501.359	64958.548	2451	911989
Average age at the municipality level	42.892	2.547	36.2	49.4
Proportion of eligible voter who actually voted	83.878	3.238	68.61	92.86
Proportion of population with or less than pre-secondary education	24.696	4.833	10.08	38.93
Proportion of population in the middle education stratum	62.071	3.37	44.69	71.31
Proportion of population with more than 3 years of post-secondary education	13.233	5.879	5.75	45.23
The total amount of crimes per 1,000 residents	96.836	29.551	35.81	231.88
Amount of violent offenses per 1,000 residents	8.432	3.313	1.32	36.53
Amount theft, robbery and receiving crimes per 1,000 residents	41.118	14.97	12.77	136.64
Amount of vandalism offenses (including arson) per 1,000 residents	11.215	5.389	1.83	46.13
Vote shares for S+V in the previous election	45.088	11.566	7.01	74.100

*2013 years data used as proxy for 2014

Table 2: Socio-economic status on vote share for SD - Baseline specification

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Unemployment rate	-0.115	-0.202**	-0.220***	0.153*	0.0796	0.0774
	(0.0742)	(0.0801)	(0.0751)	(0.0822)	(0.0823)	(0.0857)
Median income in thousands of Swedish crowns	-0.0620***	-0.0578***	-0.0564***	-0.0720***	-0.0661***	-0.0698***
	(0.0123)	(0.0119)	(0.0111)	(0.0224)	(0.0221)	(0.0253)
Population Density	-0.000107	-0.000276	-0.000214	-0.00511***	-0.00464***	-0.00466***
	(0.000212)	(0.000221)	(0.000206)	(0.00171)	(0.00158)	(0.00171)
Average age in the municipality	-0.503***	-0.458***	4.304***	-0.246	-0.138	-0.168
	(0.0981)	(0.0951)	(1.414)	(0.201)	(0.194)	(2.485)
Prop. of pop. with >3 years of post-secondary edu.	-0.187***	-0.177***	-0.161***	-1.086***	-0.893***	-0.905***
	(0.0373)	(0.0378)	(0.0365)	(0.214)	(0.207)	(0.210)
Proportion of arriving refugees in the population		0.757**	0.823**		0.869***	0.862***
		(0.363)	(0.352)		(0.209)	(0.211)
Number of violent offenses per 1,000 residents		0.0742	0.0837*		0.110***	0.110***
		(0.0477)	(0.0468)		(0.0301)	(0.0296)
Right Coalition in power before Election			-0.0106			0.199
			(0.332)			(0.200)
Average age in municipality squared			-0.0554***			3.80e-05
			(0.0164)			(0.0279)
Dummy for year 2010	5.198***	5.175***	5.189***	6.093***	5.672***	5.705***
	(0.405)	(0.376)	(0.374)	(0.532)	(0.530)	(0.586)
Dummy for year 2014	15.68***	15.21***	15.17***	17.92***	16.77***	16.91***
	(0.674)	(0.698)	(0.650)	(0.888)	(0.889)	(0.986)
Constant	40.04***	36.86***	-65.62**	41.11***	32.29***	34.40
	(6.290)	(5.980)	(30.73)	(10.02)	(9.665)	(53.56)
Municipality FE	No	No	No	Yes	Yes	Yes
Observations	870	870	870	870	870	870
R-squared	0.792	0.796	0.801	0.947	0.950	0.950
Number of municipalities				290	290	290

Note: the dependent variable is vote shares for SD at national elections. Robust and clustered standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3: Unemployment rate on vote shares for SD: Fixed effect specification

VARIABLES	(1)	(2)	(3)	(4)	(5)
Median income in thousands of Swedish crowns	-0.0661***	-0.0672***	-0.0734***	-0.0635***	-0.0626***
	(0.0221)	(0.0209)	(0.0202)	(0.0216)	(0.0207)
Population Density	-0.00464***	-0.00467***	-0.00453***	-0.00468***	-0.00473***
	(0.00158)	(0.00157)	(0.00156)	(0.00158)	(0.00157)
Average age in the municipality	-0.138	-0.169	-0.174	-0.129	-0.155
	(0.194)	(0.191)	(0.192)	(0.190)	(0.191)
Prop. of pop. with >3 years of post-secondary edu.	-0.893***	-0.899***	-0.879***	-0.894***	-0.909***
	(0.207)	(0.205)	(0.208)	(0.207)	(0.205)
Proportion of arriving refugees in the population	0.869***	0.880***	0.947***	0.895***	0.888***
	(0.209)	(0.203)	(0.211)	(0.205)	(0.207)
Number of violent offenses per 1,000 residents	0.110***	0.112***	0.112***	0.109***	0.106***
	(0.0301)	(0.0295)	(0.0310)	(0.0304)	(0.0300)
Unemployment rate	0.0796				
	(0.0823)				
Unemployment rate for young people (age 18-24)		0.0498			
		(0.0348)			
Change in unemp. rate from the year prior to the election			-0.0794		
			(0.116)		
Unemployment rate 1 year prior to election				0.109	
				(0.0821)	
Unemp. rate for young (age 18-24) 1 year prior to election					0.0801**
					(0.0355)
Dummy for year 2010	5.672***	5.647***	6.085***	5.717***	5.613***
	(0.530)	(0.478)	(0.473)	(0.457)	(0.437)
Dummy for year 2014	16.77***	16.85***	17.12***	16.64***	16.62***
	(0.889)	(0.822)	(0.789)	(0.863)	(0.812)
Constant	32.29***	33.87***	35.47***	31.19***	32.12***
	(9.665)	(9.232)	(9.131)	(9.365)	(9.188)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Observations	870	870	870	870	870
R-squared	0.950	0.950	0.950	0.950	0.951
Number of municipalities	290	290	290	290	290

Note: the dependent variable is vote shares for SD at national elections. Robust and clustered standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: Heterogeneity in vote shares for SD by income and immigration status

VARIABLES	(1)	(2)	(3)	(4)	(5)
Unemployment rate	0.0796	0.170*	0.0973	0.104	0.144
	(0.0823)	(0.0890)	(0.0827)	(0.0814)	(0.0898)
Population Density	-0.00464***	-0.00498***	-0.00483***	-0.00470***	-0.00487***
	(0.00158)	(0.00164)	(0.00163)	(0.00164)	(0.00161)
Average age in the municipality	-0.138	-0.118	-0.0619	-0.158	-0.0716
	(0.194)	(0.197)	(0.197)	(0.217)	(0.197)
Prop. of pop. with >3 years of post-secondary edu.	-0.893***	-1.231***	-0.864***	-0.910***	-0.863***
	(0.207)	(0.187)	(0.213)	(0.206)	(0.213)
Number of violent offenses per 1,000 residents	0.110***	0.108***	0.118***	0.103***	0.118***
	(0.0301)	(0.0304)	(0.0284)	(0.0273)	(0.0284)
Proportion of arriving refugees in the population	0.869***	0.931***			
	(0.209)	(0.216)			
Median income in thousands of Swedish crowns	-0.0661***		-0.0650***	-0.0750***	-0.0655***
	(0.0221)		(0.0217)	(0.0239)	(0.0217)
Prop. of people with income below national median		-0.0185			
		(0.109)			
Prop. of arriving refugees by pop. in the year prior to the election			1.232***		2.351**
			(0.418)		(1.189)
Proportion of new immigrants in the population				0.515***	
				(0.136)	
Proporion of population born abroad				-0.00710	
				(0.118)	
Unemployment rate x Arriving refugees in year prior to election					-0.138
					(0.122)
Dummy for year 2010	5.672***	4.564***	5.318***	5.843***	5.275***
	(0.530)	(0.370)	(0.533)	(0.678)	(0.532)
Dummy for year 2014	16.77***	14.88***	16.47***	17.28***	16.44***
	(0.889)	(0.622)	(0.918)	(1.195)	(0.916)
Constant	32.29***	22.43**	28.47***	34.95***	28.70***
	(9.665)	(10.56)	(9.877)	(11.97)	(9.877)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Observations	870	870	870	870	870
R-squared	0.950	0.949	0.950	0.950	0.950
Number of municipalities	290	290	290	290	290

Note: the dependent variable is vote shares for SD at national elections. Robust and clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Heterogeneity in vote shares for SD by education and incumbent of the Municipality

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Unemployment rate	0.0796	0.114	0.143*	-0.102	0.0804	0.0780
	(0.0823)	(0.0802)	(0.0818)	(0.0799)	(0.0828)	(0.0816)
Median income in thousands of Swedish crowns	-0.0661***	-0.0942***	-0.0568***	-0.0836***	-0.0659***	-0.0620***
	(0.0221)	(0.0181)	(0.0193)	(0.0253)	(0.0222)	(0.0222)
Population Density	-0.00464***	-0.00518***	-0.00401***	-0.00422***	-0.00467***	-0.00474***
	(0.00158)	(0.00161)	(0.00127)	(0.00161)	(0.00159)	(0.00145)
Average age in the municipality	-0.138	-0.0825	-0.269	-0.106	-0.133	-0.0925
	(0.194)	(0.200)	(0.203)	(0.190)	(0.194)	(0.193)
Proportion of arriving refugees in the population	0.869***	0.885***	0.707***	0.975***	0.870***	0.891***
	(0.209)	(0.219)	(0.215)	(0.198)	(0.209)	(0.206)
Number of violent offenses per 1,000 residents	0.110***	0.114***	0.106***	0.110***	0.110***	0.104***
	(0.0301)	(0.0305)	(0.0308)	(0.0298)	(0.0302)	(0.0297)
Prop. of pop. with >3 years of post-secondary edu.	-0.893***			-1.243***	-0.895***	-0.909***
	(0.207)			(0.213)	(0.208)	(0.211)
Prop. of pop. with or less than pre-secondary edu.		-0.481***				
		(0.126)				
Prop. of pop. with edu. in the middle stratum			0.609***			
			(0.108)			
Vote shares for S+V in the previous election				-0.180***		
				(0.0332)		
Left Coalition or S in power before Election					-0.0576	
					(0.224)	
Municipality where SD had balance of power						0.642***
						(0.235)
Dummy for year 2010	5.672***	3.601***	3.356***	5.838***	5.658***	5.557***
	(0.530)	(0.655)	(0.574)	(0.512)	(0.538)	(0.533)
Dummy for year 2014	16.77***	12.97***	12.56***	16.68***	16.76***	16.50***
	(0.889)	(1.139)	(0.971)	(0.870)	(0.896)	(0.895)
Constant	32.29***	38.06***	-12.03	48.60***	32.12***	29.77***
	(9.665)	(10.49)	(10.68)	(9.788)	(9.696)	(9.672)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	870	870	870	870	870	870
R-squared	0.950	0.950	0.952	0.955	0.950	0.951
Number of municipalities	290	290	290	290	290	290

Note: the dependent variable is vote shares for SD at national elections. Robust and clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Vote share for SD in the municipality election as a dependent variable

VARIABLES	(1)	(2)	(3)	(4)	(5)
Unemployment rate	0.0796	0.467***	0.462***	0.469***	0.464***
	(0.0823)	(0.109)	(0.109)	(0.109)	(0.107)
Median income in thousands of Swedish crowns	-0.0661***	-0.0323	-0.0391	-0.0317	-0.0272
	(0.0221)	(0.0321)	(0.0318)	(0.0318)	(0.0315)
Population Density	-0.00464***	-0.00387**	-0.00392**	-0.00397**	-0.00400***
	(0.00158)	(0.00155)	(0.00165)	(0.00155)	(0.00136)
Average age in the municipality	-0.138	-0.548*	-0.597*	-0.533*	-0.491
	(0.194)	(0.322)	(0.322)	(0.321)	(0.320)
Prop. of pop. with >3 years of post-secondary edu.	-0.893***	-0.432	-0.455	-0.439	-0.453
	(0.207)	(0.295)	(0.295)	(0.294)	(0.296)
Proportion of arriving refugees in the population	0.869***	0.327	0.313	0.329	0.354
	(0.209)	(0.457)	(0.457)	(0.455)	(0.454)
Number of violent offenses per 1,000 residents	0.110***	0.0850**	0.0856**	0.0851**	0.0778*
	(0.0301)	(0.0423)	(0.0424)	(0.0423)	(0.0418)
Right Coalition in power before Election			0.372		
			(0.239)		
Left Coalition or S in power before Election				-0.184	
				(0.381)	
Municipality where SD has balance of power					0.798**
					(0.349)
Dummy for year 2010	5.672***	2.861***	2.923***	2.817***	2.718***
	(0.530)	(0.742)	(0.741)	(0.740)	(0.731)
Dummy for year 2014	16.77***	9.748***	10.01***	9.706***	9.414***
	(0.889)	(1.315)	(1.315)	(1.309)	(1.289)
Constant	32.29***	34.86**	38.66**	34.30**	31.72*
	(9.665)	(16.37)	(16.34)	(16.28)	(16.20)
Municipality FE	Yes	Yes	Yes	Yes	Yes
Observations	870	870	870	870	870
R-squared	0.950	0.805	0.805	0.805	0.807
Number of municipalities	290	290	290	290	290

Note: Column 1 has vote shares for SD in the national election as dependent for the sake of comparison. Robust and clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix

A1: Panel summary statistics

VARIABLES		Mean	Std. Dev.	Min.	Max.	Obs.	
Vote shares for Sweden Democrats	overall	8.277908	6.030242	.32	29.96	N =	870
	between		2.792266	2.553333	18.24667	n =	290
	within		5.346495	-1.405425	20.03457	T =	3
Unemployment rate for young people	overall	11.09529	4.58505	1.2	29.8	N =	870
	between		3.851429	1.6	23.16667	n =	290
	within		2.494657	1.861954	21.02862	T =	3
Median income in thousands of Swedish crowns	overall	224.9153	26.65682	175.8	346.2	N =	870
	between		20.85701	193.3333	316.1667	n =	290
	within		16.63046	190.182	258.982	T =	3
Proportion of population with more than 3 years of post-secondary edu.	overall	13.23298	5.879346	5.75	45.23	N =	870
	between		5.781083	6.53	43.97	n =	290
	within		1.105758	9.552977	16.52298	T =	3
The total number of crimes per 1,000 residents	overall	96.83613	29.55076	35.81	231.88	N =	870
	between		27.79734	39.62333	218.39	n =	290
	within		10.11603	50.14613	180.1561	T =	3

A2: T-tests, sample divided by high and low vote share for SD

VARIABLES	Low SD vote share	High SD vote share	Diff	t-value
Unemployment rate	6.010	6.425	-.414***	-2.928
Median income in thousands of Swedish crowns	230.555	219.379	11.176***	6.320
Proportion of new immigrants in the population	.928	1.114	-.186***	-3.743
Proportion of arriving refugees by population	.300	.452	-.152***	-5.361
Prop. of pop. with >3 years of post-secondary edu.	15.206	11.296	3.909***	10.392

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