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Immigration and far-right voting: Evidence from Greece

Chletsos Michael* Roupakias Stelios†

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Abstract

In this paper we analyze the impact of immigration on Greek politics over the 2004-2012 period, exploiting panel data on 51 Greek regional units. We account for potential endogenous clustering of migrants into more “tolerant” regions by using a shift-share imputed instrument, based on their allocation in 1991. Overall, our results are consistent with idea that immigration is positively associated with the vote share of extreme-right parties. This finding appears to be robust to alternative controls, sample restrictions and different estimation methods. We do not find supportive evidence for the conjecture that natives “vote with their feet”, i.e. move away from regions with high immigrant concentrations. We also find that the political success of the far-right comes at the expense of “Leftist” parties. Importantly, concerns on criminality and competition for jobs and public resources appear to drive our findings.

Keywords: Immigration, Elections, Political economy

JEL codes: D72, J15, J61

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1. Introduction

In the aftermath of the 2007-2009 Great Recession, liberal democracy appears to be under threat by the “open society’s enemies” surge in many Western countries. It has also been common place, that the majority of such demagogues have built their political success on blaming immigration (and globalization) for economic insecurity, growing income inequality and the decline of the middle class. Prominent examples are Donald Trump’s campaign towards the 2016 US presidential elections or the “Leave” movement in the United Kingdom. Likewise, several parties in Europe, with a clear anti-immigration platform (e.g., France’s “National Rally” lead by Marine Le Pen, Italy’s “Five Star Movement” lead by Beppe Grillo and the “Alternative for Germany” right-wing party in Germany) have also seen their vote shares constantly increasing over the course of the last decade. Not surprisingly, xenophobic and racist parties have also become popular in Greece since the mid-2000’s, a pattern, however, completely different to the situation prevailing after the restoration of democracy in 1974.

Much of that change can be attributed to the fact that Greece has been transformed from an emigration country, until the collapse of the Soviet bloc, to a net receiver of immigrants thereafter. According to Population Census data, the share of migrants over total population hardly exceeded 1% before 1991. Nowadays, however, migration figures in Greece are comparable to international levels. For instance, there are at least 10 migrants for every 100 native-born individuals.³ What is more, Greece enjoyed unprecedented levels of democratic stability and economic prosperity between 1974 and 2007. However, the outburst of the 2009 fiscal crisis in Greece disrupted abruptly this path. As a result, populists on all sides of the political spectrum have progressively gained important electoral support, with the radical-left “Syriza” eventually coming to power in January 2015. On the other hand, the right-wing populists “Independent Greeks” and the “Popular Orthodox Rally” along with the extreme-right wing “Golden Dawn”

³ In 2011, the top-5 sending countries were Albania, Bulgaria, Romania, Pakistan and Georgia (above 50% of total immigrants).

have jointly received around 21% in the parliamentary elections in 2012. The latter even overtook the traditional center-left party, “Pasok”, becoming Greece’s third-largest party in 2015.

Existing mainstream studies on immigration, starting with the seminal work by Alonji and Card (1991), have mainly put spotlight on the impact of immigration on local labour markets. Until the early 2000s, there was a consensus that the effects of immigration were negligible (see e.g. LaLonde and Topel, 1991; Pischke and Velling, 1997; Card, 2001). However, in a series of very influential papers Borjas (2003 and 2006), changing the unit of analysis at the national level, claims that immigration exerts large adverse effects on the earnings of the less-skilled natives. More recently, however, Ottaviano and Peri (2012) and Manacorda, Manning and Wadsworth (2012), refining Borjas’s approach disputed whether migrants are to the detriment of native-born workers.⁴⁵

Our study sits within the emerging literature examining the nexus between immigration and election outcomes in Western countries. Existing evidence from EU countries overwhelmingly suggests that immigration is positively associated with the electoral success of parties in the right end of the political spectrum (either moderate-right or extreme-right). For example, Mendez and Cutillas (2014), using data from Spanish presidential elections over the 1998-2008 period, have shown that African immigration is (modestly) correlated with natives’ support for anti-immigration formations. Otto and Steinhardt (2014) find a robust effect on the political success of xenophobic parties on city districts in Hamburg. Barone, D’Ignazio, de Blasio, and Naticchioni (2016) reveal a positive relation between immigration and the vote share for the center-right coalition, headed by Silvio Berlusconi in Italy. Halla, Zweimüller and Wagner (2017) indicate that the political success of the right-wing “Freedom Party of Austria” is highly correlated with the presence of immigrants. Harmon’s (2017) study suggests that migration also

⁴ A more recent stream of the literature, focusing on the impact of immigration on the supply of tasks, documents that migrants attenuate “job polarization” by pushing natives away from routine-intensive tasks (see e. Peri and Sparber, 2009; D’Amuri and Peri, 2014; Ortega and Verdugo, 2014).

⁵ The evidence on the labour market consequences of immigration on the Greek labour market is scant. A recent study by Chletsos and Roupakias (2017), in the spirit of Borjas, suggests that there is significant positive association between migration and unemployment. On the other hand, Chassamboulli and Palivos (2013) employing a simulation-based approach argue that immigration exerts a favourable impact on the labour market outcomes of skilled labourers, while its impact on unskilled ones is ambiguous.

caused a rightward shift in election outcomes in Denmark. Likewise, studies focusing on the United States (see e.g. Mayda, Peri, and Steingress, 2018) have also shown that low-skilled immigration exerts a positive influence on the vote share for the Republican Party, especially in non-urban counties.⁶

Another related strand of the literature emphasizes on the relation between ethnic diversity and preferences for the welfare state (see e.g. Alesina, Baqir and Easterly, 1999; Alesina, Glaeser, and Sacerdote, 2001; Luttmer, 2001). These studies typically suggest that there is a negative linkage between these two variables. Our paper is also closely related to the literature examining public attitudes towards immigration (see e.g. Scheve and Slaughter, 2001; Gang, Rivera-Batiz and Yun, 2002). These studies have shown that the unskilled natives take a strong stand against laissez-faire immigration policies because of fears about increased labour market competition. On the contrary, Hainmueller and Hiscox (2007) find that negative sentiments towards migrants mainly stem from racial prejudice, which is more prominent among the less-educated natives. More recently, Card, Dustmann and Preston (2012) suggest that opposition to immigration is mainly driven by concerns on the compositional effects of immigration on local communities.

The main purpose of this paper is to complement existing literature by investigating the impact of migrants on the electoral support for far-right parties in Greece. To that end, we focus on the vote share of “Golden Dawn”, “Independent Greeks” and the “Popular Orthodox Rally”, which arguably share well-documented right-wing extremism features, such as racism, xenophobia, and nationalism (see Mudde, 1996). In stark contrast with most earlier studies, and to facilitate the interpretation of our main results of interest, we also report evidence on the relation between immigration and the vote share for the pro-immigration, radical-left Syriza. We address potential endogenous distribution of immigrants across regions (i.e. immigrants cluster into regions more “open” to ethnic diversity) by employing a shift-share instrumental variable in the spirit of Card (2001). To the best of our knowledge, this paper is the first one to empirically

⁶ Evidence consistent with the idea that migration contributes to the political success of far-right parties is also reported in a recent unpublished study by Edo, Giesing, Öztunc and Poutvaara (2017) for the case of France.

analyze the causal nexus between immigration and the support for political parties in Greece using such methods.⁷ This study also enhances our understanding of the underlying mechanisms by which native attitudes are shaped.

Our findings can be summarized as follows: Our best estimates suggest that immigration increases natives' support for right-wing parties. This result survives several robustness tests, including, among others: sample restrictions, alternative controls and different estimation methods. On the other hand, the radical-left party considered in this study appears to lose political support from voters as the share of immigrants increase. Importantly, we also show that our findings are immune to internal migration bias (i.e. we reject the conjecture that natives “vote with their feet” by moving away from regions with heavy immigrant concentrations). Finally, we provide some evidence that negative sentiments toward immigration (as expressed in the ballot box) are mainly fueled by concerns over criminality and competition for public services and jobs.

The remainder of the paper is organized as follows. Section 2 explains the estimation procedures and describes the data. Section 3 presents the results. Finally, Section 4 concludes the paper.

2. Data and empirical specification

Our examination of the relationship between immigration and far-right voting relies on regional units-level (NUTS-3) data.⁸ In order to obtain our main variable of interest, the share of immigrants over the total adult population in each region, as well as some other aggregate controls related to the native-born, such as counts of individuals, unemployment, university graduates, women and pensioners, we exploit Census information from the Integrated Public Use Microdata Series, International (IPUMS, 2018) for the years 2001 and 2011. For the needs of our instrumental variable approach, which we describe later on this section, we also use the 1991

⁷ A partial exception is Dinas, Matakos, Xeferis and Hangartner (2017) who examine the impact of Syrian refugees on the “Golden Dawn” vote share in the Aegean islands in 2015 by exploiting a difference-in-differences approach.

⁸ The 51 regional units in which Greece is administratively divided are reported in Appendix Table A1.

wave to predict the “exogenous” distribution of immigrants across Greek regions. The main advantage of our Census dataset is that it offers the most credible counts on immigrant population, which, in turn mitigates concerns about attenuation bias (see e.g. Aydemir and Borjas, 2011).⁹

Data on election outcomes are collected from the European Election Database (available at: http://www.nsd.uib.no/european_election_database). We consider the aggregate vote share at national parliamentary elections of the three largest far-right parties in Greece, namely the “Independent Greeks”, the “Popular Orthodox Rally” and the “Golden Dawn”. The former party was founded in 2012. The other two parties under scrutiny have been active since 2000 and 1980, respectively. However, before 2004, their share was negligible and cannot be directly observed in the data (i.e. they fell into the residual category “other parties”). Given our focus, we therefore limit our sample on elections of 2004, 2007, 2009 and 2012 (see Fig. 1). As is Halla et al. (2017), we relate our Census data with the nearest elections within a 3-year interval. Thus, we have to discard the 2015 elections. We impute the immigrant share for 2007 and 2009, by using information from the 2011 Census on the region of residence over the previous year and before five years (variables *migr1* and *migr2*, respectively). However, due to endogeneity and measurement error concerns, our preferred estimates are those based on elections that took place in 2004 and 2012. (Table 1 summarizes the data used in the econometric analysis).

[Insert Figure 1 here]

[Insert Table 1 here]

To assess the relation between the share of migrants and the electoral support for far-right parties we estimate the following regression:¹⁰

$$E_{it} = \alpha_0 + \beta_1 IMM_{it} + \beta_2 X_{it} + \gamma_i + \lambda_t + u_{it} \quad (1)$$

where the dependent variable is the aggregate vote share for the far-right parties under consideration, IMM_{it} stands for our main independent variable of interest, the number of

⁹ In total, our dataset contains about 3,050,00 observations. We note, however, that there is still room for measurement error concerns because of undocumented migration.

¹⁰ See e.g. Otto and Steinhardt (2014); Barone et al. (2016).

immigrants over total population, and X_{it} is a vector of control variables. The unit of analysis is the i th region and the t th year. We also account for region and period specific effects, denoted as γ_i (NUTS-2) and λ_t , respectively.¹¹ Finally, u_{it} is the disturbance term.

However, as already stated in the introduction, a potential threat to the validity of our empirical strategy is the possibility of reverse causality if migrants cluster into more “tolerant” communities. To mitigate concerns about potential endogeneity bias we pursue a Bartik-style (1991) instrumental variables strategy, building on existing migration literature, which suggests that ethnic “enclaves” are strong predictors of future migrant flows (see e.g. Bartel, 1989; Munshi, 2003), i.e. immigrants tend to settle into areas where co-ethnics already reside¹². To that end, we follow Card (2001); Ottaviano and Peri (2006) and Saiz (2007), among others, and construct our instrument as follows. We first calculate predicted immigration from country of origin c in region r and year t , as follows:¹³

$$\widehat{immigrants}_{crt} = \phi_{cr,1991} \times immigrants_{GR,ct} \quad (2)$$

where $immigrants_{GR,ct}$ is the total number of immigrants in Greece from country c and year t , and $\phi_{cr,1991}$ is the 1991 share of immigrant population from country c in region r . The implicit assumption is that the distribution of migrants in 1991 eliminates potential contemporaneous correlation between our key independent variable and local demand shocks. We then obtain our instrument using the following formula:

$$IMM_{crt} = \frac{\sum_c \widehat{immigrants}_{crt}}{\sum_c \widehat{immigrants}_{crt} + \widehat{Natives}_{rt}} \quad (3)$$

¹¹ We use NUTS-2 fixed effects, because there is not enough variation in the data. A similar approach is used in several published migration studies (see, among others, Wagner, Head, and Ries, 2002; Bellini, Ottaviano, Pinelli and Prarolo, 2013; Bratti and Conti, 2017)

¹² We also note that an IV strategy can also attenuate the bias related to measurement error in the immigration share variable.

¹³ To construct our instrument, we aggregate immigrants into 13 origin groups: Africa, Australia and New Zealand, Eastern Asia, Eastern Europe, Northern America, Northern Europe, South America, Southern Asia, Southern Europe, Western Asia, Western Europe and other countries. The full list of origin countries is reported in Appendix.

where $\widehat{Natives}_{rt}$ stands for the predicted number of natives. The validity of our instrument is verified by the first stage results, (not reported for brevity, available upon request) which indicate that our predicted migration is always significant at the one percent level and have the correct sign.¹⁴ Likewise, the F-tests presented in the empirical part of the paper are always above the rule of thumb of 10, thereby suggesting that our identification approach is unlikely to suffer from weak instrument problems.¹⁵ Interestingly, a preliminary look at the allocation of migrants across the Greek territory, in Fig.2, also provides supportive evidence that foreign-born individuals tend to cluster around regions with high immigrant concentrations in 1991.

[Insert Figure 2 here]

3. Empirical Evidence

In this section we estimate the relationship between immigration and the electoral support for far-right parties in Greece by estimating the empirical model described in Section 2. In addition, to assess the stability of our results, we conduct a battery of robustness checks, including, among others: (i) alternative estimation techniques, (ii) additional control variables, (iii) sample restrictions.

3.1 Fixed effects results

Table 2 offers fixed effects estimates with robust standard errors adjusted for clustering by region. In addition to the effects of immigration on the vote shares of extreme right-wing parties, we offer results for the radical left Syriza which has also been highly involved in the immigration debate, consistently standing in favour of liberal, open border policies. We also report alternative sets of estimates, either weighting regressions by adult population counts or using unweighted, mere OLS regressions. Finally, we run two separate models. In one, we control for per capita

¹⁴ Additional evidence is reported in Appendix Figure A2 which plots the share of immigration against the shift-share instrument.

¹⁵ Following Ottaviano and Peri (2006), we have also experimented with distance from border and distance from the main gateways in Greece as instruments. However, these variables do not appear to explain much of the variation in the distribution of immigrants across regions, and thus, they are not included in the analysis.

income, and, in the other, we control for unemployment. The coefficient estimate presented in column 1 implies (assuming a causal interpretation) that a one percent increase in immigration is expected to increase far-right parties' share by 0.34 percentage points. On the other hand, immigration appears to be negatively correlated with the vote share for the radical left party but the relevant t-statistic falls sort of the standard threshold for statistical significance. Accounting for the effect of unemployment in column (2), has little effect on our results. Importantly, the results appear to be robust when we estimate our empirical model using weighted ordinary least squares (WLS) in columns 3 and 4, albeit, the impact on radical-left voting, now becomes stronger and significant at conventional levels.

With regard to the set of demographic variables used, population enters with a positive significant coefficient in the unweighted far-right equations. Density and the share of graduates usually bear a positive and significant coefficient across specifications in the radical-left model, while the opposite is true for the shares of women and pensioners. On the contrary, variables related to the economic state of regions are always not statistically different from zero.

[Insert Table 2 here]

3.2 Robustness checks

3.2.1 Native internal migration

As discussed in Borjas (2006), a potential threat to the validity of empirical analyses based on data from local labour markets is that some natives might move away from regions with heavy immigrant concentrations to protect themselves from excessive labour market competition. If this is true, the OLS estimate of β_1 in eq. (1) would be downwardly biased. However, our analysis is based on large geographical areas (51 regional units), and thus there is very little chance that our estimates are subject to the concern of internal migration bias. Nevertheless, in Table 3, we carry-out a formal test on this conjecture, following the well-established practice put forward by Card (2007). To that end, we estimate the following empirical equation, using information for the years 1991, 1996, 2001, 2006 and 2011:¹⁶

¹⁶ We impute data for 1996 and 2006 from the 2001 and 2011 Censuses, respectively.

$$N_{it} - N_{it-1}/Pop_{it-1} = \alpha_0 + \beta(F_{it} - F_{it-1})/Pop_{it-1} + \gamma_i + \lambda_t + u_{it} \quad (4)$$

In addition, we estimate eq. (4) separately for skilled and unskilled natives as in Halla et al. (2017).

The OLS estimates in column 1, with region and year fixed effects, suggest that the outcome variable is negatively correlated with migration but the estimate is not statistically different from zero. This result seems plausible, taking into account both the level of spatial aggregation considered in that empirical exercise, as well as Greece’s exceptionally high rates of homeownership, which notoriously hamper inter-regional mobility (see e.g. Oswald, 1997). Considering effects by education attainment, mobility of unskilled natives it is not significantly related to immigration, albeit the sign of estimated coefficient of interest suggests some displacement. Interestingly, we are able to detect a significant positive effect for the skilled (i.e. immigrants and skilled natives are attracted by the same regions). Overall, our results, consistent with Otto and Steinhardt (2014) and Halla et al. (2017), suggest that the evidence presented in Table 2 is not contaminated by native internal migration bias.

[Insert Table 3 here]

3.2.3 Reverse causality

However, the empirical results presented so far may not reflect the true effect of immigration on the election outcomes considered in this study, insofar immigrants allocate into more “tolerant” areas, that is, in communities where natives are more open to multiculturalism. To mitigate concerns, we recur to an instrumental variables estimator to isolate the exogenous contribution of immigration on the electoral support for the far-right. To that end, we employ the “shift-share” methodology described above, using the 1991 distribution of immigrants.

The results of this important empirical exercise are presented in Table 4. As can easily be observed, the pattern of the estimated coefficients of interest is fully consistent with the one we found in Table 2. Immigration tends to shift political support rightwards through specifications. Notably, however, the 2SLS estimates increase in size, and thus, are consistent with previous literature, which suggests that OLS underestimates the impact of migrants on election outcomes (see e.g. Otto and Steinhardt, 2014; Barone et al., 2016).

[Insert Table 4 here]

3.2.4 Additional controls and alternative samples

Table 5 reports results from a variety of sensitivity analyses with respect to effect of immigration on the electoral support for the far-right. In all instances, the weak identification KP test suggests that our estimates are fully robust. First, we modify eq. (1) by introducing the crime rate at the NUTS-2 level as control.¹⁷ The results in row (1) indicate that the coefficient for immigration is in the same ballpark as the baseline regression and statistically significant. In row 2, we test the stability of our results to the inclusion of the voter turnout. Yet, as can be verified, the evidence is remarkably similar to previous specifications.

Next, we add occupation dummies (ISCO88, 1 digit) to control for the effects of the occupational distribution of natives on election outcomes. However, as indicated in row 3, there is little effect on our main results of interest. Dropping year dummies, in row 4, strengthens the estimated impact of immigration. In row 5, we re-estimate eq. (1) by including the 2007 and 2009 elections in the sample, as well. Even after this modification, the coefficient of the main variable of interest is roughly the same as without the 2007 and 2009 elections. In row 6 we consider the elections in 2004, 2007 and 2009, to assess whether the main findings are not driven by the confounding effects of the deep recession thereafter. As can easily be observed, the impact of migration falls slightly but remains statistically significant. In further sensitivity analysis, we consider the European parliament elections that took place in 2004 and 2009. As row 7 indicates, the importance of immigration on the vote share for the far-right remains significant in this particular sample.

In specifications 8 and 9 we consider the vote share for the “Golden Dawn” and the “Popular Orthodox Rally” separately, using the elections that took place in 2009 and 2012. Remarkably, the importance of immigration on the “Golden Dawn” appears to be about 7 times as high as the one on the “Popular Orthodox Rally”. As a final test on the robustness of our results, in specifications 10 and 11 we investigate concerns that our previous findings are driven by regions with extreme values of immigration. To that end, we eliminate Athens and

¹⁷ Data on crime rates were downloaded from the Hellenic Statistical Authority (available at: <http://www.statistics.gr/>)

Thessaloniki from the sample. However, the results once again confirm our previous finding that migrants shift the ideology of the electorate rightwards.

On balance, the results in Table 5, are consistent with the ones we found in Tables 2 and 4, and suggest that immigration exhibits a robust positive association with the electoral support for far-right parties in Greece.

[Insert Table 5 here]

3.2.5 Selection effects

In Table 6, we follow Altonji, Elder and Tader’s (2005) heuristic technique to assess the validity of our previous findings on selection effects. We do so, by computing the ratio: $\beta_F/(\beta_R - \beta_F)$, where β_R and β_F are the coefficients of interest from a restricted (column 1) and a full (column 2) specification, respectively.¹⁸ The value of the test indicates how large selection on unobservables would have to be in order to attribute the entire effect of immigration to selection bias. As stated by these authors, a ratio of 3,5 can be interpreted as suggestive of no selection issues. Our results following this procedure indicate that the ratio ranges between 5.56 and 15.57. We thus conclude that the contribution of immigration on the electoral support for the far-right is robust and high unlikely to be insignificant due to selection bias.

[Insert Table 6 here]

3.3 Additional results

Table 7 complements our analysis, showing 2SLS results for hypothetical coalitions and other parties. We first examine the impact of immigration, on a broad right-wing coalition, aggregating the vote share of the mainstream moderate-right party, “New Democracy” and the far-right parties considered in this study. Second, we examine the contribution of migrants on the political success of a left-wing coalition between the mainstream center-left party, “Pasok” and the radical left “Syriza”. Finally, we present effects on the mainstream center-right and center-left parties,

¹⁸ The same approach is used in Bellows and Miguel (2009); Nunn and Wantchekon (2011) Guriev, Speciale, and Tuccio (2016).

separately. As it is evident, both the coefficient of interest and the standard error increase significantly through specifications. Notably, our findings suggest that parties at the right end of the spectrum gain from immigration. The effect, however, is far from being significant. By contrast, pro-immigration parties appear to lose electoral support due to immigration. Not surprisingly, regressions for the moderate right and the center-left parties exhibit a similar pattern, albeit both lose significance. Overall, the results from this empirical exercise appear to confirm the idea that migration causes a rightward shift in ideology.

[Insert Table 7 here]

Our analysis so far indicates that general migration is positively associated with the political success of far-right parties. However, as suggested by Mayda et al. (2018) the impact of immigrants on host country politics might be skill- or country of origin-specific. For example, unskilled immigrants, or those who stem from poor countries may be perceived as more detrimental than their skilled or rich counterparts, and thus, the correlations established above may be driven by this particular group of migrants. We therefore examine whether the contribution of migrants on the electoral support for the anti-immigration parties differs according to their educational attainment and their origin, considering a skilled/unskilled and an OECD/non-OECD split, respectively.

In columns 1 and 2 of Table 8, we report the estimated coefficient for unskilled and skilled migrants, respectively. Interestingly, the contribution of the high-skilled is 34% higher than the one of the less-skilled. On the other hand, our estimates in columns 3 and 4 suggest that the contribution of non-OECD migrants is more important than that of their OECD counterparts. However, as shown in Chletsos and Roupakias (2017), there is substantial “downgrading” of migrants by education in the Greek labour market (i.e. skilled migrants end in occupations where unskilled natives are over-represented), attributed to the fact that immigrants in Greece mainly stem from non-OECD countries where the quality of education is remarkably poor (see e.g. Alesina, Harnoss and Rapoport, 2016). We therefore caution that our estimates by education may be confounded by unobserved differences in the quality of education across countries.

Before concluding this section, in Table 9 we report coefficient estimates from specifications which use voter turnout as the dependent variable. The underlying identification assumption is that immigration might cause some “moderate” voters’ participation to decrease insofar they are not satisfied with current immigration trends but are not willing to vote a far-right party (see e.g. Barone et al., 2016). As can be seen in column 1, general migration enters with a significant negative coefficient, implying that a 1% increase in the share of immigrants in a region cuts turnouts by about 1.8%. Moving beyond average effects in columns 2 through 5, the pattern of the estimated coefficients is consistent with the one we found in Table 8, that is, the impact of skilled and OECD migrants is stronger. We note, however, once again, that estimates by origin might be economically more sound, taking into consideration cross-country differences in education.

[Insert Table 8 here]

3.4 Explanations of the results

Up to this point, our analysis has focused in identifying the causal nexus between immigration and the support for anti-immigration parties. In this section, we attempt to illuminate potential sources of the positive linkage established above. As summarized in Barone et al. (2016), existing literature suggests that the two main channels via which immigration can affect electoral support, are either by increasing competition for jobs and public services (economic channel), or by threatening natives’ cultural identity and increasing crime (non-economic channel). Consistent with the first mechanism, the evidence reported in Borjas (2003) indicates that migrants deteriorate the labour market opportunities of natives. With respect to the second channel, Bianchi, Buonanno and Pinotti (2012) find that immigration is (weakly) positively associated with particular types of crime, such as robberies. In addition, Brunner and Kuhn (2018) claim that high levels of cultural diversity aggravate negative sentiments towards migrants.

To examine the relevance of each of these factors to our analysis, we estimate heterogeneous effects in the spirit of Barone et al. (2016). In particular, we modify our basic empirical model by interacting our main independent variable of interest with 0-1 dummies for

regions with high (above the median) and low (below the median)¹⁹ proxy variables, such as, GDP; unemployment; education attainment; crime rate; and native share of kids under 15 years of age, respectively. Likewise, we use interactions to examine whether the contribution of migrants varies with the level of ethnic diversity among foreign-born populations.

In the cases of average income (used as a proxy for wages) and the unemployment rate, in columns 1 and 2, the evidence is mixed. Our results suggest that there are no systematic differences between rich and poor regions, as both coefficients of interest are significant and almost identical in magnitude. On the other hand, our findings imply that the contribution of migrants is more important in regions with higher unemployment rates. Column 3, examines the impact of ethnic diversity on the political success of the extreme-right parties. To that end, we compute the fractionalization index, that is intended to measure the probability that two randomly drawn individuals stem from different countries.²⁰ As can easily be verified, however, our findings imply that it is the scale and not diversity which shapes native attitudes towards immigration. Importantly, we find in column 4 that the impact of migrants differs between low- and high- crime regions. In particular, the statistical insignificance of the interaction between migration and the low-crime dummy, suggests that migrants do not tend to produce negative sentiments among natives in the least violent regions. In column 5, we account for concerns on competition for public services by using the share of native kids as a proxy. The effect of the interaction between immigration and the high-share dummy is about 12% higher, pointing towards the idea that competition for public resources increases support for anti-immigration parties. Finally, row 6 tests the importance of the labour market channel from a different angle. Communities with less-educated labour force are expected to be more concerned on the labour market consequences of immigration, and therefore shift towards the right end of the political spectrum more sharply than others. Notably, however, we do not find supportive evidence for this conjecture.

¹⁹ We compute for each of the variables indicated in the text the median value in 1991. Crime rate at NUTS-3 level is an exception, since it is available from 2011 onwards only.

²⁰ We omit technical details on the construction of the index for brevity and refer the interested reader to Ottaviano and Peri (2006) for more information.

All in all, the results suggest that impact of migrants on the election outcomes operates through concerns on economic competition and crime. On the other hand, income, ethnic composition of migrants, and native education attainment do not seem to play an important role.²¹

[Insert Table 9 here]

4. Conclusion

Immigration is one of the most controversial issues in Western countries. An emerging strand of the literature studying the interactions between foreigners and host country politics, seems to confirm conventional wisdom that the rising popularity of far-right wing parties is fueled by the presence of migrants. Along those lines, our paper investigates this conjecture using a sample of 51 Greek regional units and election results over the 2004-2012 period. To generate exogenous variation in our main independent variable of interest, we implement an instrumental variable strategy by using the “shift-share” methodology. Notably, the allocation of migrants in 1991 turns out to be strong predictor of future migrant shares. Our preferred IV estimates suggest that there is a significant positive association between migrants and the success of the extreme-right wing as in Otto and Steinhardt (2014) and Halla et al. (2017). Our findings survive several robustness checks, including sample restrictions, alternative estimation methods and control variables. Interestingly, we find that the increased support for the far-right parties analyzed in this study comes at the expense for parties in the left end of the political spectrum.

We have also attempted to investigate potential mechanisms by which immigration produces increased electoral support for fierce proponents of restrictive migration policies. One of the more significant findings to emerge from this analysis is that our main findings are not only driven by concerns on labour market competition, but also by natives’ perceptions that migration causes crime and undermine local amenities. These results match those observed in

²¹ While it is beyond the scope of the present paper, in Appendix Table A2 we provide some preliminary evidence on the nexus between immigration and crime, using data for 2010 and 2011 from the Hellenic Statistical Authority, at the NUTS-3 level. As can be seen there is some evidence of positive association, which nevertheless is not stable across specifications.

earlier studies for other countries (e.g. Barone et al., 2016; Halla et al., 2017). They also corroborate the descriptive evidence, reported in Dimakos and Tasiopoulou (2003), which indicates that migrants in Greece are perceived as “crime-prone” and “fiscal opportunists”.

However, more research on this topic needs to be undertaken before the association between migration and host country’s politics is more clearly understood. For example, an important issue for future work is a detailed examination of the relation between migration and crime. Another possible area of future research would be to investigate the fiscal impact of migrants.

Table 1. Summary Statistics

	Obs.	Mean	Std. Dev.	Min	Max
Immigrant share	204	0.09	0.03	0.02	0.16
Far-right vote share	204	0.07	0.07	0.00	0.27
Radical left vote share	204	0.06	0.05	0.01	0.24
Right coalition vote share	204	0.42	0.09	0.13	0.59
Left coalition vote share	204	0.42	0.09	0.24	0.66
Center left vote share	204	0.36	0.13	0.09	0.63
Center right vote share	204	0.38	0.11	0.08	0.58
Population	204	197,696	496,484	17,930	3,735,120
Density	204	3.85	0.69	2.26	6.89
Log GDP per capita	204	9.59	0.25	9.04	10.27
Share of graduates	204	0.10	0.02	0.06	0.21
Share of females	204	0.51	0.01	0.48	0.52
Share of pensioners	204	0.24	0.04	0.14	0.40
Unemployment rate	204	0.12	0.04	0.05	0.25
Crime rate	102	0.03	0.01	0.02	0.07
Turnout	204	0.68	0.09	0.41	0.85
Managers	102	0.07	0.02	0.03	0.11
Professionals	102	0.12	0.03	0.06	0.20
Technicians and associate professionals	102	0.06	0.02	0.04	0.12
Clerical support workers	102	0.07	0.02	0.04	0.14
Service and sales workers	102	0.17	0.06	0.07	0.33
Skilled agricultural, forestry and fishery workers	102	0.19	0.09	0.01	0.50
Craft and related trades workers	102	0.15	0.03	0.10	0.30
Plant and machine operators, and assemblers	102	0.07	0.02	0.04	0.12
Elementary occupations	102	0.10	0.02	0.04	0.18

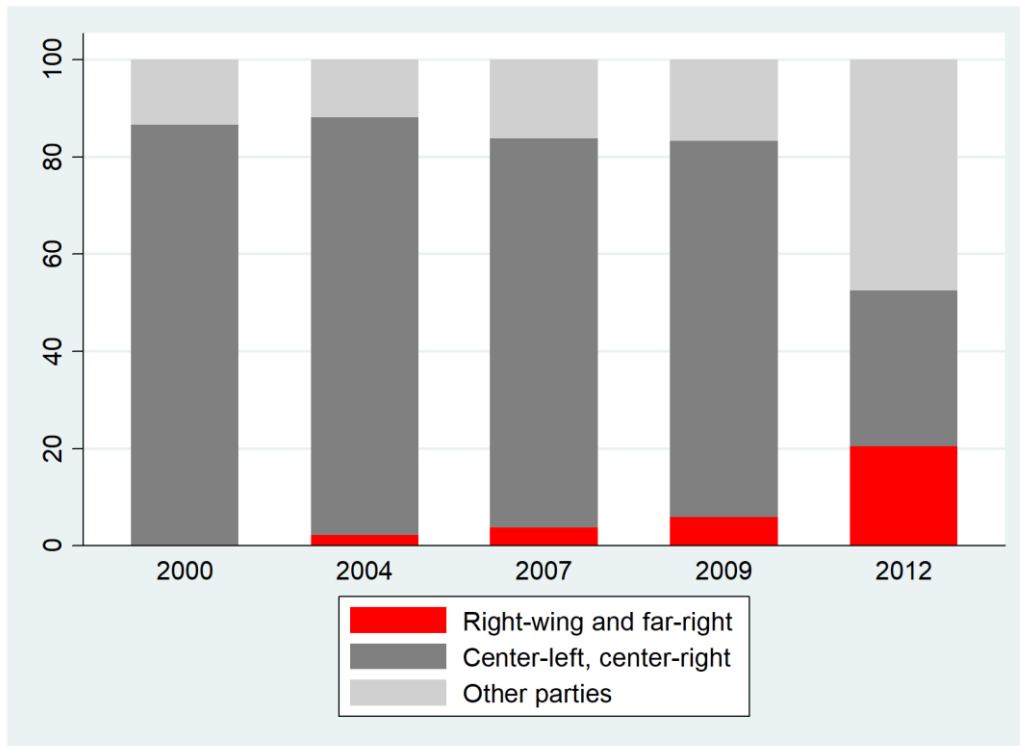
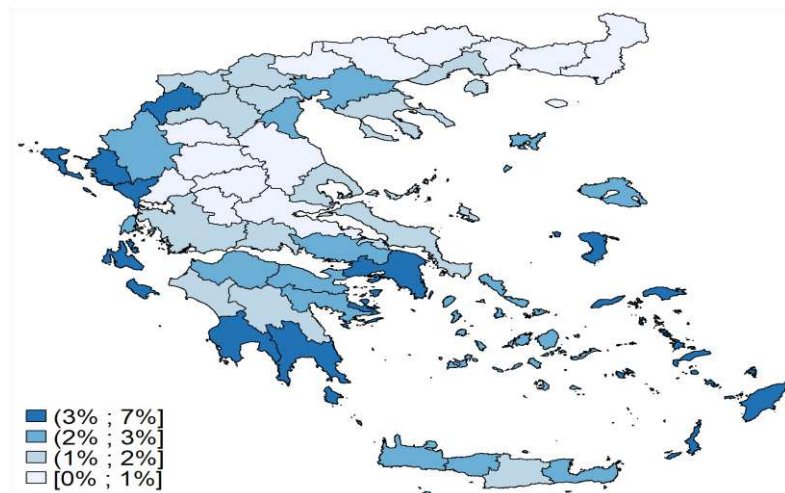
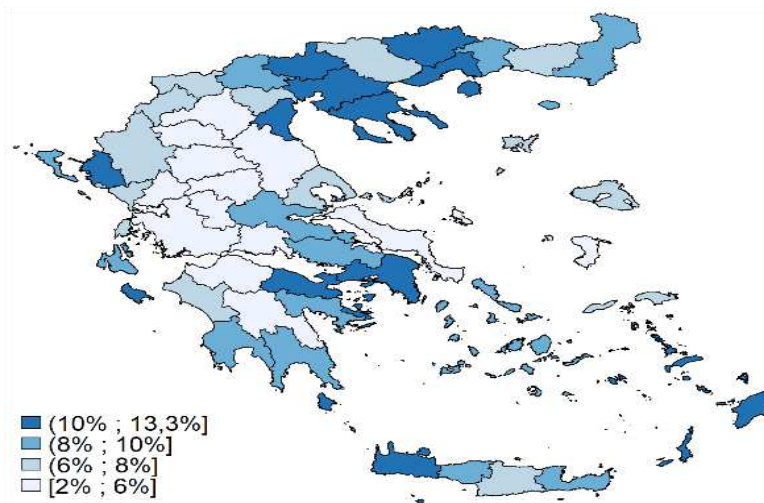


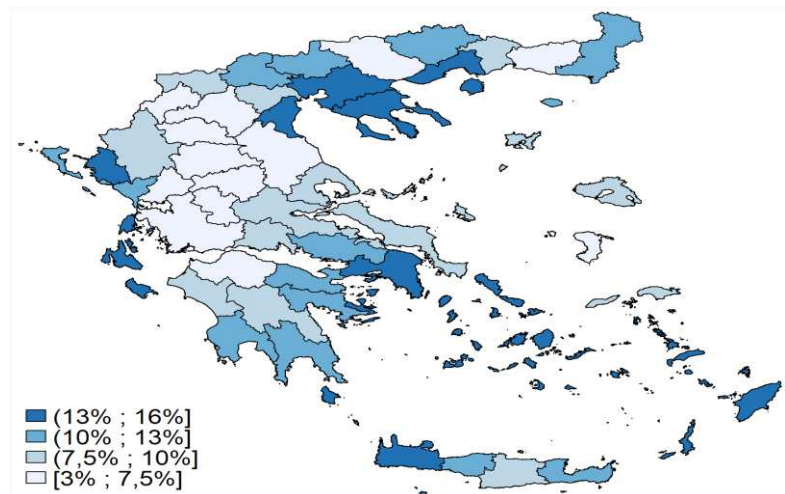
Figure 1 National Parliament Results, 2000-2012. Source: Authors' elaborations on data from the European Election Database.



1991



2001



2011

Fig. 2 Immigrant shares across regional units in Greece.

Table 2. Impact of immigration on election outcomes: Fixed effects estimates

	Unweighted Regressions				Weighted Regressions			
	Income		Unemployment		Income		Unemployment	
	Extreme right wing	Radical Left	Extreme right wing	Radical Left	Extreme right wing	Radical Left	Extreme right wing	Radical Left
Share of Immigrants	0.340** (0.150)	-0.210 (0.161)	0.312** (0.135)	-0.174 (0.148)	0.270* (0.153)	-0.312** (0.154)	0.291* (0.149)	-0.251* (0.150)
Population	0.015*** (0.005)	-0.006 (0.006)	0.014*** (0.005)	-0.005 (0.006)	0.017** (0.007)	-0.011 (0.008)	0.018*** (0.006)	-0.009 (0.008)
Population density	0.001 (0.007)	0.017** (0.007)	0.002 (0.006)	0.015** (0.006)	0.003 (0.006)	0.023*** (0.008)	0.002 (0.005)	0.020** (0.008)
GDP per capita	-0.018 (0.019)	0.008 (0.018)			0.000 (0.026)	0.032 (0.029)		
Share of university graduates	-0.198 (0.140)	0.370** (0.140)	-0.189 (0.140)	0.363*** (0.134)	-0.404** (0.161)	0.312 (0.196)	-0.413** (0.160)	0.327 (0.199)
Share of women	-0.011 (0.475)	-1.092*** (0.408)	0.046 (0.480)	-1.095*** (0.368)	-0.023 (0.519)	-1.355*** (0.480)	0.020 (0.462)	-1.490*** (0.472)
Share of pensioners	-0.012 (0.117)	-0.148 (0.114)	0.022 (0.104)	-0.163* (0.087)	-0.016 (0.127)	-0.219* (0.127)	-0.020 (0.105)	-0.297*** (0.093)
Unemployment			0.031 (0.128)	0.093 (0.112)			0.053 (0.139)	0.077 (0.113)
Observations	102	102	102	102	102	102	102	102
R-squared	0.956	0.914	0.955	0.915	0.979	0.955	0.979	0.954

Robust standard errors (clustered by region) in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3. Impact of immigration on internal mobility of natives

VARIABLES	(1) Change in share of natives	(2) Change in share of unskilled natives	(3) Change in share of skilled natives
Change in share of immigrants	-0.107 (0.210)	-0.220 (0.193)	0.113** (0.055)
Observations	204	204	204
R-squared	0.782	0.777	0.699
Time effects	Yes	Yes	Yes

Robust standard errors (clustered by region) in parentheses. Following Halla et al. (2017), the dependent variable in column 2 is defined as $N_{it}^{low} - N_{it-1}^{low}/N_{it-1}$, where N_{it}^{low} is the absolute number of the less-educated natives. Low skilled education (ISCED 0-12) is upper secondary education or below. The dependent variable in column 3 is defined as $N_{it}^{high} - N_{it-1}^{high}/N_{it-1}$, where N_{it}^{high} is the absolute number of the more educated natives. High skilled education (ISCED 9-13) is tertiary education.

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

Table 4. Impact of immigration on election outcomes: 2SLS estimates using shift-share imputed instrument

VARIABLES	Unweighted Regressions				Weighted Regressions			
	Income		Unemployment		Income		Unemployment	
	Extreme right wing	Radical Left	Extreme right wing	Radical Left	Extreme right wing	Radical Left	Extreme right wing	Radical Left
Share of Immigrants	0.409*** (0.142)	-0.405 (0.255)	0.320*** (0.114)	-0.333 (0.217)	0.354* (0.195)	-0.176 (0.311)	0.365* (0.211)	0.045 (0.367)
Population	0.016*** (0.004)	-0.008 (0.006)	0.014*** (0.004)	-0.006 (0.006)	0.018*** (0.006)	-0.009 (0.009)	0.019*** (0.006)	-0.004 (0.011)
Population density	0.001 (0.006)	0.019*** (0.006)	0.002 (0.006)	0.017*** (0.006)	0.002 (0.006)	0.021*** (0.008)	0.000 (0.006)	0.014 (0.010)
GDP per capita	-0.021 (0.018)	0.015 (0.020)			-0.002 (0.023)	0.029 (0.027)		
Share of university graduates	-0.212* (0.118)	0.412*** (0.138)	-0.190 (0.117)	0.396*** (0.130)	-0.440*** (0.149)	0.254 (0.234)	-0.447*** (0.156)	0.192 (0.268)
Share of women	0.054 (0.448)	-1.276*** (0.392)	0.055 (0.463)	-1.276*** (0.384)	0.046 (0.480)	-1.244** (0.509)	0.102 (0.463)	-1.165* (0.599)
Share of pensioners	0.000 (0.099)	-0.185* (0.096)	0.024 (0.092)	-0.207** (0.089)	-0.003 (0.108)	-0.197* (0.119)	-0.006 (0.096)	-0.241** (0.097)
Unemployment			0.032 (0.114)	0.074 (0.096)			0.069 (0.125)	0.140 (0.119)
Observations	102	102	102	102	102	102	102	102
R-squared	0.956	0.912	0.955	0.914	0.979	0.954	0.979	0.952
Kleibergen-Paap F-Test	24.84	24.84	31.50	31.50	14.47	14.47	14.19	14.19

Robust standard errors (clustered by region) in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5. Robustness results

Specification change	N	Coefficient	Std err.	KP
1. Add crime rate (NUTS2) [#]	102	0.320***	(0.114)	31.056
2. Add voter turnout [#]	102	0.334***	(0.127)	23.913
3. Add occupation dummies [#]	102	0.361*	(0.204)	19.816
4. Drop year dummies	102	1.234***	(0.292)	36.903
5. National Elections 2004, 2007, 2009 and 2012	204	0.293***	(0.103)	30.149
6. National Elections 2004, 2007 and 2009	153	0.117***	(0.051)	28.885
7. European Parliament Elections 2004 and 2009	102	0.249***	(0.086)	32.103
8. Golden Dawn only in the dependent variable	102	0.743***	(0.275)	21.145
9. Popular Orthodox Rally only in the dependent variable	102	0.132**	(0.056)	30.149
10. Excluding Athens and the wider Athens area	100	0.316***	(0.122)	31.798
11. Excluding Athens and Thessaloniki	98	0.355***	(0.114)	29.835

Robust standard errors (clustered by region) in parentheses *** p<0.01, ** p<0.05, * p<0.1

[#] indicates added variable does not enter with a significant coefficient at conventional levels

Table 6. Robustness on selection effects

Restricted version	Full version	Far right
None	Full set of controls from eq. (1)	9.33
None	Full set of controls from eq. (1), crime rate and voter turnout	6.29
Population, Density and gdp	Full set of controls from eq. (1)	7.7
Population, Density and gdp	Full set of controls from eq. (1), crime rate and voter turnout	15.57
Population, Density and unemployment	Full set of controls from eq. (1)	5.56
Population, Density and unemployment	Full set of controls from eq. (1), crime rate and voter turnout	7.53

Each cell reports the ratio $\beta_F/(\beta_R - \beta_F)$, where β_R and β_F are the coefficients for *IMM* from the specifications reported in the first and second column, respectively.

Table 7. Impact of immigration on other parties and hypothetical coalitions

VARIABLES	(1) Right coalition	(2) Left coalition	(3) Moderate Right	(4) Center left
imm	0.612 (0.476)	-0.716** (0.345)	0.408 (0.471)	-0.310 (0.501)
Demographic controls	Yes	Yes	Yes	Yes
Observations	102	102	102	102
R-squared	0.965	0.943	0.982	0.970
Time effects	Yes	Yes	Yes	Yes
Kleibergen-Paap F-Test	14.39	14.39	14.39	14.39

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 8. Heterogeneous effects by education level and origin

	(1)	(2)	(3)	(4)
Share of Unskilled Immigrants	0.198*** (0.075)			
Share of Skilled Immigrants		0.299** (0.117)		
Share of OECD Immigrants			0.361** (0.142)	
Share of non-OECD Immigrants				0.531** (0.225)
Observations	102	102	102	102
R-squared	0.953	0.957	0.954	0.953
Time effects	Yes	Yes	Yes	Yes
Kleibergen-Paap F-Test	36.40	11.64	15.96	10.79

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9 Impact of Immigration on Voter Turnout

	(1)	(2)	(3)	(4)	(5)
Share of Immigrants	-1.876** (0.802)				
Share of Unskilled Immigrants		-1.164*** (0.445)			
Share of Skilled Immigrants			-1.756** (0.887)		
Share of OECD Immigrants				-2.118** (0.903)	
Share of non-OECD Immigrants					-3.118** (1.513)
Demographic controls	Yes	Yes	Yes	Yes	Yes
Observations	102	102	102	102	102
R-squared	0.727	0.773	0.550	0.783	0.498
Time effects	Yes	Yes	Yes	Yes	Yes
Kleibergen-Paap F-Test	31.50	36.40	11.64	15.96	10.79

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 10 Channels

	(1)	(2)	(3)	(4)	(5)	(6)
immigration*high GDP	0.321*** (0.111)					
immigration*low GDP	0.318** (0.127)					
immigration*high unemployment		0.468** (0.204)				
immigration*low unemployment		0.394*** (0.150)				
immigration*high ethnic diversity			0.320*** (0.116)			
immigration*low ethnic diversity			0.320*** (0.119)			
immigration*high crime				0.295** (0.127)		
immigration*low crime				0.259 (0.165)		
immigration*high share of children					0.395*** (0.150)	
immigration*low share of children					0.347*** (0.125)	
immigration*high education level						0.350*** (0.124)
immigration*low education level						0.346** (0.148)
Kleibergen-Paap F-Test	14.75	9.359	18.81	13.95	11.20	10.95

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

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Appendix

Variables: definitions and sources

Share of immigrants: The ratio of foreign-born individuals over total working age (16-64) population. Source: Integrated Public Use Microdata Series (International)

Population: Logarithm of total population. Source: Integrated Public Use Microdata Series (International)

Population density: Logarithm of population per square kilometer. Source: Integrated Public Use Microdata Series (International) and Wikipedia

GDP per capita: The ratio of Gross Domestic Product over total population. Source: Hellenic Statistical Authority

Share of university graduates: The ratio of natives with tertiary education over total working age (16-64) population

Share of women: The ratio of native women over total working age (16-64) population

Share of pensioners: The ratio of pension receivers over adult population

Unemployment: The proportion of unemployed natives (16-64) in total labour force

Voter turnout: The total number of votes cast divided by the number of eligible voters. Source: European Election Database

Crime rate: Reported crimes over the total population. Source: Hellenic Statistical Authority

Election outcomes: The vote share for each party. Source: European Election Database

Table A1. Name of the regional units (NUTS-3) used

Evros	Pieria	Magnissia	Lefkada	Arkadia	Dodekanissos
Xanthi	Serres	Trikala	Etoloakarnania	Korinthia	Kyklades
Rodopi	Chalkidiki	Arta	Achaia	Lakonia	Iraklio
Drama	Grevena	Thesprotia	Ilia	Messinia	Lassithi
Kavala	Kastoria	Ioannina	Viotia	Argolida	Rethymno
Imathia	Kozani	Preveza	Evia	Attiki	Chania
Thessaloniki	Florina	Zakynthos	Evrytania	Lesvos	
Kilkis	Karditsa	Kerkyra	Fthiotida	Samos	
Pella	Larissa	Kefallinia	Fokida	Chios	

Countries included in the construction of the shift-share instrument and fractionalization index

Integrated Public Use Microdata Series-International and United Nations (2015), Trends in International Migrant Stock: Migrants by Destination and Origin.

ORIGIN COUNTRIES: Afghanistan, Africa, Albania, Algeria, Argentina, Armenia, Asia, Australia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Cameroon, Canada, Central African Republic, Central/South America and Caribbean, Chile, China, Colombia, Comoros, Congo, Croatia, Cuba, Cyprus, Czech Republic/Czechoslovakia, Democratic Republic of Congo, Denmark, Dominica, Dominican Republic, Egypt, Ethiopia, Finland, France, Georgia, Germany, Ghana, Hungary, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Korea, Kyrgyzstan, Lebanon, Libya, Lithuania, Luxembourg, Macedonia, Malta, Mexico, Moldova, Morocco, Netherlands, New Zealand, Nigeria, Norway Oceania, Pakistan, Palestinian Territories, Panama, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia/USSR, Samoa, Saudi Arabia, Senegal, Serbia, Slovakia, Somalia, South Africa, South Sudan, Spain, Sri Lanka (Ceylon), Sudan, Sweden, Switzerland, Syria, Tanzania, Thailand, Tunisia, Turkey, Ukraine, United Kingdom, United States, Uzbekistan, Venezuela, Vietnam, Yemen, Yugoslavia, Zambia, Zimbabwe.

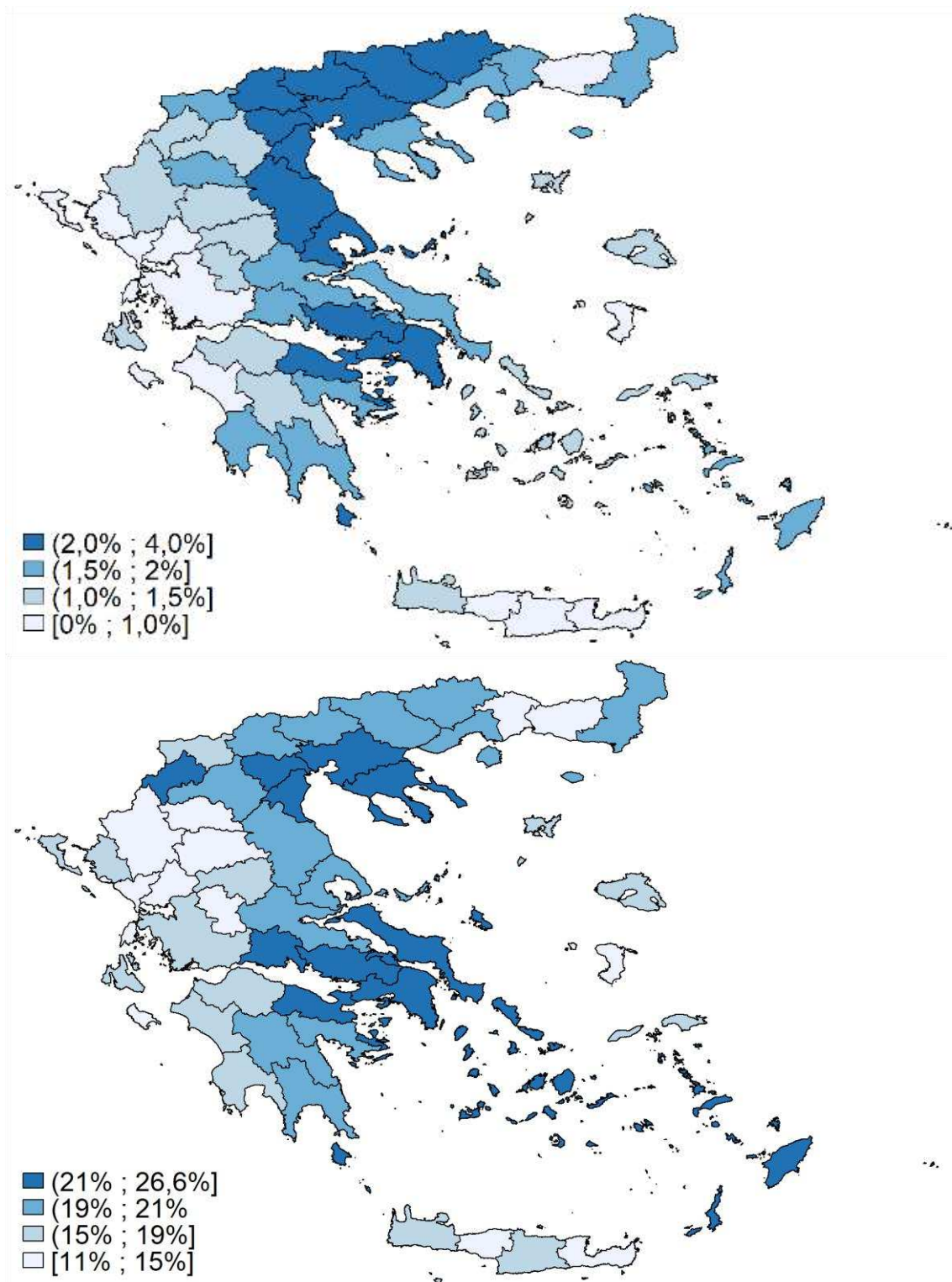


Fig. A1 Far-right vote share in 2004 and 2012. This figure depicts the aggregate vote share for the anti-immigration parties considered in this study, namely “Golden Dawn”, “Independent Greeks” and “Popular Orthodox Rally”.

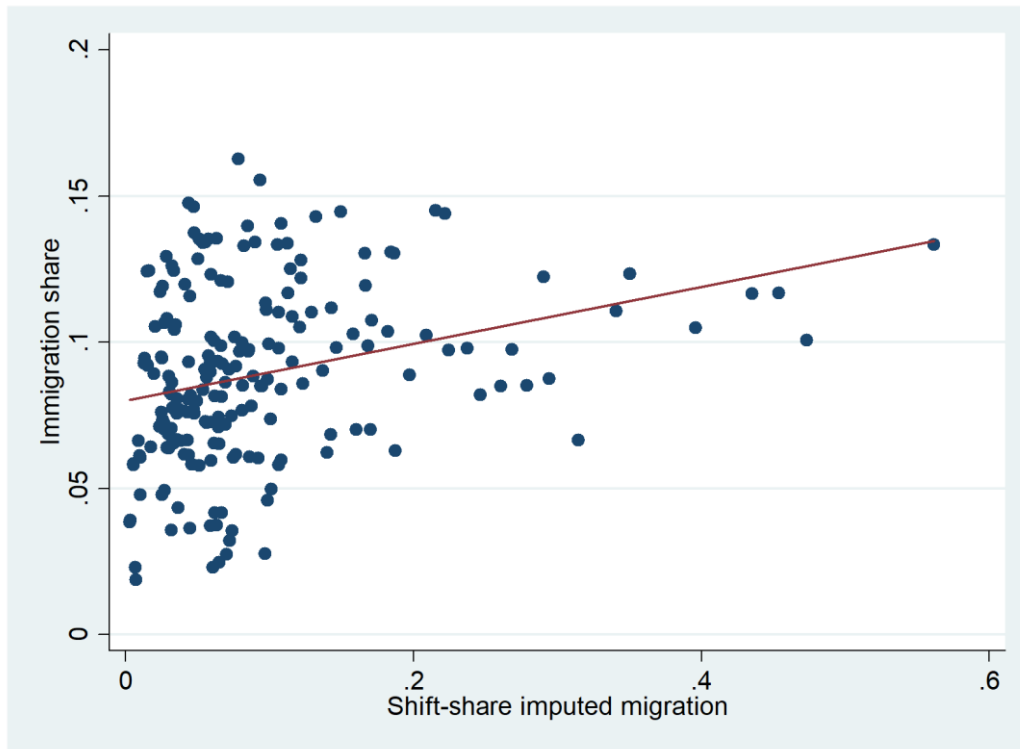


Fig. A2 Scatter plot of actual share of immigration versus the shift-share instrument.

Table A2 Immigration and crime IV estimates

	(1)	(2)	(3)
imm	0.071 (0.173)	0.320* (0.165)	0.118 (0.164)
pop	0.001 (0.006)	0.008* (0.004)	0.003 (0.005)
density	0.003 (0.004)	-0.001 (0.006)	0.000 (0.005)
gdppc			0.058** (0.029)
grad	-0.094 (0.103)	-0.105 (0.106)	-0.104 (0.098)
femshare	0.971** (0.423)	0.778** (0.394)	0.998** (0.436)
penshare	0.200* (0.115)	0.140 (0.097)	0.200* (0.113)
unegr		0.258 (0.166)	0.241 (0.158)
Observations	102	102	102
R-squared	0.386	0.350	0.403
Time effects	Yes	Yes	Yes
Kleibergen-Paap F-Test	19.25	21.14	16.66

Robust standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1