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"The Mother of all Political Problems"? On Asylum Seekers and Elections

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Lukas Tomberg, Karen Smith Stegen, and Colin Vance[1]

"The Mother of all Political Problems"? On Asylum Seekers and Elections

Abstract

As immigration to Europe has increased, so has support for extremist parties. While many studies have examined the effect of immigration on election outcomes, few have probed the effect of asylum seekers – those fleeing strife and persecution – on voting, nor has there been much research on the mediating role of local economic conditions. Drawing on county level panel data from Germany, our study fills both gaps. We find that economic circumstances, as measured by the unemployment rate and the level of disposable income, condition voters' responses to the presence of asylum seekers, but the effects for parties on the far right and left diverge markedly. Under economic prosperity, immigration increases support on both sides of the political spectrum. As economic conditions worsen, however, the effect of asylum seekers on the vote share for the far right remains stable, but weakens for the left, eventually becoming negative. This divergence – which has not yet been reported in the literature – suggests that an influx of asylum seekers, particularly when coupled with an economic downturn, could tilt a political system rightwards. From a policy perspective, these results suggest that heterogeneity arising from local economic conditions has important implications for the regional allocation of asylum seekers.

JEL-Code: D72, J15, K37, P16

Keywords: Asylum seekers; immigration; voting outcomes; fractional response

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1 Lukas Tomberg, RWI and RGS Econ; Karen Smith Stegen, Jacobs University, Bremen; Colin Vance, RWI and Jacobs University, Bremen. *– Thomas K. Bauer and Julia Bredtmann are acknowledged for their insightful commentary. We are indebted to Fabian Dehos for the extensive support he offered in providing his expertise on migration policy in Germany and his guidance in data assembly. We thank Lukas Feddern and Lennart Knoche for research support. This work has been supported by the Collaborative Research Center "Statistical Modeling of Nonlinear Dynamic Processes" (SFB 823) of the German Research Foundation (DFG), within Project A3, "Dynamic Technology Modeling".-* *All correspondence to: Lukas Tomberg, RWI, Hohenzollernstr. 1-3, 45128 Essen, Germany, e-mail: lukas.tomberg@rwi-essen.de*

1 Introduction

"We will manage."[1] So spoke Chancellor Angela Merkel in August of 2015 in response to growing public anxiety following her decision to open Germany's borders to over a million refugees. Two years later, her right-of-center party, the Christian Democrats (CDU), recorded their worst postwar result in national elections, with heavy losses to both the left and the right. On the left, the Greens, one of the most prominent immigration-friendly parties in Germany, garnered 8.4% of the vote. The right also gained, with the anti-immigrant party Alternative for Germany (AfD) winning 12.6% of the vote, making it the first far-right party since the Nazi-era to capture meaningful political power. But Germany is not alone. As the number of asylum seekers to Europe has increased, so has electoral support for extremist parties in many countries. In Austria, France, the Netherlands and Hungary, for example, vote shares for the far right exceeded 10% in the most recent parliamentary elections.

Many observers, including politicians, have assumed that the influx of asylum seekers has revived nationalistic and racist sentiments (Dennison and Geddes 2019), and while many studies have examined the effect of immigrants on election outcomes, few have probed the effect of *asylum seekers* – those fleeing strife and persecution – on voting, nor has there been much research on the mediating role of local economic conditions in the regions where asylum seekers are settled. Drawing on country-level data from Germany, the European country with arguably the most tainted history with extremist parties, the present paper fills both these gaps in the literature. By applying linear and fractional response models for panel data (Papke and Wooldridge 2008), we explore the relationship between asylum seekers and vote shares for the Greens and the right over six elections between 1998 and 2017. To allow for the influence of asylum seekers to be dependent on economic conditions, the specification includes interaction terms that capture differential effects according to the unemployment level as well as disposable income. Our set-up makes it possible to test the hypothesis that anti-immigrant parties benefit electorally from voter sentiments rooted in both relative deprivation, the perception of being deprived compared to a relevant outgroup, and relative gratification, the perception of being better off than the outgroup, coupled with a fear of losing their advantages.

Ours is among only a handful of studies that tackle the role of asylum seekers on elections (Steinmayr 2020, Hangartner et al. 2019, Dinas et al. 2019, Dustmann et al. 2019). In line with the contact hypothesis, Steinmayr (2020) finds that hosting refugees decreases support for the right among a sample of Austrian communities from 2015. Conversely, drawing on Danish election data over the 1986-1998 interval, Dustmann et al. (2019) identify a positive effect of refugees on vote shares for right-wing parties in the majority of municipalities, notwithstanding a small but negative effect seen in the most urbanized ones. Likewise, Hangartner et al. (2019) and Dinas et al. (2019) both find that recent refugee

[1] Translated from the German phrase "Wir schaffen das," as reported in the newspaper Zeit Online (Hildebrandt and Ulrich 2015).

inflows in the Greek islands generated support for restrictive asylum and immigration policies and increased vote shares for the extreme-right party Golden Dawn.

These former results are in line with other studies examining the influence of immigrants on support for right-leaning parties, which generally find a positive association (Otto and Steinhardt 2014, Barone et al. 2016, Becker et al. 2016, Sekeris and Vasilakis 2016, Halla et al. 2017, Brunner and Kuhn 2018, Harmon 2018, Edo et al. 2019). Relatively fewer studies have examined the effect of immigrants on support for pro-immigrant parties on the left, and the existing evidence is mixed. While Otto and Steinhardt (2014), Harmon (2018) and Edo et al. (2019) identify a negative relationship between immigrants and votes for (far) left parties in Germany, Denmark and France, respectively, Gerdes and Wadensjö (2008) find that a pro-immigrant party on the Danish left benefits from their presence. Dustmann et al. (2019) conversely find evidence for a negative effect of refugees on center-left parties, but one that is again conditional on location; in highly urbanized areas they find the effect to be positive.

The question of causality is an issue that looms large in identifying these influences, particularly as regards the likely endogeneity of location choice: To the extent that immigrants choose where to live based on the political leanings and socioeconomic circumstances of the host region, the estimated effect of immigration on voting outcomes is subject to bias. Moreover, it is not possible to identify the direction of bias from such sorting. On the one hand, immigrants may choose locations based on prior election outcomes and/or based on the hospitality of the host community, implying negative bias. Alternatively, immigrants may be drawn to communities hit by negative economic shocks, where the cost of living is lower. To the extent that such shocks draw voters to the right, the bias will be positive. We address this issue by distinguishing two types of immigrants, those who have been granted permission to reside in Germany, referred to here as foreigners, and those who have an application for refugee status pending, referred to as asylum seekers.

While foreigners enjoy freedom of movement and may therefore self-select into particular regions, asylum seekers – the focus of the present analysis – are subject to strict rules that govern where they are settled, thereby eliminating biases arising from endogenous location choice. Upon arrival in Germany, asylum seekers are allocated by the authorities first across states and then within states across regions according to predefined quotas. As suggested by Glitz (2012) in his analysis of the impact of immigrants on the German labor market, this exogenously given dispersal policy can be regarded as a quasi-experiment, one that obviates the threat to identification that is otherwise posed by self-selection into particular locations. More recently, Dehos (2017) and Piopiunik and Ruhose (2017) employ the same logic to estimate the effect of immigration on crime in Germany. As in these studies, and similar to the identification strategy applied in Dustmann et al.'s (2019) analysis of Danish electoral outcomes, we leverage the exogenously given location restrictions of the German allocation system to identify the impact of asylum seekers on elections.

Two variants of the model are specified to further tighten the estimated magnitude of the effects. The first controls for the influence of time-invariant unobservables, while the second instead includes the lagged dependent variable (LDV) to directly control for past election results. As demonstrated by Guryan (2001) and elaborated by Angrist and Pischke (2008), the virtue of jointly referencing these two models is that they serve to bracket the causal effect of interest. Together with the prohibitions that prevent asylum seekers from choosing where they settle, identification is thus predicated on the assumption that the settlement program is exogenous conditional of time-varying county characteristics, state-specific time trends, county fixed effects and, alternatively, feedback effects via a lagged dependent variable. We present a battery of exogeneity tests suggesting that these features support a causal interpretation of the estimates.

Among our key results, we find that the presence of asylum seekers has a polarizing effect, increasing vote shares for both the right and the Greens. For the right, we conclude that the magnitude of this effect is independent of unemployment and disposable income. For the Greens, as unemployment increases or income decreases, the positive association between asylum seekers and vote shares abates, eventually becoming negative. This finding is a unique contribution of our study and suggests that support for pro-immigrant parties is conditional on favorable economic conditions. The implications are weighty: If an immigrant influx is accompanied by a rise in unemployment, then far-right parties could benefit while support for the left would taper, which would reduce the counter-balance of the left and tilt a political system to the right. Moreover, our approach of analyzing effect heterogeneity with respect to regional economic circumstances advances the practical importance of the literature as it informs policy makers about the political consequences of schemes to allocate asylum seekers.

The following section anchors the paper in the larger literature, specifically those studies that explore the mediating influence of economic conditions on election outcomes. Section three describes data assembly, presents the descriptive statistics, provides background on some of the key variables, and probes the exogeneity of our main variable of interest, *asylum seekers*. Section four introduces the econometric modeling approach, while section five presents the results. Section six concludes.

2 Asylum seekers and the mediating role of economic conditions

Beyond estimating the direct impact of asylum seekers on voting outcomes, our aim is to additionally account for the role of local socio-economic conditions in mediating voter sentiments about their presence. The unemployment level and income have been identified as important factors that potentially drive voters to the margins of the political spectrum, but the exact nature of the relationship between these variables remains murky. Much of the work in this area focuses on support for the right. While Knigge (1998) and Lubbers et al. (2002) find no direct association between the unemployment rate

and voting for radical-right parties, many other studies find a positive effect (Golder 2003, Arzheimer 2009, Halla et al. 2017). Similarly, Jetten et al. (2015) document several studies that establish a positive correlation between lower income groups and harsh attitudes towards minorities. These findings are consistent with the idea – encapsulated in *relative deprivation* theory (Davis 1959, Crosby 1976) – that deteriorating socioeconomic conditions engender a sense of grievance that attracts people to the far right under the perception that they are disadvantaged relative to others (De Witte and Klandermans 2000, Koopmans 2005, Rydgren 2007). As these 'others' often include minorities, one extension of this reasoning is that the presence of minority groups, such as asylum seekers, strengthens the positive impact of the unemployment rate on support for the far right (Golder 2003). We note that such a response may also prevail in cases where, as in Germany, asylum seekers are not permitted to work, since the unemployed natives may regard them as competing for government outlays.

Theorizing from political psychology offers an alternative – though not mutually exclusive – prediction rooted in the notion of *relative gratification* (Grofman and Muller 1973), whereby conditions of economic prosperity foment support for the far right out of anxiety that gains to one's status or privilege are under threat of being stripped away. Support for this prediction is not only found in observational studies of voting behavior, which identify a negative correlation between the unemployment level and support for the far right (Knigge 1998, Arzheimer and Carter 2006), but also from experimental studies (Guimond and Dambrun 2002, Mols and Jetten 2016). As in the case of relative deprivation, the psychology underpinning relative gratification may exacerbate a negative reaction to asylum seekers to the extent they are seen as a source of competition. Mols and Jetten (2016), for example, report evidence from Australia that respondents' endorsement of an anti-immigration message was stronger when they were confronted with the prospect of economic prosperity rather than economic downturn. Similarly, Guimond and Dambrun (2002) provide evidence from an experiment with university students in France showing that respondents exposed to relative gratification treatments exhibited increased levels of generalized prejudice and expressed a greater willingness to support restrictive immigration policies. Drawing on data from a Swiss referendum, Jetten et al. (2015) find a higher percentage of anti-immigrant voting in cantons with relatively lower and relatively higher disposable income, thereby supporting the so-called V-curve hypothesis, by which both relative deprivation and relative gratification simultaneously drive electoral outcomes.

While there has been less theoretical work on electoral support for parties on the left, there is broad agreement that such support falls into two categories: traditional working class voters who seek redistribution and 'new left' voters who prioritize values (Alonso and Fonseca 2012). Redistribution voters are generally supportive of immigrants, but as the level of immigration rises, they may become concerned about the effect on the social safety net and on wages (Keith and Mcgowan 2014). As Freeman (2006) and Lidén and Nyhlén (2014) argue, parties on the left are consequently torn between appealing

to voters for whom economic threats may make them more critical of immigration, and voters whose wealth buffers them from such concerns and leads to a more steady support of immigration.

With regard to such value-oriented voters, Inglehart's (1977) thesis of the 'silent revolution' of value change explains how conditions of affluence and physical security, which have widely prevailed in industrialized countries since the end of World War II, reorient people's priorities from satisfying basic material needs to an emphasis on quality of life and higher order values, such as multiculturalism. However, even among well-off voters, this post-materialist reorientation might be subject to temporal lapses. In situations of extreme hardship and crises, some of these voters might re-emphasize economic concerns (Inglehart and Welzel 2005). Thus, it follows that voter support for a value-oriented 'new left' party like the Greens would be conditional on favorable economic conditions. This tension is seen in the results of a conjoint experiment conducted across 15 European countries by Bansak et al. (2016). They find that while humanitarian reasons play a more important role in increasing the probability of accepting asylum seekers among respondents on the left than on the right, those on the left respond more negatively to asylum seekers when economic opportunities are cited as the reason for migrating, thereby providing some support for the hypothesis that sympathy is conditional.

Of course, it is also possible that voters' motivations – whether on the right or on the left – are compartmentalized, such that their reactions to asylum seekers are independent of economic conditions. Sniderman et al. (2004), for example, conclude from experimental evidence from a survey in The Netherlands that economic considerations are of only secondary importance in evoking exclusionary reactions to migrants, with the perceived threat to national identity playing a stronger role. Similarly, Card et al. (2012) conclude from survey data that concerns about compositional amenities, which natives derive from a homogenous composition of the local population, are two to five times more important in explaining attitudes towards immigration policy than concerns over wages and taxes. These sentiments are reflected in the word *Überfremdung* (over alienation), a term commonly used by German far right movements to describe threats to national identity due to immigration.

The present paper contributes to the above literature by drawing on quasi-experimental evidence to assess the impact of immigrants on voting patterns. Unlike many of the studies reviewed above, which use individual-level data, we explore here the relationship between variables aggregated at the county-level. Although the use of such data prevents us from drawing inferences on individual behavior, its main virtue – contrary to the hypothetical nature of experiments or public opinion surveys – is to reveal evidence on observed election outcomes. Linking this evidence to particular theoretical predictions is complicated by the fact that the theories themselves are not mutually exclusive, so that the aggregated results may reflect multiple overlapping impact channels that cannot be precisely disentangled. By isolating differential effects of asylum seekers according to the unemployment rate and disposable income, however, our analysis affords insight into which channels dominate at the aggregate

level, thereby complementing empirical work based on individual-level experimental evidence.

3 Data, descriptive statistics, and exogeneity checks

The data for this paper was assembled from publicly available sources that are accessible online. Variables are measured at the county level, the average size of with is roughly 800 square kilometers, using boundary definitions from the year 2010.[2] Temporal coverage begins in 1998 and includes each year in which a national election was held – 1998, 2002, 2005, 2009, 2013 and 2017. With 405 counties recorded over six years, the data forms a balanced panel comprising 2,430 observations.

Data on election results was obtained from the Federal Returning Officer (2018). The data contains county-level information on the number of eligible voters, the number who voted, and the number of votes going to each party for each election year. This information is recorded for two types of ballots, the first vote and the second vote (*Erststimme* and *Zweitstimme*). The first vote allows voters to directly elect a local representative, either party-affiliated or independent, from each of the voting districts to the parliament. This vote is intended to ensure that all regions have representation. The second vote, which is the focus of the present analysis, is cast for a party, whose representatives are sent to parliament. This vote is more consequential, as it determines the final distribution of seats in parliament by party. In turn, the party with the most seats traditionally selects the chancellor, whose final approval is subject to an up or down vote by the parliament.[3]

The dependent variables are generated by calculating vote shares by county and year for the immigrant-friendly party the Greens and a group of anti-immigrant parties on the right. Our focus on the Greens follows Otto and Steinhardt (2014), who model the share of the Green vote as a counterpoint to their analysis of far-right voting in Hamburg, arguing that the Greens is the only party in Germany to have consistently promoted liberal immigration and integration policies unconditionally. We verified this argument by undertaking a review of party platforms published by the Greens since 2002. In each platform we found explicit and extensive pronouncements in support of pro-immigrant policies.[4] To gauge robustness, we also estimate a model that groups the Greens with parties situated further to the left, including The Left and the German Communist Party.

As noted by Arzheimer and Carter (2006), the designation of right-wing parties is facilitated by a general consensus that such parties share a number of ideological features comprising some combination of racism, xenophobia, nationalism, and a desire for a strong state. The National Democratic Party

[2]To account for territorial reforms in the state of Mecklenburg-Vorpommern as of 2011, we used population-based weights provided by Germany's Federal Office for Building and Regional Planning (BBSR 2018), which serve to convert values to the county boundaries of 2010.

[3]There are occasionally attempts to buck tradition. In the 2005 election, Gerhard Schroeder tried unsuccessfully to be designated chancellor even though his party, the Social Democrats, won a smaller share of seats in the Bundestag than Angela Merkel's party, the Christian Democrats.

[4]An example of such pronouncements is found in the 2002 party platform: *Germany is a country of immigration. We need immigration not only for economic reasons, but also for demographic reasons. The mistakes of the old "guest worker policy" must not be repeated. We want an integration offensive* (Die Grünen 2002).

of Germany, the Republicans, and the Right are three such parties that we include in our measure of the far right vote share. We also include the Alternative for Germany (AfD) in the measure, but only for the 2017 election. For the 2013 election, the year the AfD was formed, we exclude the party from the calculation of the share. This exclusion owes to the content of the party's original platform, which targeted the dissolution of the European currency union (Arzheimer 2015).[5] The 2013 platform is devoid of anti-immigrant sentiment and indeed briefly references the desirability of bringing in qualified labor from abroad (AfD 2013). It was only after just missing the 5% of the vote needed for representation in the Bundestag in 2013 that the AfD pivoted to an overtly anti-immigrant tone, which coincided with the refugee crisis of 2015. This transformation of the AfD's message from technocratic to nativist resulted in several of its founding members disassociating themselves, even as the party's fortunes improved markedly with the 2017 election.

Data on asylum seekers was taken from the Federal Statistical Office (Destatis 2018b), which posts a yearly online spreadsheet that separately tabulates the number of all categories of immigrants – including asylum seekers – by the state and county in Germany in which they reside. Upon arrival, asylum seekers are allocated across states according to annually adjusted quotas based on the state's tax revenue and population. The criteria for allocating asylum seekers across counties within states varies, but most states employ either fixed allocation keys or flexible quotas based on the population size and, in some cases, the land area.

To construct our main explanatory variable, designated as *asylum seekers*, we extracted entries having the status of an asylum seeker from the spreadsheet and divided this by the county's population in the corresponding year. To allow for the possibility that responses to asylum seekers may be conditioned on the number of foreigners already living in a county, we created a second explanatory, designated as *foreigners*, by summing all remaining immigrants in a county who do not have the status of an asylum seeker and dividing by the population.[6]

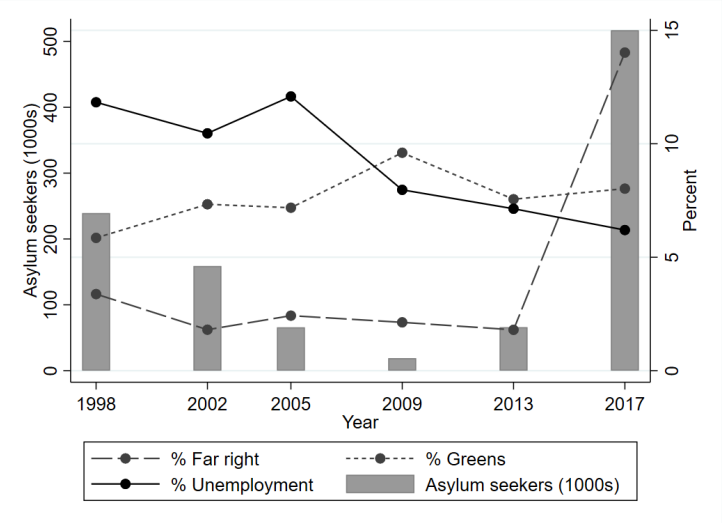
Figure 1 presents the temporal evolution of key variables under consideration in the analysis: the vote shares for the far right and the Greens, the total number of asylum seekers, and the unemployment rate, the latter of which was obtained from Germany's Federal Employment Agency (2018).[7] The Green party is seen to have had a consistently stronger following in Germany than the right that extends until the most recent election, when a pronounced ascendancy of the right is evident. This ascendancy coincides with the sharp increase in asylum seekers, but also with a fall in the unemployment rate, which dropped by over a percentage point between 2013 and 2017. These aggregate trends are thus

[5]Excluding the AfD from the far right also follows the party's positioning in the RILE index (Budge et al. 2001, Klingemann et al. 2006), a widely used source for situating parties along the political spectrum, which positioned the AfD in the center in 2013. In Appendix C, we present a robustness check that groups the AfD with the far right in 2013.

[6]This latter category also includes foreigners with the status of *Duldung*, who enjoy a temporary permit to remain in Germany because of humanitarian or legal reasons. We exclude them from our categorization of *asylum seekers* because they have freedom of residency within states and may also be granted work permits.

[7]Although the plots indicate contemporaneous measurement of these three variables, the figures for unemployment and asylum applications and are recorded in December of the preceding year.

Figure 1: Asylum seekers, unemployment and vote shares in each election year



consistent with the theory of relative gratification, which would interpret the upsurge in support for the right in 2017 as reflecting an attempt by voters to secure gains in economic prosperity threatened by the influx of asylum seekers.

The descriptive statistics on the full set of dependent and independent variables that enter the model are presented in Table 1. In addition to unemployment, disposable income is included as a measure of socioeconomic well-being, which enters the model in logged form. We also include controls for the share of foreigners, population density (persons per square kilometer), education, and age structure, all of which are derived from time-varying, county-level data available from the Federal Statistical Office (Destatis 2018a;b;c). Similar to Barone et al. (2016), education is measured as the share of high school students who graduate with a university-qualifying degree (*Abitur*), while the age structure is captured by the share of residents over 65 years old.

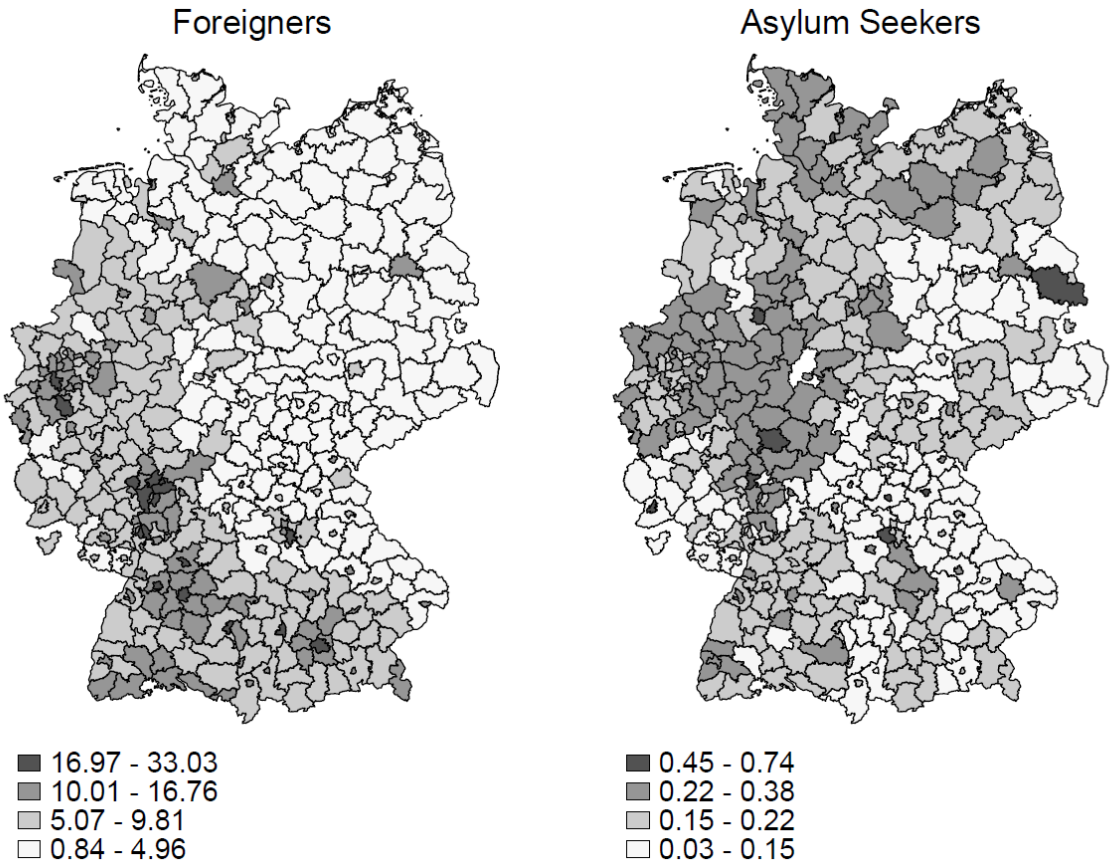
Table 1: Summary statistics

		Mean	**Std. Dev.**
Far right	Vote share for the far right	0.043	0.051
Greens	Vote share for the Greens	0.076	0.035
Asylum seekers	Asylum seekers per 100 residents	0.201	0.239
Foreigners	Foreigners per 100 residents	7.281	5.167
Unemployment	Unemployment rate	0.093	0.049
Income	Average annual disposable income	19300	2643
Pop density	Population density	0.518	0.674
Share Abitur	Share of students graduating with Abitur	0.259	0.105
Share old	Share of resident older than 65	0.194	0.03
No. obs.		2430	

Figure 2 presents time averages of the per capita spatial distribution of foreigners and asylum seekers across German counties. For foreigners, a spatial sorting process is evident, with most concentrated in the western part of the country and in the capital Berlin. The overall share of foreigners in the West

is 8.6%, over threefold the share of 2.3% in the East. Asylum seekers, by contrast, are seen to be more evenly dispersed throughout the country. In the West, their overall share is 0.21%, somewhat higher than the share of 0.18% in the East. This difference likely reflects the higher tax revenue collected in the West, which, along with population, is one of the main criteria underpinning the allocation rules across states. These rules account for the subtle pattern of state boundaries evidenced in the map on the right, within which the distribution of asylum seekers is similar, though there are also isolated counties scattered within each state where concentration deviates positively or negatively. To dispel any concerns of political influence or self-selection of natives in underpinning this pattern, we conduct three diagnostic tests that serve to double-check the conditional exogeneity of asylum seekers.

Figure 2: Spatial distribution of foreigners and asylum seekers per 100 residents



First, along the lines of Halla et al. (2017) and Dustmann et al. (2019), we examine whether past election outcomes affect the future allocation of asylum seekers. To this end, we regress the change in the share of asylum seekers from period $t-1$ to period t on the lagged change in vote shares for the far right and the Greens from the penultimate period $t-2$ to the previous period $t-1$:

$$\Delta\text{Asylum seekers}_{it} = \gamma\Delta\text{Vote share}_{i,t-1} + \boldsymbol{\beta}^T\Delta\mathbf{X}_{it} + \epsilon_{it}, \tag{1}$$

where $\mathbf{X}_{it}$ includes a suite of control variables from Table 1 as well as State $\times$ year dummies to control

for time-varying effects across each of Germany's sixteen states. The inclusion of the period $t-2$ in the specification means that observations from the years 1998 and 2002 are omitted, so that the sample comprises elections between 2005 and 2017. The model can also be estimated in levels by regressing the share of asylum seekers in period t on the lagged voting outcomes while controlling for fixed effects. This version of the test, which has the advantage of losing observations only from 1998 and thereby corresponds to the estimation sample in our main analysis, is also presented.

Table 2: Tests of the identifying assumption I

	Test in first differences			Test in levels (with fixed effects)	
	Δ Asylum seekers$_t$			Asylum seekers$_t$	
	Far right	Greens		Far right	Greens
Δ Vote Share$_{t-1}$	-0.002	-0.0002	Vote Share$_{t-1}$	-0.006	0.006
	(0.004)	(0.004)		(0.006)	(0.005)
Controls	✓	✓		✓	✓
State $\times$ year dummies	✓	✓		✓	✓
No. obs.	1620			2025	
Sample years	2005–2017			2002–2017	

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

The results, shown in Table 2, suggest no systematic relation: the key coefficients of interest on the variables Δ*Vote Share*$_{t-1}$ and *Vote Share*$_{t-1}$ are small and imprecisely estimated in both the models of the far right and the Greens, suggesting that past electoral performance does not bear on the regional settlement of asylum seekers.

The second diagnostic check, also applied by Dustmann et al. (2019), is a more general test for strict exogeneity suggested by Wooldridge (2010, p. 325). This approach regresses the change in the vote shares from period $t-1$ to period t on the change in the share of asylum seekers in a county from period $t-1$ to period t and additionally on the level of the share of asylum seekers in period t.

$$\Delta\text{Vote share}_{it} = \gamma\text{Asylum seekers}_{it} + \delta\Delta\text{Asylum seekers}_{it} + \boldsymbol{\beta}^T\Delta\mathbf{X}_{it} + \epsilon_{it}. \tag{2}$$

The null hypothesis under strict exogeneity is that the coefficient of the share of asylum seekers in period t is zero. As Wooldridge (2010, p. 325) notes, this model can also be estimated in levels by including a lead value of the asylum seekers, i.e. the value in period $t+1$, in addition to fixed effects, effectively allowing for a test of whether future asylum seekers affect past voting outcomes. We also present this version of the test, recognizing that in this case, we lose observations from the year 2017.

The test of strict exogeneity, depicted in Table 3, clearly holds for the far right. The estimates of *asylum seekers*$_t$ and *asylum seekers*$_{t+1}$ in the two model variants are -0.079 and -0.059, and are both statistically indistinguishable from zero. The results for the Greens are somewhat less clear-cut. The coefficient on *asylum seekers*$_t$ is larger at 0.254 and has a p-value equal to 0.09. The magnitude of the estimate of *asylum seekers*$_{t+1}$ is somewhat smaller, at 0.021, with a p-value equal to 0.14. Thus, notwithstanding the

Table 3: Tests of the identifying assumption II

	Test in first differences			Test in levels (with fixed effects)	
	Δ Vote share$_t$			Vote share$_t$	
	Far right	Greens		Far right	Greens
Asylum seekers$_t$	-0.079	0.254	Asylum seekers$_{t+1}$	-0.059	0.201
	(0.266)	(0.144)		(0.063)	(0.135)
Controls	✓	✓		✓	✓
State × year dummies	✓	✓		✓	✓
No. obs.	2025			1620	
Sample years	2002–2017			2002–2013	

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

absence of an influence of past vote shares on the future allocation of asylum seekers indicated by the first diagnostic check, the second check provides more tentative evidence that strict exogeneity holds in the case of the Greens. In what follows, we consequently present alternative specifications that attempt to bracket the magnitude of the estimate of *asylum seekers*, one of which includes a lagged dependent variable to capture feedback effects from past election outcomes.

An additional threat to identification would arise if natives relocate in response to immigrant inflows, either repelled by animosity to foreigners or attracted by a desire to live in a diverse community (Otto and Steinhardt 2014). Evidence of this response would be revealed by a negative association between a change in natives and a change in asylum seekers, both measured as a share of the population. To rule out this possibility, we follow Otto and Steinhardt (2014) and Edo et al. (2019) by using a test proposed by Peri and Sparber (2011) that is based on the following regression:

$$\frac{N_{it} - N_{it-1}}{Pop_{it-1}} = \alpha + \beta \frac{A_{it} - A_{it-1}}{Pop_{it-1}} + \boldsymbol{\beta}^T \mathbf{X}_{it} + \mu_i + \epsilon_{it}, \tag{3}$$

where N_{it} indicates the level of natives in county i and year t. Pop_{it} is the total population and A_{it} is the number of asylum seekers in county i. $\mathbf{X}_{it}$ contains the explanatory variables, including the interaction of state and year dummies, while μ_i captures county fixed effects.

Table 4: Tests on native outmigration

	$\frac{N_{it}-N_{it-1}}{Pop_{it-1}}$	
$\frac{A_{it}-A_{it-1}}{Pop_{it-1}}$	0.294	-0.133
	(0.279)	(0.185)
Controls		✓
State × year dummies	✓	✓
No. obs.	2,025	

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

The baseline model without covariates in column 1 indicates a positive association between a change in asylum seekers and a change in natives as shares of the county population, but the estimate is statistically insignificant. Including the full set of covariates yields a negative estimate of the share of asylum

seekers, but one that is small and likewise statistically insignificant. We conclude that native emigration does not pose a threat our identification strategy.

4 Modeling approach

Following the literature on voting outcomes, our point of departure is a least squares regression estimated with the following econometric specification:

$$vote_{it} = \alpha + \boldsymbol{\beta}^T \mathbf{X}_{it} + \mu_i + \epsilon_{it}, \tag{4}$$

where the dependent variable, *vote*, measures the vote share for either the far right or the Greens in county i and year t, and the vector $\mathbf{X}_{it}$ contains explanatory variables, the key ones of interest being *asylum seekers*, *unemployment*, and their interaction. The vector additionally contains controls for time-varying effects across each of Germany's sixteen states via the interaction of state and year dummies. A time-invariant linear fixed effect is captured by μ_i, which may or may not be orthogonal to the random disturbance term ϵ_{it}. α and $\boldsymbol{\beta}$ are the parameters and parameter vectors to be estimated.

Although the specification in Model 4 conditions on state-level time-varying effects, unobserved time-invariant heterogeneity at the county-level, and a suite of time-varying county-level variables, the existence of unobserved dynamic processes at the county level that affect the outcome variable and are correlated with the distribution of asylum seekers cannot be completely ruled out. As asylum seekers have no say in where they are settled, the corresponding threat to identification is not from sorting, but rather from possible influences on the administrative process that determines settlement. One strategy for addressing this issue, discussed at length by Keele and Kelly (2006), is to use a specification that controls for past election outcomes by including a lagged dependent variable (LDV):

$$vote_{it} = \alpha + \boldsymbol{\beta}^T \mathbf{X}_{it} + \xi vote_{i(t-1)} + \epsilon_{it}, \tag{5}$$

where $vote_{i(t-1)}$ measures the vote share from the preceding election. Distinguished from Model 4, Model 5 directly captures dynamic effects in election outcomes. However, it does not condition on unobserved time-invariant heterogeneity, as so doing would yield estimates that are not consistent owing to correlation between the LDV and the error term (Nickell 1981). Nevertheless, Models 4 and 5 have a useful bracketing property. Given a negative correlation between asylum seekers and the error term, as might be expected if political influence emerging from previous electoral successes of the far right conspires against accepting refugees, the model controlling for unobserved time-invariant heterogeneity gives an upper bound estimate while the LDV model gives a lower bound (see the discussion of bounding in Guryan (2001)). Conversely, given a positive correlation between asylum seekers and the

error, which could be expected in regions where pro-immigrant parties enjoyed previous electoral victories, the effect from Model 5 of the far left share will exceed that of Model 4. Consequently, as Angrist and Pischke (2008, pp. 243–246) suggest, referencing the two models jointly serves to bracket the causal effect of interest.

One drawback of applying the linear estimator in Models 4 and 5 to vote shares is that it neglects the bounded nature of the dependent variable, potentially resulting in the same problems that afflict the linear probability model (Papke and Wooldridge 2008). These include non-normality of the errors, incorrect statistical inferences, and non-sensible predictions. More disconcerting, Horrace and Oaxaca (2006) demonstrate that the unbiasedness and consistency of the linear estimator in the case of a bounded dependent variable demands a strong condition that is unlikely to hold, namely that the predictions given by the population parameters and the data matrix fall strictly in the zero to one range.

To deal with these issues, we avail a fractional probit model (Papke and Wooldridge 1996; 2008) using two specifications.[8] As in Model 4, the first of these controls for unobserved time-invariant heterogeneity that is potentially correlated with the explanatory variables, with the model expressed as:

$$vote_{it} = \Phi(\boldsymbol{\beta}^T \mathbf{X}_{it} + \boldsymbol{\xi}^T \bar{\mathbf{X}}_i + \epsilon_{it}), \tag{6}$$

where Φ represents the cumulative density function of the standard normal distribution. In lieu of fixed effects, the model controls for unobserved time-invariant heterogeneity using the Chamberlain-Mundlak device, by which unit-level time-averages of the explanatory variables, $\bar{\mathbf{X}}_i$, are included (Papke and Wooldridge 2008). Sometimes referred to as Correlated Random Effects (CRE), this approach yields estimates that are identical to the results of a standard fixed-effects (FE) approach in linear models, yet does not suffer from the incidental parameter problem that plagues non-linear models.[9] We also estimate a lagged dependent variable specification of the model, expressed as:

$$vote_{it} = \Phi(\boldsymbol{\beta}^T \mathbf{X}_{it} + \xi vote_{i(t-1)} + \epsilon_{it}), \tag{7}$$

Models 6 and 7 can be estimated by fitting the data to a Bernoulli distribution and using the Maximum-Likelihood estimator, which is analogous to estimating a Probit model (Papke and Wooldridge 2008). As Ding and Li (2019) demonstrate, the bracketing property afforded by the FE and LDV models carries over to non-linear settings.

[8] To our knowledge, the only other study that employs the fractional probit model to analyze voting outcomes is Otto and Steinhardt (2014).

[9] The main conceptual difference between the CRE and FE approaches is that the FE approach allow for arbitrary dependence between the heterogeneity c_i and the explanatory variables $\mathbf{X}_{it}$, while the CRE is based on the more restrictive assumption that $c_i|\mathbf{X}_{it} = N(\psi + \boldsymbol{\xi}^T \bar{\mathbf{X}}_i, \sigma_a^2)$ (Papke and Wooldridge 2008).

5 Results

The estimation sample covers the years beginning with 2002 to accommodate the loss of the year 1998 in the LDV model. We begin with a brief overview of the estimates from the linear models, but focus primarily on the non-linear estimates because we deem them to be more reliable, particularly the estimates of the far right.

5.1 Linear estimates of voting outcomes for the far right

Table 5 presents the estimates from the fixed effects- (FE) and lagged dependent variable (LDV) models for the far right. Columns 1 and 2 present the models that include the unemployment level to measure local economic conditions, while columns 3 and 4 present models that include the log of average annual disposable income.[10] Table 5 also presents the control variables, though we subsequently suppress these to focus on the main results. The coefficients on the controls – where statistically significant – are broadly in line with earlier studies (e.g. Otto and Steinhardt 2014, Barone et al. 2016): Support for the far right is negatively associated with population density and the education level, while it is positively associated with the share of people over 65 and the share of foreigners.[11] The LDV models additionally indicate evidence for the roles of unemployment and disposable income, with the former having a positive association with support for the far right and the latter a negative association.

Table 5: OLS coefficients for the far right

	FE	LDV	FE	LDV
Asylum seekers	0.270	0.141	0.280	0.174
	(0.401)	(0.314)	(0.395)	(0.318)
Foreigners	0.075	0.020	0.079	0.029*
	(0.057)	(0.012)	(0.057)	(0.013)
Unemployment	-0.038	0.066**	–	–
	(0.035)	(0.013)	–	–
ln(Income)	–	–	0.015	-0.008**
	–	–	(0.011)	(0.003)
Population density	-0.086**	-0.002*	-0.085**	-0.001
	(0.019)	(0.001)	(0.018)	(0.001)
Share Abitur	-0.030*	-0.027**	-0.029*	-0.026**
	(0.012)	(0.004)	(0.012)	(0.004)
Share old	0.084	0.058**	0.069	0.091**
	(0.061)	(0.017)	(0.060)	(0.015)
Lagged dependent variable	–	0.897**	–	0.917**
	–	(0.040)	–	(0.041)
Constant	0.012*	-0.007*	0.242**	0.072**
	(0.006)	(0.003)	(0.058)	(0.026)
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

The models in Table 5 indicate no evidence that asylum seekers are associated with vote shares for

[10] We do not include both variables simultaneously due to their high collinearity.

[11] The estimate on *foreigners* is subject to the caveat that this variable may be endogenous. We undertook a robustness check that accounted for endogeneity using instrumental variables based on a shift-share instrument. As presented in Tomberg et al. (2019), the APE on *foreigners* from this model is higher at 0.17, while the remaining estimates do not change markedly.

the far right. In fact, the variable *asylum seekers* is the only one to have a statistically insignificant estimate across all four of the models. This picture changes dramatically, however, when the interactions capturing differential effects according to economic conditions are included. As seen in Table 6, the estimate of *asylum seekers* becomes highly significant, with an effect size that increases with increasing unemployment and decreases with increasing disposable income. This pattern is illustrated by a plot of the marginal effects (MEs) of *asylum seekers* and the associated 95% confidence intervals over different levels of unemployment and disposable income, defined by dividing the counties into ten evenly large groups based on the time-averaged unemployment and income levels and then calculating the MEs separately for each of these ten groups. The plot in the left panel of Figure 3 illustrates that the ME of *asylum seekers* varies substantially with the unemployment rate, increasing from less than zero (but not statistically significant) in the first decile, to over four by the tenth decile. An opposite pattern is seen for disposable income: Positive but decreasing estimates are seen over most of the deciles, with confidence intervals that cross zero as of the fourth decile.

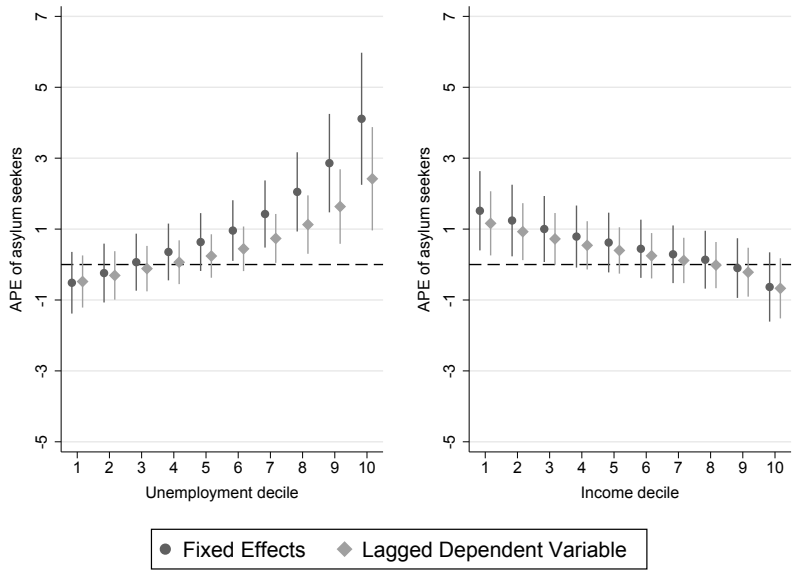
Table 6: OLS coefficients for the far right – interaction with economic conditions

	FE	LDV	FE	LDV
Asylum seekers	-1.885**	-1.338*	50.930**	43.313**
	(0.628)	(0.562)	(15.710)	(14.365)
Unemployment	-0.072*	0.030*	–	–
	(0.034)	(0.013)	–	–
Unemployment × asylum seekers	34.883**	21.858**	–	–
	(7.766)	(6.632)	–	–
ln(Income)	–	–	0.019	0.000
	–	–	(0.011)	(0.003)
ln(Income) × asylum seekers	–	–	-5.112**	-4.361**
	–	–	(1.584)	(1.452)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

The pattern of results in Figure 3 are consistent with the hypothesis that *relative deprivation* drives electoral support for the right, but several considerations lead us to view the estimates with skepticism, particularly those that include the interaction with unemployment. For starters, we deem the magnitude of the estimates, which exceed one as of the eighth decile, exccedingly high given other results in the literature, even recognizing that these studies typically use a broader definition of immigrants than our use of asylum seekers. In their study of Hamburg, for example, Otto and Steinhardt (2014, p. 71) report that a "a one percentage point increase in the foreigner share increases right-wing parties' vote share by 0.23 percentage points," while Halla et al. (2017) report a corresponding estimate for Austria of 0.16 percentage points. Dustmann et al. (2019), who focus on asylum seekers in Denmark, find point estimates between 1.34 and 2.32. The point estimates in the left panel of Figure 3 blanket the estimates reported in these studies, ranging from zero to upwards of 25 times their magnitude.

Figure 3: OLS marginal effects for the far right – multiplicative interaction with economic conditions



We find this range to strain plausibility, and suspect that one complication is that many counties in the data register a very small value for the share of the far right vote that borders on zero. The resulting build-up of observations near the lower bound may render the linear model's assumption of a constant marginal effect of the explanatory variables unrealistic. One possible manifestation associated with this pattern is predictions that fall above one or below zero. Eleven such cases of predictions below zero are found for the model of the far right that includes the interactions, with far more found – upwards of 150 – with more parsimonious specifications. While not necessarily troublesome in its own right, such a pattern can be indicative of other problems: Referring to the application of OLS on the linear probability model (LPM), Horrace and Oaxaca (2006, p. 326) note that "consistency seems to be an exceedingly rare occurrence as one would have to accept extraordinary restrictions on the joint distribution of the regressors," leading them to conclude that "OLS is frequently a biased estimator and almost always an inconsistent estimator of the LPM." In light of these concerns, an exploration of the results using a fractional probit model seems warranted.

5.2 Fractional probit estimates of voting outcomes for the far right

We present the coefficient estimates from the fractional response models and, to facilitate comparison with the linear estimates, present the average partial effects (APEs) graphically. The APEs are calculated by differentiating Models 6 and 7 with respect to the explanatory variable of interest, which yields an estimate of the marginal effect for each observation in the data. Our discussion refers to the mean of these observation-specific marginal effects.

Table 7 presents the estimates from the models of the far right that individually include *unemploy-*

ment and *disposable income* but omit the interaction of these variables with *asylum seekers*. Columns 1 and 2 present the coefficients for the correlated random effects (CRE)-models while columns 3 and 4 present those of the lagged dependent variable (LDV) models.

Contrasting with the corresponding specification from the linear models presented in Table 5, the estimate of the share of asylum seekers on votes for the far right is consistently positive and statistically significant at the 1% level. With reference to the CRE results in columns 1 & 2, the associated APE suggests that a one percentage point increase in *asylum seekers* is associated with a 0.57 percentage point increase in the vote share. The estimated APE from the LDV model is, as expected, somewhat smaller at 0.38 percentage points, which is consistent with the possibility that settlement across counties is subject to a negative selection process owing to local political resistance.

Table 7: Fractional probit coefficients for the far right

	CRE	LDV	CRE	LDV
Asylum seekers	6.875**	4.681**	7.486**	5.021**
	(2.207)	(1.683)	(2.274)	(1.764)
Foreigners	0.925**	0.114	0.918*	0.266*
	(0.345)	(0.116)	(0.373)	(0.124)
Unemployment	0.614*	0.785**	–	–
	(0.263)	(0.136)	–	–
ln(Income)	–	–	-0.046	-0.140**
	–	–	(0.089)	(0.037)
Population density	-0.457**	-0.009	-0.452**	-0.005
	(0.101)	(0.009)	(0.101)	(0.009)
Share Abitur	-0.150	-0.292**	-0.181	-0.279**
	(0.093)	(0.046)	(0.097)	(0.046)
Share old	0.307	0.397**	0.497	0.780**
	(0.432)	(0.140)	(0.461)	(0.131)
Lagged dependent variable	–	11.362**	–	11.541**
	–	(0.477)	–	(0.474)
Constant	-2.149**	-2.361**	0.888	-0.984**
	(0.074)	(0.042)	(0.803)	(0.359)
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

To revisit the question of whether local economic conditions and the presence of asylum seekers mediate each others' effect on the vote share for the far right, the models in Table 8 include the interaction of asylum seekers with the unemployment rate and disposable income, respectively. Again, the pattern that emerges differs from the corresponding specification of the linear model in Table 6. The unemployment × asylum seekers interactions in the CRE and LDV models presented in columns 1 and 2 now indicate no evidence for differential effects, while the income × asylum seekers interactions in columns 3 and 4 are both positive and have similar magnitudes, with the LDV estimate being statistically significant at the 5% level.

The APEs and 95% confidence intervals corresponding to the estimates in Table 8 are presented in Figure 4. The plot in the left panel confirms the impression gleaned from the coefficients: There is only moderate variation in the magnitude of the APEs over different levels of unemployment, with

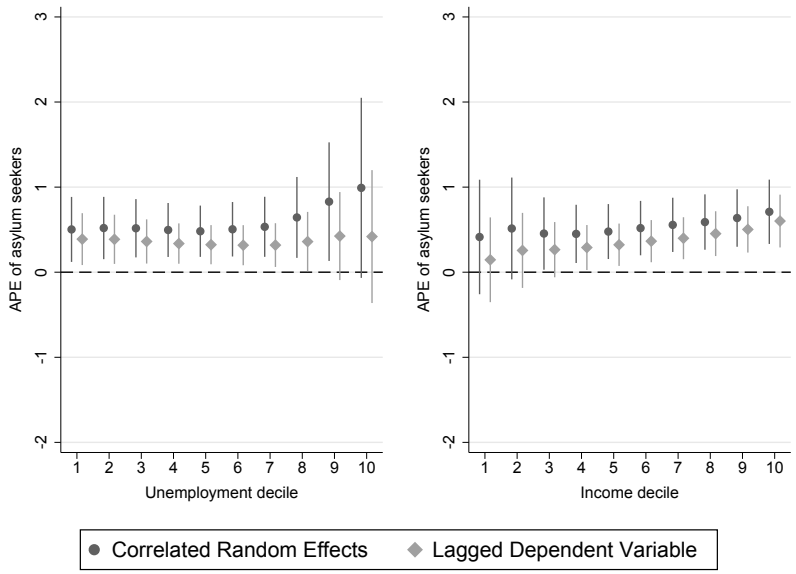
substantial overlap in the confidence intervals. In the CRE model, there is some evidence for an increase in the magnitude of the estimates by the eighth decile, though the confidence intervals also increase commensurately and cross zero by the tenth decile. Taken together, these results corroborate the finding of Golder (2003), who, based on a linear fixed effects model spanning 19 countries, concludes that higher levels of immigration increase the electoral support of right-leaning populist parties irrespective of the unemployment rate. A similar interpretation is reached from the estimates of *asylum seekers* over different levels of disposable income, presented in the right panel. The differences in the point estimates are small, and the confidence intervals overlap completely.

Table 8: Fractional probit coefficients for the far right – multiplicative interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	5.905	5.424	-156.073	-175.502*
	(3.531)	(2.867)	(96.866)	(70.792)
Unemployment	0.594*	0.812**	–	–
	(0.262)	(0.146)		
Unemployment × asylum seekers	17.194	-11.911	–	–
	(45.114)	(35.455)		
ln(Income)	–	–	-0.076	-0.197**
			(0.086)	(0.043)
ln(Income) × asylum seekers	–	–	16.485	18.244*
			(9.774)	(7.156)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure 4: Average partial effects for the far right – multiplicative interaction with economic conditions



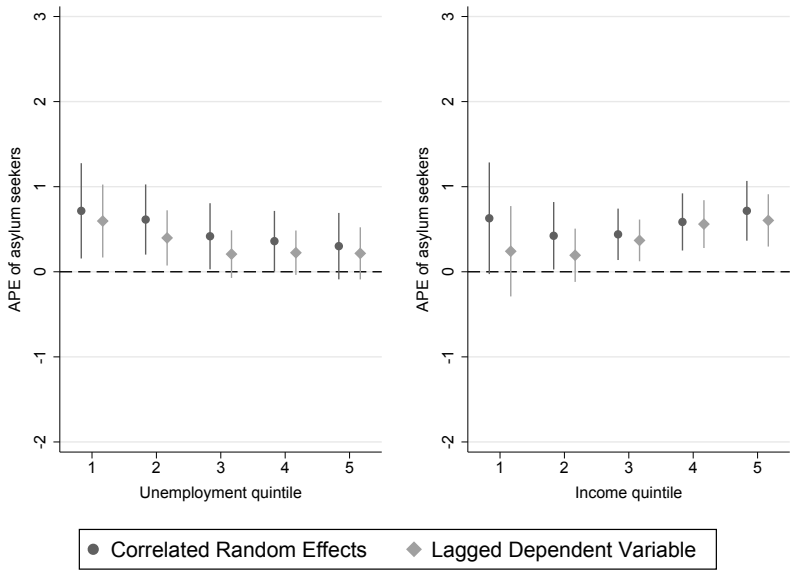
Note: The graph on the left depicts the model with the unemployment rate as the moderator and the graph on the right depicts the model with the average income as the moderator.

The specifications estimated thus far do not allow for testing the V-curve hypothesis, according to

which both relative deprivation and relative gratification underpin far-right electoral success, as the multiplicative interaction terms included in the models only allow for monotonic relationships. There may instead prevail strong voting responses to asylum seekers only at the low and high levels of unemployment and disposable income (Jetten et al. 2015). To pursue this possibility, we sort the unemployment and income data, cut the data into five equally sized groups per year, and then create five dummy variables that indicate membership in each group. By interacting the dummies with the share of asylum seekers, we estimate the voting response to the presence of asylum seekers at different levels of unemployment and disposable income without having to assume a linear relation. A second advantage of this approach is that it is concerned with a county's relative position in the unemployment/income distribution, which is conceptually closer to the theoretical concepts of *relative deprivation* and *relative gratification* than when the variables are measured continuously in levels.

The results of this binned estimator are shown in Table 9, where the omitted base group is the one below the first 1st quintile of the respective distribution. The coefficient estimates indicate no discernible pattern for a V-curve, and, with the exception of some of the income-interactions in the LDV model, all are statistically insignificant. Figure 5 presents the associated APEs. Contrasting with the linear estimates, the left panel indicates a slightly weakening effect of asylum seekers on voting for the far right as unemployment increases, with the confidence intervals overlapping zero by the fifth quintile. A reflection of this pattern is seen in the right panel, which indicates higher precision in the estimate of asylum seekers in high-income counties. Nevertheless, the range of estimates continues to be tight, with overlapping confidence intervals across each of the bins.

Figure 5: Average partial effects for the far right – binned interaction with economic conditions



Note: The graph on the left depicts the model with the unemployment rate as the moderator and the graph on the right depicts the model with disposable income as the moderator.

Table 9: Fractional probit coefficients for the far right – binned interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	6.041*	6.064*	5.708	2.198
	(3.074)	(2.684)	(3.161)	(2.620)
Unemployment – 2nd quintile	0.007	0.022*	–	–
	(0.013)	(0.010)	–	–
Unemployment – 3rd quintile	0.008	0.040**	–	–
	(0.017)	(0.011)	–	–
Unemployment – 4th quintile	0.031	0.076**	–	–
	(0.020)	(0.013)	–	–
Unemployment – 5th quintile	0.049*	0.096**	–	–
	(0.023)	(0.016)	–	–
Unemployment – 2nd quintile	2.152	-0.739	–	–
× Asylum seekers	(3.070)	(2.361)	–	–
Unemployment – 3rd quintile	2.039	-1.239	–	–
× Asylum seekers	(3.127)	(2.960)	–	–
Unemployment – 4th quintile	-2.343	-5.110	–	–
× Asylum seekers	(3.249)	(2.906)	–	–
Unemployment – 5th quintile	-1.836	-2.705	–	–
	(3.320)	(3.190)	–	–
ln(Income) – 2nd quintile	–	–	0.030	-0.001
	–	–	(0.017)	(0.010)
ln(Income) – 3rd quintile	–	–	0.013	-0.043**
	–	–	(0.020)	(0.013)
ln(Income) – 4th quintile	–	–	-0.006	-0.055**
	–	–	(0.023)	(0.014)
ln(Income) – 5th quintile	–	–	-0.016	-0.072**
	–	–	(0.026)	(0.014)
ln(Income) – 2rd quintile	–	–	-0.891	-0.383
× Asylum seekers	–	–	(2.837)	(2.817)
ln(Income) – 3rd quintile	–	–	0.281	2.856
× Asylum seekers	–	–	(2.844)	(2.632)
ln(Income) – 4th quintile	–	–	2.285	6.043*
× Asylum seekers	–	–	(3.122)	(2.867)
ln(Income) – 5th quintile	–	–	4.671	6.309*
× Asylum seekers	–	–	(3.233)	(2.981)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Consolidating the results from both the linear and fractional probit models, the evidence indicates a positive influence of asylum seekers on vote shares for the far right. Whether the evidence additionally supports a differential influence of asylum seekers according to economic conditions is less clear. The linear model indicates that the association strengthens with increasing unemployment and, to a lesser extent, with decreasing disposable income. Nevertheless, the range of estimates is broad and, in our view, implausible given other findings from the literature. Moreover, we found the mean squared residual of the linear model to be substantially higher – by about 20% higher – than that of the fractional probit model. We therefore ascribe more credence to the results of the latter model, concluding that the positive effect of asylum seekers on vote shares for the far right is largely independent of economic conditions.

5.3 Linear estimates of voting outcomes for the Greens

Table 10 presents estimates from the models of the vote share for the Greens. As in the models of the far right, there is evidence for a positive effect of *asylum seekers*, but only the FE estimates are statistically significant. Effect sizes range between 0.28 and 0.30. Aside from the estimate of *foreigners*, which is also positive, the estimates on the remaining control variables all have opposing signs to those of the models of the far right: disposable income, population density, and educational attainment have a positive association with the vote share for the Greens, while unemployment and the share over 65 both have negative associations.

Table 10: OLS coefficients for the Greens

	FE	LDV	FE	LDV
Asylum seekers	0.284*	0.189	0.304**	0.185
	(0.116)	(0.103)	(0.115)	(0.097)
Foreigners	-0.000	0.015*	0.008	0.003
	(0.037)	(0.006)	(0.037)	(0.006)
Unemployment	-0.009	-0.036**	–	–
	(0.019)	(0.007)	–	–
ln(Income)	–	–	0.017**	0.011**
	–	–	(0.006)	(0.002)
Population density	-0.005	0.001**	-0.003	0.002**
	(0.008)	(0.000)	(0.008)	(0.000)
Share Abitur	-0.000	0.015**	0.002	0.014**
	(0.006)	(0.003)	(0.006)	(0.003)
Share old	-0.096	-0.007	-0.108*	-0.028**
	(0.050)	(0.007)	(0.050)	(0.007)
Lagged dependent variable	–	0.941**	–	0.934**
	–	(0.010)	–	(0.010)
Constant	0.102**	0.032**	-0.333**	-0.073**
	(0.014)	(0.003)	(0.105)	(0.018)
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

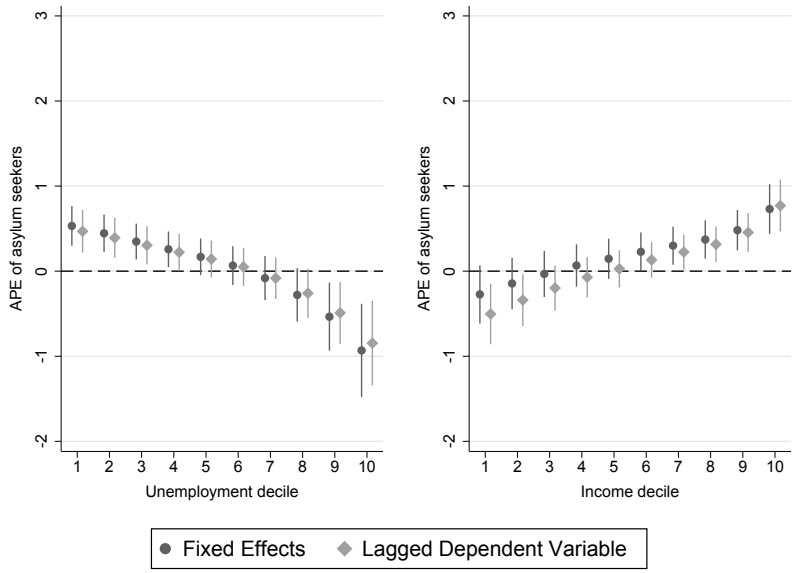
The precision of the estimates increases substantially when the interaction terms capturing differential effects according to unemployment and disposable income are included, presented in Table 11. The APEs from these models, plotted in Figure 6, reveal that the positive effect of asylum seekers is contingent on low unemployment or high disposable income. Specifically, the left panel of the figure shows that as unemployment increases, the positive and statistically significant effect of *asylum seekers* tapers off, eventually becoming negative and significant. The right panel shows the opposite pattern for disposable income. Only at high levels of income, as of the seventh decile, are the estimates positive and statistically significant. Overall, the patterns indicate that the positive effect of *asylum seekers* on support for the Greens seen in Table 10 is conditional on favorable economic conditions.

Table 11: OLS coefficients for the Greens – interaction with economic conditions

	FE	LDV	FE	LDV
Asylum seekers	0.965**	0.859**	-23.334**	-29.794**
	(0.179)	(0.186)	(5.361)	(6.181)
Unemployment	0.002	-0.020*	–	–
	(0.018)	(0.008)	–	–
Unemployment × asylum seekers	-11.031**	-9.917**	–	–
	(2.332)	(2.199)	–	–
ln(Income)	–	–	0.015*	0.005**
	–	–	(0.006)	(0.002)
ln(Income) × asylum seekers	–	–	2.386**	3.030**
	–	–	(0.541)	(0.624)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure 6: OLS marginal effects for the Greens – multiplicative interaction with economic conditions



5.4 Fractional probit estimates of voting outcomes for the Greens

Unlike for the far right, the measure of the share of the vote for the Greens does not have a build-up of zeros near zero, nor do the predictions from the models fall outsite of the zero to one range. It is nevertheless of interest to explore the robustness of the results with the fractional probit model. Tables 12 and 13 show the models with and without the interaction terms. With respect to both the magnitude and statistical precision of the estimates, the pattern is very similar to that of the linear model. The plots of APEs in Figure 7 are nearly identical to that of the marginal effects from the linear models in Figure 6. Moreover, we now find a similar performance of the models in terms of fit: the mean squared residual of the linear model is only 6% higher than that of the fractional probit model.

These patterns are corroborated by the models with the more flexible binned interaction terms presented in Table 14 and visualized in Figure 8. At low unemployment rates and high disposable income,

Table 12: Fractional probit coefficients for the Greens

	CRE	LDV	CRE	LDV
Asylum seekers	1.432*	2.028	1.556*	1.783
	(0.716)	(1.058)	(0.687)	(1.010)
Foreigners	0.055	0.195*	0.098	0.052
	(0.225)	(0.094)	(0.230)	(0.090)
Unemployment	-0.408**	-0.901**	–	–
	(0.138)	(0.159)	–	–
ln(Income)	–	–	0.139**	0.134**
	–	–	(0.042)	(0.035)
Population density	-0.055	0.018*	-0.053	0.012
	(0.044)	(0.007)	(0.045)	(0.007)
Share Abitur	-0.042	0.143**	-0.025	0.127**
	(0.046)	(0.046)	(0.045)	(0.046)
Share old	-0.536	0.281*	-0.703*	-0.187
	(0.333)	(0.138)	(0.339)	(0.136)
Lagged dependent variable	–	5.149**	–	5.098**
	–	(0.308)	–	(0.325)
Constant	-1.269**	-1.674**	-4.023**	-2.991**
	(0.091)	(0.031)	(0.663)	(0.335)
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

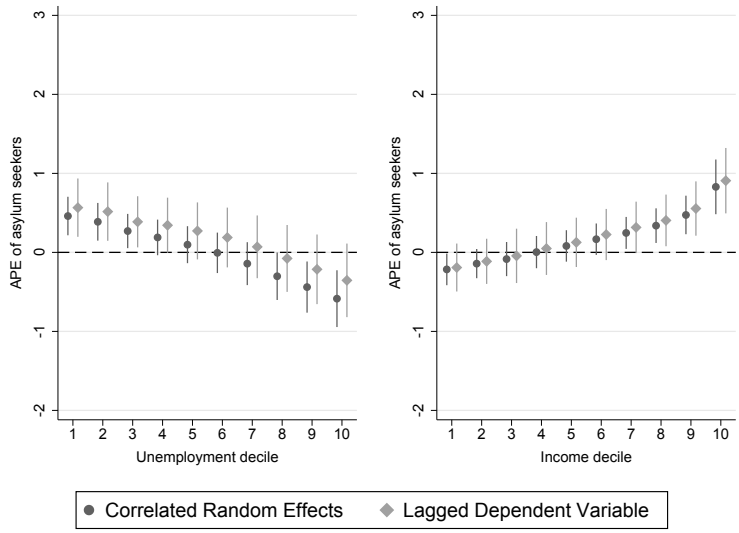
Table 13: Fractional probit coefficients for the Greens – multiplicative interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	5.622**	5.746**	-155.529**	-162.225**
	(1.195)	(1.624)	(34.905)	(42.542)
Unemployment	-0.349**	-0.808**	–	–
	(0.134)	(0.165)	–	–
Unemployment × asylum seekers	-69.900**	-56.264**	–	–
	(16.139)	(20.282)	–	–
ln(Income)	–	–	0.128**	0.103**
	–	–	(0.042)	(0.038)
ln(Income) × asylum seekers	–	–	15.860**	16.576**
	–	–	(3.526)	(4.270)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

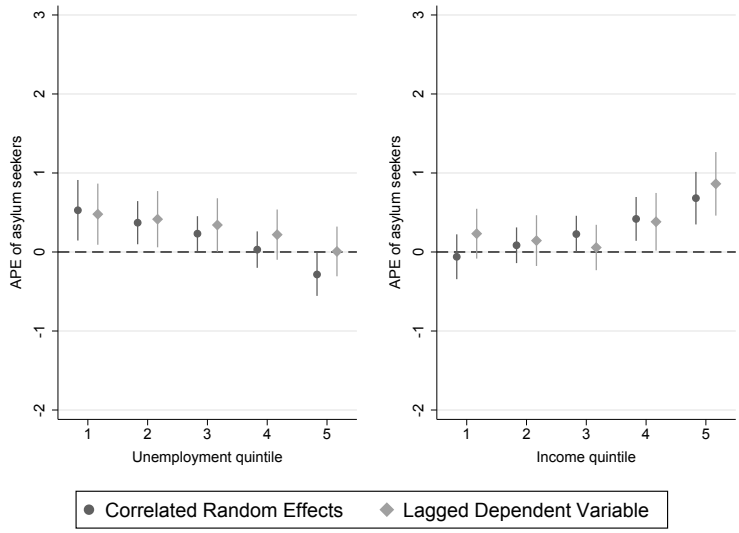
the effect of asylum seekers on voting for the Greens is positive and of comparable magnitude to the results suggested by the multiplicative interaction model. At the other end of the scale – high unemployment and low income – the binned estimates are a bit noisier, with confidence intervals that cross zero. Consistent with Inglehart's (1977) notion of post-materialism, the results across the linear and fractional probit models suggest that concerns about asylum seekers and economic conditions are linked on the left, with support for the pro-immigrant party the Greens predicated on economic security.

Figure 7: Average partial effects for the Greens – multiplicative interaction with economic conditions



Note: The graph on the left depicts the model with the unemployment rate as the moderator and the graph on the right depicts the model with disposable income as the moderator.

Figure 8: Average partial effects for the Greens – binned interaction with economic conditions



Note: The graph on the left depicts the model with the unemployment rate as the moderator and the graph on the right depicts the model with disposable income as the moderator.

Table 14: Fractional probit coefficients for the Greens – binned interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	4.005*	3.262**	-0.768	2.529
	(1.562)	(1.264)	(1.620)	(1.789)
Unemployment – 2nd quintile	-0.020**	-0.029**	–	–
	(0.007)	(0.008)	–	–
Unemployment – 3rd quintile	-0.037**	-0.049**	–	–
	(0.011)	(0.012)	–	–
Unemployment – 4th quintile	-0.033**	-0.045**	–	–
	(0.013)	(0.013)	–	–
Unemployment – 5th quintile	-0.030*	-0.069**	–	–
	(0.015)	(0.016)	–	–
Unemployment – 2nd quintile	-2.185	-0.829	–	–
× Asylum seekers	(1.547)	(1.407)	–	–
Unemployment – 3rd quintile	-2.334	-0.900	–	–
× Asylum seekers	(1.732)	(1.299)	–	–
Unemployment – 4th quintile	-2.883	-1.131	–	–
× Asylum seekers	(2.081)	(1.575)	–	–
Unemployment – 5th quintile	-8.185**	-4.147*	–	–
	(2.192)	(1.870)	–	–
ln(Income) – 2nd quintile	–	–	0.007	0.032**
	–	–	(0.007)	(0.011)
ln(Income) – 3rd quintile	–	–	0.013	0.046**
	–	–	(0.008)	(0.012)
ln(Income) – 4th quintile	–	–	0.018	0.053**
	–	–	(0.011)	(0.012)
ln(Income) – 5th quintile	–	–	0.017	0.061**
	–	–	(0.012)	(0.015)
ln(Income) – 2rd quintile	–	–	1.399	-1.400
× Asylum seekers	–	–	(1.647)	(1.893)
ln(Income) – 3rd quintile	–	–	2.246	-2.802
× Asylum seekers	–	–	(1.705)	(1.820)
ln(Income) – 4th quintile	–	–	3.347*	-0.074
× Asylum seekers	–	–	(1.672)	(1.891)
ln(Income) – 5th quintile	–	–	4.770**	2.673
× Asylum seekers	–	–	(1.729)	(1.831)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

5.5 Additional robustness checks

Halla et al. (2017) point to the possibility that the effect of immigrants on election outcomes could be subject to non-linearities. For example, it is conceivable that the effect of immigrants increases but at a decreasing rate, eventually reaching a tipping point at which it levels off and potentially turns negative. To explore this possibility, we estimate additional models that include a quadratic specification of the variable *asylum seekers*.

In the models of the right that allow for a differential effect of unemployment, the coefficient estimates on *asylum seekers* and its square are statistically significant (Table 15), indicating a positive effect that increases at a decreasing rate. Evaluated at the mean level of unemployment, the average partial effect reaches a tipping point of zero when the density of asylum seekers equals 0.012 in the CRE model and 0.011 in the LDV model. The same pattern is found in the models that allow for a differential impact of income, with tipping points of 0.012 and 0.011, respectively. These values fall in the top one percent

of the distribution of *asylum seekers*, suggesting that the rate at which the effect weakens is gradual but nevertheless becomes marginally negative within the range of the data. Figure 9 presents the associated APEs from the models of the right over the different deciles of unemployment and income. The estimates are statistically significant over all deciles and are nearly double the magnitude of those from the model in which *asylum seekers* enters linearly (Figure 4). On average, the estimates suggest that a one percent point increase in the density of asylum seekers increases the vote for the far right by 1.2 percent points, with the point estimate reaching a maximum of 1.7. This range overlaps substantially with that reported by Dustmann et al. (2019), who find effect sizes of asylum seekers ranging between 1.34 and 2.32 in all but the most urban Danish municipalities.

In the models of the Greens, presented in Appendix A, the more flexible quadratic specification substantially increases the standard errors and yields no evidence for a non-linear relationship.

Table 15: Fractional probit coefficients for the far right – with Asylum seekers^2 and the interaction with economic conditions

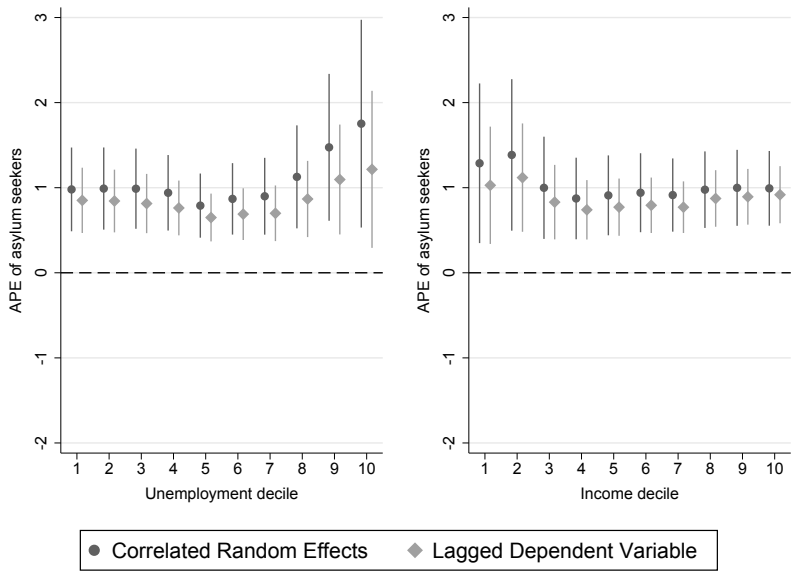
	CRE	LDV	CRE	LDV
Asylum seekers	17.053**	15.530**	-95.974	-123.128
	(4.877)	(4.017)	(96.741)	(72.961)
Unemployment	0.498	0.805**	–	–
	(0.262)	(0.146)	–	–
Unemployment × asylum seekers	14.185	-9.015	–	–
	(44.209)	(36.595)	–	–
ln(Income)	–	–	-0.075	-0.191**
	–	–	(0.085)	(0.043)
ln(Income) × asylum seekers	–	–	11.508	14.035
	–	–	(9.684)	(7.312)
Asylum seekers^2	-751.471**	-655.676**	-744.082**	-683.714**
	(202.445)	(186.603)	(223.797)	(192.545)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Other robustness checks, documented in the Appendix, were undertaken to explore whether the results are sensitive to the definition of the dependent variable, the time frame of the analysis, and the sample composition. First, we redefined the dependent variable in the model for the Greens, grouping them with other parties further to the left that are characterized by internationalism, anti-capitalist rhetoric, socialism, and protectionism (Appendix B). As in Falck et al. (2014), these other parties include The Left and the German Communist Party. This redefinition increases the magnitude of the estimates but retains the pattern seen in Figure 7. We also redefined the dependent variable in the model of the far right by including the AfD in the calculation of the share for the year 2013 (Appendix C). We continue to find positive effects of asylum seekers, but in this case the magnitude of the effect increases with unemployment while decreasing with disposable income.

Second, owing to the unprecedented inflow of asylum seekers between the 2013 and 2017 elections, we estimated the models on a data set limited to these two years (Appendix D). This resulted in a

Figure 9: Average partial effects for the far right – with Asylum seekers^2 and the interaction with economic conditions



Note: The graph on the left depicts the model with the unemployment rate as the moderator and the graph on the right depicts the model with the average income as the moderator.

very similar pattern of estimates for both the far right and the Greens, though the magnitude of the estimates increase in the former case. We also split the sample by West and East (Appendix E). The pattern of estimates for both the far right and Greens holds for the West. For the sample from the East, the precision of the estimates decreases substantially, likely owing to the smaller sample size. In the case of the Greens, we also see some evidence for a negative association between asylum seekers and the vote share. This possibly reflects the population decline and economic stagnation that characterizes large swaths of the East (Schmidt 2011), which could undermine support for pro-immigrant parties.

5.6 To what extent did asylum seekers bear on the 2017 election?

The massive influx of refugees to Germany in 2015 created a charged political atmosphere leading up to the 2017 election. Over this period, widespread media coverage of asylum seekers being welcomed with food and clothing as they arrived at the nation's train stations was juxtaposed with images of mass anti-immigrant protests, particularly in the eastern cities. It has been a commonly held viewpoint in Germany that asylum seekers were a key determining factor in the outcome of the election (Bukow 2017, Haas 2017, Korte 2017). We explore this question by moving beyond a discussion of the model estimates to consider their implications for the outcome of the most recent election in 2017. Specifically, we want to consider the question of how parties on both sides of the political spectrum would have fared had no asylum seekers been present. To this end, we undertake a simple counterfactual exercise in which we use the coefficient estimates from the models to predict the vote share when the share of

asylum seekers is set at its observed level in 2017, and subtract from this the model prediction when the share of asylum seekers is set to zero, holding all other variables fixed at their observed values.

Estimating such counterfactual quantities is, of course, an approximate undertaking for which caveats abound, one of the most important being the absence of general equilibrium effects. However, we would expect such effects to be modest given that asylum seekers comprise a small share of the population, well below one percent in most counties. Therefore, the results can serve as a broad gauge of the magnitude of the effects implied by the econometric estimates. As the CRE and the LDV models generate virtually similar predictions, the following results are based on the CRE models. Additionally, as the patterns are similar if unemployment or income is used as the moderator for the Greens, and income seems to explain more of the effect heterogeneity for the far right, we calculate the counterfactuals for the different income quintiles based on the results of the binned interaction estimator.

Table 16: Counterfactual voting outcomes if there were no asylum seekers in 2017

	Disposable income quintile	1	2	3	4	5
Far right	Predicted vote share	19.95%	14.70%	11.72%	11.79%	11.93%
	Predicted vote share (with asylum seekers=0)	19.67%	14.46%	11.18%	10.86%	10.91%
	Difference	0.28	0.23	0.54	0.93	1.01
Greens	Predicted vote share	5.10%	6.88%	8.29%	9.37%	10.48%
	Predicted vote share (with asylum seekers=0)	4.96%	6.78%	8.31%	9.12%	9.91%
	Difference	0.13	0.10	-0.02	0.25	0.57

The top panel of Table 16 indicates that, across low income counties, there would have been moderate losses in vote shares for the far right had there been no influx in asylum seekers. For the bottom two quintiles, these losses range between 0.23 and 0.28 percentage points. Larger losses are seen in high income counties, just exceeding a percentage point in the top quintile. The pattern for the Greens is similar, with relatively moderate losses in low income counties. By the top quintile, there is again a substantial jump. Among these high income counties, the Greens would have garnered a 0.57 percentage point lower vote share given the absence of asylum seekers. While moderate in magnitude, we would regard these estimates as conservative, since they reflect the effect of county-level variation in asylum seekers and do not fully incorporate the influence exerted through a broader awareness of asylum seekers in the country as a whole.

5.7 Effects on centrist parties and turnout

The question arises as to whether the increase in electoral support for far right parties and the Greens attributed to asylum seekers is drawn from centrist parties or due to higher voter turnout. There are three possibilities, all of which may play a role simultaneously: (1) existing voters changed party allegiance; (2) voter turnout increased, with new voters drawn to parties on the right and left; and (3) the composition of voters changed, with exiting centrist voters replaced by right and left-leaning vot-

ers. While it is not possible to completely disentangle these channels, we can glean some insight by estimating the effect of asylum seekers on the voter participation rate and on aggregated votes for the three parties situated between the Greens and the AfD on the German political spectrum: the social democratic SPD, the conservative CDU and the liberal FDP. The results in Table 17 indicate, if anything, a negative but weak association between asylum seekers and voter participation, with a p-value just below the 10% level in the case of the LDV model. The estimates on centrist parties likewise indicate a negative association with asylum seekers, with estimates that reach the 10% significance level for both the CRE and LDV models. Taken together, these results suggest that the increase in votes for the far right and the Greens from asylum seekers is driven either by an abandonment of centrist parties or by a change in the composition of voters, rather than by an increase in voter turnout.

Table 17: Fractional probit coefficients for centrist parties and voter turnout

	Centrist Parties (SPD+CDU+FPD)		Turnout	
	CRE	LDV	CRE	LDV
Asylum seekers	-2.197	-1.826	-0.516	-1.044
	(1.267)	(1.090)	(0.718)	(0.618)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

6 Conclusion

Three years following her pronouncement that Germany would manage the challenges of migrant inflows, Chancellor Angela Merkel's interior minister, Horst Seehofer, called immigration "the mother of all political problems," (Eddy 2018) and expressed understanding for the anger that fueled right wing protests in the town of Chemnitz in September of 2018. A month later, Merkel's sister party the Christian Social Union suffered heavy losses in local elections held in Bavaria, a state with the lowest unemployment rate in Germany, currently at 2.8%. Polling following the vote suggested that the refugee issue played a substantial part in an outcome that resulted in big gains for both the Greens and the AfD, with 28% of Bavarian voters citing refugees as the biggest problem at the state level (RTL/n-tv - Trendbarometer 2018).

Hence, from the partisan perspective of Germany's center right ruling party, the CDU, the anecdotal and econometric evidence presented above suggest that the migration issue does indeed present a problem for the party's political prospects, one threatening its ability to maintain a governing coalition despite having presided over a prolonged period of economic stability pre-dating the financial crisis of 2008. Not only do we find that higher regional concentrations of asylum seekers have a direct and

powerful effect of mobilizing electoral support for far right parties, but also that this support appears to be largely independent of economic conditions. The model that includes a quadratic specification shows that a one percent point increase in the share of asylum seekers is associated on average with a 1.2 percent point increase in the vote share for the far right. Moreover, this model indicates no evidence for statistically significant variation in the effect size over different levels of unemployment. As suggested by Golder (2003), it may be that voters compartmentalize their responses to the unemployment rate and immigration, regarding the latter as a threat to national identity and culture irrespective of the state of the labor market.

Our results fail to corroborate Steinmayr's (2020) analysis of the contact hypothesis, which predicts that interpersonal contact would dampen hostility toward asylum seekers and by extension dampen support for anti-immigrant far right parties. Steinmayr (2020) notes that in testing this hypothesis, it is conceptually important to distinguish between effects on the macro level, such as those transmitted via the media and political campaigns (Benesch et al. 2019), and the micro level, as are transmitted through direct encounters between people. His analysis of election outcomes among rather small communities in Austria uncovers persuasive evidence that such direct encounters change voter perceptions about immigrants and draws them away from far right parties. Our use of a larger administrative unit, counties, dissuades us from claiming a direct test of the contact hypothesis. However, we would also not regard differential effects of asylum seekers on voting outcomes across scales as inherently inconsistent. Thus, our finding of a positive effect of asylum seekers on the far right vote share does not preclude the possibility that direct interactions with asylum seekers in one's immediate neighborhood could dampen support, as Steinmayr (2020) finds. Identifying the existence of such cross-scale differences and their underpinnings is a promising line of inquiry for future research.

On the left, we find that the presence of asylum seekers increases the support for the Greens, one of the most prominent immigration-friendly parties in Germany, but only when the unemployment rate is moderate or disposable income levels are high, with effect sizes reaching upwards of 0.9. These results suggest that "postmaterial" considerations influence voters who share the humanitarian and egalitarian values championed by parties on the left. As Inglehart and Welzel (2005) surmise, however, the prioritization of postmaterialist values might wane as socioeconomic conditions become more precarious, a notion our data supports. Our findings show that support for the Greens tapers as unemployment rises or disposable income falls. At high unemployment levels the point estimate reaches a magnitude of -0.6. A robustness check that groups the Greens with parties situated further to the left confirms this pattern.

In the coming years and decades, immigration to Europe will likely increase as refugees flee civil wars or persecution, or – as some have argued – because climate change will render neighboring regions less hospitable. Other possible reasons include political shocks, such as President Erdogan's recent

threat to "open the gates and send 3.6 million refugees your way" (Reuters 2019). How will this alter Europe's political landscape? For that matter, how will a global rise in refugees affect politics? The evidence from Germany indicates that parties on the far right and left will benefit at the expense of centrist parties. Moreover, if an immigrant influx is accompanied by a rise in unemployment or fall in income, then the far right will continue to benefit while support for the left dampens. Given the confluence of a deteriorating economy and high immigration, the picture in Germany would be of an electoral tilt to the right.

Appendix

A Quadratic specification for the Greens

Table A.1: Fractional probit coefficients for the Greens – with Asylum seekers^2

	CRE	LDV	CRE	LDV
Asylum seekers	4.098**	3.457	3.503*	2.071
	(1.532)	(2.285)	(1.480)	(2.147)
Unemployment	-0.428**	-0.902**	–	–
	(0.139)	(0.160)	–	–
ln(Income)	–	–	0.139**	0.134**
	–	–	(0.042)	(0.035)
Asylum seekers^2	-155.998*	-93.673	-114.255	-18.887
	(71.528)	(112.487)	(69.913)	(107.150)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table A.2: Fractional probit coefficients for the Greens – with Asylum seekers^2 and the interaction with economic conditions

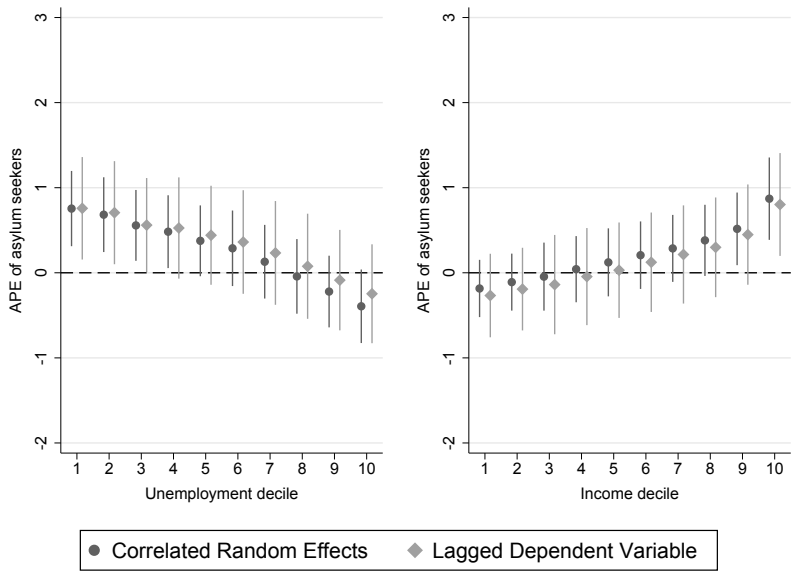
	CRE	LDV	CRE	LDV
Asylum seekers	7.910**	7.299**	-153.208**	-167.382**
	(1.907)	(2.457)	(36.854)	(46.298)
Unemployment	-0.368**	-0.808**	–	–
	(0.135)	(0.166)	–	–
Unemployment × asylum seekers	-68.680**	-56.656**	–	–
	(16.521)	(20.261)	–	–
ln(Income)	–	–	0.129**	0.103**
	–	–	(0.042)	(0.038)
ln(Income) × asylum seekers	–	–	15.659**	17.008**
	–	–	(3.678)	(4.565)
Asylum seekers^2	-137.181	-100.134	-16.489	58.204
	(82.459)	(126.333)	(77.530)	(122.062)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

B Grouping left parties

In Table B.2 we redefined the dependent variable in the model for the Greens, grouping them with other parties on the left that are characterized by internationalism, anti-capitalist rhetoric, socialism, and protectionism, including The Left and the German Communist Party. The results are depicted in Table B.2 and Figure B.1. The general pattern seen for the Greens also emerges for this broader definition of left parties, i.e. a positive effect of asylum seekers that is contingent on low unemployment rates / high average income and turns negative if economic conditions worsen. Yet, this pattern is much more pronounced compared to the results for the Greens only. There is a strong negative effect at high

Figure A.1: Average partial effects for the Greens – with Asylum seekers^2 and the interaction with economic conditions



Note: The graph on the left depicts the model with the unemployment rate as the moderator and the graph on the right depicts the model with the average income as the moderator.

unemployment which reaches 3 percentage points in counties with the highest average unemplyoment rate. Furthermore, the positive effect in the richest counties, as measured by the average disposable income, also reaches nearly 2 percentage points.

Table B.1: Fractional probit coefficients for the left

	CRE	LDV	CRE	LDV
Asylum seekers	2.641**	3.611**	2.473**	3.747**
	(0.848)	(1.058)	(0.849)	(1.021)
Unemployment	-0.140	0.115	–	–
	(0.148)	(0.079)	–	–
ln(Income)	–	–	-0.090	0.057**
	–	–	(0.052)	(0.014)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

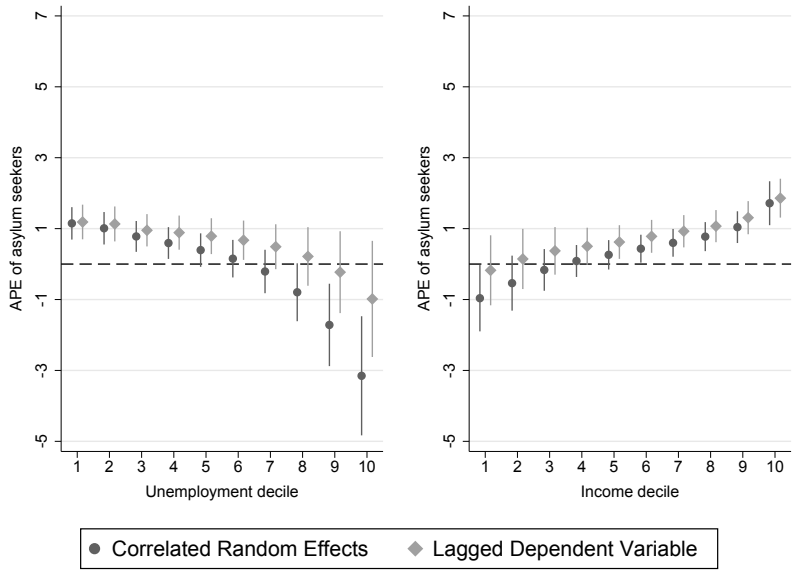
Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table B.2: Fractional probit coefficients for the left – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	9.639**	7.961**	-228.959**	-185.793**
	(1.588)	(1.600)	(48.671)	(41.149)
Unemployment	-0.036	0.217*	–	–
	(0.147)	(0.085)	–	–
Unemployment × asylum seekers	-112.482**	-64.030**	–	–
	(21.247)	(20.371)	–	–
ln(Income)	–	–	-0.103	0.021
	–	–	(0.054)	(0.016)
ln(Income) × asylum seekers	–	–	23.380**	19.168**
	–	–	(4.912)	(4.130)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure B.1: Average partial effects for the left



C Categorizing the AfD as a far right party in 2013

Table C.1: Fractional probit coefficients for the far right (including AfD in 2013)

	CRE	LDV	CRE	LDV
Asylum seekers	4.150*	1.685	4.541*	2.024
	(1.992)	(1.596)	(2.025)	(1.662)
Unemployment	0.818**	0.907**	–	–
	(0.258)	(0.127)	–	–
ln(Income)	–	–	-0.150	-0.134**
	–	–	(0.087)	(0.033)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

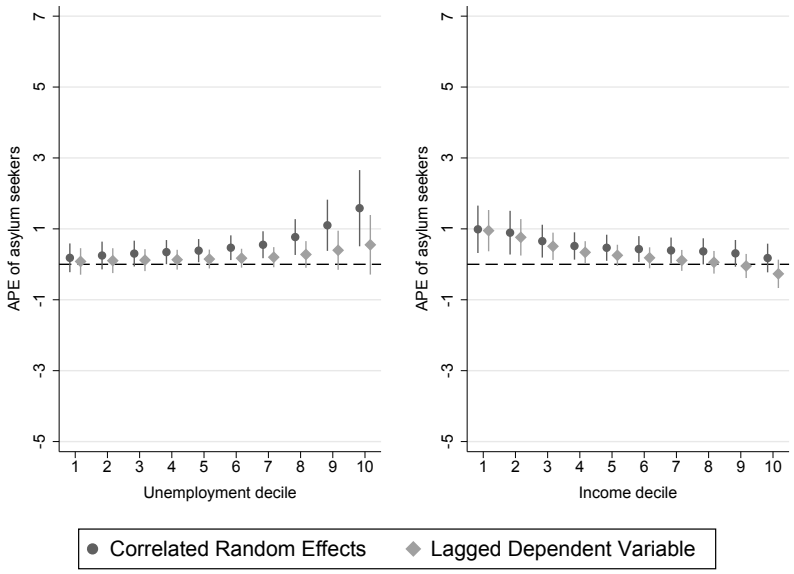
Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table C.2: Fractional probit coefficients for the far right (including AfD in 2013) – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	-0.934	-0.105	141.904*	256.018**
	(3.080)	(2.941)	(68.979)	(76.124)
Unemployment	0.737**	0.846**	–	–
	(0.251)	(0.144)	–	–
Unemployment × asylum seekers	85.921*	28.671	–	–
	(40.183)	(35.782)	–	–
ln(Income)	–	–	-0.141	-0.063
	–	–	(0.085)	(0.032)
ln(Income) × asylum seekers	–	–	-13.856*	-25.667**
	–	–	(6.946)	(7.696)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure C.1: Average partial effects for the far right (including AfD in 2013)



D Restricting the estimation sample to the years 2013 and 2017

Table D.1: Fractional probit coefficients for the far right using the years 2013 and 2017

	CRE	LDV	CRE	LDV
Asylum seekers	9.758**	5.169**	10.366**	5.561**
	(2.858)	(1.802)	(2.775)	(1.895)
Unemployment	0.688	0.916**	–	–
	(1.112)	(0.226)	–	–
ln(Income)	–	–	-0.772*	-0.113**
	–	–	(0.354)	(0.039)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	810			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table D.2: Fractional probit coefficients for the far right using the years 2013 and 2017 – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	12.951**	7.027*	-266.740*	-185.066
	(4.218)	(3.526)	(117.556)	(104.767)
Unemployment	0.628	1.046**	–	–
	(1.145)	(0.269)	–	–
Unemployment × asylum seekers	-57.760	-31.317	–	–
	(59.379)	(47.676)	–	–
ln(Income)	–	–	-0.747*	-0.206**
	–	–	(0.343)	(0.063)
ln(Income) × asylum seekers	–	–	27.925*	19.270
	–	–	(11.832)	(10.592)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	810			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure D.1: Average partial effects for the far right using the years 2013 and 2017

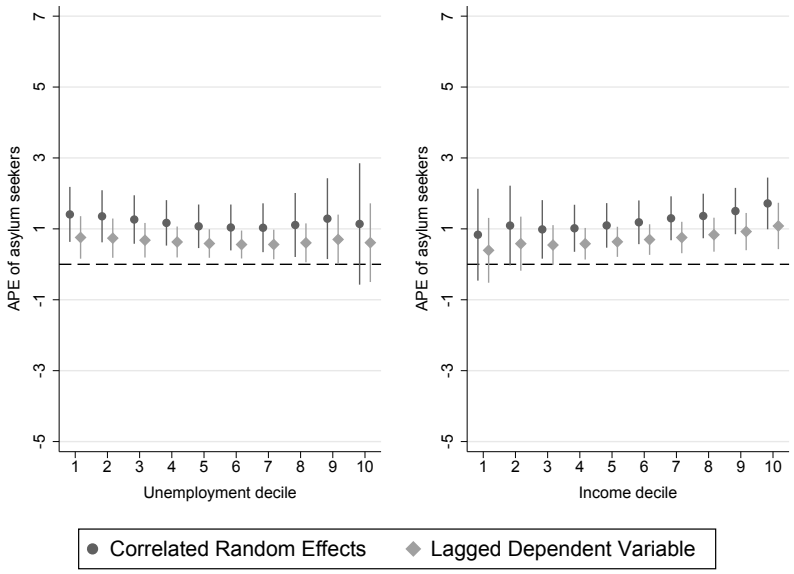


Table D.3: Fractional probit coefficients for the Greens using the years 2013 and 2017

	CRE	LDV	CRE	LDV
Asylum seekers	0.099	2.024*	0.178	1.835
	(1.212)	(1.021)	(1.250)	(0.959)
Unemployment	0.354	-0.865**	–	–
	(0.503)	(0.177)	–	–
ln(Income)	–	–	0.160	0.122**
	–	–	(0.124)	(0.027)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	810			

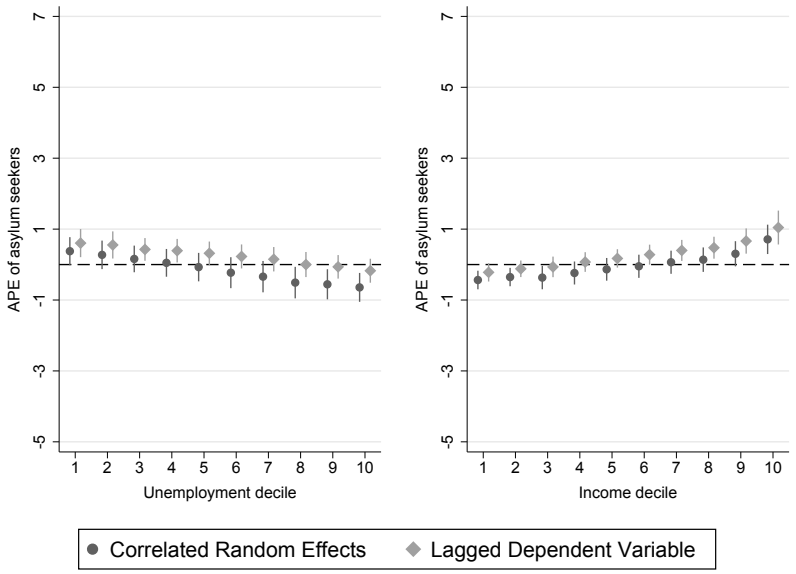
Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table D.4: Fractional probit coefficients for the Greens using the years 2013 and 2017 – interaction with economic conditions

	CRE Coef.	LDV Coef.	CRE Coef.	LDV Coef.
Asylum seekers	5.245**	5.459**	-215.918**	-203.069**
	(1.553)	(1.697)	(36.080)	(51.996)
Unemployment	0.091	-0.683**	–	–
	(0.480)	(0.184)	–	–
Unemployment × asylum seekers	-100.014**	-59.468*	–	–
	(23.210)	(23.409)	–	–
ln(Income)	–	–	0.198	0.049
	–	–	(0.124)	(0.032)
ln(Income) × asylum seekers	–	–	21.768**	20.688**
	–	–	(3.614)	(5.245)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	810			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure D.2: Average partial effects for the far right using the years 2013 and 2017



E Separate results for eastern and western Germany

E.1 Western Germany

Table E.1: Fractional probit coefficients for the far right in western Germany

	CRE	LDV	CRE	LDV
Asylum seekers	7.364**	5.237**	8.254**	5.470**
	(2.428)	(1.880)	(2.671)	(2.012)
Unemployment	1.290**	1.247**	–	–
	(0.358)	(0.212)	–	–
ln(Income)	–	–	0.019	-0.167**
	–	–	(0.089)	(0.038)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table E.2: Fractional probit coefficients for the far right in western Germany – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	8.668*	7.204*	-272.762**	-220.394**
	(3.848)	(3.086)	(85.780)	(76.339)
Unemployment	1.314**	1.340**	–	–
	(0.352)	(0.225)	–	–
Unemployment × asylum seekers	-23.848	-34.539	–	–
	(49.478)	(40.293)	–	–
ln(Income)	–	–	-0.022	-0.241**
	–	–	(0.087)	(0.042)
ln(Income) × asylum seekers	–	–	28.287**	22.782**
	–	–	(8.606)	(7.699)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure E.1: Average partial effects for the far right in western Germany – interaction with economic conditions

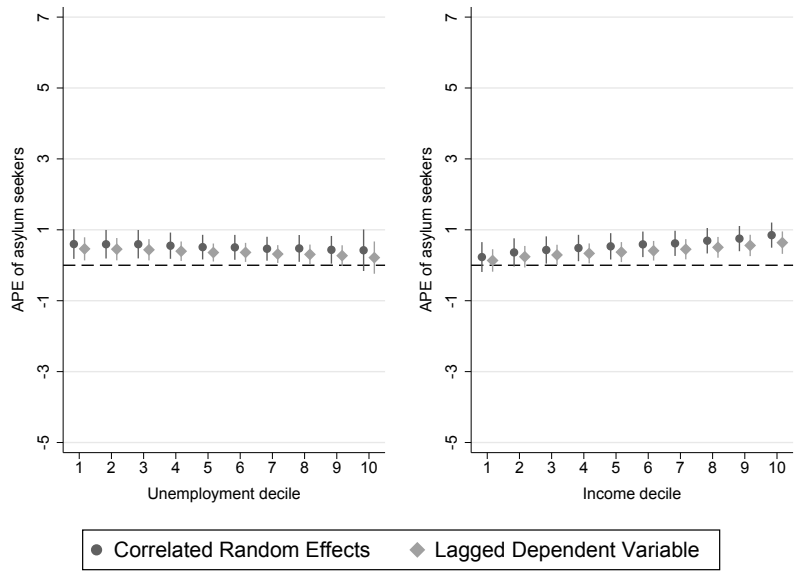


Table E.3: Fractional probit coefficients for the Greens in western Germany

	CRE	LDV	CRE	LDV
Asylum seekers	1.837*	3.461**	1.855**	3.555**
	(0.731)	(1.045)	(0.696)	(0.989)
Unemployment	-0.597**	-0.748**	–	–
	(0.152)	(0.170)	–	–
ln(Income)	–	–	0.125**	0.154**
	–	–	(0.042)	(0.031)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

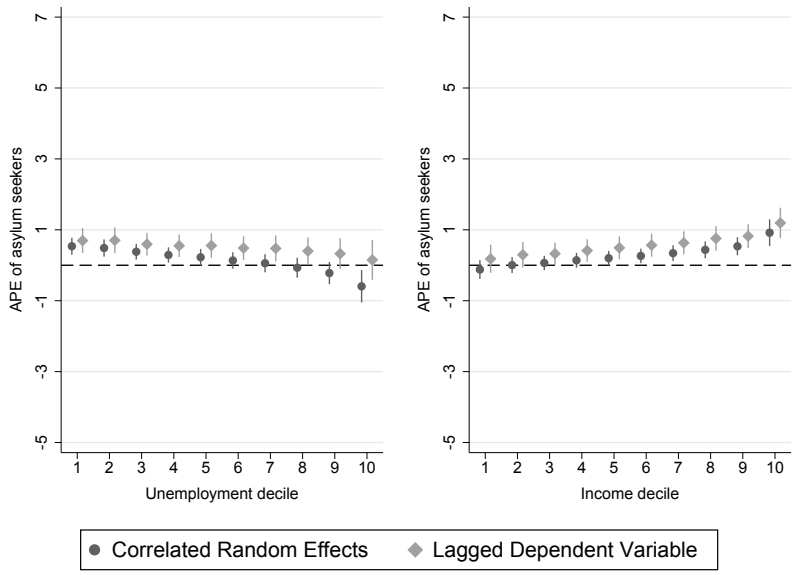
Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table E.4: Fractional probit coefficients for the Greens in western Germany – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	6.441**	5.895**	-154.163**	-139.938**
	(1.204)	(1.553)	(36.796)	(43.218)
Unemployment	-0.533**	-0.681**	–	–
	(0.147)	(0.178)	–	–
Unemployment × asylum seekers	-79.250**	-38.573	–	–
	(17.215)	(20.046)	–	–
ln(Income)	–	–	0.116**	0.127**
	–	–	(0.042)	(0.034)
ln(Income) × asylum seekers	–	–	15.738**	14.489**
	–	–	(3.715)	(4.336)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure E.2: Average partial effects for the Greens in western Germany



E.2 Eastern Germany

Table E.5: Fractional probit coefficients for the far right in eastern Germany

	CRE	LDV	CRE	LDV
Asylum seekers	7.016	3.795	7.242	3.888
	(6.462)	(3.777)	(6.550)	(3.906)
Unemployment	0.150	0.296	–	–
	(0.342)	(0.151)	–	–
ln(Income)	–	–	-0.200	-0.048
	–	–	(0.513)	(0.030)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table E.6: Fractional probit coefficients for the far right in eastern Germany – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	-4.685	5.164	158.845	-13.166
	(8.002)	(6.950)	(186.047)	(160.187)
Unemployment	0.100	0.323	–	–
	(0.317)	(0.213)	–	–
Unemployment × asylum seekers	100.464	-13.726	–	–
	(88.326)	(73.721)	–	–
ln(Income)	–	–	-0.224	-0.053
	–	–	(0.490)	(0.054)
ln(Income) × asylum seekers	–	–	-15.578	1.746
	–	–	(18.919)	(16.372)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure E.3: Average partial effects for the far right in eastern Germany

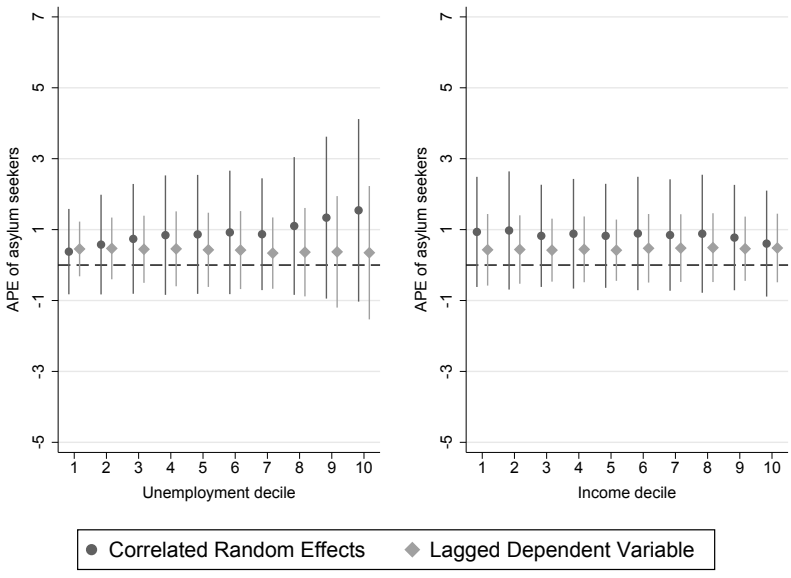


Table E.7: Fractional probit coefficients for the Greens in eastern Germany

	CRE	LDV	CRE	LDV
Asylum seekers	-4.072	-7.070*	-4.125	-7.356*
	(2.573)	(3.470)	(2.444)	(3.642)
Unemployment	-0.317	-0.658**	–	–
	(0.231)	(0.121)	–	–
ln(Income)	–	–	0.318	0.095
	–	–	(0.192)	(0.090)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

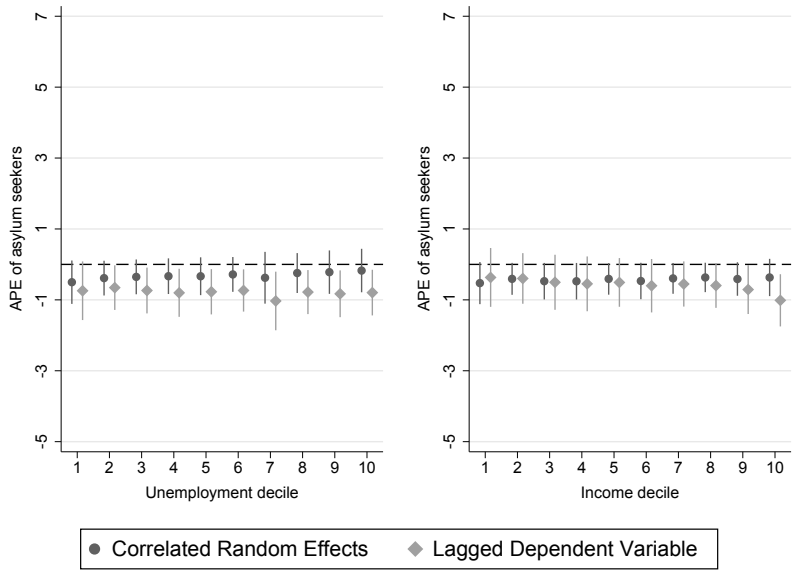
Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Table E.8: Fractional probit coefficients for the Greens in eastern Germany – interaction with economic conditions

	CRE	LDV	CRE	LDV
Asylum seekers	-6.273	-1.795	-100.871	259.909
	(5.429)	(6.069)	(122.902)	(143.582)
Unemployment	-0.339	-0.590**	–	–
	(0.235)	(0.131)	–	–
Unemployment × asylum seekers	20.074	-46.302	–	–
	(42.240)	(40.406)	–	–
ln(Income)	–	–	0.286	0.149
	–	–	(0.195)	(0.110)
ln(Income) × asylum seekers	–	–	9.914	-27.407
	–	–	(12.566)	(14.600)
Further controls	✓	✓	✓	✓
State × year dummies	✓	✓	✓	✓
No. obs.	2025			

Note: Clustered standard errors are reported in parentheses. ** and * indicate statistical significance at the 1% and 5% level, respectively.

Figure E.4: Average partial effects for the Greens in eastern Germany



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