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Massive Migration and Elections: Evidence from the
Refugee Crisis in Greece¹

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Abstract

This paper explores whether the massive arrival of refugees at Greek islands has had an impact on natives' voting behavior. Our results show a positive and significant effect of refugees' presence on votes for the Greek extreme-right party Golden Dawn. More precisely, we find that a 1% increase in the share of refugees is associated with an increase of 5% in the share of votes for Golden Dawn. This outcome is robust under different estimation methodologies and placebo regressions.

Keywords: immigration, refugee crisis, voting

JEL codes: F22, J61

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1 Introduction

The political instability of the Middle East has prompted an unprecedented surge of refugees to Europe. According to a report of the United Nations High Commissioner for Refugees released in June 2015, the number of forcibly displaced people around the globe had reached a figure of 59.5 million (UNHCR 2015), constituting the largest number of refugees since WWII. Whereas refugees have historically sought refuge in developing countries because of geographical proximity, the recent turmoil in North Africa and the Middle East, alongside the continuing violence in Afghanistan, has sparked a massive increase in displacements toward the European Union, with the number of people applying for asylum reaching a record figure of 1.26 million in 2015 (Eurostat 2016).

Meanwhile, we have witnessed a rise in nationalist and anti-immigration parties in several European countries, including Austria (FPÖ), Belgium (Vlaams Belang), Finland (True Finns), France (Front National), Germany (Pegida and AfD), Sweden (Sweden Democrats), the United Kingdom (UKIP), and the country studied in this paper, Greece (Golden Dawn). While the rise in extreme-right parties is not a new phenomenon in Europe (Arzheimer 2009), the trend does seem to have accelerated in more recent years, as epitomized by the successful Brexit campaign. This, in turn, raises two related questions: (i) whether a massive refugee presence can affect the political choices of natives in European countries, and (ii) whether increases in right-wing votes reflect anti-immigration feelings going beyond purely economic concerns.

To address these questions, we explore the effect of the unprecedented surge of refugees to the European Union on two parliamentary electoral results in Greece in January and September 2015. Our focus on refugees in Greece contributes to the existing literature by allowing us to instrument the number of refugees with the geographical distance separating (recipient) Greek islands from (sending) Turkish coasts. We are thus able to clearly identify the positive effect of a massive increase in refugees on extreme-right votes. Moreover, our analysis reveals that this same surge of refugees has negatively affected right-wing parties, thus suggesting a transfer of right-wing voters toward more radical political platforms. Lastly, the high number of refugees, together with the short timespan separating the two electoral rounds, allows us to conclude that the aforementioned effects are likely to have been driven by a potential rise in anti-immigration feelings or a protest for feeling abandoned by the Greek government of the Greek voters. To further rule out economic channels as the cause of the rise in political extremism, we conduct a placebo analysis. We substitute the voting share of Golden Dawn in the 2015 election with that of 2012; given that this election took place before the large inflow of refugees, we should see no effect of the presence of refugees in 2012 on this earlier election. Indeed, we find no effect.

Immigration — especially in the presence of large numbers of migrants — has been shown to generate anti-immigration feelings (Hopkins 2010; Dustmann et al. 2011) and these feelings are expressed through voting for extreme-right parties or racist behavior (e.g., Knigge 1998; Norris 2005; Rydgren 2008; Halla et al. 2017). The channels explaining this phenomenon are multiple. Anti-immigration attitudes are explained by both economic factors, such as labor market competition and the impact of immigration on the fiscal burden, and non-economic

factors rooted in cultural values and beliefs (see, for example, Rydgren 2008; Arzheimer 2009; Hainmueller and Hopkins 2014; Barone et al. 2016; Halla et al. 2017).

Theories tying immigration to the labor market rely mostly on the Heckscher–Ohlin and the factor proportions models and emphasize the competition that native workers may be facing from migrants. The main conclusions are that under fairly general conditions the skilled (un-skilled) natives should be in favor of unskilled (skilled) migrants, while opposing skilled (unskilled) ones (Scheve and Slaughter 2001; Mayda 2006; O’Rourke and Sinnott 2006). The empirical support shows that low-skilled immigration increases (decreases) negative attitudes toward migrants from low-skilled (high-skilled) natives (Scheve and Slaughter 2001; Mayda 2006; O’Rourke and Sinnott 2006; Facchini and Mayda 2009). The effect of migrants on labor markets goes beyond wage considerations, though, since higher unemployment rates have equally been shown to boost extreme-right parties (Jackman and Volpert 1996) or right-wing criminal activities (Falk et al. 2011). In the specific Greek context, Karydis (2004) presents survey evidence according to which anti-immigration feelings are rooted in the fear of migrants stealing jobs. On the other hand, there is evidence in Germany that the migrants do not displace the jobs of native workers but rather struggle to find jobs (Gehrsitz et al. 2017). The second economic channel — which has been shown to be quantitatively bigger than that of the labor market (Dustmann and Preston 2007) — operates via the increased fiscal burden required to provide social security to the newcomers. Nevertheless, there is evidence that economic conditions are not the main reason for the support of extreme-right parties (see Labrianou and Ellinas 2016; Rydgren 2008; Ivarsflaten 2005).

Setting aside pure economic factors, natives’ attitudes toward economic migrants and refugees have equally been shown to be affected by anti-immigration feelings and perceived threats to one’s cultural identity (Mayda 2006; Arzheimer 2009). In the context of Sweden, for instance, Bauer et al. (2000) conclude that this dimension is more salient than economic factors, while Dustmann and Preston (2007) find that in Great Britain the cultural aspect is highly relevant in explaining negative attitudes toward migrants. In fact, cultural distance has been shown to matter (Mayda et al. 2015). According to Mendez and Cutillas (2014), more culturally proximate migrants (e.g., Latin Americans in Spain) may translate into more votes for leftist parties, while culturally distant ones (e.g., Africans in Spain) increase votes for anti-immigration parties. Moreover, an experimental study of the Netherlands further confirms the salience of cultural distance being perceived as a threat to cultural identity (Sniderman et al. 2004).

Two studies on the effect of immigration on Danish politics partially concur with a positive association with extreme-right-wing votes. Harmon (2014) uses historical renting housing stock to instrument the current settlements of migrants and finds that higher ethnic diversity in Danish municipalities increases the support for anti-immigration (nationalist) parties at municipal elections, which parallels decreases in political support for left-wing parties. Using a different identification strategy that exploits the random assignment of migrants across municipalities, Dustmann et al. (2016) find that immigration boosts anti-immigration parties’ votes, except in the municipalities with a very high population density (e.g., urban centers), where the reverse holds true. Lastly, Steinmayr (2016) instruments the number of refugees in Austrian communities (an administrative unit of 3,000 inhabitants on average) with the existence of buildings suitable for hosting migrants. The study finds evidence in support of Allport’s (1954) contact hypothesis following which contact with minority groups reduces the prejudice of the majority group toward the former one. Accordingly, the presence of refugees in Austrian communities has reduced the support for the anti-immigrant extreme-right party Freedom Party of Austria

(FPÖ). Seen together, these studies reveal that migrants and refugees could have different effects on natives' attitudes, and/or that particular socioeconomic contexts could influence the result.

Our paper contributes to the literature in several ways. The particular context of our study enables us to identify the specific impact of mass immigration on policy opinions. On the one hand, existing studies relying on attitude surveys have unsatisfactorily coped with endogeneity issues. On the other hand, the literature relying on electoral results that instruments for the presence of migrants in different manners suffers from a deficiency underlined by Mayda (2006) and Arzheimer (2009): since voting decisions are jointly determined by individual attitudes toward migrants and by the strategic reaction of political entities (government and opposition parties), it is very difficult to disentangle these two effects.

The peculiarity of our context is that we exploit two electoral rounds (January and September 2015), which were 8 months apart and where, more importantly, the second election was neither caused by the refugee wave nor anticipated by voters or political parties. Indeed, in July 2015 the newly elected government decided in the midst of negotiations with funding bodies (the European Union) to launch a referendum on whether or not to accept the terms of securing a bailout of the Greek economy. This unexpected decision resulted in a large majority opposing the terms of the agreement that the government would eventually accept in the 13th hour. The Greek government's decision to overrule the referendum's result provoked wide discontent, which eventually compelled the government to organize renewed parliamentary elections. Importantly, during the same period separating the two electoral rounds, Greece witnessed a vast refugee wave from the Middle East and Asia — via Turkey — as the conflict in Syria intensified and refugees took advantage of the summer so as to attempt to reach the Greek shores by sea. Combined, these events imply that the country experienced a sharp increase in refugees shortly before unforeseen elections took place in September 2015, enabling us to study the pure policy opinion effect of immigration.

Our results show a positive and significant effect of refugees' presence on votes for the Greek extreme-right party Golden Dawn. More precisely, we find that a 1% increase in the share of refugees is associated with an increase of 5% in the share of votes for Golden Dawn. To provide further evidence of this anti-immigration channel, we demonstrate the absence of any effect in a placebo analysis on Greek islands that received no migrants and that are geographically proximate to the migrant-hosting islands. This result reinforces our conclusion that the increased electoral outcomes of Golden Dawn resulted from the very presence of migrants, rather than from the associated economic consequences, which is in line with the political literature in which economic conditions are not the main reason for the support of extreme-right parties (see Labrianou and Ellinas 2016; Rydgren 2008; Ivarsflaten 2005).

Lastly, we inquire as to whether the rise in extreme-right-wing vote shares can be attributed to a radicalization of right-wing voters or to other channels. Our findings reveal that Golden Dawn benefited from a transfer of votes from other right-wing factions such as ANEL and New Democracy. Given that the ANEL party participated in government with SYRIZA, we infer that the refugee crisis might reinforce anti-system votes of islanders feeling neglected by the Greek state, partially due to its failure to adequately address the crisis. This is in line with Labrianou and Ellinas (2016), who suggest that Golden Dawn draws not only economic and cultural but also protest/anti-system votes (e.g., Knigge 1998). Meanwhile, we find that New Democracy has suffered significant electoral losses because of the refugee crisis, as their political agenda is focused only on economic issues, neglecting the immigration agenda that she had in previous elections.

To further convince the reader, we instrument the stock of refugees with the interaction of time with the minimal travel distance from each Greek municipality to the closest Turkish border. The validity of the instrument rests on two elements, namely the homogeneity of the overall stock of refugees (rather than their precise location), which occurred between the two electoral rounds under study, and the refugee's likely strategy of minimizing the crossing route to Greek territory. Combined, these features enable us to improve upon the existing literature by proposing a convincing identification strategy.

In the next section we review the current refugee crisis and explore the migratory paths from Turkey to Europe via Greece. Section 3 describes the empirical model and data, Section 4 contains our empirical findings, and Section 5 concludes.

2. The background

2.1 The refugee crisis

In 2015, more than 1 million refugees are estimated to have reached Europe (International Organization for Migration), mainly by sea (97%) and mostly transiting via the Turkish shores to the Greek islands (82%), before pursuing their journey through the Balkans toward Northern Europe (IOM 2015). This unprecedented wave of refugees to Europe is to be comprehended in the context of the ongoing Syrian civil war, which has resulted thus far in around 250,000 casualties and 12 million displaced persons, according to conservative UN estimates (UN 2015). As of April 2016, Turkey was hosting close to 3 million registered refugees (UNHCR 2016), most of whom desired reaching Northern Europe. The typical journey is both perilous and onerous. Turkish, Greek, Kurdish or "Balkan" smugglers — also known as *kaçakçı* — organize the crossing from the Turkish shores to the Greek islands for amounts that can commonly cost between 2,500 and 3,500 euros (Papadopoulou 2004; To Vima 2015). The smuggling strategy is relatively straightforward: smugglers rely on informants so as to avoid patrols from coast guards and the navy, and if the boat loaded with migrants happens to be detected, some of the passengers are instructed to fall in the sea in order to compel the Greek authorities to initiate a search and rescue operation instead of pushing the illegal boat back to Turkish waters. This perilous journey seems to have been the predilection road for refugees to penetrate Europe since the Greek government constructed a 4-meter-tall fence along the Greek–Turkish land border so as to contain illegal migration. The total number of registered arrivals of refugees in 2015 reached a record figure of 856,723, with the bulk of the migrants being directed toward the Greek islands bordering Turkey, as can be seen in Figure 1. The islands which received refugees comprised Chios, Lesbos, Tilos, Crete, Symi, Kos, Leros, Kalymnos, Agathonisi, Samos, Samothraki, and Rhodes.

Once on Greek soil, the unique way in which refugees pursue their route to Northern Europe is by processing their papers with local Greek authorities, before embarking on vessels heading to Athens' port, Piraeus, or to the port of Kavala. This unprecedented wave of migrants has created a bottleneck on the Greek islands, wherein local authorities have struggled to screen and record the migrants, while ferry companies have reached capacity

constraints on board their vessels. Moreover, the Greek islands did not have the infrastructure to accommodate these people, given that the influx of refugees was quite low in previous years (see Figure 1). The combination of these features makes our study unique: firstly, this wave of refugees has translated into a permanent presence of refugees on the Greek islands during the timespan covered by this study and, secondly, natives have protested against government or potential government parties due to feeling abandoned by the Greek state, hence dismissing any economic motivation for voting in favor of an anti-immigration party.

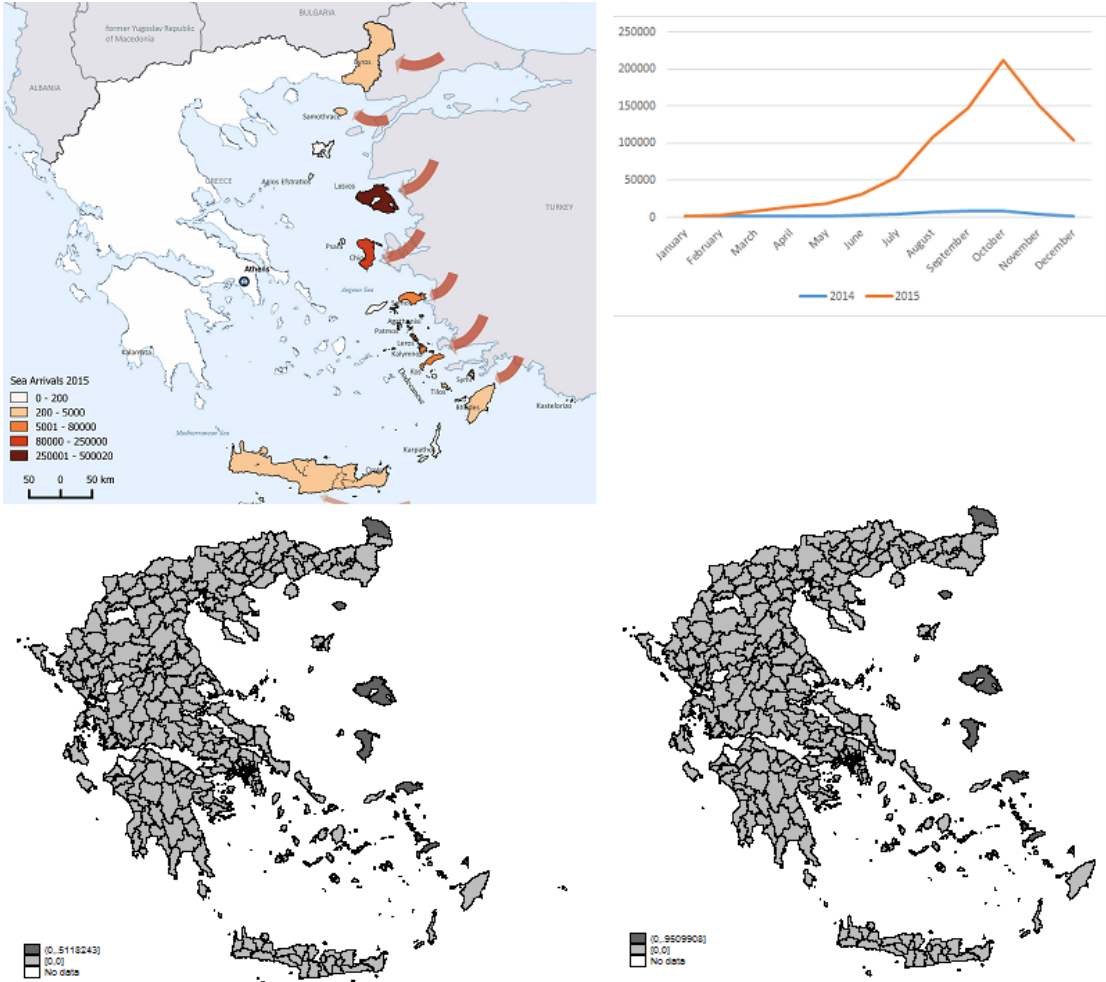


Figure 1: Registered arrivals of refugees in Greece in 2015 (UNHCR), monthly number of refugees and municipality-level shares of refugees in the population received in 2014 and 2015.

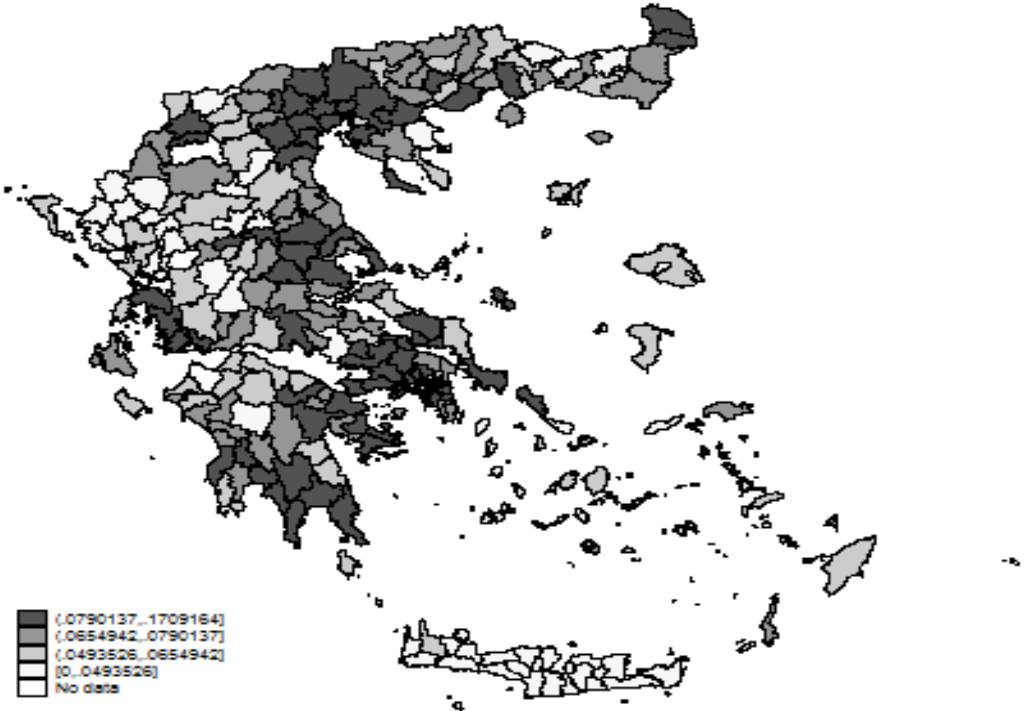
2.2 The rise of Golden Dawn

Greece is a parliamentary democracy. Its parliament’s 300 members are elected for a four-year term by a (reinforced) proportional system in which 250 members are elected by a proportional allocation of votes to all of the parties (accounting for at least 3% of the total votes), with the remaining 50 seats being allocated to the party receiving the largest share of votes. Historically, two rival factions have dominated Greek politics, but since the beginning of the subprime crisis, we have witnessed a dispersion of votes together with an increase in the number of parties in parliament. One of the new entrants has been the extreme-right-wing party Golden Dawn.

The party was founded in 1980 initially as a magazine, and then acted as a political movement during the 1990s. His presence in the political scene was insignificant, securing less than 0.5% of the total votes at parliamentary elections. The party gained momentum in the midst of the economic crisis, scoring 7% at the June 2012 parliamentary elections. In the January and September 2015 electoral rounds the party renewed its electoral success, with its scores reaching 6.3% and 7% respectively. Figure 2 presents the share of votes for Golden Dawn in the last two elections (January 2015 and September 2015) in all of the municipalities of Greece.

Golden Dawn is known for its harsh discourse and actions against migrants, and its political platform is deeply anti-austerity, anti-European and anti-immigration. These features have convinced part of the Greek electorate, with the party obtaining more than 20% of the votes in some municipalities of Athens in the May 2012 parliamentary elections. Given this clear and loud anti-immigration discourse, the ongoing refugee crisis is likely to have contributed to strengthening the party in municipalities harboring refugees.

The unprecedented refugee wave to Greece in 2015 has disproportionately affected islands neighboring Turkey, thus constituting an ideal context in which to test the impact of refugees' presence on votes for an anti-immigration party. Two parliamentary elections were organized in Greece in 2015, in January and in September. The peculiarity of the September elections lies in that they were totally unexpected, thus preventing political parties from strategically designing electoral campaigns in advance. Moreover, the second electoral round was organized at the end of the northern hemisphere's summer period, a period of particularly intense refugee smuggling due to favorable weather conditions. Together, these facts imply that municipalities close to the Turkish border had been exposed to important increases in the refugee presence prior to casting their votes in September 2015.



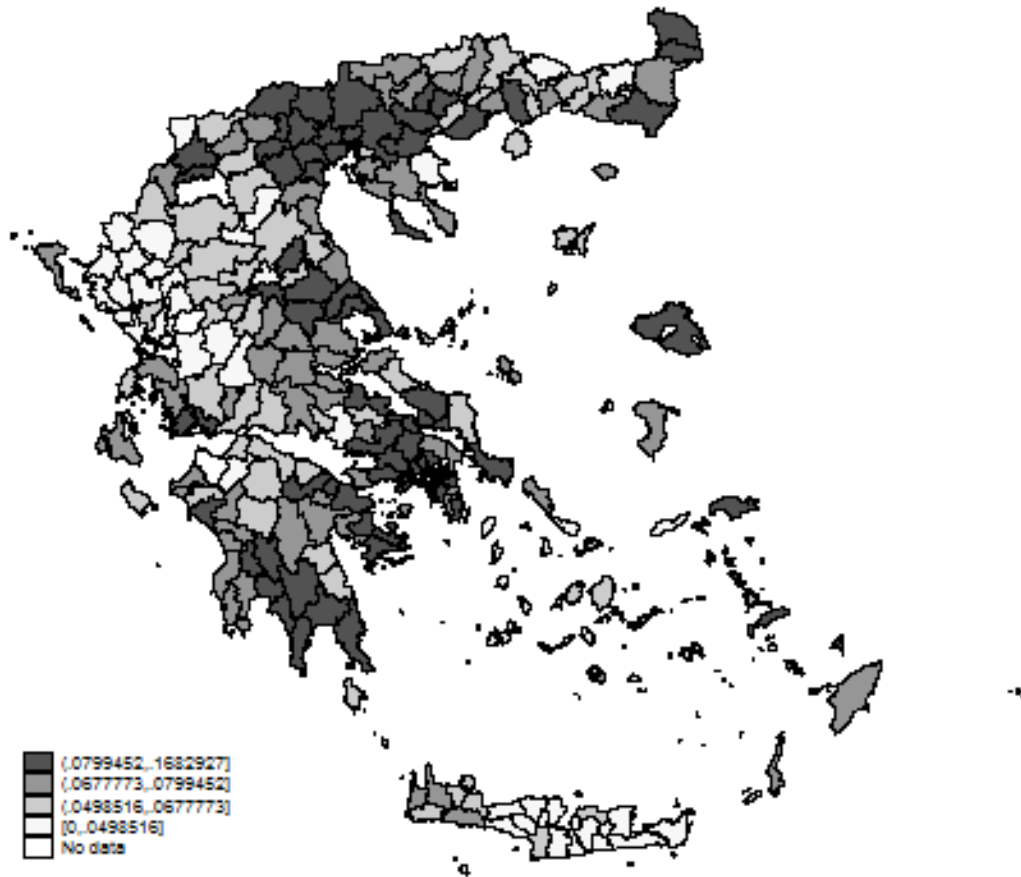


Figure 2: Share of votes for Golden Dawn in elections of January 2015 and September 2015.

3. Empirical methodologies and data

3.1. Empirical models

We use two different specifications in our analysis. The first benchmark specification, which is to test our main hypothesis regarding whether the share of refugees in the Greek municipalities affects the share of votes for Golden Dawn, reads as:

$$y_{it} = bREF_{it} + \delta X_{rt} + \gamma_i + \gamma_t + \epsilon_{it} \quad (1)$$

where y_{it} is the share of votes received by Golden Dawn in municipality i and electoral round t ($t = \text{January or September 2015}$), and REF_{it} is the share of refugees over the total population of municipality i in electoral round t .

The coefficient of interest is b and it captures the effect of the presence of refugees in a given municipality on the percentage of votes that the Golden Dawn party received. To mitigate the possibility of an omitted variable bias, we introduce time-varying covariates, X_{rt} , that include the log of unemployment rates and the log of crime rates (thefts), which concerns total unemployment and the crime level divided by the population at a regional

level. Lastly, we further capture unobserved heterogeneity by including year γ_t ³ and municipality fixed effects γ_i , with the time-fixed effects capturing — amongst other things — the common economic shock affecting Greece during the January–September 2015 period. Then, we alternate our specification while following Steinmayr (2016) and we take the first difference of Eq. (1), which becomes:

$$\Delta y_{it} = \beta \Delta REF_{it} + \nu \Delta X_{rt} + \Delta \epsilon_{it}, (2)$$

where the dependent variable would have been the change in the voting share for Golden Dawn and the explanatory variable of interest the change in the share of refugees. This specification gives us the possibility to investigate whether the slight increase from the January to September 2015 elections can be linked to the refugee inflow. To solve the reverse causality and measurement problems, we next propose an instrumental variable approach.

3.2 Instrumental strategy

Our strategy consists in instrumenting the share of the stock of refugees with the interaction between a time dummy and the geodesic distance between each municipality of destination (i) and the closest Turkish border (r). Identification comes from the time-varying effect of geographic distance on migration, reflecting gradual changes in transportation and communication costs. The exclusion restriction is that distance affects the refugee number, but no other characteristics are likely to affect the voting behavior.

3.3. Data

This study draws upon a new panel dataset combining electoral outcomes at the municipality level in Greece, data on refugees' arrivals, geographic data (distance from the Turkish coast), and crime and unemployment on a regional basis.

Our electoral data cover vote outcomes for all of the parties that participated in the last two Greek legislative elections between January 2015 and September 2015. Our sample includes all of the municipalities of Greece (325 municipalities).

Data for refugees have been collected from the United Nations' archives for the years 2014 and 2015. While refugees' data are available on a monthly basis at municipality level, we calculate the average stock of refugees in different time windows, i.e., one month, three months and four months, to compute the share of refugees over the total population of the municipality. Two remarks are in order here. Firstly, the rationale for also considering wide windows of observation rather than the number of registered refugees on the day preceding the elections lies in the substantial temporal (day-by-day) variation in the number of refugees present on the islands. This high temporal variation in the number of refugees implies that a wider window of observation provides a more reliable measure of the actual exposure to refugees. Secondly, the unit of observation is the municipality, despite the existence of more disaggregated electoral data (electoral center level). We follow this strategy because it is

³ The "time"/year dummy captures an electoral period (January or September) rather than a temporal dimension.

impossible to identify the number of refugees at the more disaggregated geographical unit of observation. The reason is that after setting foot on the Greek islands the refugees were not confined to reception centers located in specific geographical areas⁴ and could instead be located anywhere on the island, which corresponds to our geographical unit of aggregation: the municipality. We accordingly collected electoral data for each municipality from the Ministry of Interior for the January and September 2015 ballots.

To construct the shares of refugees over the total population, we use data for the population of each municipality from 2014 to 2015. The data are taken from a Greek statistics service (ELSTAT). We use as control variables for our regressions unemployment and crime data. The unemployment and crime data are collected from ELSTAT and the Greek police at a regional level. The crime data comprise the total number of robberies, drug arrests and burglaries divided by the population of each municipality.

Given the unavailability of data for the specific months of interest, January and September 2015, we instead take the (yearly) 2014 and 2015 variables as proxies for those covering the period preceding, respectively, the January and September 2015 elections. To compute the travel distance from Turkey to Greek municipalities, we use geographical coordinates to calculate the minimal travel distance from each Greek municipality to the closest Turkish border. More specifically, whenever a land connection exists, we calculate the minimum travel distance to the nearest Greek–Turkish land border⁵. For islands, on the other hand, we use the geodesic distance to the closest Turkish shore⁵. Table 1 illustrates the summary statistics for the main variables of our analysis⁶.

Table 1: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.
^{REF} 3month	0.008	0.067	0	0.97
Monthly refuge stock	239	3,565	0	86,449
^{REF} 4month	0.009	0.07	0	0.95
^{REF} 1month	0.006	0.05	0	0.96
Golden Dawn	0.066	0.023	0	0.171
SYRIZA	0.363	0.074	0.139	0.788
New Democracy	0.309	0.078	0.047	0.679
Potami	0.049	0.03	0.006	0.43
KKE	0.054	0.031	0	0.331
ANEL	0.042	0.018	0	0.207
Centrists	0.023	0.013	0	0.112
Pasok	0.036	0.042	0	0.207
ln(unemployment rate)	-2.99	0.848	-4.67	-0.782
ln(crime rate)	-7.193	0.644	-8.041	-4.875

⁴ The first such center was inaugurated in October 2015, hence after the September 2015 elections.

⁵ These distances were computed using OpenStreetMap software.

4. Results

4.1 Benchmark results

Table 2 displays the baseline estimates. Columns 1 to 3 illustrate the results of Eq. (1). In each column the share of refugees is constructed using different time windows of the average stock of refugees (1 month, 3 months, 4 months). Furthermore, Columns 4 to 6 show the results estimating Eq. (2). The majority of the regressions explain more than 91% of the variation in the observed percentage of votes received from Golden Dawn. This ensures a very good fit, given that migration rates are very heterogeneous across corridors. The magnitude of the coefficient of the share of refugees is relatively high: an increase of one percentage point in the share of refugees is associated with an increase of five percentage points on average for Golden Dawn at the elections. Moreover, the unemployment and crime rates are not significant at any significance level. Columns 4 to 6 show the equivalent results using the change in the share of votes for Golden Dawn and the change in the proportion of refugees instead of the vote shares and refugees as dependent and independent variables respectively. We find a positive and significant effect of the increase in the change of the percentage of refugees on the change of the share of votes that Golden Dawn received. The size of the coefficient in Columns 4 to 6 is very similar to that of Columns 1 to 3.

Table 2: Benchmark results

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Share of votes for Golden Dawn	Share of votes for Golden Dawn	Share of votes for Golden Dawn	Difference of share of votes for Golden Dawn	Difference of share of votes for Golden Dawn	Difference of share of votes for Golden Dawn
REFinflow1month						0.057*** (0.009)
$\Delta \ln(\text{unemployment})$				-0.001 (0.003)	-0.000 (0.003)	-0.000 (0.003)
$\Delta \ln(\text{crime})$				0.006 (0.004)	0.005 (0.004)	0.005 (0.004)
REFinflow3month					0.056*** (0.009)	
REFinflow1month				0.062*** (0.019)		
REF4month			0.059*** (0.013)			
$\ln(\text{unemployment})$	0.002 (0.005)	0.002 (0.005)	0.002 (0.005)			
$\ln(\text{crime})$	0.005 (0.006)	0.003 (0.006)	0.003 (0.006)			
REF3month		0.058*** (0.013)				
REF1month	0.063** (0.027)					
Observations	650	650	650	325	325	325
R-squared	0.957	0.959	0.959	0.103	0.142	0.143
Municipality dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	No	No	No

Notes: In all tables standard errors are clustered at the municipality level and the corresponding standard errors are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

4.2 Robustness checks

In Table 3, we explore the robustness of our results, introducing additional controls and alternating the main specification. Firstly, in Columns 1 and 2, we include a dummy which takes the value of 1 for municipalities which elected members of Golden Dawn in Greek Parliament (I_{GD}) and zero when Golden Dawn was not elected in the elections of 2012. This variable captures unobserved factors favoring the extreme right prior to the massive 2015 inflow of refugees. We notice that the coefficient of interest remains stable throughout the specifications of Columns 1 and 2.

The I_{GD} coefficient is positive and significant, thus reflecting a higher tendency to vote for the extreme right in municipalities where the party had a higher propensity to elect its members in Greek parliament. In Columns 3 and 4, we exclude from our sample the municipalities that had elected members of Golden Dawn in the last 4 years, so as to ensure that the municipalities that regularly elected members of Golden Dawn in Greek Parliament do not drive our results. We notice that the point estimate for the share of refugees equals 0.0481 on average and is significant at the 1% level of significance.

Table 3: Benchmark with additional controls

	(1)	(2)	(3)	(4)
Variables	Share of votes for Golden Dawn	Share of votes for Golden Dawn	Share of votes for Golden Dawn	Share of votes for Golden Dawn
REF3month		0.057*** (0.013)		0.048*** (0.013)
ln(unemployment)	-0.002 (0.004)	-0.001 (0.004)	-0.008* (0.004)	-0.007 (0.004)
ln(crime)	0.006 (0.006)	0.005 (0.006)	0.009 (0.008)	0.007 (0.008)
REF1month	0.061** (0.027)		0.050* (0.027)	
IGD	0.023*** (0.005)	0.023*** (0.005)		
Observations	648	648	389	389
R-squared	0.958	0.960	0.961	0.963
Municipality dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes

Notes: In all tables standard errors are clustered at the municipality level and the corresponding standard errors are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

4.3 Source of the rise

In this subsection, we examine the potential source of the rise in the share of votes for Golden Dawn. We substitute the dependent variable of Eq. (2) for the percentage of votes for the parties entered in September 2015 in Greek Parliament. The intuition is that if the change in the proportion of refugees negatively affects one of the parties being in government, then it will be an indication that the refugee crisis might reinforce anti-system votes of islanders feeling neglected by the Greek state. If we find evidence that other parties have experienced electoral loss, it should be for a political reason.

Table 4 shows that only two parties have experienced electoral losses. The two parties belong to the right wing: ANEL and New Democracy. ANEL was a party in the government, so our first hypothesis is confirmed. This argument is in line with Labrianou and Ellinas (2016). The electoral losses that New Democracy experienced are based on the argument that the main priority of the campaign of the party was for economic reasons, providing less importance to the immigration issue. This argument could be true, given that in 2012 this party in government built a fence in the region of Evros to discourage smugglers and refugees from entering Greece.

Table 4: Sources of the rise of Golden Dawn

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables	Difference of share of votes for SYRIZA	Difference of share of votes for New Democracy	Difference of share of votes for POTAMI	Difference of share of votes for KKE	Difference of share of votes for ANEL	Difference of share of votes for Centrist	Difference of share of votes for PASOK
REF1monthinflow	-0.009 (0.064)	-0.126* (0.074)	0.015 (0.021)	0.011 (0.018)	-0.005* (0.003)	0.006 (0.006)	0.034 (0.048)
$\Delta \ln(\text{unemployment})$	-0.022 (0.021)	0.026 (0.016)	-0.003 (0.005)	0.010* (0.005)	0.007 (0.005)	-0.002 (0.004)	-0.012 (0.010)
$\Delta \ln(\text{crime})$	0.016 (0.023)	-0.082*** (0.027)	0.011 (0.008)	-0.010 (0.008)	0.000 (0.009)	-0.005 (0.004)	0.059*** (0.017)
Observations	325	325	325	325	325	325	325
R-squared	0.920	0.941	0.898	0.973	0.856	0.924	0.881

Notes: In all tables standard errors are clustered at the municipality level and the corresponding standard errors are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

4.4 Instrumental variable results

Since our benchmark regression is likely to be plagued by endogeneity concerns, in Table 5 we present the instrumental variable approach results. Our instrument — the interaction of the distance of Greek municipalities to the closest Turkish border with year dummies — is conceptually satisfying the exclusion restriction. Moreover, our F-statistic allows us to exclude weak instrument concerns, given that it is above 10 in all of the regressions. Columns 1 and 2 depict the second-stage results when considering the share of refugees using the average of the stock of refugees in one-month and three-month windows respectively.

Columns 3 and 4 show the IV estimates for the change in the share of votes for Golden Dawn. In these regressions, we instrument the change in the share of refugees over the total population with geo-distance. The regressions explain more than 60% of the variation in the observed percentage of votes received from Golden Dawn. All of the columns document that the impact of the presence of refugees on the percentage of votes for the extreme right is now much larger and highly significant, suggesting a substantial overall downward bias in the OLS estimates. This finding highlights the fact that among the sources of bias, those delivering attenuation — such as measurement error and/or reverse causality — are likely to play a major role. After instrumenting for the shares of refugees, we find that an increase of one percentage point of the immigrant shares entails an increase in the percentage of votes for Golden Dawn of 10 percentage points on average.

Table 5: IV regressions

	(1)	(2)	(3)	(4)
Variables	Share of votes for Golden Dawn	Share of votes for Golden Dawn	Difference of share of votes for Golden Dawn	Difference of share of votes for Golden Dawn
$\Delta \ln(\text{unemployment})$			0.004 (0.002)	0.004 (0.002)
$\Delta \ln(\text{crime})$			-0.004 (0.004)	-0.004 (0.005)
REFinflow3month				0.145*** (0.037)
REFinflow1 month			0.219*** (0.066)	
$\ln(\text{unemployment})$	0.006** (0.002)	0.006** (0.003)		
$\ln(\text{crime})$	-0.006 (0.004)	-0.005 (0.042)		
REF3month		0.147*** (0.037)		
REF1month	0.220*** (0.027)			
Observations	659	650	325	325
R-squared	0.71	0.61	0.58	0.142
Municipality dummies	Yes	Yes	No	No
Year dummies	Yes	Yes	No	No
F-test first stage	51	22.02	48	
K-P F-Test	59.7	54.37	59.1	
Hansen (p-value)	0.22	0.29		

Notes: In all tables standard errors are clustered at the municipality level and the corresponding standard errors are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

4.5 Placebo regressions

The literature has attempted to identify the sources of a change in political attitudes following migration using different approaches. In this section we provide tentative evidence to establish that the mechanism lying behind our findings is not rooted in economic reasons.

Table 6 illustrates a placebo test. In Columns 1, 2 and 3, we substitute the voting share of Golden Dawn in the 2015 election with that of 2012 in Eq. (1). In both election outcomes, Golden Dawn received almost a similar percentage in total for entering in Greek Parliament.

This placebo test is important, given that the share of votes for Golden Dawn fell in January 2014 because some members of them were in prison and then were released after a few months⁷. As a result, it could be claimed that the number of votes fluctuated for this reason. Moreover, Golden Dawn is the only party which remained in Greek Parliament against the austerity measure.

Given that Greek Parliament voted on an additional memorandum in August 2015, some voters might have preferred to protest by voting for Golden Dawn. We did not find any significant effect of the share of refugees over the total population on the share of votes for Golden Dawn, whereby indicating that our prediction holds.

⁷ Golden Dawn has been accused of criminal actions. As of today, the court has not decided whether these members are guilty or not.

Table 6: Placebo regressions

Variables	(1) Share of votes for Golden Dawn	(2) Share of votes for Golden Dawn	(3) Share of votes for Golden Dawn
ln(unemployment)	0.034** (0.015)	0.034** (0.016)	0.060** (0.015)
ln(crime)	-0.054** (0.025)	-0.054** (0.025)	-0.012 (0.007)
REF3month		-0.029 (0.061)	
REF1month	-0.040 (0.081)		-0.050 (0.091)
Observations	650	650	650
R-squared	0.590	0.590	0.650
Municipality dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
F-test			46

Notes: In all tables standard errors are clustered at the municipality level and the corresponding standard errors are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. In the regressions, we substitute the voting share of Golden Dawn in the 2015 election with that of 2012 in Eq. (1).

5. Conclusions

The existing literature on the political economy of migration has demonstrated that both legal and illegal migration generate anti-immigration attitudes for economic and emotional reasons. State-of-the-art research exploits quasi-natural experimental settings, as well as regression discontinuities, to study the effect of migration on political outcomes. Our study complements this strand of the literature by exploiting a unique setting that enables us to accurately evaluate the effect of refugees' presence on extreme-right votes.

In this study we exploit an unprecedented surge of refugees to the Greek islands during the summer of 2015, and show that the municipalities that were more exposed to the inflow of refugees experienced a high (and absolute) increase in the share of votes for the anti-immigration party Golden Dawn in the Greek parliamentary elections of September 2015.

This unique context, which features unexpected elections at the height of the refugee crisis, allows us to isolate the effect of an increased level of anti-immigration feelings in response to a refugee presence. Given the timing of events, we can reasonably rule out political parties' strategic reactions to the refugee inflow, as well as standard economic channels identified by scholars, and thereby suggest that anti-immigration attitudes have been a driving force behind the rise of Golden Dawn.

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