Climate-induced migration and environmental values

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Abstract

Climate awareness is crucial for gaining broad public support for climate policies. Previous work highlights socio-political factors and personal experience of weather shocks as the main drivers of climate attitudes. This paper introduces and empirically tests for international migration induced by weather variations as a novel determinant of climate concern in host countries. The empirical analysis leverages exogenous weather variation in non-OECD countries to construct a gravity-predicted instrument for asylum demands and shows a strong positive effect on individual climate concern in the European Union between 2000 and 2019. Google search data rule out that news and media coverage are confounding the effect of weather-induced asylum demands. Changes in stated preferences, however, do not translate into changes in voting behavior, documenting no effect on Green votes in the European Parliament elections. The findings are consistent with a drop-out of traditional Green voters, changes in preferences for individuals below the voting age, as well as no changes in the pro-environmental agenda of political parties.

Keywords: Asylum seekers, climate change, climate concern, gravity model, migration, political ideology

JEL Classification: D72, F22, J15, Q54, P16

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1 Introduction

Climate mitigation ambitions are not yet supported by adequate policy measures. Advancing and implementing green policies requires public climate awareness in the first place. For this reason, the study of the drivers of public concern about climate change as a political priority is of utmost importance in addressing the pressing challenge of climate action. Previous literature has predominantly focused on socio-political determinants (Poortinga et al., 2019) and the direct experience of extreme weather events as the main factors influencing climate concern (Hazlett and Mildenberger, 2020; Hoffman et al., 2022). Growing global climate awareness is also accompanied by an increasingly accurate understanding of the consequences of climate change, including larger migration flows (Dechezleprêtre et al., 2022). Recent surveys in the European Union suggest respondents see climate change as causing increasing migration inflows in their country (Figure 1a). Despite growing attention to the effects of economic migration in host countries (Alesina and Tabellini, 2023), the political implications of climate-induced migration remain largely unknown. The indirect exposure to weather anomalies through the rise in migration inflows may reduce the psychological and social distance to such events, fostering greater concern for the underlying cause: climate change.

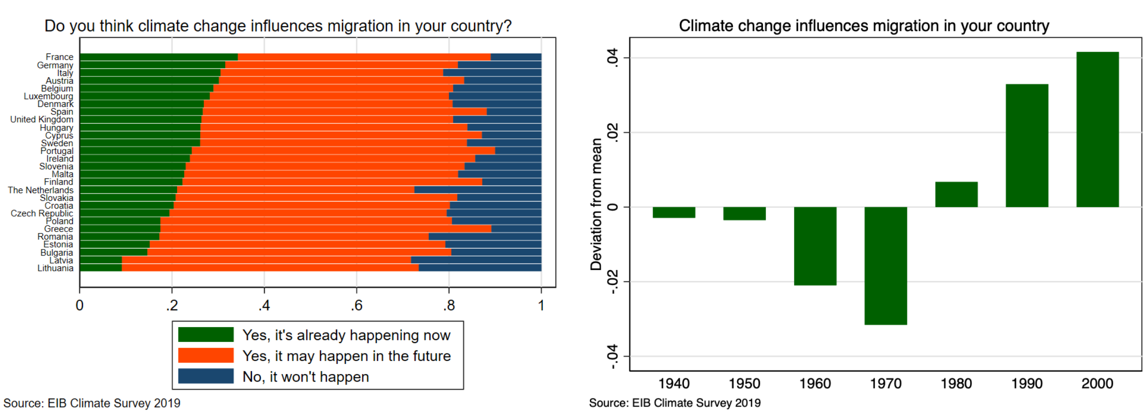
This paper studies the effect of recent waves of weather-induced asylum seekers in the European Union (EU) on individual climate concern and voting behavior for Green parties from 2000 to 2019. I combine non-OECD outflows of asylum seekers with high-resolution climatological data and several cross-country data sets on individual attitudes, political party agenda, and electoral outcomes. Using data from the Eurobarometer, I analyze the implications of weather-induced asylum demands on individuals' concern about climate change as a political priority. Then, I examine if changes in stated preferences translate into changes in revealed preferences by examining how pro-environment voting behavior is affected by weather-induced asylum applications.

To estimate the causal effect of weather-induced asylum demands, I adopt an instrumental variable approach, constructing a measure of weather-driven asylum seekers from a gravity model leveraging plausibly exogenous variation in weather (Bosetti et al., 2020). I recover an asymmetric U-shaped relationship between temperature and asylum applications and use the estimated semi-elasticities on non-linear functions of temperature and precipitation, holding fixed origin-destination and time-specific characteristics and accounting for multilateral resistance to predict bilateral flows. I then aggregate them to obtain an instrument for actual asylum demands and overcome the potential measurement error in inferring the weather-driven portion of asylum seekers. The time-varying instrument makes it possible to control for unobserved country-, time-, and cohort-specific factors potentially correlated with changes in both asylum demands and climate concern.

Starting from the survey-level analysis, I find that weather-induced asylum applications increase individual concern about climate change as a political priority. The interaction with asylum seekers considerably varies across birth cohorts and climate change has a differential degree of concern across age categories, as documented by previous surveys (Figure 1b, Thompson (2021); Marris (2019)) and recent climate-related school-strikes and demonstrations initiated by younger generations (Bowman, 2020; Kenis, 2021). Exploiting birth-cohort variation in exposure to weather-induced asylum seekers, and accounting for country-specific age trends, I document that individuals who grew up when their country was receiving more asylum applications were, at the time of the survey, more concerned by climate change, finding evidence that environmental values are shaped during the "formative age", between 16 and 24 years (Krosnick and Alwin, 1989). In my preferred specification, a 50% increase in weather-induced asylum applications (approximately equivalent to the inter-quartile range in the sample) increases an individual's climate concern by 19% of the sample mean. This is similar to the difference in climate concern between Cyprus and Germany, or that between Hungary and France.

Figure 1. Awareness of climate-migration nexus in survey data

(a) Country frequencies | (b) Birth-cohort heterogeneity



Notes: Both figures use the survey question "Do you think climate change influences migration in your country?" in the European Investment Bank Climate Survey in 2019. Panel (a) shows the country frequency responses. Panel (b) shows the average deviations from country means by ten-year birth cohorts using a binary version of the question equal to one if individuals answers "Yes, it's already happening now".

I propose and test for alternative mechanisms behind these results. First, I show that the effect is driven by younger, female individuals who have less trust in national institutions and more in supra-national ones. Second, I provide descriptive evidence on the relationship between past asylum demands and awareness of the climate-migration nexus in host countries. Third, I rule out the hypothesis that news and media coverage are confounding the effect of weather-induced asylum demands by using data from Google searches. I find no correlation between the predicted measure of weather-induced asylum demands and public attention through online searches and conclude that weather-induced asylum demands are a central driver of climate concern as a political priority and that online searches cannot explain the findings. Last, I test for two alternative underlying psychological mechanisms. On the one hand, asylum demands can reduce the geographical distance of weather anomalies induced by climatic changes and influence climate change perceptions as a global problem; on the other hand, climate-induced migration inflows can be perceived as an additional social cost and a "threat" (Baldwin, 2013) increasing climate concern as a political priority to support further climate action. This empirical finding supports the theoretical result of the role of climate-induced migration in enhancing incentives of host regions to fight climate change documented in Alsina-Pujols (2023). I find that weather-induced asylum applications do not affect any other climate-related attitudes and instead also spur migration concern as a political priority and drive climate concern mostly among right-wing and less-educated individuals, providing suggestive evidence in support of the latter mechanism.

This effect is not translated into changes in revealed preferences as measured by Green party votes in European Parliament elections. At the country level, I document that Green parties in countries more exposed to weather-induced asylum demands between two electoral rounds do not gather larger consensus and if anything, the consensus reduces in response to such flows. I propose several co-existing explanations. First, weather-induced asylum applications do not affect any other party vote shares but decrease electoral turnout, suggesting that the dropout of traditional Green voters of voting polls may partially explain the results. Second, only individuals below the voting age and not yet eligible to vote are more likely to report climate change as an important theme for the electoral campaign for the European Parliament elections, which could explain the gap between stated and revealed preferences at the voting booths. Finally, I examine changes in the supply side of the political process as measured by the pro-environment policy platforms of the parties. Exploiting within-party variation in environmental policy platforms from the Manifesto Project Database, I find no effect of weather-induced asylum applications. This result provides a complementary mechanism for which a lack of supply shifts in the pro-environment policy platform may explain why the rising stated climate concern in response to weather-induced asylum demands did not translate into more pro-environment voting behavior.

This paper contributes to the literature investigating the determinants of climate change perceptions and concern. Various studies focus on the importance of perceptions of climate policy costs, socio-demographic characteristics, including political ideology, education, unemployment, and gender (Carlsson et al., 2021; Hornsey et al., 2016; Czarnek et al., 2021; Duijndam and van Beukering, 2021; Dechezleprêtre et al., 2022), and experience of recent, local and extreme weather events (Konisky et al., 2016; Hoffman et al., 2022; Bergquist and Warshaw, 2019; Hilbig and Riaz, 2024). Recent work has also studied the effect of climate protests (Valentim, 2023; Fabel et al., 2022) and international trade (Bez et al., 2023) on climate concern and pro-environment voting behavior. This paper identifies a new channel for the formation of concerns about climate - weather-induced asylum demands - that reduces the geographical and social distance associated with weather fluctuations induced by changes in climate. Contrary to Deryugina and Shurchkov (2016), which provides experimental evidence that information provision on the scientific consensus on climate change does not impact the belief that policy action is warranted, I document an increase in climate concern as a political priority in response to higher exposure to weather-induced asylum demands.

There is a growing body of work on the relationship between immigration, political attitudes, and voting behavior (Alesina and Tabellini, 2023).[1] Recent experimental studies have examined attitudes towards climate migrants in Denmark (Hedegaard, 2022), Germany (Helbling, 2020) and the US (Arias and Blair, 2022; Raimi et al., 2024; Gillis et al., 2023), finding a more favorable opinion than for economic migrants. My paper takes a cross-country perspective to study the political effects of climate-induced migration in a quasi-experimental observational setting.

From a methodological standpoint, this paper ties to the literature on the relationship between climate change and international migration. Previous surveys have reviewed this relationship (Millock, 2015; Hoffmann et al., 2021; Beine and Jeusette, 2021), which has am-

[1] Previous research has studied economic immigration and right-wing (anti-immigration) voting in different European countries, such as Austria (Halla et al., 2017; Steinmayr, 2021), Denmark (Harmon, 2018), France (Edo et al., 2019), Germany (Otto and Steinhardt, 2014), Italy (Barone et al., 2016; Campo et al., 2021), Switzerland (Brunner and Kuhn, 2018) and across Europe (Moriconi et al., 2019). Natives' reactions have also been studied through political ideology and preferences for redistribution in Sweden (Dahlberg et al., 2012) and across Europe (Alesina et al., 2021; Moriconi et al., 2022).

biguous findings: positive in certain cases (Cai et al., 2016; Backhaus et al., 2015; Marchiori et al., 2012; Coniglio and Pesce, 2015), null in others (Beine and Parsons, 2015), or conditional on income (Cattaneo and Peri, 2016). Missirian and Schlenker (2017b) find that temperature fluctuations affect asylum applications in a nonlinear fashion, Abel et al. (2019) document that drought severity and induced armed conflict are important drivers. This paper complements these works by estimating a bilateral gravity model for asylum applications that leverages weather fluctuations as a push and pull factor and accounts for multilateral resistance to construct a predicted climate-driven measure of asylum demands.

2 Data

I combine data from multiple sources including asylum applications at the country level in the European Union over the period 2000-2019, climatic gridded data, individual attitudes towards climate, Google Trends data on daily searches about migration and climate change, national party political agendas, and the electoral outcomes in the European Parliament elections. This section (with complementary information in the Data Appendix B) describes and summarizes the main data sources.

2.1 Asylum applications

Bilateral data on asylum applications are sourced from the United Nations High Commissioner for Human Rights. Despite the relatively small size of this facet of migration, around 10% of the overall migration flows, asylum seekers have already received substantial attention in academia (Hatton, 2020; Missirian and Schlenker, 2017a) and in the policy debate (Byravan and Rajan, 2017; Wennersten and Robbins, 2017).

Around 13,400,000 asylum applications were registered in European Union (EU) countries between 2000 and 2019, of which around 12,950,000 are from non-OECD countries (Figure A1). I consider annual asylum applications from each source country outside the OECD to any EU member state. Figure A2 shows the aggregated outflows of asylum applicants from their origin country over the twenty years considered, whereas Figure A3 displays the distribution of the asylum applicants across the EU member countries over the same time period (see Appendix B.1 for additional details).

The motivation behind the use of asylum demands as a measure of human migration induced by climate is two-fold. First, asylum-seeking can be linked to climate-related migration more directly than regular migration which is driven by various other push and pull factors. Weather-induced conflicts in developing countries spill over to developed countries through asylum applications (Missirian and Schlenker, 2017b) and increases in asylum demands have been associated with climate change through drought increases (Abel et al., 2019) and conflict (Burke et al., 2015; Hsiang et al., 2011). Second, whilst refugee flows are also likely to be driven by climate-induced conflict, they are endogenous to a host country's specific policy in granting refugee status. Moreover, asylum procedures are long and differ across host countries and more than two years can range between application and formal status registration (Campo et al., 2021). Asylum demands are therefore preferred since actual stock and refugee figures can be strongly affected by country-specific political actions. Additional details on the asylum application process can be found in Appendix Section B.1.1.

2.2 Weather data

I gather temperature and precipitation data from two sources. The main source is the global reanalysis ERA-5 dataset by the European Centre for Medium-Range Weather Forecasts (ECMWF) (Copernicus Climate Change Service, 2023), which combines model data with observations from across the world into a globally complete and consistent dataset using information from weather stations, satellites, sondes, and re-analysis. ERA-5 is available on a $0.25° \times 0.25°$ resolution grid ($\approx$ 28km at the Equator) from 1950 to the present. The original temporal frequency is hourly, but I aggregate it into daily data for the empirical analysis.

To maintain weather variability, I compute nonlinear transformations at the grid cell level before averaging values across space using grid-level weights and accounting for fractional grid cells that partially fall within a country (Hsiang, 2016). Spatial aggregation at the country level is conducted in three ways. First, I average all grid cells in a country over the entire year. Second, I use population count in each grid cell as time-invariant weights from the gridded UN-WPP adjusted population count from the Gridded Population of the World (GPW) dataset, v4.11 for the year 2000. Third, since a large share of the population in most origin countries works in agriculture and given that weather is a direct input to the production function of this sector, I construct weather exposure for the maize growing area (Monfreda et al., 2008), with maize being the staple commodity accounting for the largest share of humans' caloric intake and grown around the world (Missirian and Schlenker, 2017b). I use crop-specific growing season dates from Sacks et al. (2010) to compute the country-specific period of the year in which maize is grown.[2]

For a sensitivity check, I also use the gridded Climatic Research Unit of the University of East Anglia (CRU) data with a 0.5 spatial resolution ($\approx$ 55km at the Equator) and a monthly temporal resolution as in Missirian and Schlenker (2017b).

Previous research shows that agricultural productivity is the main pathway linking temperature and migration (Cattaneo and Peri, 2016; Cai et al., 2016; Missirian and Schlenker, 2017b; Bohra-Mishra et al., 2017; Feng et al., 2012; Marchiori et al., 2012; Falco et al., 2019). It could be that higher temperatures have other disruptive effects in countries besides agriculture, e.g. increased conflicts, wars, and effects on health and fertility, which in turn would increase emigration rates. Nevertheless, only certain of these reasons are valid for filing an asylum application (UN, 1951). Although it is beyond the scope of this paper to pin down the exact mechanisms through which weather fluctuations drive asylum demands, I provide evidence that the agricultural productivity channel through seasonal weather engendering higher "output conflict" (McGuirk and Burke, 2020) can be a valid mechanism for inducing spikes in asylum applications by leading to changes in acceptance rates (see Appendix Section C.4).

2.3 Individual climate concern

I use the Eurobarometer surveys as the main source for individual stated climate concern across the European Union. The relevant surveys for the scope of the analysis regard those Eurobarometer Standard and Special editions that contain questions on individual perceptions, awareness, and attitudes towards climate change.[3] Each Eurobarometer survey typically involves 25,000-30,000 respondents from all EU member states. I select two main questions on the individual concern about climate change as a political priority. The two variables, labeled respectively *CC EU Election* and *CC Pol Priority*, measure in a binary fashion whether individuals consider climate change important in the electoral campaign for the European Parliament elections and whether climate change is a priority for European Parliament deliberations. The exact formulation and temporal coverage of the questions used

[2]The data set gives the start and end dates of the maize growing season. When I use daily weather data, I construct measures from the median planting date to the median harvest date. When I use monthly weather data, I define the growing season to start on the first of the month of the median planting date and to end on the last of the month of the median harvest date (Missirian and Schlenker, 2017b). If the crop is grown more than once a year, I focus on the first season.

[3]The surveys also contain information on socio-demographic characteristics of the respondents that are included as controls in the analysis, such as gender, age, education, employment status, and political orientation.

as an outcome, and their summary statistics, are reported in Table B1. Since the interest is in the effect of asylum seeker flows on natives' awareness of climate change, I restrict the sample to native-born individuals, i.e., born in their current EU country of residence.

2.4 Electoral outcomes

I collect data on electoral votes for European Parliament (EP) elections from Schraff et al. (2022). The data cover 28 countries at the NUTS-2 level and contain information for six EP election rounds spanning 25 years from 1994 to 2019. From the list of parties, I classify parties as Green on the basis of their party family classification in the Manifesto Project electoral program database (Merz et al., 2016) and their membership in the European Green Party, a federation of political parties supporting Green politics across Europe, that forms the G-EFA parliamentary group in the European Parliament. On the basis of this information, I compute the national Green vote share as a fraction of valid votes for Green parties in each country per election round in the four European Parliament elections held after 2000, respectively in 2004, 2009, 2014 and 2019.[4]

Environmental values in the European political arena date back to the late-20$^{\text{th}}$ century, following the rise of environmental awareness and the development of new social movements. In particular, starting in 1984, Green parties agreed on a common platform for the European Parliament elections, and the first Green Members of the European Parliament were elected. They have faced different destinies throughout Europe, accumulating electoral successes mainly in Germany, Belgium, Finland, and France, whereas in other European countries, especially in Central and Eastern Europe, their political relevance is more limited. Since then, Green parties have become a more or less permanent feature on the political scene and they are growing in visibility (Richardson and Rootes, 2006). Despite the variety of electoral mandates, Green parties share the closeness to any environmental, ecological, and climate-related matter, whose salience is here posited to have increased due to the upsurge in weather-induced asylum applications.

I use European Parliament elections since voters are more willing than in national elections to support small parties and properly reveal their electoral preferences (Pearson and Rüdig, 2020). Being "second-order elections" (Reif and Schmitt, 1980), voters have a lower level of

[4]Two new member states of the European Union, Romania, and Bulgaria, held elections to the European Parliament in 2007 for the Parliament's mandate 2004-2009, while Croatia entered the European Union on 1 July 2013 and, as a new member state of the European Union, it held European Parliament elections for the first time in 2013, with the elected member serving the remainder of the Parliament's 2009–2014.

strategies or utilitarian voting and are more likely to "vote with the heart" (Hix and Marsh, 2007). For this reason, vote shares in these elections provide a more accurate snapshot of voters' revealed preferences (Hoffman et al., 2022).

2.5 Party political agenda

The Manifesto Project Database (MPD) (Merz et al., 2016) contains detailed information on the platforms (i.e., "manifestos") of political parties in Europe and elsewhere by using a content analysis of their electoral manifestos. Specifically, based on these manifestos, it categorizes 56 different political positions relating to economic, social, foreign policies, and, most importantly, the environment. It also contains vote shares for each party in every legislative election. I retrieve information for 622 European political parties available for elections between 2000 and 2019.

Based on MPD data, I measure preferences on environmentalism as the share of quasi-sentences that positively referred to policies in favour of protecting the environment, fighting climate change and other *green* policies, for instance: general preservation of natural resources, preservation of countryside forests, protection of national parks, animal rights. This topic includes a great variance of policies that have the unified goal of environmental protection. Table B2 reports the number and years of the European Parliament elections for each country and the number of years of national elections covered by the MPD. Table B3 provides additional information on the exact wording of each topic covered in the manifesto used in the analysis.

3 Empirical Approach

In this section, I present the baseline empirical approach adopted to estimate the effect of asylum applications on environmental values. In Section 3.1, I examine potential changes in individual concern about climate using survey data. I investigate this channel by exploiting within-country variation over time and additional mechanisms leveraging within-country between cohort variation in exposure to asylum seeker flows. Section 3.2 explains the instrumental variable approach adopted to strengthen the causal identification of the effect driven by the weather-induced portion of asylum demands.

3.1 Individual-level analysis

I start by focusing on the demand side of the environmental political process. I use citizens' stated preferences as an initial measure of voters' demand. The objective is to estimate the effect of weather-induced asylum demands on citizens' concern about climate change as a political priority in the EU destination countries. By increasing the salience of migration as a consequence of weather fluctuations, higher exposure to weather-induced asylum seekers may foster greater concern about climate change among natives, spurring the demand for climate change policies and attention to the issue. I test this hypothesis with individual-level regressions of the form:

$$Y_i = \beta_1 \log\left(\sum_{\tau=s}^{S} AsyApp_{d,t-\tau}\right) + X_i'\gamma + Z_{dt}'\boldsymbol{\delta} + \mu_d + \kappa_{t-b} + \zeta_{rt} + \theta_d \times age + \varepsilon_{ibdrt} \qquad (1)$$

where Y_i is a vector of climate-related policy preferences as described in Table B1 of individual i belonging to birth-cohort b in country d in region r in year of interview t.[5] The main explanatory variable is $\sum_{\tau=s}^{S} AsyApp_{d,t-\tau}$, that is, the sum of all non-OECD asylum applications in country d over various time intervals, to let diffusion mechanisms unfold and to account for the average length of the electoral mandates in the country. The baseline specification accounts for asylum demands over the previous five years; in Appendix D.2, I replicate the analysis using other time frames. As the distribution of asylum demands is right-skewed, I always consider logs and estimate relative impacts to allow for concavity in the response and interpret the coefficients as semi-elasticities. I control for a set of individual covariates X_i', capturing socio-economic characteristics (gender, education, political orientation, and employment status), potentially correlated with climate change preference formation (Nowakowski and Oswald, 2020). Z_{dt}' captures second-order polynomial measures of annual temperature and total precipitation since local weather conditions drive environmental preferences (Hoffman et al., 2022).

I also include destination country fixed effects (μ_d) to partial out country ideology at birth and anything specific to a certain country of residence that could be unobserved heterogeneity in climate change beliefs (e.g. political, cultural). I add age-specific κ_{t-b} fixed

[5] Regions are defined following the UN M49 nomenclature: Eastern Europe (Bulgaria, Hungary, Poland, Romania, Slovakia); Northern Europe (Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Sweden, United Kingdom); Southern Europe (Croatia, Greece, Italy, Malta, Portugal, Slovenia, Spain); Western Asia (Cyprus); Western Europe (Austria, Belgium, France, Germany, Luxembourg, Netherlands).

effects to partial out unobserved age-specific determinants of preferences and attitudes (e.g. preferences specific to life-cycle)[6], and I include region by survey-year fixed effects (ζ_{rt}) that absorb not only time-varying changes in the overall ability of foreigners to migrate and international shocks but also region-specific events in the year of the interview. Finally, I account for interactions of country dummies with linear age trends ($\theta_d \times age$) to help rule out the possibility that results are driven by country-specific cohort effects. Standard errors are clustered at the country level.

3.2 Instrument for asylum applications

In an OLS estimation of Equation (1), the coefficient β_1 would produce a measure of the partial correlation between asylum applications and the outcome of interest that may be biased for several reasons. Unobservable characteristics affecting citizens' environmental values (captured in the term ε_{ibdrt}) and correlated with asylum demands would generate such bias. For instance, if asylum seekers are attracted to countries where the attitudes of citizens are more favorable to immigration, and these attitudes are correlated with climate attitudes or voting behavior towards pro-immigration parties, then a spurious correlation could arise. Similarly, social, economic, and demographic changes attracting asylum seekers and changing individual attitudes would also induce bias.

To address these concerns, in the following section, I explain the construction of an instrument that leverages plausibly exogenous variation in weather in origin countries, measured as a high-order polynomial of temperature and precipitation, accounting for origin-, dyad- and time-specific unobservable characteristics (Bosetti et al., 2020).

3.2.1 Gravity equation and predicting weather-induced flows

I propose an identification strategy exploiting plausibly exogenous variation in weather to construct a predicted measure of asylum seeker flows, using it as an instrumental variable in a 2SLS estimation strategy. I adopt a "gravity" approach that predicts asylum applications based on nonlinear effects of variations in temperature and precipitations in origin countries (Bosetti et al., 2020; Beine et al., 2016).

Gravity models are frequently used in the migration literature to predict the geography-driven portion of migrant flows and estimate the causal impact of migration on receiving

[6] I conduct robustness tests including birth year fixed effects instead of age fixed effects since they are not perfectly collinear in a repeated cross-section. This approach does not alter my results.

countries' economic performance (Ortega and Peri, 2014; Alesina et al., 2016; Docquier et al., 2016) and probabilities of conflict (Bosetti et al., 2020). I predict bilateral migration using an OLS estimator following Frankel and Romer (1999) for the canonical log-transformation of the gravity equation.[7] The bilateral gravity equation is written as:

$$\log\left(AsyApp_{odt}\right) = f(\boldsymbol{W_{ot}}; \boldsymbol{X_{od}}; \alpha) + \theta_o + \mu_{dt} + \chi_{rt} + u_{odt} \tag{2}$$

where the dependent variable $\log\left(AsyApp_{odt}\right)$ is the natural logarithm of the asylum applications from non-OECD origin-country o to EU destination-country d in year t (Missirian and Schlenker, 2017b). To obtain bilateral time-varying variation in weather at the origin, I introduce interaction terms between weather $\boldsymbol{W_{ot}}$ and bilateral geographic characteristics $\boldsymbol{BIL_{od}}$, which include common border, common official language, common colonial history, and the natural logarithm of bilateral (geodesic) distance between the two capital cities (Cattaneo and Peri, 2016; Beine and Parsons, 2017; Bosetti et al., 2020).

In the baseline specification, I only consider contemporaneous weather and use a fourth-order polynomial of daily average temperatures, summed across the maize growing season, which provides sufficient flexibility to capture important nonlinearities (Carleton et al., 2022). Analogous to temperature, I construct a second-order polynomial of season-total precipitation over the maize growing season. I also include the uninteracted terms of the bilateral geographic characteristics, origin fixed effects (θ_o), destination-by-year fixed effects (ψ_{dt}) and region-of-origin-by-year fixed effects (χ_{rt}).[8] In a set of robustness checks, I explore the sensitivity of the results to alternative definitions of temperature and functional forms, including lower-order polynomials and binned daily average temperatures. Additional robustness checks also include up to four lags of the weather variables to allow for delayed effects. Standard errors are clustered by origin country-year.

One of the major challenges for the estimation of a gravity equation relates to the so-called multilateral resistance term to migration, defined as the confounding influence that the

[7] A more common approach in the gravity estimation in trade and migration uses the Poisson Pseudo Maximum Likelihood (PPML) estimator, which reduces concerns of potential inconsistency in the estimation of multiplicative models in log-linearized form, and addresses the issue that OLS estimates may be biased due to many zeros in bilateral flows (Silva and Tenreyro, 2006). I do not adopt this estimation method for two reasons. First, the asylum application data do not contain zeros. Second, most importantly PPML always requires including origin-time fixed effects to control for the resistance term (Beine et al., 2016). By including such dummies, it would not be possible to identify origin-time effects such as the identifying weather variation used in Equation 2.

[8] Following the UN M49 nomenclature, the world is divided into 17 regions: Australia and New Zealand, Central Asia, Eastern Asia, Eastern Europe, Latin America and the Caribbean, Melanesia, Micronesia, Northern Africa, Northern America, Northern Europe, Polynesia, South-Eastern Asia, Southern Asia, Southern Europe, Sub-Saharan Africa, Western Asia, Western Europe.

attractiveness of alternative destinations exerts on the bilateral migration rate (Bertoli and Moraga, 2013). Omitting this term can generate biases in the estimation of the coefficients of the determinants of migration, by ignoring the influence of alternative destinations (Beine et al., 2016). This is particularly important since weather fluctuations can be positively correlated between origins and alternative destinations, both over time and space. Therefore, when ignoring this, the origin terms $\boldsymbol{W_{ot}}$ would pick up both their own effect and the effect of alternative destinations.

Several strategies have been proposed to account for the multilateral resistance term. Bertoli and Moraga (2013); Bertoli et al. (2016) show that under some data-demanding conditions, the resistance term conforms with the common correlated effects (CCE) estimator proposed by Pesaran (2006) and implemented in a climate migration regression in Mullins and Bharadwaj (2021). Against this backdrop, I adopt two different approaches that account for the multilateral resistance term both non-parametrically and parametrically. First, the baseline specification controls for destination-by-year fixed effects (ψ_{dt}) and region-of-origin-by-year fixed effects to capture regional trends (χ_{rt}). Destination-by-year dummies completely account for time-varying multilateral resistances in receiving countries (Feenstra, 2015), the most important aspect in the context of international migration (Beine and Parsons, 2015). Region-of-origin-by-year dummies control for the multilateral resistance to migration that is induced by time-varying heterogeneity in the preference for migration from a specific region of origin while ensuring estimation of origin by time variation. Therefore, the regression only exploits exogenous year-to-year variation in weather in origin countries to predict the flow of asylum seekers and does not rely on baseline difference (e.g., different forms of government might result in a different average number of refugees fleeing a country) to obtain causal estimates of the relationship analyzed.

Second, in Appendix Section C.1 I detail the construction of a parametric control of multilateral resistance $\boldsymbol{MR_{odt}}$ as an additional robustness check. This measure of multilateral resistance is, for each destination-origin country pair, the average of all the other destinations' weather variables weighted by the marginal propensity to apply for asylum in each destination country, constructed as the ratio of asylum applications over the total asylum applications in the first available year in the sample. These additional regressors account for changes in the attractiveness of alternative destinations weighted by the propensity to migrate to such alternative destinations (Mayda, 2010). Since these proxy variables do not entirely capture the factors affecting changes in attractiveness and are not theoretically-founded, the inclusion of these parametric controls is to be interpreted only as a robustness test on the stability of the estimates associated with origin weather variation (Head and Mayer, 2014).

The vector of estimated parameters $\widehat{\alpha}$'s from Equation (2) is used to construct an instrument for the total asylum applications at the destination country-year level. Let X_{odt} be the matrix of temperature and precipitation interacted with bilateral characteristics, the resulting weather-induced asylum seeker inflows predicted for country d in year t is $\widehat{AsyApp}_{dt} = \sum_o \exp(\widehat{\alpha} X_{odt})$. To test for the robustness of the results, I construct alternative instruments. In Appendix Section C.2, I estimate a regression that does not account for destination-by-year unobservable heterogeneity but includes destination-specific weather as a measure of pull factor. In Appendix Section C.3, I estimate host country-specific response functions to weather variations in origin countries, an alternative way to account for multilateral resistance.

The predictors are based on a fixed-effects gravity regression, however, they do not include the estimated fixed effects (Ortega and Peri, 2014). Hence, the instrument is obtained only from the estimated semi-elasticities to weather fluctuations. This may potentially reduce the predictive power, however, it increases the confidence in isolating the variation in asylum applications solely induced by changes in temperature and precipitation. For this reason, I interpret the finding as the effect of weather-induced asylum applications, as I will refer to them throughout the rest of the paper.

3.2.2 Identifying assumption and instrument validity

The instrument relies on the variation solely induced by deviations in temperature and precipitation in non-OECD origin countries and it is thus free from reverse causality and exogenous to any single EU destination country, and within countries, to any specific age cohort. The time-varying nature of the instrument allows me to account for destination country-specific factors and shocks common to all destination countries that may be correlated with migration flows and environmental preferences.

A potential violation of the exclusion restriction for the predicted weather-induced asylum seeker flows as a valid instrument could arise if origin-country weather variations were correlated with environmental preferences through channels other than their effect on asylum applications. The key identifying assumption is that only asylum applications are directly affected by the predicted measure of weather-driven asylum applications, conditional on the fixed effects.

A first concern for the credibility of this assumption is that weather anomalies driving asylum demands are spatially correlated. In the individual-level analysis, this concern would arise if, relative to other birth cohorts in the same country, or relative to individuals in the same birth cohorts in other destination countries, cohorts more exposed to asylum applications because of weather fluctuations had also experienced local weather shocks that influenced their preferences. For this reason, all specifications always include both linear and quadratic terms of temperature and precipitation in the host country. Weather changes are an important factor explaining people's awareness of climate change, although previous studies show that only direct personal experience of climate-related events matter for individual climate beliefs (Lee et al., 2018; Hoffman et al., 2022; Deryugina, 2013; Hazlett and Mildenberger, 2020; Lee et al., 2015).

A second concern for the validity of the instrument is that individual climate preferences lie on differential trends as a function of baseline bilateral networks, which may make certain destination countries more likely to change their environmental values due to weather fluctuations in more *salient* origin countries. To allay this concern, I use gradual climatic conditions in the gravity equation and not natural disaster measures such as droughts or floods that may affect the outcome of interest through other channels than the inflows of asylum seekers in the country. The gravity equation also includes time-varying destination-country fixed effects, which absorb the long-run effects of climate on the destination country through colonization history, disease environment, geographical accessibility, as well as the country's institutions.

I also conduct an empirical test by constructing a measure of country-level exposure to temperature and precipitation fluctuations via past migration links. For this, I assume that destination countries that in the past received a higher share of asylum applications from certain origin countries are more likely to receive migrants from these origins when weather fluctuations occur there. I exploit the network channel, according to which migrants tend to choose destinations previously chosen by migrants from their same origin country (Mahajan and Yang, 2020; Card, 2001). I use the average share of asylum applications from origin country o to destination country d over the average number of asylum applications in destination d in the 2000-2005 baseline period to construct a destination-year level weighted measure of exposure to weather shocks in origin countries via migration links. I then regress the individual-level outcomes on this shift-share measure of exposure to weather fluctuations in origin countries. A statistically significant effect would undermine the validity of the instrumental variable approach by indicating that individuals change their environmental preferences as a function of weather fluctuations in origin countries via the baseline propensity to receive asylum seekers from such countries instead of annual fluctuations in weather-induced migration flows. Figure A8 allays such concern finding a null effect of indirect exposure to weather fluctuations. In additional robustness checks, I include such measures as a control in the baseline specification (Table D5).

A third concern is posed by weather shocks in origins that could increase higher salience of climate change in media and affect environmental attitudes. To account for this channel, I gather data from Google searches (see Data Appendix Section B.3) and use them to test for the correlation between Google searches about climate and migration and the actual asylum demands and include these as additional controls in the baseline estimating equation (see Section 4.2 for further details).

A final concern is that even if one could observe the reason for the asylum application, climate change and weather-related reasons do not apply to the refugee criteria of the 1951 Convention (UN, 1951). People may have a valid claim for refugee status for reasons indirectly affected by climate change (e.g., through disputes, armed conflict, and violence), but would not list climate as a direct cause of asylum application. For this reason, despite being widely used, the term "climate refugee" is not endorsed by institutional bodies, that deem more accurate the use of "persons displaced in the context of disasters and climate change" (UNHCR, 2021). I ascertain that spikes in additional demands induced by weather anomalies are valid for asylum and are thus not due to economic reasons (Missirian and Schlenker, 2017b). I examine the relationship between the number of accepted applications per year and the application anomalies driven by weather fluctuations and find that weather-induced spikes lead to higher acceptance rates, providing suggestive evidence that application anomalies induced by weather fluctuations classify as valid demands for asylum and are thus recognized as refugees by host countries (see Appendix Section C.4 for additional details).

3.2.3 Zero stage - Gravity results

Table D1 displays the estimates of the coefficients in the gravity model in Equation (2) using the sample of non-OECD countries as the origin and the sample of EU27 + UK as destination countries. I report the estimates using three different measures of temperature and precipitation: unweighted average annual weather (column 1), weather weighted by maize area during the maize growing season (column 2), weather weighted by the population during the maize growing season (column 3).

To understand the response of international migration to weather variations, I also consider a model without interaction terms with bilateral controls (Tabular results in Table D2). Figure A4 shows a robust asymmetric U-shaped relationship between temperature in the origin and asylum applications, with effects compared to a day at 20°C. The effect is strongly positive and statistically significant only for an additional day hotter than 25°C compared to a 20°C day. Conversely, total precipitation is not an important predictor for migration, consistent with previous findings (Cai et al., 2016). I also include up to three lags of the weather variables to account for delayed increases in asylum demands as a result of past weather fluctuations or forward migration displacement. The contemporaneous effect of temperature persists with the inclusion of up to three lags and asylum demands show a similar response function to past temperature fluctuations (Table D3). Similar estimates are also obtained when including weather conditions in the destination country as a pull factor (Table D4). Appendix Section C.1 discusses the results of the specification that controls for the multilateral weather parametrically.

I also explore a non-parametric version of the effect of weather using binned daily average temperatures over the maize growing season. Figures A5 and A6 report the coefficients associated with the 5°C and 3°C bins across the temperature distribution interval. In particular, the positive effect of days with temperatures above 30°C on asylum demands is robust to such alternative specifications. Results are similar when replicating the analysis using monthly averages of temperature and precipitation from CRU weather data (Figure A7).

Figure A9 displays the conditional correlation between the aggregated inflows of asylum seekers in EU destination countries and the predicted weather-induced portion of inflows obtained in the four alternative instruments that, respectively, use origin weather and bilateral characteristics; include the parametric multilateral resistance; include origin and destination weather; obtain destination-specific effects of origin weather.

I visually inspect the variation underlying the instrument by plotting its average annual change in Figure A10. The largest asylum demands induced by weather fluctuations come from Sub-Saharan Africa, the Middle East, and partly Latin America. At the same time, there is substantial variation within the same region, and the instrument predicts lower levels for a number of countries in Central America and South-East Asia. In the presence of heterogeneous treatment effects, the 2SLS estimates identify the impact of asylum demands in destination countries coming from source countries due to exogenous changes in weather, therefore estimating a local average treatment effect (LATE) on the "compliers" (Imbens and Angrist, 1994) in host countries.

4 Individual environmental preferences

4.1 Main results

Table 1 displays the main results for the effect of weather-induced asylum applications on individual climate concern as a political priority. I report the OLS estimates of Equation (1) in columns (1) and (3), and the 2SLS estimates in columns (2) and (4), respectively for the two main survey outcomes.

The OLS estimates reveal a small and, respectively, negative and positive, but never statistically significant correlation between asylum applications and preferences related to climate. Turning to the 2SLS estimates, the Kleibergen-Paap F-stats confirm the validity of the instrument. In contrast with the OLS estimates, the 2SLS coefficients always indicate that weather-induced asylum applications have a strong, positive, and statistically significant effect on individual concern about climate change as a political priority. Country-by-age linear trends absorb country-specific trends in beliefs and rule out the possibility that country-specific cohort effects drive the results.

The magnitude of the 2SLS coefficients for the effects of asylum applications is substantially larger than that of the OLS ones by an order of magnitude. One potential explanation is that OLS estimates suffer from attenuation bias due to measurement error in asylum applications and do not capture the effect of the weather-driven portion of asylum seekers. As speculated above, another possibility is that the estimation strategy identifies a local average treatment effect (LATE) for countries that experienced larger inflows of asylum seekers as a result of weather fluctuations and whose citizens were more likely to update their preferences for climate change. The effect is modest in size but not negligibly small. According to the coefficient reported in columns (2) and (4), doubling the country's weather-induced asylum applications in the five years before the survey increases the probability of reporting climate change as an important theme for the electoral campaigns of the European Parliament elections by 2.3 percentage points (p.p.) and by 4.3 p.p. the probability of reporting climate change as a political priority for the European Parliament deliberations. In the latter case, such a magnitude is similar to the difference between Cyprus's and Germany's country averages. With respect to the mean, that is a 33% increase in the preference for climate as a priority for EP elections and a 41% increase in the preference for climate as a priority over EP deliberations. To put this into context, comparing the effect to the partial correlation of socio-demographic characteristics, the effect of experiencing a doubling in asylum demands over five years on climate as a priority for EP elections is over seven times larger than the effect of being employed and twice the effect of being left-wing leaning.[9]

Table 1. Weather-induced asylum applications and individuals' environmental values

Dep. variable	CC EU Election (*Mean: 0.068*)		CC Pol Priority (*Mean: .106*)	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
log(Asylum Applications)	-0.00147	0.0226**	0.00746	0.0431**
	(0.00384)	(0.0106)	(0.00651)	(0.0207)
Weather Controls	X	X	X	X
Individual Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Statistic		21.566		26.241
N	106614	106614	130068	130068
Number of countries	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-2 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 3-4 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. Columns (2) and (4) report the 2SLS estimates using the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Summary of robustness checks. In Appendix D.2, I test for the robustness of the findings. First, I account for the average weather conditions in origin countries weighted by the baseline propensity to receive migrants from those countries and find robust and stronger estimates, suggesting that actual migration flows induced by weather fluctuations increase the salience of climate change, inducing updates in individual concern about the issue (Table

[9] Table C3 replicates Table 1 reporting coefficients on all individual controls.

D5). Second, I replicate the analysis including additional fixed effects (Table D6). Third, I consider alternative gravity-derived instruments including only using origin weather fluctuations, destination-specific effects of temperature in origin countries and constructed using bilateral geographic controls (Table D7). Fourth, I consider alternative time windows over which exposure to asylum applications is defined (Table D8). Fifth, I use alternative regressors considering only the instrumented contemporaneous asylum demands and the measure of weather-induced asylum anomalies constructed in Appendix Section C.4 (Table D9). Sixth, results are virtually unchanged when dropping one country at a time from the estimation sample (Figure D1). Seventh, weather-induced asylum applications do not affect concern on any other topic or theme not related to climate, such as terrorism, Euro as a single currency, food safety, or economic growth (Table D10, see Table B1 for the exact wording). Eighth, results are unchanged and estimates are more precise if I exclude the origin countries with the largest number of asylum seekers (Afghanistan, Iraq, Russian Federation, Serbia, Syria) (Table D11). Finally, I test for the presence of pre-trends, finding no correlation between past climate concern at the country level and leads in actual and predicted asylum demands (Table D12).

4.2 Mechanisms

Heterogeneity. The results presented above show that higher exposure to weather-induced asylum applications increases citizens' concern about climate as a political priority. Nevertheless, these effects can be heterogeneous across individual characteristics. To explore this issue, I perform a sub-sample analysis.

First, individuals differentially interact with asylum seekers depending on their age, and preferences are more malleable after exposure to events during certain periods of life (this hypothesis is further explored in Section 4.3). Dividing the estimation sample by age terciles, younger individuals are more strongly affected by exposure to higher weather-induced flows. For instance, the effect on the importance of climate for the European Parliament electoral campaigns is not significant for individuals aged above 60 years and is largest in magnitude for individuals between 18 and 40 years old. Similarly, weather-induced asylum applications have a strong positive and statistically significant effect on the probability of reporting climate change as a priority for European Parliament deliberations only for respondents between 18 and 40 years old and between 41 and 59 years old (Table C4). Sub-sample analysis by gender reveals that the effect is substantially driven by females (Table C5).

Finally, political ideologies and preferences may also play a role in determining how individuals form climate preferences as a response to climate-induced migration flows. Since climate concern is surveyed as a political priority at the supra-national political level, the effect of asylum seekers may vary by attitudes toward EU's legitimacy. I test for heterogeneous effects on the subsamples of individuals who trust, respectively, the national government, the national parliament, the European Parliament, and the European Union. Overall, there is suggestive evidence that the effect of weather-induced asylum applications on climate concern is driven by individuals who have less (respectively, more) trust in national (resp. supra-national) institutions (Figure A14).

Channels. In this sub-section, I further explore different channels that may explain the mechanisms at play behind the estimated effect. There are two main puzzles to solve. First, one may wonder about the extent to which asylum demands are informative about shifts in weather distributions in origin countries and how individuals in destination countries are aware of climate as the driver of refugees seeking asylum in their country - while migrants are unable to state climate change as a reason to apply for asylum. Although descriptively, using a survey conducted in 2019, Figure A15 provides suggestive evidence of a strong positive correlation between the five-year cumulative asylum demands received in a country and the share of respondents that thinks that climate change is already influencing migration in their country (p-value <0.0001). Combined with leveraging only variation in weather conditions in the origin countries to explain changes in asylum demands, this first piece of descriptive evidence strengthens the link between awareness of the climate-migration nexus and the actual flows of migrants in the country.

Second, one may wonder about the reasons behind the changes in individual attitudes toward climate change as a function of weather-induced asylum applications. One major threat to the validity of the instrumental variable approach concerns changes in public attention to the climate-migration nexus. To account for this channel, I use data from Google searches. I leverage these data in two ways. First, I run a horse race between instrumented weather-induced asylum demands and average Google searches for "climate change", "climate protests", "migration", and "refugee" in each country in the baseline specification to ascertain that the instrumental variable approach captures the media channel. The estimates are comparable and slightly larger in magnitude than the baseline estimates in the case of climate change as a political priority (Table C6). Second, I test for correlation between actual and predicted flows and the Google Trends measures. I find a small positive but imprecisely estimated partial correlation between asylum demands and "climate change" searches and a negative correlation with all other searches, significant only in the case of "climate protests" (Table C7). Although I cannot fully rule out that non-migration forces might have independent effects, this analysis provides support for the hypothesis that weather-induced asylum demands are a central driver of climate concern as a political priority and public attention through Google searches cannot explain the findings. To further allay concerns on media coverage mostly explaining the results, I split the sample between EU destination countries above and below the median number of asylum demands received in the time interval and document a positive and significant effect only among countries that receive a larger number of asylum demands, with estimates for countries below the median small and imprecisely estimated (Table C8).

There are two main alternative underlying psychological mechanisms that can explain the effect. On the one hand, weather-induced asylum applications may increase the salience of the drivers of migration flows and reduce the psychological distance to climatic changes (McDonald et al., 2015). Psychological distance refers to the belief that climate change hits geographically distant areas and affects other social groups (Spence et al., 2012; Brügger et al., 2015). Through this channel, the effect could then be explained by an increase in underlying concern about climate change as a global problem. On the other hand, individuals in destination countries may see such migration flows as tangible consequences of inaction in climate mitigation efforts and thus update their beliefs about the importance of climate as a political priority in response to increases in asylum demands. In this case, the effect may be explained by changes in attitudes toward migration and by changes in preferences only by specific subsets of the population.

To test for the first hypothesis, I consider two other survey outcomes related to climate change and more specifically to the perception of climate change as a global problem (see Table B1 for the exact wording of the survey questions). Estimating the baseline specification on these survey outcomes, I find a small effect not distinguishable from zero of weather-induced asylum demands, providing suggestive evidence of the absence of such a mechanism (Table C9). I test the second alternative hypothesis in two ways. First, I examine the effect of weather-induced asylum applications on the individual concern about migration as a political priority, in a symmetric manner to the questions asked on climate change (see Table B1 for the exact wording). I find a small and significant effect only on the question of migration as a priority for EP deliberations, suggesting that asylum demands, if anything, also increase the salience of migration (Table C10). Individuals update their concern about climate change as a response to higher costs induced by receiving additional asylum demands, which increase incentives to fight climate change, in line with the hypothesis of climate-induced migration in a "threat" frame (Baldwin, 2013). A final piece of evidence in support of this hypothesis comes in a sub-sample analysis by individual political orientation and education. In contrast with previous findings (Duijndam and van Beukering, 2021; Lee et al., 2015), the effect is positive and statistically significant for both survey outcomes only among right-wing individuals (Table C11) and individuals without tertiary education (Table C12). Combined with previous heterogeneity findings, these results reveal new dynamics on diverse coalition compositions around climate concern (Bush and Clayton, 2023; Gaikwad et al., 2022).

4.3 Exposure during the formative age

Climate change is a particularly important concern for children and young people (Thompson, 2021; Nature, 2021). Recent school strikes and student-led demonstrations illustrate this phenomenon (Ojala, 2012; Bowman, 2020; Kenis, 2021). Building on the heterogeneous effect of weather-induced asylum applications by age documented in the previous section, I further investigate whether the effect is stronger for individuals exposed to such flows during their formative age.

A large strand of the literature in social psychology posits the *impressionable years hypothesis*, according to which attitudes, beliefs, and values are formed mostly during a period of great mental plasticity in late adolescence and early adulthood, defined as the formative age, between 16 and 24 years of age, and past this critical age, they change slowly (Krosnick and Alwin, 1989; Cutler, 1974; Sears, 1975; Greenstein, 1965).[10]

For individuals belonging to birth cohort b in country d, I define exposure to asylum applications as:

$$exposure_{bd} = \sum_{s=0}^{8} (\text{AsyApp})_{d,b+16+s}$$

where $AsyApp$ is country d's asylum applications received during the impressionable years

[10] This hypothesis has already been tested on a variety of domains within the economic literature, including early life experiences of economic recessions and preferences for redistribution (Carreri and Teso, 2023), job preferences (Cotofan et al., 2023) and attitudes towards migration (Cotofan et al., 2021), exposure to trade with democracies and attitudes towards democracy (Magistretti and Tabellini, 2023), exposure to disasters and support for environmental public action (Falco and Corbi, 2023), exposure to the 1968 movement and political preferences (Barone et al., 2022), epidemic exposure and confidence in political institutions (Aksoy et al., 2020), environmental policy exposure and preferences (Vora and Zappalà, 2024).

(from the age of 16 to the age of 24).[11] Figure A12 shows the average exposure to observed and predicted asylum flows by country-cohort during the formative age, while Figure A13 shows the density distribution of asylum seeker flows exposure during the formative age. Such an approach allows me to construct exposure to asylum applications for the entire 2000-2019 period of available data since respondents interviewed in the same year and in the same country can have a different exposure history due to variation in their birth cohort.[12] The estimated specification is

$$Y_i = \beta_1 \log\left(exposure_{bdt}\right) + X_i'\gamma + Z_{bdt}'\boldsymbol{\delta} + \mu_d + \zeta_{rt} + \kappa_{t-b} + \xi_b + \theta_d \times age + \varepsilon_{ibdt} \quad (3)$$

where Y_i is the same vector of outcomes as in Section 3.1. The main explanatory variable is $exposure_{bdt}$, in logs to allow for concavity in the response. I also control for a set of individual covariates X_i', capturing individual socio-economic characteristics (gender, education, political orientation and employment status). Z_{bdt}' accounts for objective local weather conditions (average temperature and precipitation over the period of exposure). I include a wide set of fixed effects (country, region-by-year, age, birth-cohort, country-age linear trends) so that β_1 is estimated from changes across birth cohorts within a country, as compared to changes across the same age groups in other countries, in a given year of interview. Standard errors are clustered at the country level.

Results in Table 2 show the OLS and 2SLS estimates of Equation (3). The 2SLS estimates indicate that being exposed to more weather-induced asylum applications over the impressionable years has a positive and statistically significant effect on the probability of reporting climate change as a priority for the electoral campaign in the European Parliament elections (column 2) and a priority that the European Parliament should deliberate about (column 4).

To formalize the intuition that the formation of climate-related political preferences occurs during the formative age, I investigate the effect of weather-induced asylum seekers over different age categories. I decompose the sample of respondents into different age brackets to estimate the heterogeneous age effect.[13] Figure 2 presents the 2SLS coefficients associated

[11]For the subset of individuals who are too young, I use all available years over the 9-year formative age window.

[12]Since the data availability for asylum seeker flows in Europe starts from 2000, I limit myself to the birth cohorts whose impressionable years are in the 21st century (i.e., individuals born after 1984 and whose year of age 16 is after 2000).

[13]To define age categories, I first consider the range of the impressionable years assumed before, i.e., from

Table 2. Formative age exposure to weather-induced asylum seeker flows and environmental values

Dep. variable	CC EU Election (*Mean: 0.079*)		CC EU Pol Priority (*Mean: 0.099*)	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
log(Exposure$_{16-24}$)	0.00203	0.0235**	0.0165**	0.0390**
	(0.00455)	(0.00959)	(0.00775)	(0.0180)
Weather Controls	X	X	X	X
Individual Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Birth-cohort FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Statistic		26.020		46.347
N	17554	17554	21661	21661
Number of countries	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed and whose formative age (between 16 and 24 years) occurs in the time period in which asylum applications data are available (i.e., after 2000). The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 3, see Table B1 for exact wording and additional details on the construction of the variable). In columns (2) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). Columns (1) and (3) report the OLS estimates using the (log) of the sum of asylum applications in a given country in the time period in which the individual was between 16 and 24 years old (until the year of the interview if younger than 24 years old). Columns (2) and (4) report the 2SLS estimates where the (log) of exposure to asylum applications is instrumented with the symmetric version constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. Individual controls: Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented. Weather Controls: Exposure to average temperature and precipitation over the same time period in which exposure to asylum applications is measured. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

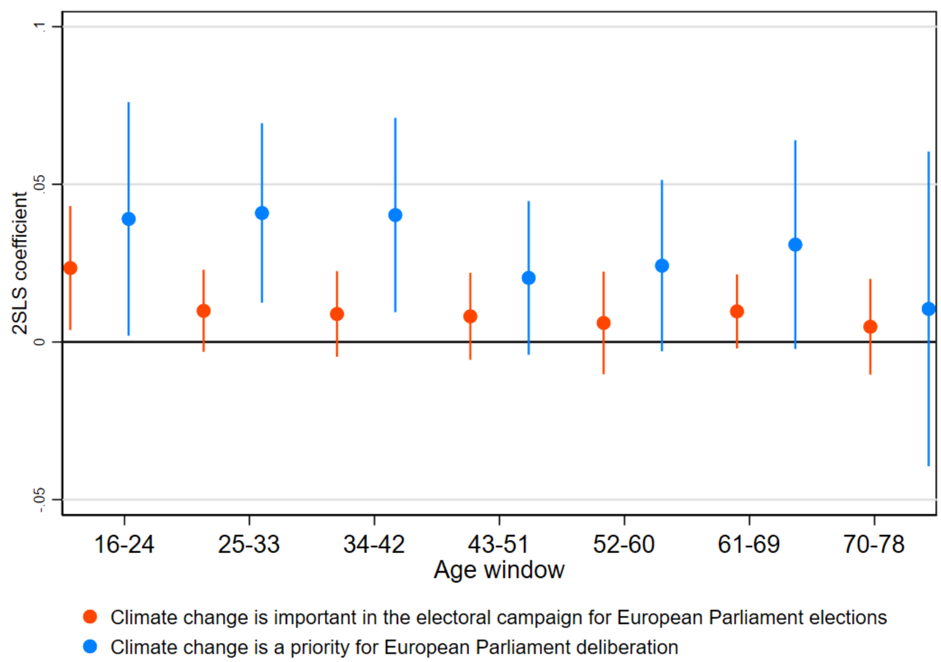
with exposure in each age window for eight different age categories in which the sample has been split (Tabular results in Table D13). Exposure to weather-induced asylum seeker flows does not appear to be substantially driving climate concern as a political priority in other than the formative age windows, although individuals exposed to higher flows during ages 25-33 and 34-42 are also positively affected only in concern about climate change in EP deliberations.

In terms of magnitude, a 50% increase in exposure during the formative age (approximately equivalent to the interquartile range) increases the probability of reporting climate change as a priority in the electoral campaigns for the European Parliament elections by 15% of the sample mean and of stating climate change as a priority in the political arena by 19%

16 to 24, and then each category is a 9-year age window.

of the sample mean. The latter is similar to the difference between Cyprus and Germany, or that between Hungary and France. Overall, these results seem to provide suggestive evidence that exposure to weather-induced asylum seeker flows during late teenage and early adulthood drives concern about climate change as a political priority debate even later in life. Results are robust to the use of alternative instruments (Table D14) and to alternative definitions of the formative age window (Table D15).

Figure 2. 2SLS coefficients of weather-induced asylum seeker flows exposure by age window



Notes: The figure plots the 2SLS coefficients estimated regressing the survey response on the total asylum applications experienced during a specific age window of the individual. The point estimates are reported in Table D13. Bins represent the 95% confidence interval.

5 From stated to revealed preferences

5.1 Green party votes in European Parliament elections

5.1.1 Empirical approach

To what extent do these effects on climate concern translate into political choices? In this section, I move from stated individual climate concern in survey responses to revealed preferences in the form of voting behavior. I focus on Green party votes in European Parliament elections since the use of proportional rules for the allocation of seats in the European Parliament should limit the extent to which voters engage in strategic voting and they should reveal their preferences more than in national elections (Pearson and Rüdig, 2020; Hoffman et al., 2022). I examine how asylum applications induced by weather variations affect destination country electoral outcomes in the EP elections. I estimate the following specification

$$y_{dt} = \beta_1 \log\left(\sum_{\tau=1}^{s} AsyApp_{d,t-\tau}\right) + X'_{dt}\gamma + \alpha_d + \lambda_t + \varepsilon_{dt} \tag{4}$$

where y_{dt} is the Green party vote share in European Parliament elections. The main explanatory variable, $\sum_{\tau=1}^{s} AsyApp_{d,t-\tau}$, is the sum of all asylum demands in country d during the previous electoral mandate of the European Parliament and it is instrumented with its predicted counterpart that leverages origin weather conditions. The matrix X'_{dt} includes the wide set of country-level covariates. Previous research has shown that Green voters are proportionally younger (Franklin and Rüdig, 1992) and with a higher level of education (Knutsen, 2004). Support for Green parties is also higher among employed people (Knutsen, 2005) and has a strong link with GDP per capita (Pearson and Rüdig, 2020). The equation controls for the population share of 18-23 year-olds, the unemployment rate, the percentage of the population with tertiary education, and the (log) GDP per capita (Moriconi et al., 2019), and electoral turnout to account for the low and declining turnout in European Parliament elections (Van der Eijk and Van Egmond, 2007). I account for second-order polynomials of temperature and precipitation since local weather explains party vote shares (Bassi, 2019; Baccini and Leemann, 2020; Hoffman et al., 2022), and to allay concerns on the validity of the instrumental variable approach. I also include year- and country-specific fixed effects and regional linear time trends to capture potential unobserved heterogeneity at each of these levels. Standard errors are clustered at the country level.

5.1.2 Main results

Table C14 displays the OLS (column 1) and 2SLS estimates (columns 2 to 4) of the effect of asylum demands on Green party vote shares in EP elections. In both cases, the estimates are negative but largely imprecise and not statistically significant at any conventional level, with the 2SLS estimates quantitatively larger than the OLS ones. Although the sample size is very small (N=65), the instrumental variable approach preserves its relevance with the F-stat well above conventional thresholds. To further ascertain the validity of the approach, I check whether the actual or predicted flows of asylum applications induced by weather fluctuations are associated with the Green party vote shares in earlier elections. In both cases, the estimates are very close to zero and imprecisely estimated (Table D16). Overall, the results indicate that Green parties in countries more exposed to weather-induced asylum demands between one electoral round and the following one do not gain in vote share and, instead, their share of votes is lower in response to such flows. Results are robust to the use of alternative instruments (Table D17).

5.1.3 Mechanisms

To gain further insight into the findings by which higher exposure to weather-induced asylum applications increases individual climate concern but does not translate into Green party votes in EP elections, I evaluate and test for various possible mechanisms, which are by no means mutually exclusive: anti-immigration party votes, electoral turnout, changes in not-yet-eligible voters' concern and parties' environmental agenda.

Anti-immigration parties. A first potential explanation is that voters do not distinguish between weather-induced asylum seekers and migrants for economic conditions. Electoral preferences may have been shifted towards populist anti-immigrant nationalist parties, as found in national contexts as a result of economic migration, rather than increasing the salience of environmental-related issues. Moreover, Green party votes reflect political support for climate action in a simplified manner and may not capture all relevant aspects of pro-environment voting decisions. Another explanation is that votes may have been directed to other pro-environmental parties than Green parties. Some countries may have more solid Green parties, whereas in other countries longer-term party attachment may prevent climate concern from turning into Green voting. I examine whether any other political groups' electoral outcomes respond to weather-induced asylum demands. The effect is imprecisely estimated for all parties, except for nationalist party votes that are negatively affected by higher exposure to weather-induced asylum demands at the 90% significance level. An opposite positive effect of a similar magnitude, though imprecise, is found in socialist and any other left-wing party votes (Table D18). Overall, the results do not provide evidence in support of this hypothesis.

Turnout dropout. A second hypothesis is that Green party votes decreased as a result of weather-induced asylum applications because traditional Green voters did not vote in the European Parliament elections. The low participation rate and turnout may explain this finding

(Bhatti and Hansen, 2012). To test this mechanism, I check the effect of weather-induced asylum applications on voter turnout in European Parliament elections. The 2SLS estimates of weather-induced asylum applications on electoral turnout are negative and statistically significant (Table D19). Therefore, this mechanism cannot be entirely ruled out, and Green party votes may not have been affected by weather-induced asylum applications, due to an exit, at least partially, of the traditional Green voters from the electoral turnout.

Changes in preferences of young voters. An alternative explanation builds on the heterogeneous effect of exposure to weather-induced asylum application on climate concern by age category. Previous results show that what matters most is exposure during late adolescence and early adulthood. Younger generations are generally more supportive of Green parties (Lichtin et al., 2023). Changes in climate-related preferences in this age category may not be enough to drive overall shifts in voting behavior at the national level. To further investigate this hypothesis, I split the sample of individuals for which the exposure in the formative age can be observed, distinguishing between those below and above the voting age.[14] Figure A16 shows the results for the two survey outcomes used in Section 4 (Tabular results in Table C13). Respondents below the voting age are more likely to report climate change as an important theme for the electoral campaign for the European Parliament elections, whereas the effect is not statistically significant for respondents above the voting age. Conversely, exposure has a positive and statistically significant effect on climate change as a priority for European Parliament deliberations only for respondents above the voting age but not for those below. This result may indicate that the increase in concern for climate change and its importance as part of the political agenda in the European Parliament electoral campaigns is driven by individuals not yet eligible to vote and thus explain the gap between states and revealed preferences in voting behavior for Green parties.

Parties' environmental agenda. A final mechanism concerns changes on the supply side of the environmental political process defined as the environmental agenda of political parties (Guiso et al., 2017). For this purpose, I use information on parties' political agenda from the *Manifesto Project Database* (MPD) to measure the degree of environmentalism of each party in national elections and exploit within-party variation in the environmental political agenda across elections (see Appendix Section C.7 for additional details). I find that weather-induced

[14]The voting age is a minimum age established by law that a person must attain before they become eligible to vote in a public election. This is set at 18 years for most of the countries in the sample, except for Austria after 2007, Malta after 2018 which set their voting age to 16 years, and Greece after 2017, setting it to 17 years.

asylum applications do not affect the environmental agenda of political parties in national elections across a variety of specifications (Table C16). The 2SLS estimates are negative, but small and not statistically significant, while the instrument satisfies the relevance condition.

In the baseline specification, each party running in multiple elections has the same weight. Nevertheless, small parties do not have the same influence on the political system as large parties, and may change their positions more easily. When I weigh each party by the percentage of votes gained in the elections, I find no significant effect. Results are also robust to considering parties that gained at least 5% of votes, to rule out entry/exit or mergers and splits of small parties and potential measurement error in their agendas. Similar results are found using alternative instruments (Table D22), while I find a larger and significant negative effect on party environmentalism when only including larger parties that gained at least 10, 15, or 20% of votes in the elections (Table D23). I also examine the presence of heterogeneous effects by party family masked in the average treatment effect but find small and largely imprecise estimates across the seven party families (Table D24). These findings suggest that weather-induced asylum applications have not shifted parties toward a *greener* environmental agenda, suggesting why the rising climate concern in response to climate-induced inflows did not translate into more environmental-related voting behaviors.

Moriconi et al. (2019) show that inflows of less-educated immigrants induce European parties to endorse platforms less favorable to social welfare. To investigate whether asylum demands drive similar mechanisms, I consider alternative dimensions of the manifesto of parties, including attitudes towards refugees, Europe, and multiculturalism (see Table B3 for the exact definition). I find a negligible negative effect that is not statistically significant across all outcomes (Table D25) in response to higher asylum applications.

Environmentalism in national elections. Last, building on these findings, I construct a measure of *environmentalism* at the election-country level obtained as the average percentage of environmentalism in each party's manifesto weighted by its vote share in a given election. Once again, the 2SLS estimates on weather-induced asylum demands, although positive, are not statistically significant (Table C15). Similar null results are obtained when using alternative instruments (Table D20). I also examine if weather-induced asylum demands explain changes in other dimensions of the political agenda of parties but find small and imprecise estimates (Table D21).

6 Conclusions

Understanding the drivers of changes in public climate concern and support for Green parties is essential to identify the mechanisms to promote climate action and induce transformations toward a greener more sustainable society. Several studies examine the role of socio-economic determinants (see Drews and van den Bergh (2016) for a review) and direct experience of extreme events (Hazlett and Mildenberger, 2020; Hoffman et al., 2022). A growing literature has documented the political effects of economic migration in host countries (Alesina and Tabellini, 2023). Fluctuations in temperature as a result of climatic changes have increased the outflows of asylum seekers from non-OECD countries into the European Union (Missirian and Schlenker, 2017a), possibly altering the individual concern for climate change and leading to eventual changes in electoral voting behavior.

In this paper, I examine the effect of weather-induced asylum applications on citizens' climate concern and pro-environment voting behavior, exploiting exogenous variation in the annual asylum seeker flows generated by weather fluctuations from non-OECD origin countries to the European Union.

I find that exposure to weather-induced asylum applicants increases public climate concern and individuals who grew up when their country received more weather-induced asylum demands are more concerned about climate at the time of the survey, providing support to the formative age hypothesis. The effect of weather-induced asylum applications on climate concern appears to be driven by right-wing voters and to induce joint concern about climate and migration as political priorities rather than increasing public perception of climate change as a world problem. These findings are not mirrored in voting behavior for Green parties in European Parliament elections, which do not respond to inflows of weather-induced asylum seekers. Three main co-existing mechanisms involve a drop out of traditional Green voters of the electoral turnout, a change in public concern mostly driven by individuals who are not yet eligible to vote, and a lack of change in the pro-environmental policy manifesto of political parties. These findings suggest that a rise in concern for climate-related issues could contribute to achieving a transformation by catalyzing public support for climate action that, however, has not translated yet into concrete policy proposals by parties.

The results suggest several directions for further research. First, the goal of this paper is to provide first evidence and assess the effects of weather-induced asylum application exposure in an international context, aggregating across countries and different types of interactions and time periods (e.g., periods where asylum demands are more or less salient, periods where temperature fluctuations and weather anomalies are more pronounced). However, several aspects of heterogeneity may deserve closer attention, including country-specific case studies both within Europe and in the United States, the world's largest migration destination country. Changes in attitudes and voting behavior may depend on the conditions under which contact occurs and on the characteristics of both immigrants and natives, including the type of climatic push factor, a specific origin place, and other features. Finally, a narrower geographical focus could help analyze in more detail the relationship between actual climate-migration flows and the salience of the phenomenon using its media coverage. Traditional media channels including articles in national newspapers can increase awareness of the issue and its potential impacts, as well as shape perceptions of migrants and the reasons for their migration, which could in turn influence policy.

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Online Appendix

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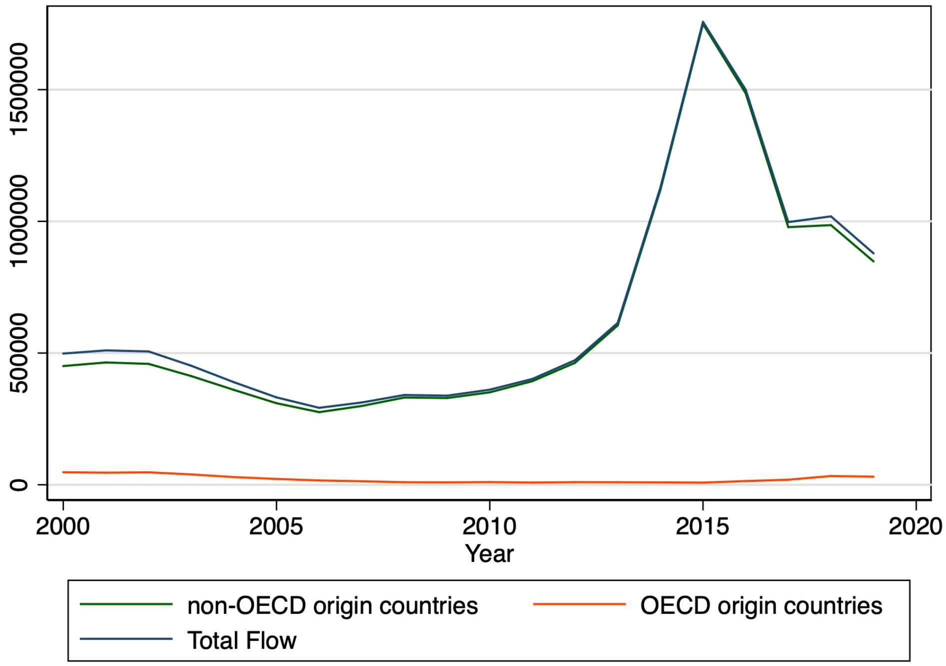
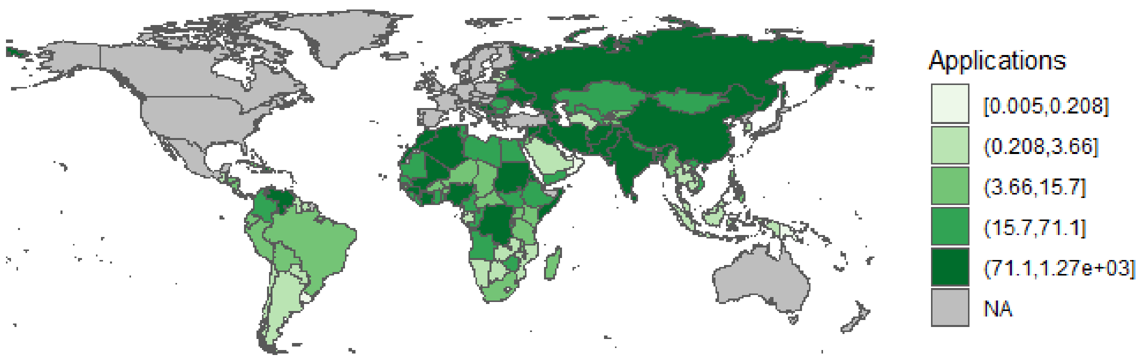
A Additional Figures

Figure A1. Asylum Applications in EU between 2000 and 2019



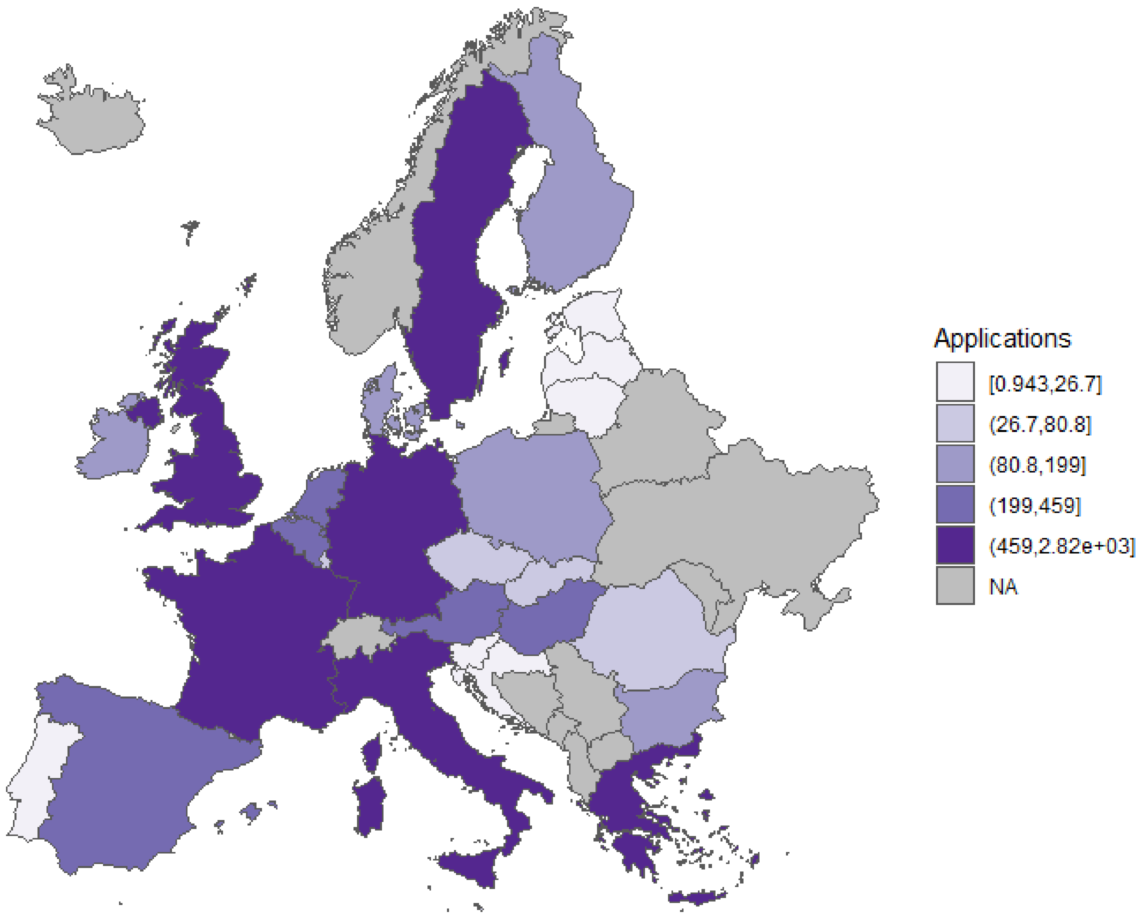
Notes: UNHCR (2020). Author's computation. Cumulative annual asylum demands in EU27+UK countries from 2000 to 2019.

Figure A2. Asylum applications (in 1000s) from non-OECD countries between 2000 and 2019



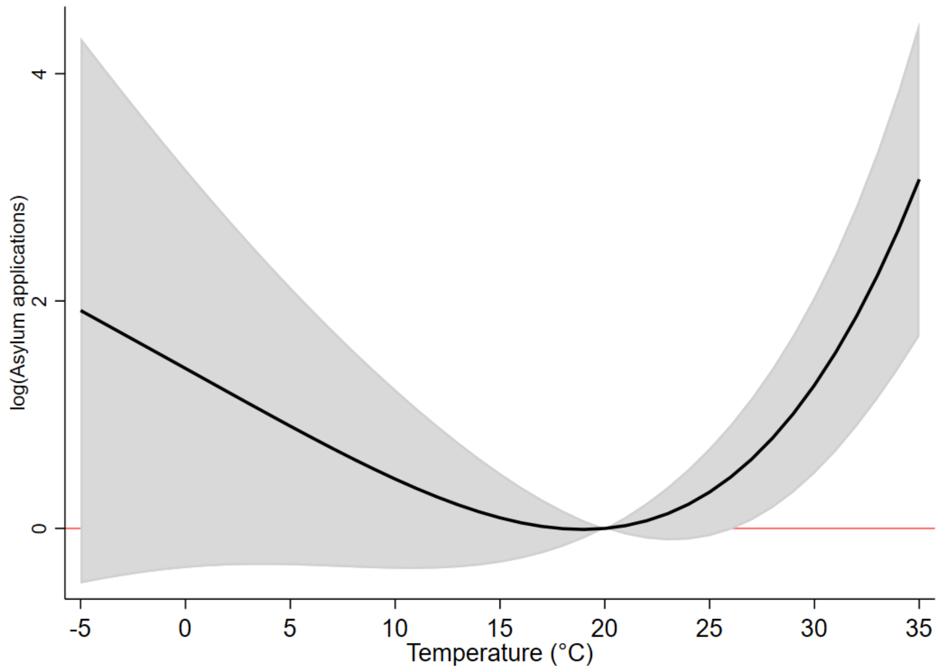
Notes: The map shows total asylum applications (in thousands) from non-OECD countries between 2000 and 2019.

Figure A3. Asylum applications (in 1000s) in EU27 + UK between 2000 and 2019



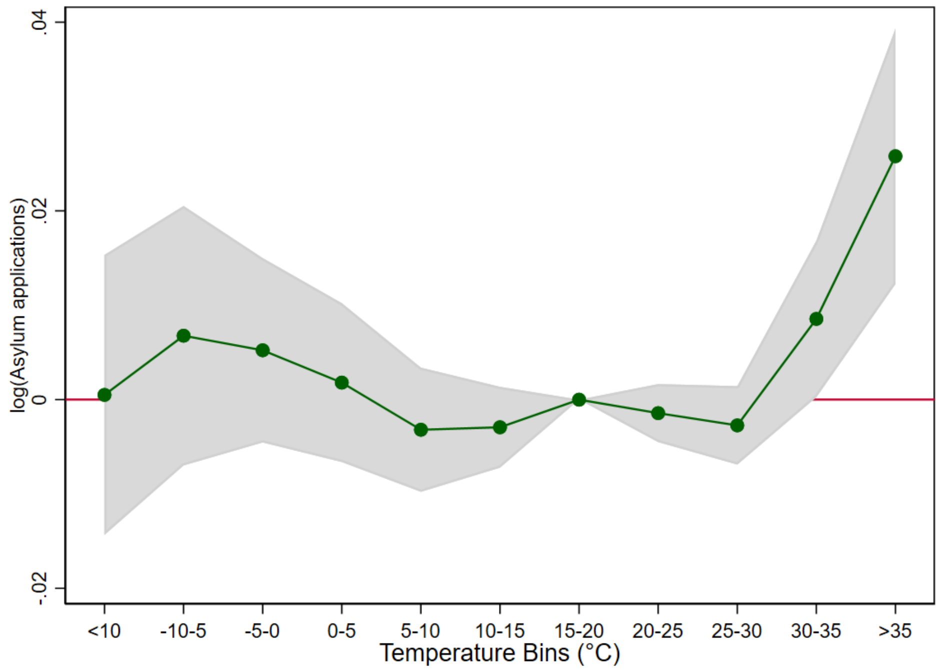
Notes: The map shows total asylum applications (in thousands) in EU27+UK countries between 2000 and 2019.

Figure A4. Response of asylum applications to the EU with respect to the temperature over the maize growing season



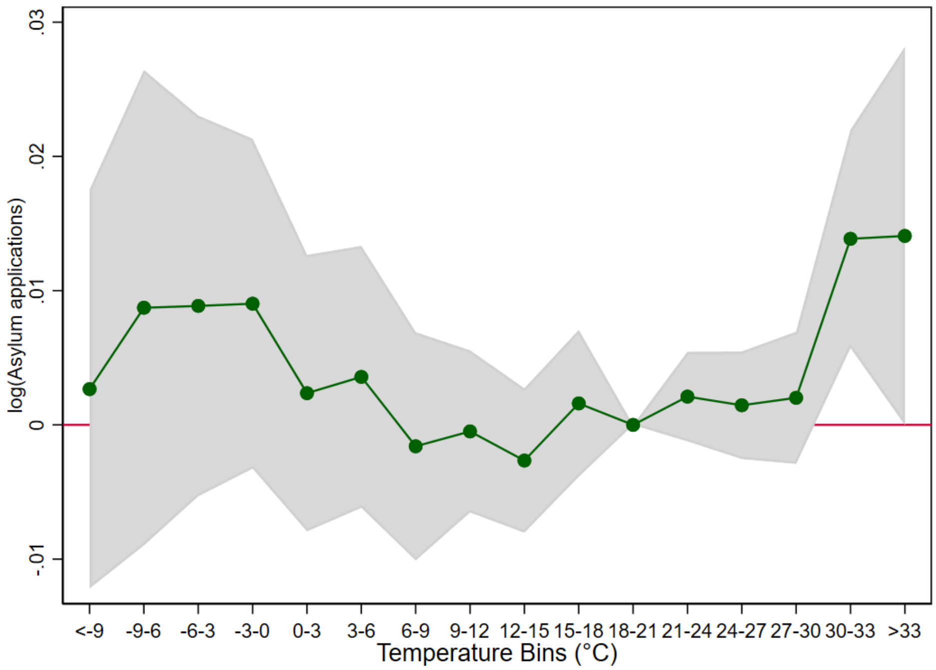
Notes: The figure represents a predicted asylum applications-temperature response function for the applications coming from non-OECD countries in the EU. Regression estimates are from a fourth-order polynomial in daily average temperature over the maize growing season weighted by maize area in each grid cell. The response function is estimated in a regression model that controls for a quadratic function in season-total precipitation, multilateral weather, as well as destination-by-year, region-of-origin-by-year, and dyad-specific fixed effects. See Table D2 (column 2) for point estimates. Shaded areas are the associated 95% confidence interval using clustered standard errors at the origin country-year level.

Figure A5. Response of asylum applications to 5°C binned daily temperature over the maize growing season



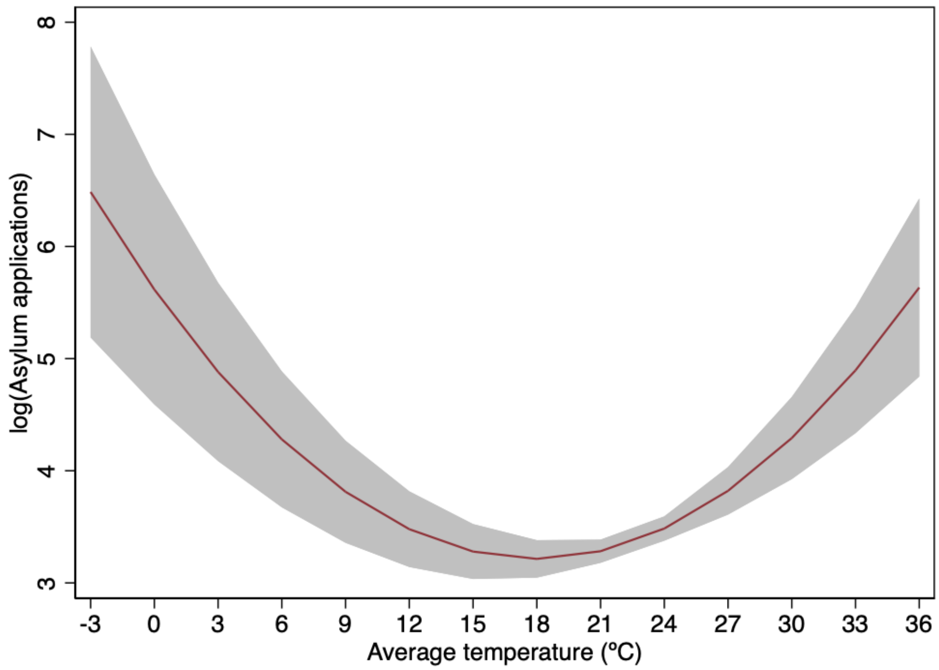
Notes: The figure represents a predicted asylum applications-temperature response function for the applications coming from non-OECD countries in the EU. Regression estimates are from binned daily average temperature over the maize growing season with bins 5°C wide weighted by maize area in each grid cell. The response function is estimated in a regression model that controls for a quadratic function in season-total precipitation, as well as destination-by-year, region-of-origin-by-year, and dyad-specific fixed effects. Shaded areas are the associated 95% confidence interval using clustered standard errors at the origin country-year level.

Figure A6. Response of asylum applications to the 3°C binned daily temperature over the maize growing season



Notes: The figure represents a predicted asylum applications-temperature response function for the applications coming from non-OECD countries in the EU. Regression estimates are from binned daily average temperature over the maize growing season with bins 3°C wide weighted by maize area in each grid cell. The response function is estimated in a regression model that controls for a quadratic function in season-total precipitation, as well as origin-, destination-by-year, region-of-origin-by-year, and dyad-specific fixed effects.

Figure A7. Response of asylum applications to the EU with respect to the annual average temperature over the maize growing season using CRU data

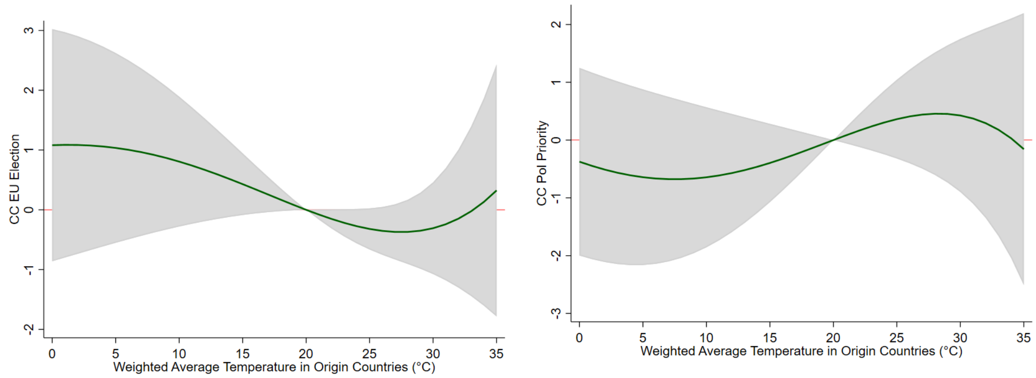


Notes: The quadratic response function is shown as a solid brown line. The y-axis indicates the relative impact of changing temperatures on asylum applications. The model controls for a quadratic function in season-total precipitation using CRU data as in Missirian and Schlenker (2017b), as well as origin-, -by-year, dyad-specific fixed effects.

Figure A8. Effect of migration-weighted exposure to weather shocks in origin countries on Climate Change (CC) concern

(a) "CC important in electoral campaigns for EP elections"

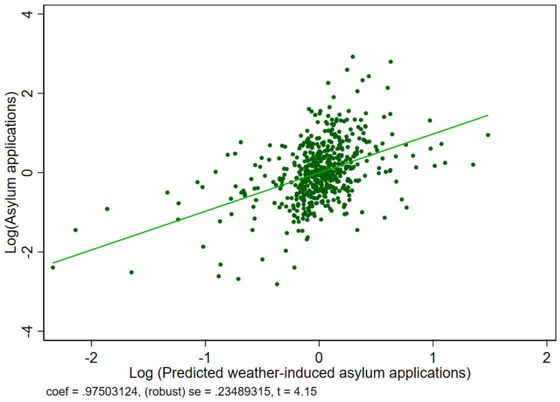
(b) "CC is a priority for EP deliberations"



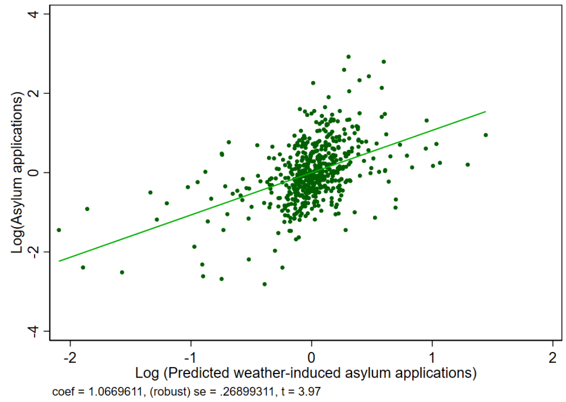
Notes: The figure shows the predicted individual preference-temperature response function (normalized at 20° C) using a baseline migration-weighted exposure measure of weather fluctuations in asylum application origin countries. Each origin country's weather realizations is weighted by the average number of asylum applications from the origin country to the destination country over the total average number of asylum applications of the destination country in the baseline 2000-2005 period. Regressions estimates are from a fourth-order polynomial in season average temperature and total precipitation fully saturated with country-, year-, age-, region-by-year and country-by-age linear trends. Shaded areas are the associated 95% confidence interval.

Figure A9. Observed and predicted log weather-induced asylum applications. Predicted measure constructed by estimating the Equation in the label.

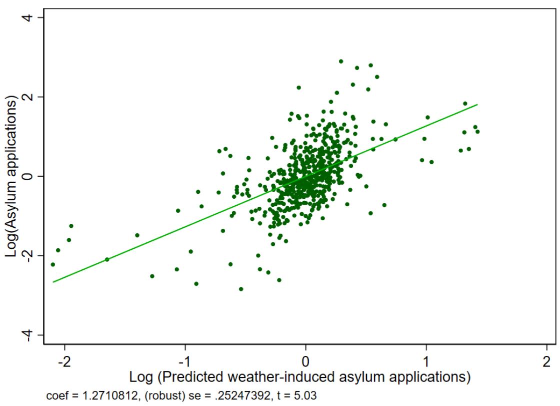
(a) Equation (2)



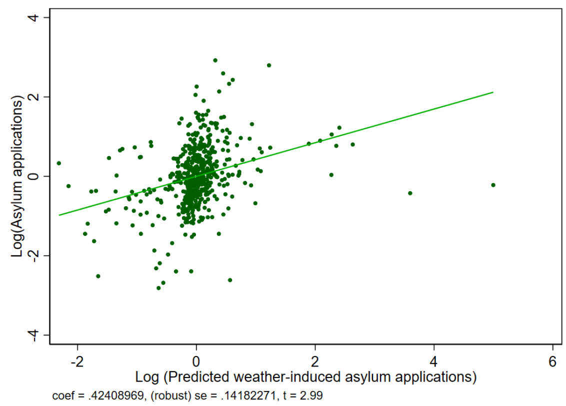
(b) Equation (C2)



(c) Equation (C3)

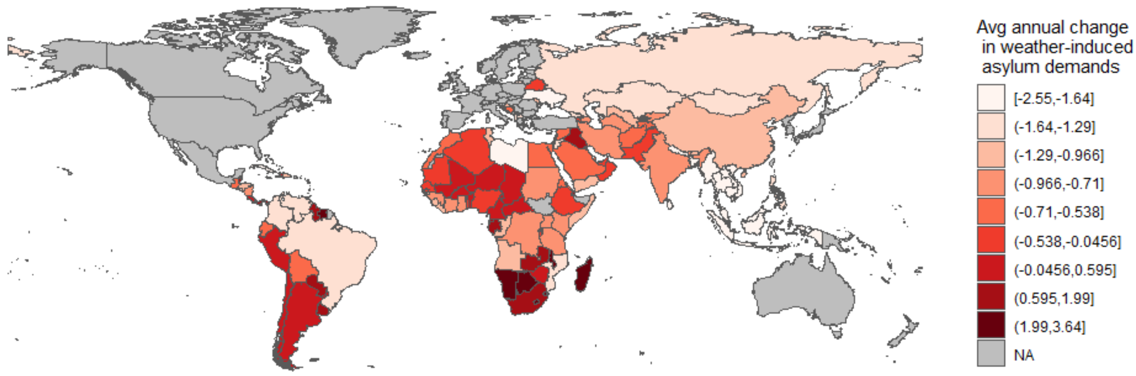


(d) Equation (C4)



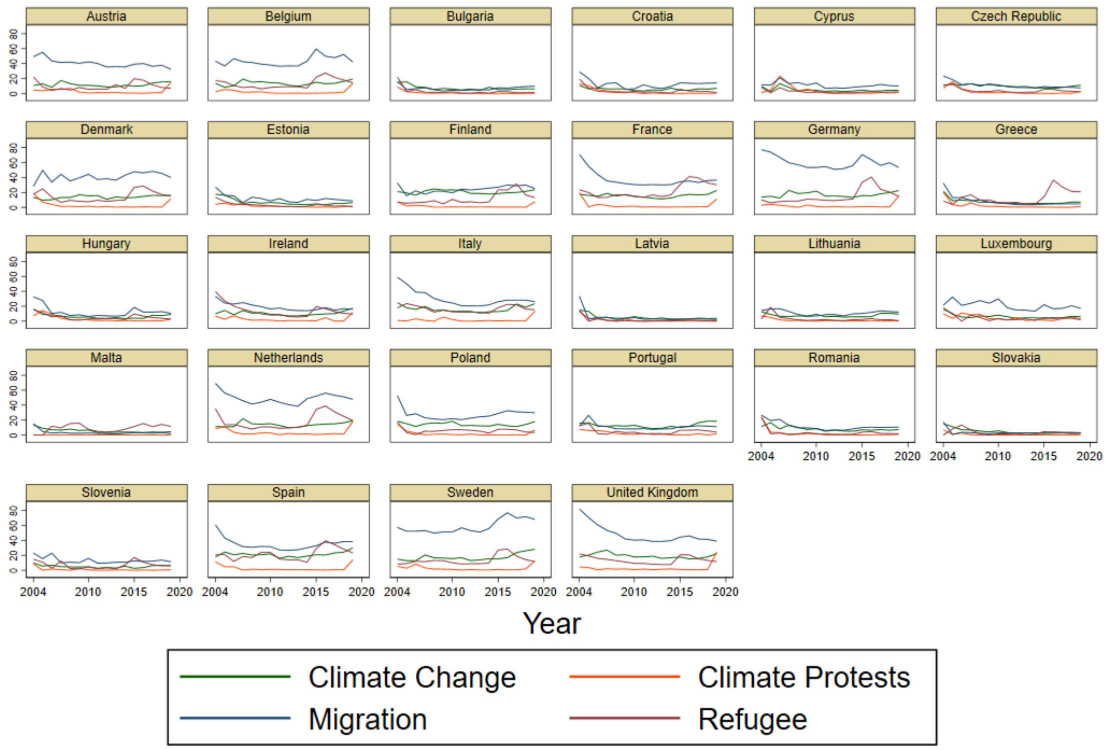
Notes: The vertical axis shows the observed logarithm of flows of asylum applications. The horizontal axis shows the logarithm of predicted weather-induced flows of asylum applications in EU obtained by estimating different gravity equations as reported in the title. Each point in the scatterplot represents the residuals of the two variables for each country-year observation, after filtering out country and year fixed effects. Standard errors are clustered at the country level. The green line refers to the slope of the regression of the actual (log) of asylum applications on the predicted weather-driven counterpart.

Figure A10. Average Change in Predicted Weather-Induced Asylum Applications



Notes: The figure plots the deciles of the average annual change in the log of predicted weather-induced asylum demands in EU member countries for the non-OECD countries from the estimation of Equation (2).

Figure A11. Annual average attention (measured with Google Trends) for climate change, climate protests, migration and refugee by country



Notes: The figure plots the average annual searches for "climate change", "climate protests", "migration", "refugee" from Google Trends. Additional details on the construction of the four indices can be found in Appendix Section B.3.

Figure A12. Country-cohort exposure to observed and predicted flows during formative age

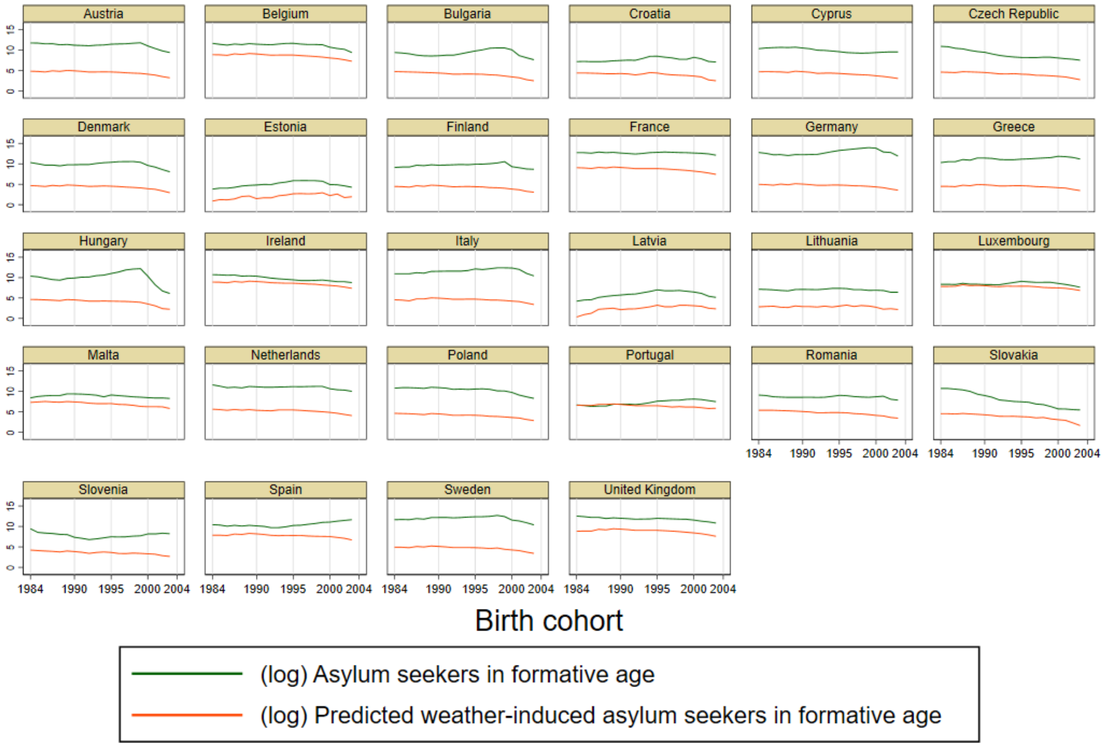


Figure A13. Density distribution of observed asylum flows during formative age in the estimation sample

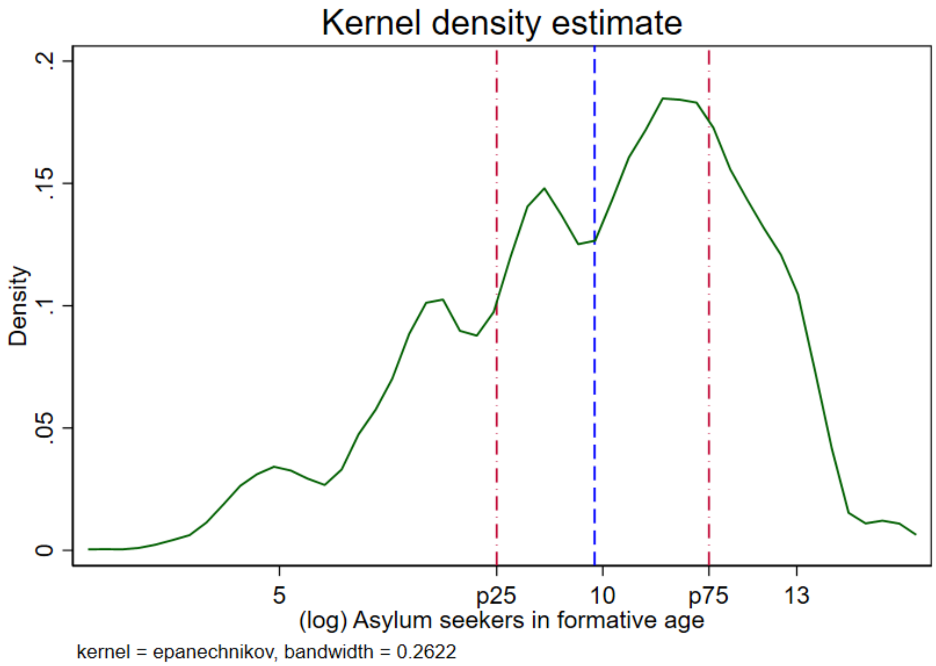
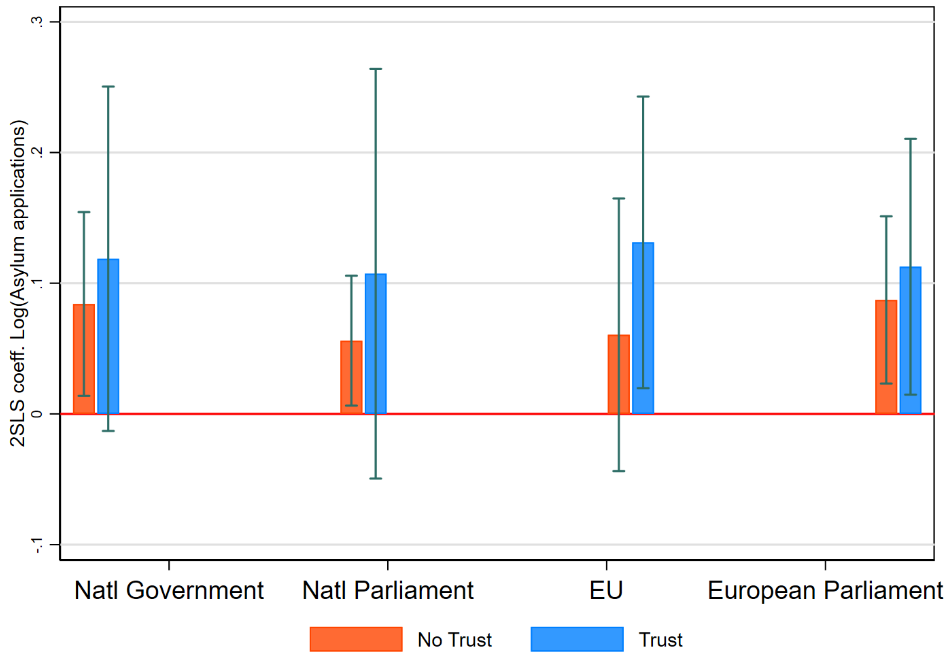
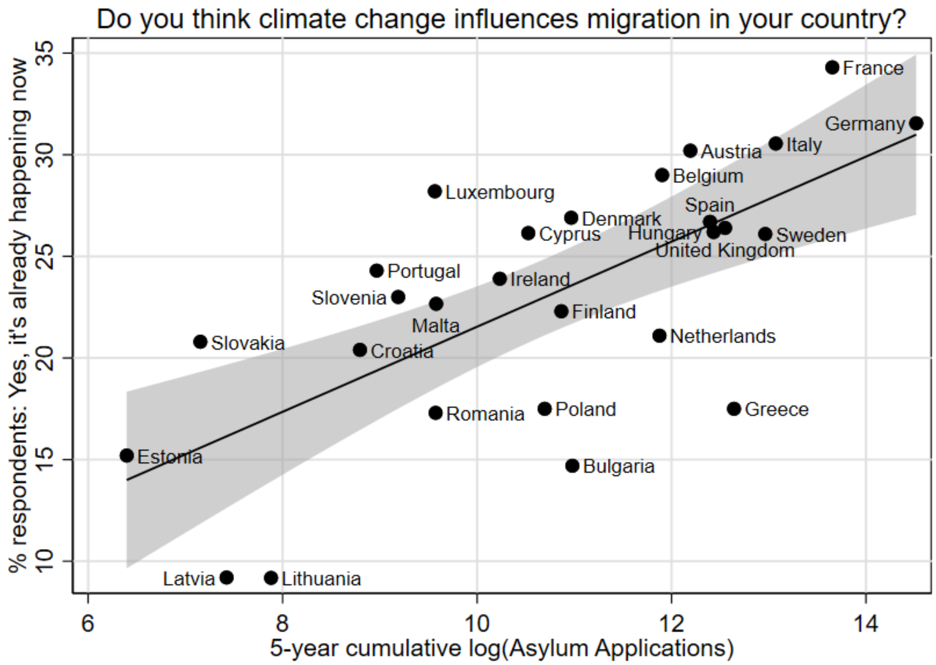


Figure A14. Heterogeneous effect of asylum applications on climate concern for EU Elections by trust in institutions



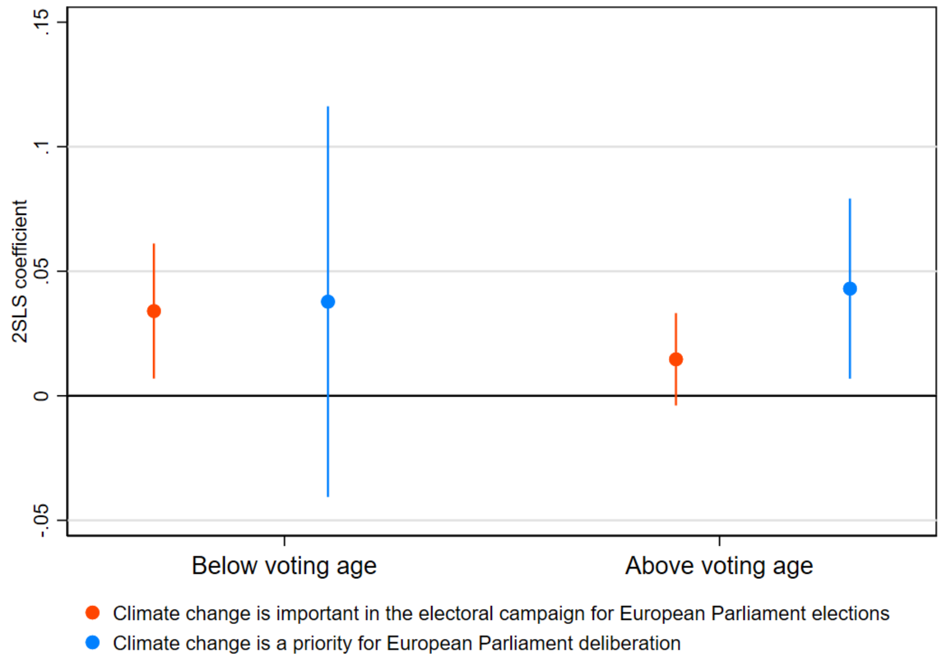
Notes: The figure plots the 2SLS coefficients (with corresponding 95% confidence intervals) for the effects of the log of five-year asylum applications on the survey response to the question "Climate change is important in the electoral campaign for European Parliament elections", after controlling for individual covariates (gender; education level; unemployment status; left-wing orientation) and country-level covariates (linear and squared average temperature and precipitation) and country-, age-, region-by-year fixed effects and country-age linear trends. Orange (resp., blue) bars refer to individuals who reported no trust (resp. trust) in the institution reported on the x-axis. Standard errors are clustered at the country level. Since the question is not asked across all survey waves, I cannot control for this variable in the baseline specification and only test this for the outcome variable CC EU Election.

Figure A15. Asylum demands and climate-migration nexus awareness



Notes: The figure plots the share of respondents that answered "Yes, it's already happening now" to the statement "Do you think climate change influences migration in your country?" in the European Investment Bank Climate Survey in 2019 against the cumulative asylum applications received in the country over the period five years (in logs).

Figure A16. 2SLS coefficients of weather-induced asylum seeker flows exposure by eligibility to vote



Notes: The figure plots the 2SLS coefficients estimated regressing the survey response on the total asylum applications experienced during the formative age period in the sample of individuals interviewed above or below the voting age threshold in the country. The point estimates are reported in Table C13. Bins represent the 95% confidence interval.

B Data Appendix

B.1 Asylum applications data

The applications generally refer to the number of applicants or persons, rather than the number of applications or families. Only those persons who have officially filed a formal request for asylum are included. Other refugees who, for whatever reason, are either unwilling or unable to file an asylum request, and illegal immigrants are not included. The UNHCR data lists the year an application was filed, which allows for a clear temporal link on the intention to migrate, even if asylum is granted with a delay. The UNHCR also provides, at the same spatial and temporal resolution, the number of decisions. A decision corresponds to the closure of an application because the refugee status has been either granted ("recognized"), denied ("rejected"), denied but the applicant is given a complementary form of protection ("other decision"), or not determined before the application got closed for administrative reasons ("otherwise closed") (Missirian and Schlenker, 2017a).

B.1.1 Asylum application process

The asylum application process can substantially differ across European countries, however, there are certain common characteristics that they share which are described in what follows. Individuals fleeing their country have the right to ask for protection in a European country they have entered if they are afraid to return to the country of their current residence because their life or that of their family members is in danger. To register the request for asylum, individuals usually contact the national Police upon their arrival and, if needed, can ask to be hosted in a reception center, and have the right to be welcomed in a special center, have a temporary residence permit, and remain on the national territory waiting for their application to be examined. As long as their status as asylum seekers last, individuals cannot leave the national territory. Labor market integration of refugees differs across countries with lasting negative consequences of delayed entry into the destination country labor market due to employment restrictions while waiting for asylum (Fasani et al., 2021). In Denmark since 2013, refugees can work before asylum adjudication (Foged et al., 2022); in Italy, two months after the compilation of the application form at the Immigration Office of the Police, asylum seekers have the right to work regularly (Campo et al., 2021). Other countries, such as Germany in 2017, grant asylum seekers access to training and employment program during the pre-asylum phase (Fasani et al., 2021).

B.2 Additional covariates

I retrieve variables on geographic time-invariant bilateral characteristics that are included in the estimation of the gravity equation. The geographic controls come from the BACI dataset and provided by CEPII (Head and Mayer, 2014). In particular, I include variables on whether countries have a common border, a common official language, a common colonial history and a variable measuring the natural logarithm of bilateral (geodesic) distance between capitals (Abel et al., 2019; Beine and Parsons, 2015; Bosetti et al., 2020). The use of these time-invariant dyad-specific covariates provides an alternative specification to the gravity equation with bilateral fixed effects.

In the country-level specification, I include time-varying country-level covariates to account for potential confounders of the determinants of voting behavior that are also correlated with changes in asylum seeker inflows. Immigration may be driving per capita income levels in the destination country (Felbermayr et al., 2010), which has also been found to be associated with higher support for Green parties (Pearson and Rüdig, 2020). For this reason, I retrieve GDP and population data from the Penn World Table, version 10.0. In particular, I use Output-side real GDP at chained PPPs (in millions 2017 US$) and population in the country in millions. I also obtain yearly unemployment rate data from the World Bank indicator on total unemployment (as a percentage of total labor force based on International Labor Organization estimates), tertiary-level educational attainment (in the percentage of the total population) from Eurostat and the percentage of population between 18 and 23 years old from the United Nations Department of Economics and Social Affairs[15] as proxies of institutional determinants of migrants' decision of destination countries and as explanatory factors of the support for Green parties.

B.3 Google Trends Data

Google Trends data consist of the volume of daily searches by word, or list of words, in a given country, over time in all languages. I leverage these data to measure public attention to migration, refugees, and climate change. I collect the volume of searches for several keywords to construct a measure of relative attention to the following topics (keywords in parentheses) "climate change" (climate change, drought*, flood*, heat wave*, global warming, storm*), "climate protests" (climate protest*, climate strike*, Fridays for future), "migration" (migration, migrants) and "refugee" (refugee*, asylum seeker*). Search trends are computed

[15] Source: https://population.un.org/wpp/Download/Standard/Interpolated/

based on a random sample of the total searches on Google, and this might produce measurement error issues. To diminish such worries, I draw the time series three times and take an average. I then construct the four indices as an unweighted average of the searches of each keyword. Figure A11 plots the evolution of Google searches about the four indices by destination country. Each line represents the annual average of Google searches over time. Before averaging, the value is normalized, assigning 100 to the weekly maximum. Google searches strongly correlate with news articles (Battiston, 2020). Ideally, one would gather data from news articles to compare the two and include them in the estimating equation. This channel would be particularly relevant since newspapers' language and sentiment largely respond to readers' demands (Gentzkow and Shapiro, 2010). Given the wide cross-national scope of this analysis, it is difficult and beyond the aim of this paper to construct a comprehensive dataset of EU member states' newspaper coverage of climate and migration issues. This is left as a promising avenue for future research.

B.4 Additional tables

Table B1. *Eurobarometer* Outcome Variables Definition

VARIABLE	DESCRIPTION	MEAN (SD)	SURVEY WAVES [Sample Size]	SOURCE
CC EU Election (0-1)	Which of the following themes should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections? (Combating climate change and protecting the environment)	0.06 (0.24)	2008; 2009; 2018 [106,614]	Eurobarometer
CC EU Pol Priority (0-1)	The EP makes decisions on European legislation which directly impacts every citizen's life. In your opinion which of the following should be given priority by the European Parliament? (Combating climate change and protecting the environment)	0.107 (0.31)	2008; 2009; 2012; 2013; 2014; 2018 [130,068]	Eurobarometer
CC World Problem (0-1)	In your opinion, which of the following do you consider to be the most serious problem currently facing the world as a whole? (Global Warming / Climate Change)	0.37 (0.48)	2008; 2009; 2011; 2013; 2015; 2017; 2019 [116,879]	Eurobarometer
CC Seriousness (1-10)	How serious a problem do you think climate change is at this moment? Please use a scale from 1 to 10, '1' would mean that it is "not at all a serious problem" and '10' would mean that "it is a problem extremely serious".	7.57 (2.14)	2008; 2009; 2011; 2013; 2015; 2017; 2019 [164,779]	Eurobarometer
Migration EU Election (0-1)	Which of the following themes should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections? (Migration)	0.08 (0.27)	2008; 2009; 2018 [106,613]	Eurobarometer
Migration EU Pol Priority (0-1)	The EP makes decisions on European legislation which directly impacts every citizen's life. In your opinion which of the following should be given priority by the European Parliament? (Migration)	0.08 (0.28)	2008; 2009; 2012; 2013; 2014; 2018 [130,067]	Eurobarometer
Economic growth EU Election (0-1)	Which of the following themes should be discussed as a matter of priority during the electoral campaign for the next EP elections? (Economy and growth)	0.16 (0.37)	2008; 2009; 2018 [106,614]	Eurobarometer
Euro single currency EU Election (0-1)	Which of the following themes should be discussed as a matter of priority during the electoral campaign for the next EP elections? (Euro as single currency)	0.03 (0.16)	2008; 2009; 2018 [53,799]	Eurobarometer
Terrorism EU Election (0-1)	Which of the following themes should be discussed as a matter of priority during the electoral campaign for the next EP elections? (Fight against terrorism)	0.06 (0.23)	2008; 2009; 2018 [106,614]	Eurobarometer
Food safety EU Election (0-1)	Which of the following themes should be discussed as a matter of priority during the electoral campaign for the next EP elections? (Consumer protection and food safety)	0.05 (0.21)	2008; 2009; 2018 [106,614]	Eurobarometer
Terrorism EU Pol Priority (0-1)	The EP makes decisions on European legislation which directly impacts every citizen's life. In your opinion which of the following should be given priority by the EP? (Fight against terrorism)	0.11 (0.31)	2008; 2009; 2012; 2013; 2014; 2018 [130,068]	Eurobarometer

Notes: The survey waves used include Eurobarometer 69.2 (2008), 71.1 (2009), 78.2 (2012), 79.5 (2013),82.5 (2014), 83.4 (2015), 87.1 (2017), 90.1 (2018).

Table B2. European Parliament elections and National elections by country and year in the estimation sample

COUNTRY	# European Parliament Elections	Years with Green party votes	# National Elections	Years
Austria	4	2004; 2009; 2014; 2019	4	2006; 2013; 2017; 2019
Belgium	4	2004; 2009; 2014; 2019	4	2003; 2007; 2010; 2019
Bulgaria	0		5	2001; 2005; 2013; 2014; 2017
Croatia	0		4	2007; 2011; 2015; 2016
Cyprus	0		0	
Czech Republic	3	2004; 2009; 2014	5	2002; 2006; 2010; 2013 ; 2017
Denmark	3	2009; 2014; 2019	6	2001; 2005; 2007; 2011; 2015; 2019
Estonia	2	2009; 2019	4	2003; 2007; 2011; 2015
Finland	4	2004; 2009; 2014; 2019	5	2003; 2007; 2011; 2015; 2019
France	4	2004; 2009; 2014; 2019	4	2002; 2007; 2012; 2017
Germany	4	2004; 2009; 2014; 2019	4	2002; 2009; 2013; 2017
Greece	3	2004; 2009; 2019	4	2004; 2009; 2012; 2015
Hungary	2	2014; 2019	4	2002; 2006; 2010; 2014
Ireland	4	2004; 2009; 2014; 2019	3	2002; 2007; 2011
Italy	0		2	2008; 2018
Latvia	0		6	2002; 2006; 2010; 2011; 2014; 2018
Lithuania	2	2014; 2019	0	
Luxembourg	4	2004; 2009; 2014; 2019	2	2009; 2013
Malta	4	2004; 2009; 2014	0	
Netherlands	4	2004; 2009; 2014; 2019	6	2002; 2003; 2006; 2010; 2012; 2017
Poland	0		2	2001; 2005
Portugal	2	2014; 2019	4	2009; 2011; 2015; 2019
Romania	0		2	2012; 2016
Slovakia	0		5	2002; 2006; 2010; 2012; 2016
Slovenia	2	2004; 2019	4	2004; 2008; 2011; 2018
Spain	3	2009; 2014; 2019	6	2004; 2008; 2011; 2015; 2016; 2019
Sweden	4	2004; 2009; 2014; 2019	5	2002; 2006; 2010; 2014; 2018
United Kingdom	4	2004; 2009; 2014; 2019	5	2001; 2005; 2010; 2015; 2019

Table B3. *Manifesto* Outcome Variables Definition

VARIABLE	DESCRIPTION	MANIFESTO VARIABLE	SOURCE
Environmentalism	Environmental Protection. General policies in favour of protecting the environment, fighting climate change, and other "green" policies. For instance: General preservation of natural resources; Preservation of countryside, forests, etc.; Protection of national parks; Animal rights. May include a great variance of policies that have the unified goal of environmental protection.	per501	Manifesto Project Dataset
Europe +	Favourable mentions of European Community/Union in general. May include the: - Desirability of the manifesto country joining (or remaining a member);- Desirability of expanding the European Community/Union; - Desirability of increasing the ECs/EUs competences; - Desirability of expanding the competences of the European Parliament.	per108	Manifesto Project Dataset
Europe -	European Community/Union: Negative. Negative references to the European Community/Union. May include: Opposition to specific European policies which are preferred by European authorities; Opposition to the net-contribution of the manifesto country to the EU budget.	per110	Manifesto Project Dataset
Multiculturalism +	Multiculturalism: Positive. Favourable mentions of cultural diversity and cultural plurality within domestic societies. May include the preservation of autonomy of religious, linguistic heritages within the country including special educational provisions	per607	Manifesto Project Dataset
Multiculturalism -	Multiculturalism: Negative. The enforcement or encouragement of cultural integration. Appeals for cultural homogeneity in society	per608	Manifesto Project Dataset
Refugees +	Favourable mentions of, or need for, assistance to people who left their homes because of the war (for instance, on the territory of ex-Yugoslavia) or were forcibly displaced.	per706_2	Manifesto Project Dataset
Cultural Autonomy +	Cultural Autonomy: Positive. Favourable mentions of cultural autonomy	per607_1	Manifesto Project Dataset

C Additional Results

C.1 Parametric multilateral resistance term

The confounding influence that the attractiveness of alternative destinations exerts on the bilateral migration rate, known as the multilateral resistance term, can generate biases in the estimation of the push and pull factors of migration in a gravity equation. In an alternative specification of the baseline estimating gravity equation (Equation (2)), I account for multilateral resistance in two ways. Since the equation is estimated using OLS and not PPML, the use of fixed effects is not enough to account for outward and inward multilateral resistance indexes (Fally, 2015). For this reason, I also account for "inward" multilateral resistance term to migration (Anderson and Van Wincoop, 2003) parametrically.[16] The parametric version of the multilateral resistance term is constructed for each of the six weather vectors W (fourth-order polynomial of temperature and second-order polynomial of precipitation) as follows:

$$MR_{odt} = \sum_{k \neq d} \omega_{ok} W_{kt} \tag{C1}$$

where ω_{ok} is the ratio of asylum applications from origin country o to destination country k over the total asylum applications received by country k in the first available year. This weighting scheme accounts for the relative propensity to apply for asylum in each country k among the EU27+UK set of destination countries. The weighted average of weather conditions across the k destination countries except for d accounts for changes in the attractiveness of alternative destinations that would otherwise be inflated in $\boldsymbol{W_{ot}}$. The six dyad-specific time-varying regressors are included in the estimating equation in the multilateral resistance term $\boldsymbol{MR_{odt}}$. This approach also allows me to account for costs of migration common to all asylum seekers within a particular bilateral link comprising both a time-invariant component, captured by the fixed effects, and a time-varying component as a function of networks and weather conditions in other destinations. The resulting estimating equation is written as

$$\log\left(AsyApp_{odt}\right) = f(\boldsymbol{W_{ot}}; BIL_{od}; \alpha) + g(\boldsymbol{MR_{odt}}; \beta) + \theta_{od} + \mu_{dt} + \chi_{rt} + u_{odt} \tag{C2}$$

[16] Since the objective of the gravity equation is to estimate the impact of weather fluctuations on asylum seeker outflows, the "outward" multilateral resistance term that captures alternative source countries' conditions is not necessary for this context.

Table C1 displays the coefficients associated with the uninteracted origin temperature and precipitation from Equation (2) respectively omitting and accounting for the multilateral resistance term both non-parametrically, with the additional suite of fixed effects, and parametrically, with the $\boldsymbol{MR_{odt}}$ matrix. Both temperature and precipitation estimates substantially vary across the four specifications, suggesting that accounting also parametrically for multilateral resistance changes the semi-elasticity of migration to origin weather.

Table C1. Gravity model for asylum applications accounting for multilateral resistance

	(Log) Asylum Applications			
	(1)	(2)	(3)	(4)
Temperature origin	-2.055**	-1.782**	-2.133**	-1.925**
	(0.601)	(0.634)	(0.602)	(0.634)
Temperature origin^2	0.0456	0.0411	0.0478	0.0434
	(0.0289)	(0.0293)	(0.0290)	(0.0294)
Temperature origin^3	0.00208	0.00167	0.00214	0.00181
	(0.00184)	(0.00190)	(0.00184)	(0.00191)
Temperature origin^4	-0.0000445	-0.0000313	-0.0000471	-0.0000355
	(0.0000366)	(0.0000392)	(0.0000366)	(0.0000393)
Precipitation origin	20.07	57.91	26.15	63.51
	(66.69)	(69.39)	(67.09)	(69.81)
Precipitation origin^2	5016.9	-31071.0	4780.5	-32224.7
	(48460.4)	(51003.8)	(48429.6)	(50950.6)
Multilateral weather			X	X
p-value (Multilateral weather = 0)			0.000	0.000
Country-pair FE	X	X	X	X
Origin FE	X	X	X	X
Year FE	X		X	
Destination FE	X		X	
Destination-by-year FE		X		X
Region of origin-by-year FE		X		X
Number of country pairs	2084	2084	2084	2084
Number of origin countries	141	141	141	141
Destination Sample	EU27 + UK	EU27 + UK	EU27 + UK	EU27 + UK
Mean Outcome	3.733	3.733	3.733	3.733
SD Outcome	1.858	1.858	1.858	1.858
N	25951	25951	25951	25951
adj. R^2	0.747	0.796	0.748	0.796

Notes: The estimated equation always uses origin-specific seasonal temperature and precipitation. Robust standard errors, clustered at the origin-year level, in parentheses. Interaction terms between all weather variables and bilateral controls are included in the regression but not displayed. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

C.2 Gravity equation accounting for weather in host countries

To introduce an additional bilateral source of variation in the predicted values of asylum demands, I include as regressors a measure of pull factors, measured as linear and squared terms of temperature and precipitation in the destination country. The econometric specification is written as

$$\log\left(AsyApp_{odt}\right) = f(\boldsymbol{W_{ot}}, BIL_{od}, \alpha) + g(\boldsymbol{W_{dt}}, \beta) + \theta_{od} + \chi_{rt} + u_{odt} \tag{C3}$$

where I account for a second-order polynomial of daily average temperatures and daily precipitation in the destination country. This alternative specification does not account for destination-by-year fixed effect, collinear with the pull factors. Predicted values of asylym demands are then constructed as $\widehat{AsyApp}_{dt} = \sum_{o\neq d} \exp\left(\widehat{\alpha}_M X_{odt} + \widehat{\beta}_M W_{dt}\right)$. Table D4 displays the results for the three different alternative measures of temperature and precipitation.

C.3 Destination-specific response function to weather fluctuations

To account for the fact that weather deviations in the origin country have differential effects for each destination country, I estimate destination-specific response functions. I estimate the following equation in a pooled sample of origin-specific asylum demands to the EU27 + UK destination countries.

$$\log\left(AsyApp_{odt}\right) = f(\boldsymbol{W_{ot}}, \alpha_d) + \theta_{od} + \psi_{dt} + \chi_{rt} + u_{odt} \tag{C4}$$

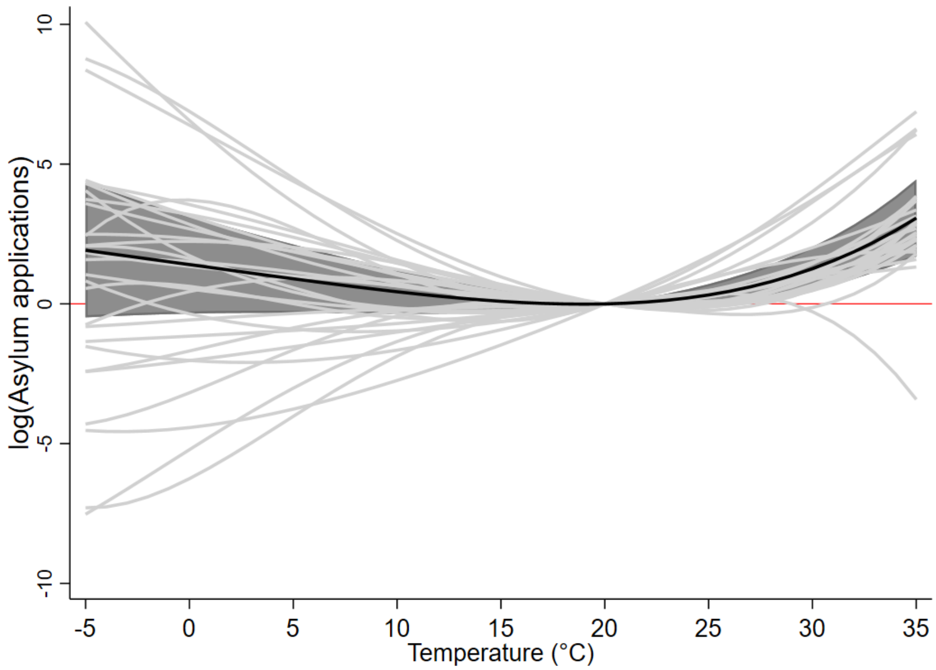
where I use the same vector of origin weather $\boldsymbol{W_{ot}}$ including a fourth-order polynomial of daily average temperatures, summed across the maize growing season and a second-order polynomial of daily precipitation across the growing season and estimate destination-specific functions of this vector. This alternative specification serves two purposes. First, by estimating destination-specific responses to weather fluctuations in origin countries, the predicted values obtained leveraging only weather variation are time-varying and pair-specific. Second, the equation now accounts for multilateral resistance in an alternative manner by allowing the effect of push factors to be different across destinations while controlling for time-varying destination-specific effects. Figure C1 displays the destination-specific response functions to season-total temperature in origin countries.

C.4 Weather-induced anomalies in asylum applications lead to higher acceptance rate

Weather anomalies and climate change are not valid criteria for asylum applications (UN, 1951). There are two main channels through which weather fluctuations can increase asylum demands. On the one hand, asylum applications can increase due to economic reasons, on the other one, they can increase due to conflict or persecution, for instance, as a result of crop failures or tightening of natural resource constraints. Only in the latter case, asylum applications could be deemed valid by the host countries. I test whether application decisions respond positively to weather-induced asylum demands, providing an indirect test of the validity of weather-induced asylum applications as in Missirian and Schlenker (2017b).

I compute anomalies in weather-induced asylum demands as the predicted change in the number of applications from an origin country to a destination country as explained

Figure C1. Destination-specific response functions to temperature in origin countries over maize growing season



Notes: The figure plots the predicted asylum applications-temperature response function for each destination country for the applications coming from non-OECD countries in the EU27+UK. Regression estimates are from a fourth-order polynomial in daily average temperature over the maize growing season weighted by maize area in each grid cell. The response function is estimated in a regression model that controls for a quadratic function in season-total precipitation, as well as destination-by-year, region-of-origin-by-year, dyad-specific fixed effects. The solid black line reports the pooled average response function as displayed in Figure A4 and its associated 95% confidence interval using country-year clustered standard errors.

by deviations in the weather variables from their respective sample averages. The weather-induced application anomaly from origin o to destination d in year t is

$$n_{odt} = e^{\boldsymbol{W_{ot}}\widehat{\alpha}+\widehat{\theta_{od}}+\widehat{\pi}_t+\widehat{\lambda_o}+\widehat{\mu_d}+\widehat{\psi_{dt}}+\widehat{\chi_{rt}}+\frac{\widehat{\sigma_u^2}}{2}} - e^{\overline{\boldsymbol{W_{ot}}}\widehat{\alpha}+\widehat{\theta_{od}}+\widehat{\pi}_t+\widehat{\lambda_o}+\widehat{\mu_d}+\widehat{\psi_{dt}}+\widehat{\chi_{rt}}+\frac{\widehat{\sigma_u^2}}{2}} \tag{C5}$$

where the parameters are the coefficients from the baseline gravity in Equation (2) of log asylum applications on weather, and $\widehat{\sigma_u^2}$ is the predicted variance of the error term from the same regression. Then, I examine asylum decisions (acceptances) d_{odt} in the following two years.

$$d_{odt} = \sum_{\tau=0}^{2} \gamma \ n_{od(t-\tau)} + \theta_{od} + \pi_t + \lambda_o + \mu_d + \psi_{dt} + \chi_{rt} + \nu_{odt} \tag{C6}$$

Table C2 displays the coefficients on how weather-induced asylum anomalies translate into additional acceptances accounting for up to two-year lagged application anomalies. Accounting for both recognized refugee status and complementary protections granted (column 2), contemporaneous and one-year lagged anomalies are positive and statistically significant and the sum of the three coefficients is 45.23 (p-value: 0.001) for the baseline fourth-order polynomial model in temperature. These findings suggest that weather-induced shocks to applications are deemed valid by host countries at a much higher rate. Similar to findings in Missirian and Schlenker (2017b) in a unilaterally-specified equation estimated on a sample until 2014, I find that weather shocks induce people to flee and be recognized as needing international protection through refugee status.

Table C2. Weather-induced asylum application anomalies and acceptance

	(1)	(2)
n_{odt}	31.80*	36.25**
	(18.59)	(17.73)
n_{odt-1}	12.22***	18.90***
	(3.148)	(3.742)
n_{odt-2}	1.207	7.947
	(5.624)	(6.327)
Outcome	Recognized decisions	Recognized decisions & Complementary Protection
p-value ($\gamma_1 + \gamma_2 + \gamma_3 = 0$)	0.024	0.001
F-Stat ($\gamma_1 + \gamma_2 + \gamma_3 = 0$)	5.076	10.822
Mean Outcome	150.547	513.577
Average acceptance rate	0.061	0.326
N	19125	19125
adj. R^2	0.362	0.442

Notes: The estimated equation includes origin-, destination-, origin-destination, year-, region-of-origin-by-year, destination-by-year fixed effects. Robust standard errors, clustered at the origin-destination pair level, in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

C.5 Additional individual level results

Table C3. Weather-induced asylum applications and environmental values. All controls.

Dep. variable	CC EU Election (*Mean: 0.068*)		CC Pol Priority (*Mean: 0.106*)	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
log(Asylum Applications)	-0.00147	0.0226**	0.00746	0.0431**
	(0.00384)	(0.0106)	(0.00651)	(0.0207)
Male	-0.0119***	-0.0118***	-0.00795**	-0.00777**
	(0.00395)	(0.00395)	(0.00367)	(0.00363)
Education categories (baseline: Up to 15 years)				
Between 16 and 19 years	0.0126***	0.0124***	0.00752**	0.00717**
	(0.00225)	(0.00221)	(0.00274)	(0.00278)
20 years or older	0.0377***	0.0378***	0.0193***	0.0193***
	(0.00451)	(0.00451)	(0.00404)	(0.00403)
Still studying	0.0483***	0.0478***	0.0299***	0.0293***
	(0.00693)	(0.00691)	(0.00757)	(0.00770)
No education	-0.0159	-0.0160	-0.0323***	-0.0309***
	(0.00978)	(0.00994)	(0.0110)	(0.0106)
Unemployed	-0.00673*	-0.00592*	-0.00812**	-0.00735**
	(0.00331)	(0.00314)	(0.00346)	(0.00352)
Left Political Orientation	0.0343***	0.0342***	0.0234***	0.0232***
	(0.00943)	(0.00943)	(0.00770)	(0.00768)
Weather controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Statistic		21.566		26.241
N	106614	106614	130068	130068
Number of countries	28	28	28	28

Notes: The table replicates Table 1 reporting all individual controls included in the regressions. The 2SLS estimates use the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C4. Weather-induced asylum applications and environmental values. Heterogeneity by age. 2SLS estimates.

Dep. variable	CC EU Election			CC Pol Priority		
	(1)	(2)	(3)	(4)	(5)	(6)
log(Asylum Applications)	0.0264**	0.0233*	0.0181	0.0514**	0.0374**	0.0386
	(0.0108)	(0.0118)	(0.0124)	(0.0209)	(0.0169)	(0.0264)
Sample	14-40	41-59	60+	14-40	41-59	60+
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Age FE	X	X	X	X	X	X
Region-by-year FE	X	X	X	X	X	X
Country-age linear trends	X	X	X	X	X	X
F-Stat	15.657	13.808	13.840	24.611	20.910	19.226
N	35938	36455	34221	44395	44428	41245

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C5. Weather-induced asylum applications and environmental values. Heterogeneity by gender. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.0160*	0.0137	0.0454**	0.0400
	(0.00916)	(0.00819)	(0.0183)	(0.0241)
Sample	Female	Male	Female	Male
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat	20.414	21.154	27.587	21.963
N	58446	48168	70963	59103

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C6. Weather-induced asylum applications, environmental values, and Google Trends. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.0181*	0.0162*	0.0454**	0.0417***
	(0.00934)	(0.00890)	(0.0191)	(0.0142)
Google Trends "Climate change"	0.00209*	0.00282**	-0.00243	0.000430
	(0.00102)	(0.00125)	(0.00266)	(0.00227)
Google Trends "Climate protests"	-0.000550	0.000628	0.0243**	0.0185**
	(0.00441)	(0.00488)	(0.00943)	(0.00835)
Google Trends "Migration"		0.00187		-0.00345*
		(0.00137)		(0.00202)
Google Trends "Refugee"		-0.00198		-0.00118
		(0.00278)		(0.00310)
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat	23.481	26.961	29.272	43.920
N	106614	106614	130068	130068

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C7. Asylum applications and Google Trends. OLS and 2SLS estimates.

Google Trends for	Climate change		Climate protests		Migration		Refugee	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Predicted Asylum Applications)	0.333		-0.705**		-1.037		-0.624	
	(0.381)		(0.308)		(0.690)		(0.738)	
log(Asylum Applications)		0.372		-0.786*		-1.157		-0.696
		(0.415)		(0.433)		(0.826)		(0.966)
Country FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X
Outcome Mean	11.15		2.38		23.92		9.36	
Outcome SD	5.96		3.82		18.32		9.36	
F-Stat		17.318		17.318		17.318		
N	444	444	444	444	444	444	444	444

Notes: Country-level estimates regressing annual average Google Searches for "Climate change" (columns 1-2), "Climate protests" (columns 3-4), "Migration" (columns 5-6), "Refugee" (columns 7-8) on the instrument (odd columns) and the actual flows instrumented with the instrument (even columns). The gravity-predicted (log) of asylum applications is obtained from the predicted values from Equation (C3) in the text. All columns control for country and survey year fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C8. Weather-induced asylum applications and environmental values. Heterogeneity by destination country. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.00807	0.0193*	0.0213	0.0515*
	(0.00585)	(0.0115)	(0.0167)	(0.0301)
Destination country sub-sample	Below median	Above median	Below median	Above median
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat	13.865	11.286	14.272	12.929
N	49384	57228	59095	70972

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). Odd columns report the estimates in the sub-sample of countries below the median number of asylum demands received, even columns report the estimates in the sub-sample of countries above the median number of asylum demands received (Austria, Belgium, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Spain, Sweden, United Kingdom). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C9. Weather-induced asylum applications and perception of climate change as a global problem

Dep. variable	CC World Problem (*Mean: 0.37*)		CC Seriousness(1-10) (*Mean: 7.57*)	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.00646	0.00108	0.0239	-0.129
	(0.00666)	(0.0113)	(0.0451)	(0.110)
Weather Controls	X	X	X	X
Individual Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Statistic		20.995		21.172
N	116879	116879	116110	116110
Number of countries	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-2 is a dummy equal to 1 if the respondent reports climate change or global warming as the most serious problem the world is currently facing as a whole. The dependent variable in columns 3-4 is a categorical variable ranging from 1 to 10 that indicates the level of seriousness of climate change as a world problem perceived by the respondent (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. Columns (2) and (4) report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C10. Weather-induced asylum applications and migration as political priority

Dep. variable	Migration EU Election (*Mean: 0.078)*		Migration Pol Priority (*Mean: .085)*	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.0135	0.00585	0.0126	0.0383**
	(0.00999)	(0.0163)	(0.00853)	(0.0162)
Weather Controls	X	X	X	X
Individual Controls	X	X	X	X
Country FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Statistic		14.434		21.434
N	106613	106614	130067	130068
Number of countries	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-2 is a dummy equal to 1 if the respondent reports migration as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 3-4 is a dummy equal to 1 if the respondent reports migration as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. Columns (2) and (4) report the 2SLS estimates using the predicted asylum applications from the gravity equation with bilateral fixed effects using destination-specific coefficients of weather fluctuations in origin countries. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C11. Weather-induced asylum applications and environmental values. Heterogeneity by political orientation. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.0250**	0.0191	0.0444**	0.0326
	(0.0100)	(0.0174)	(0.0187)	(0.0327)
Sample	Right-wing	Left-wing	Right-wing	Left-wing
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat	24.332	16.237	25.334	11.061
N	79947	26666	97464	32604

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared annual average temperature and total precipitation in the country; Population), and country, survey year, birth-year and country by year of birth fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C12. Weather-induced asylum applications and environmental values. Heterogeneity by education. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.0174*	0.0103	0.0334**	0.0633
	(0.00901)	(0.0107)	(0.0142)	(0.0386)
Sample	Non Tertiary	Tertiary	Non Tertiary	Tertiary
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat	14.028	16.635	22.434	23.388
N	73229	33382	89513	40555

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C13. Weather-induced asylum applications and environmental values. Heterogeneity by eligibility to vote. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.0340**	0.0147	0.0378	0.0431**
	(0.0132)	(0.00904)	(0.0382)	(0.0176)
Voting Age	Below	Above	Below	Above
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat	32.155	20.089	48.265	30.174
N	2412	16979	2999	20815

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed and below the age of thirty years old. Odd columns report estimates on the sub-sample of individuals interviewed below the age eligible to vote in national and European elections; even columns report the estimates on the sub-sample of individuals interviewed above the age eligible to vote in the elections. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared average temperature and total precipitation in the country), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

C.6 Additional country level results

Table C14. Weather-induced asylum applications and Green party votes in European Parliament elections

Dep. variable	% Green Party in EP elections (*Mean: 9.84)*			
	OLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
Log(Asylum Applications)	-0.323	-1.609	-2.392	-4.022
	(1.398)	(1.711)	(1.695)	(2.254)
Weather Controls	X	X	X	X
Country Controls	X		X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Regional linear time trends				X
F-Statistic		12.657	23.060	20.882
N	65	65	65	65
Number of countries	20	20	20	20

Notes: The table reports the OLS (columns 1) and 2SLS (columns 2 to 4) coefficients on (log) of total asylum applications in the five years preceding the European Parliament elections. The dependent variable is the share of votes of Green parties in European Parliament elections after 2000 in a EU country. In columns (3) to (6), the (log) of total asylum applications in the five years preceding the elections is instrumented with the gravity-predicted (log) of total asylum applications described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. Country Controls: (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, voter turnout. Weather Controls: Linear and squared average temperature and total precipitation in the country. All columns control for country and year-fixed effects. Column 5 adds region-by-year fixed effects and column 6 accounts for regional linear time trends. F-statistic refers to the Kleibergen-Paap F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C15. Weather-induced asylum applications and environmentalism in national elections

Dep. variable	National Elections Environmentalism Index			
	OLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
Log(Asylum Applications)	-0.0729	0.215	0.232	0.371
	(0.107)	(0.260)	(0.343)	(0.501)
Weather Controls	X	X	X	X
Country Controls	X		X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Regional linear time trends				X
F-Statistic		22.366	16.030	13.664
N	119	119	119	119
Number of countries	27	27	27	27

Notes: The table reports the OLS (columns 1) and 2SLS (columns 2 to 4) coefficients on (log) of total asylum applications in the years between one national election round and the other. The dependent variable is the normalized index of environmentalism of national elections where the share of quasi-sentences that positively referred to the environment in each party's manifesto is weighted by its vote share in the national elections. In columns 2 to 4, the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. Country Controls: (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old. Weather Controls: Linear and squared average temperature and total precipitation in the country. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

C.7 Party-level empirical approach

In Section 5.1.3, I explore the aspects of the supply side and the political dynamics of the party system, by investigating whether changes in asylum applications have determined a shift in the supply side of the climate-related political process. I use the information on parties' political agenda related to the environment from the *Manifesto Project Database* (MPD) to measure the degree of environmentalism of each party in national elections. Using a similar approach to Moriconi et al. (2019), I exploit within-party variation in the environmental political agenda across elections. The econometric specification writes as follows:

$$environmentalism_{pdt} = \beta_1 \log\left(\sum_{\tau=1}^{s} AsyApp_{d,t-\tau}\right) + X'_{dt}\boldsymbol{\gamma} + Z'_{pt}\boldsymbol{\delta} + \alpha_p + \mu_d + \lambda_t + \varepsilon_{pdt} \quad \text{(C7)}$$

where $environmentalism_{pdt}$ is the normalized share with mean equal to 0 and standard deviation equal to 1 of quasi-sentences that positively referred to policies in favor of protecting the environment and fighting climate change in the political manifesto of party p in country d in election year t. The main variable of interest is $\sum_{\tau=1}^{s} AsyApp_{d,t-\tau}$, i.e., the cumulative number of asylum applications between one election and the other. In X'_{dt}, I include country-level socio-economic and environmental characteristics averaged over the period between two consecutive elections in a country that may confound the effect of migration flows on electoral outcomes. The use of party-specific fixed effects α_p and country-specific fixed effects μ_d identifies the effect of asylum applications on the political agendas only through changes within parties over time. Any time-invariant feature of countries and parties will not affect identification, since it will be filtered out by these fixed effects. Election-year fixed effects (λ_t) capture common trends over time. Standard errors are clustered at the country level. The inclusion of party- and country-fixed effects guarantees the identification of the effect of weather-induced asylum seeker flows on parties' environmental preferences only through changes in agendas for parties that were present in at least two elections. This approach captures changes in the agendas of existing parties in response to changes in weather-induced flows, rather than the entry or exit of new parties.

Table C16. Weather-induced asylum applications and environmental agenda of parties.

	Party's Environmentalism (Mean=0)			
	(1)	(2)	(3)	(4)
	OLS	2SLS	2SLS	2SLS
log(Asylum Applications)	-0.0739**	-0.0254	-0.154	-0.158
	(0.0359)	(0.103)	(0.112)	(0.116)
Weights			Votes	Votes
Votes				Above 5%
Right-left ideological index	X	X	X	X
Country Controls	X	X	X	X
Weather Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Party FE	X	X	X	X
F-Stat		32.570	28.076	27.312
N	641	641	634	469
adj. R^2	0.723	0.082	0.120	0.115

Notes: The analysis is over a sample of parties that are running in multiple elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other. The dependent variable is the (normalized) share of quasi-sentences that positively referred to the environment in each party's manifesto in the national elections. Column (1) reports the OLS estimates, and columns (2) to (4) display the 2SLS estimates where (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. All columns control for the normalized right-left ideological index provided in the MPD. Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. All columns control for country, year, and party fixed effects. Columns (3) and (4) weigh each party's observation by the vote gained in the national elections. Column (4) only considers parties that gained at least 5% of the votes. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

D Robustness Checks

D.1 Robustness Checks for Gravity Equation

Table D1. Gravity model for asylum applications in non-OECD origin countries & EU destination countries with dyadic controls

	(1)	(2)	(3)
	Log Asylum Applications	Log Asylum Applications	Log Asylum Applications
Temperature	-1.436*	-1.782**	-1.803*
	(0.759)	(0.885)	(0.912)
Temperature^2	0.0824**	0.0411	0.0440
	(0.0414)	(0.0321)	(0.0312)
Temperature^3	0.000838	0.00167	0.00189
	(0.00133)	(0.00191)	(0.00217)
Temperature^4	-0.0000331	-0.0000313	-0.0000432
	(0.0000381)	(0.0000424)	(0.0000421)
Temperature * Contiguity	0.803***	0.438	0.407
	(0.220)	(0.283)	(0.302)
Temperature * Common Language	-0.0391	0.188	0.403
	(0.245)	(0.366)	(0.356)
Temperature * Common Colonial History	0.690***	0.427**	0.398*
	(0.232)	(0.202)	(0.214)
Temperature* Log(distance)	0.192**	0.212*	0.217*
	(0.0927)	(0.108)	(0.110)
Temperature^2 * Contiguity	0.0135	0.0222*	0.0161
	(0.0101)	(0.0127)	(0.0116)
Temperature^2 * Common Language	-0.0148	-0.00947	-0.0386
	(0.0198)	(0.0435)	(0.0400)
Temperature^2 * Common Colonial History	-0.0129	-0.00911	-0.00710
	(0.00950)	(0.00954)	(0.00962)
Temperature^2 * Log(distance)	-0.0107**	-0.00532	-0.00568
	(0.00499)	(0.00391)	(0.00377)
Temperature^3* Contiguity	0.0000449	-0.0000907	-0.000164
	(0.000237)	(0.000813)	(0.000845)
Temperature^3* Common Language	0.00109	0.000372	0.00165
	(0.00143)	(0.00193)	(0.00179)
Temperature^3* Common Colonial History	-0.00105*	-0.000375	-0.000279
	(0.000573)	(0.000474)	(0.000563)
Temperature^3* Log(distance)	-0.000131	-0.000205	-0.000236
	(0.000155)	(0.000221)	(0.000250)
Temperature^4 * Contiguity	-0.0000167	-0.0000253	-0.0000149
	(0.0000113)	(0.0000216)	(0.0000214)
Temperature^4 * Common Language	-0.0000160	-0.00000441	-0.0000220
	(0.0000260)	(0.0000276)	(0.0000261)
Temperature^4 * Common Colonial History	0.0000290*	0.0000122	0.00000904
	(0.0000160)	(0.00000875)	(0.0000119)
Temperature^4 * Log(distance)	0.00000527	0.00000436	0.00000582
	(0.00000469)	(0.00000507)	(0.00000498)
Precipitation	13.96	57.91	28.07
	(61.82)	(58.40)	(53.17)
Precipitation^2	1322.5	-31071.0	-13403.8
	(42959.9)	(55904.3)	(46178.8)
Precipitation * Contiguity	19.86	11.38	7.539
	(23.97)	(50.60)	(49.79)
Precipitation * Common Language	2.262	8.100	9.380
	(5.220)	(6.195)	(5.725)
Precipitation * Common Colonial History	10.02	2.529	-4.058
	(15.02)	(21.68)	(19.06)
Precipitation* Log(distance)	-1.665	-6.851	-3.423
	(6.900)	(6.530)	(6.008)
Precipitation^2 * Contiguity	30550.1	15682.9	24834.9
	(20185.6)	(46456.1)	(47742.0)
Precipitation^2 * Common Language	-984.3	-2068.1	-3416.1
	(2459.8)	(3198.1)	(2768.5)
Precipitation^2 * Common Colonial History	490.4	1716.9	3725.7
	(5056.8)	(7668.4)	(6566.9)
Precipitation^2 * Log(distance)	-233.0	3414.2	1481.8
	(4802.8)	(6220.4)	(5181.1)
Weather	Annual	Maize GS over maize area	Maize GS over pop density
Country-pair FE	X	X	X
Destination-year FE	X	X	X
Region of origin-by-year FE	X	X	X
Number of country pairs	2084	2084	2084
Number of origin countries	141	141	141
Destination Sample	EU27 + UK	EU27 + UK	EU27 + UK
Mean Outcome	3.733	3.733	3.733
Dep Var SD	1.858	1.858	1.858
N	25951	25951	25951
adj. R^2	0.796	0.796	0.796

Notes: Standard errors are clustered by origin country-year. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Column (1) uses annual weather, column (2) uses weather weighted by maize area over maize-growing season, column (3) uses weather weighted by population over maize-growing season.

Table D2. Gravity model for asylum applications without bilateral controls interactions.

	(Log) Asylum Applications		
	(1)	(2)	(3)
Temperature origin	0.121	-0.0905	-0.0806
	(0.0988)	(0.0747)	(0.0771)
Temperature origin^2	-0.00453	-0.000517	-0.000177
	(0.00316)	(0.00219)	(0.00220)
Temperature origin^3	-0.000194**	0.0000301	0.00000463
	(0.0000856)	(0.0000766)	(0.0000851)
Temperature origin^4	0.00000852***	0.00000287	0.00000281
	(0.00000293)	(0.00000212)	(0.00000221)
Precipitation origin	0.581	3.096	1.875
	(3.515)	(4.675)	(4.491)
Precipitation origin^2	-820.6	-2278.6	-1302.9
	(1452.4)	(1853.8)	(1690.7)
Weather	Annual	Maize GS over maize area	Maize GS over pop density
Country-pair FE	X	X	X
Destination-by-year FE	X	X	X
Region of origin-by-year FE	X	X	X
Number of country pairs	2138	2138	2138
Number of origin countries	145	145	145
Destination Sample	EU27 + UK	EU27 + UK	EU27 + UK
Mean Outcome	3.751	3.751	3.751
SD Outcome	1.873	1.873	1.873
N	26533	26533	26533
adj. R^2	0.798	0.799	0.799

Notes: The table reports the coefficients associated with the weather variables in origin country in Equation (2) in the text. The sample is restricted to non-OECD 145 origin countries and to EU27 member countries + UK as destinations. Standard errors are clustered by origin country-year. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Column (1) uses annual weather, column (2) uses weather weighted by maize area over maize growing season, column (3) uses weather weighted by population over maize growing season. The estimated fixed effects are not used in building the predictors for asylum applications. All regressions control for country-pair, destination-by-year, and region-of-origin-by-year fixed effects.

Table D3. Gravity model for asylum applications with lags of weather

	(Log) Asylum Applications			
	(1)	(2)	(3)	(4)
Temperature origin	-0.0905	-0.0745	-0.118	-0.136*
	(0.0747)	(0.0739)	(0.0747)	(0.0739)
Temperature origin^2	-0.000517	-0.000805	0.000291	0.000464
	(0.00219)	(0.00218)	(0.00221)	(0.00221)
Temperature origin^3	0.0000301	0.0000431	0.000118	0.000158*
	(0.0000766)	(0.0000777)	(0.0000886)	(0.0000908)
Temperature origin^4	0.00000287	0.00000269	0.000000433	-0.000000152
	(0.00000212)	(0.00000207)	(0.00000223)	(0.00000228)
Precipitation origin	3.096	7.652	6.963	4.693
	(4.675)	(5.198)	(5.393)	(5.505)
Precipitation origin^2	-2278.6	-3691.6*	-2861.5	-2162.3
	(1853.8)	(2056.9)	(2013.5)	(2023.6)
L1.Temperature origin		-0.0879	-0.0901	-0.121
		(0.0806)	(0.0777)	(0.0774)
L1.Temperature origin^2		0.000103	0.000468	0.00248
		(0.00231)	(0.00230)	(0.00230)
L1.Temperature origin^3		0.0000770	0.0000886	0.000136
		(0.0000795)	(0.0000813)	(0.0000937)
L1.Temperature origin^4		0.00000113	0.000000591	-0.00000161
		(0.00000213)	(0.00000214)	(0.00000224)
L1.Precipitation origin		8.156	10.55*	9.637*
		(5.079)	(5.418)	(5.559)
L1.Precipitation origin^2		-3606.5*	-4332.6**	-3174.5
		(1972.5)	(2056.5)	(2094.9)
L2.Temperature origin			-0.126	-0.125
			(0.0890)	(0.0882)
L2.Temperature origin^2			0.00446*	0.00574**
			(0.00252)	(0.00247)
L2.Temperature origin^3			0.000164*	0.000166*
			(0.0000985)	(0.0000994)
L2.Temperature origin^4			-0.00000413	-0.00000511**
			(0.00000260)	(0.00000254)
L2.Precipitation origin			7.458	8.168
			(5.287)	(5.654)
L2.Precipitation origin^2			-3135.3	-2986.7
			(2063.5)	(2165.7)
L3.Temperature origin				-0.249***
				(0.0961)
L3.Temperature origin^2				0.00612**
				(0.00258)
L3.Temperature origin^3				0.000308***
				(0.000100)
L3.Temperature origin^4				-0.00000725***
				(0.00000261)
L3.Precipitation origin				7.050
				(5.717)
L3.Precipitation origin^2				-2574.3
				(2190.6)
Country-pair FE	X	X	X	X
Destination-by-year FE	X	X	X	X
Region of origin-by-year FE	X	X	X	X
Mean Outcome	3.751	4.029	4.175	4.276
SD Outcome	1.873	1.844	1.828	1.820
N	26533	21890	19109	16942
adj. R^2	0.799	0.799	0.805	0.811

Notes: The table reports the coefficients associated with the weather variables in origin country in Equation (2) in the text. The sample is restricted to non-OECD 145 origin countries and to EU27 member countries + UK as destinations. Standard errors are clustered by origin country-year. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All regressions use weather weighted by maize area over maize growing season with different lags of weather. All regressions control for country-pair, -by-year, and region-of-origin-by-year fixed effects.

Table D4. Gravity model for asylum applications with destination weather

	(Log) Asylum Applications		
	(1)	(2)	(3)
Temperature origin	-1.650**	-2.036***	-2.102***
	(0.657)	(0.603)	(0.615)
Temperature origin^2	0.0793**	0.0448	0.0470
	(0.0316)	(0.0289)	(0.0293)
Temperature origin^3	0.000990	0.00206	0.00237
	(0.00119)	(0.00183)	(0.00188)
Temperature origin^4	-0.0000350	-0.0000445	-0.0000578
	(0.0000328)	(0.0000366)	(0.0000352)
Precipitation origin	-16.45	18.63	-9.071
	(55.75)	(66.72)	(63.21)
Precipitation origin^2	28112.6	4645.8	22074.1
	(36210.8)	(48527.1)	(41935.2)
Temperature destination	-0.0564**	-0.0467**	-0.0472**
	(0.0231)	(0.0229)	(0.0228)
Temperature destination^2	0.00391***	0.00395***	0.00395***
	(0.000889)	(0.000879)	(0.000880)
Precipitation destination	6.303*	6.304*	6.292*
	(3.814)	(3.803)	(3.804)
Precipitation destination^2	1034.1	1160.2	1241.9
	(4398.2)	(4393.4)	(4396.6)
Weather	Annual	Maize GS over maize area	Maize GS over pop density
Country-pair FE	X	X	X
Region of origin-by-year FE	X	X	X
Mean Outcome	3.748	3.748	3.748
SD Outcome	1.873	1.873	1.873
N	25957	25957	25957
adj. R^2	0.749	0.749	0.749

Notes: The table reports the coefficients associated with the weather variables in the origin country in Equation (2) in the text. The sample is restricted to non-OECD 141 origin countries and to EU27 member countries + UK as destinations. Standard errors are clustered by origin country-year. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

D.2 Robustness Checks for Individual Level Analysis

Table D5. Weather-induced asylum applications and individuals' environmental values. Accounting for shift-share weather in origin countries.

Dep. variable	CC EU Election (*Mean: 0.068*)		CC Pol Priority (*Mean: .106*)	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.00209	0.0313^{**}	0.0147^{*}	0.0532^{**}
	(0.00463)	(0.0138)	(0.00825)	(0.0214)
Weighted weather in origin	X	X	X	X
Weather Controls	X	X	X	X
Individual Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Statistic		16.931		39.206
N	106614	106614	130068	130068
Number of countries	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-2 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 3-4 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications are the cumulative asylum applications in a country in the five years preceding the survey year, as defined in Equation 1. Columns (2) and (4) report the 2SLS estimates using the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation). All columns control for a fourth-order polynomial of seasonal temperature and a second-order polynomial of total precipitation in all origin countries of asylum demands weighted by baseline propensity to migrate to that host country. All columns include country, survey year, age, region-by-survey-year fixed effects, and country-by-age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D6. Weather-induced asylum applications and individuals' environmental values. 2SLS estimates. Alternative Specifications.

Dep. variable	CC EU Election (*Mean: 0.068*)			CC Pol Priority (*Mean: 0.106*)		
	(1)	(2)	(3)	(4)	(5)	(6)
log(Asylum Applications)	0.0217**	0.0222**	0.0232**	0.0427**	0.0432**	0.0476**
	(0.0102)	(0.0104)	(0.0108)	(0.0202)	(0.0208)	(0.0218)
Weather Controls	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Region-by-year FE	X	X	X	X	X	X
Country-by-age FE	X			X		
Birth cohort FE	X			X		
Country-by-birth cohort FE		X	X		X	X
Country-age linear trends	X	X		X	X	
F-Statistic	21.341	21.367	21.427	27.410	27.317	27.438
N	106547	106613	106542	130010	130067	130004
Number of countries	28	28	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-3 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 4-6 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. All columns report the 2SLS estimates using the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation). Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D7. Weather-induced asylum applications and individuals' environmental values. 2SLS estimates. Alternative Instruments.

Dep. variable	CC EU Election (*Mean: 0.068*)			CC Pol Priority (*Mean: 0.106*)		
	(1)	(2)	(3)	(4)	(5)	(6)
log(Asylum Applications)	0.0205**	0.0134*	0.0181*	0.0417*	0.0458**	0.0495**
	(0.00972)	(0.00788)	(0.00893)	(0.0203)	(0.0197)	(0.0200)
Weather Controls	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Age FE	X	X	X	X	X	X
Region-by-year FE	X	X	X	X	X	X
Country-age linear trends	X	X	X	X	X	X
Instrument	w/ MR	Destination-weather	Destination-specific	w/ MR	Destination-weather	Destination-specific
F-Statistic	22.384	20.107	19.944	27.810	26.549	28.592
N	106614	106614	106614	130068	130068	130068
Number of countries	28	28	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-3 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 4-6 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. Each column uses a different instrument for predicted weather-induced asylum applications, constructed from the predicted values in the estimation of Equation (C2), (C3) and (C4). All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D8. Weather-induced asylum applications and individuals' environmental values. 2SLS estimates. Alternative time windows.

Dep. variable	CC EU Election (*Mean: 0.068*)				CC Pol Priority (*Mean: 0.106*)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Asylum Applications)	0.0226**	0.0209**	0.0154*	0.0174**	0.0431**	0.0383*	0.0369*	0.0359*
	(0.0106)	(0.00993)	(0.00798)	(0.00807)	(0.0207)	(0.0212)	(0.0196)	(0.0188)
Weather Controls	X	X	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X	X	X
Country FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X
Age FE	X	X	X	X	X	X	X	X
Region-by-year FE	X	X	X	X	X	X	X	X
Country-age linear trends	X	X	X	X	X	X	X	X
Window exposure	5 years	4 years	4 years (excl. contemp.)	5 years (excl. contemp.)	5 years	4 years	4 years (excl. contemp.)	5 years (excl. contemp.)
F-Statistic	22.106	17.934	20.835	26.397	27.252	28.695	31.225	31.223
N	106614	106614	106614	106614	130068	130068	130068	130068
Number of countries	28	28	28	28	28	28	28	28

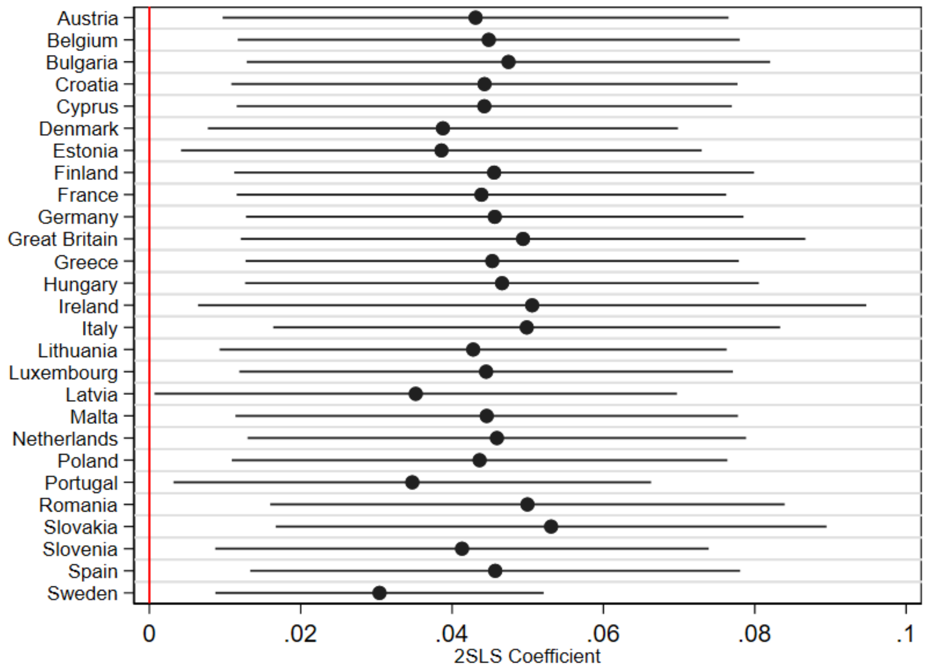
Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-3 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 4-6 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. The 2SLS estimates are obtained using the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D9. Weather-induced asylum applications and individuals' environmental values. 2SLS estimates. Alternative treatments.

Dep. variable	CC EU Election	CC Pol Priority	CC EU Election	CC Pol Priority
	(1)	(2)	(3)	(4)
Asylum Applications	0.0151*	0.0213*	0.0244***	0.0204**
	(0.00776)	(0.0120)	(0.00629)	(0.00927)
Weather Controls	X	X	X	X
Individual Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
Regressor	log annual flow		weather-induced asylum anomaly	
F-Statistic	29.737	11.569		
N	106614	130068	106614	130068
Number of countries	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-2 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 3-4 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). The first two columns report the 2SLS estimates where Asylum Applications is the log of asylum applications in a given country in the survey year and is instrumented using the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. Columns 3-4 report the OLS estimates where Asylum Applications is the measure of weather-induced asylum application spikes n_{dt} constructed in Appendix Section C.4. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure D1. 2SLS estimate of weather-induced asylum applications on climate concern as a political priority leaving out one country



Notes: This figure reports the 2SLS coefficient estimates of the effect of weather-induced asylum applications on CC EU Pol Priority when each country in the y-axis is excluded once at a time from the estimation sample. The whiskers indicate the 90% standard error confidence intervals.

Table D10. Weather-induced asylum applications and individual concern on other topics. 2SLS estimates.

Dep. variable	Economic growth EU Election	Euro EU Election	Terrorism EU Election	Food safety EU Election	Terrorism Pol Priority
	(1)	(2)	(3)	(4)	(5)
log(Asylum Applications)	-0.00226	-0.0458	-0.00383	-0.0193	0.0126
	(0.0165)	(0.0814)	(0.00804)	(0.0130)	(0.0153)
Weather Controls	X	X	X	X	X
Individual Controls	X	X	X	X	X
Country FE	X	X	X	X	X
Year FE	X	X	X	X	X
Age FE	X	X	X	X	X
Region-by-year FE	X	X	X	X	X
Country-age linear trends	X	X	X	X	X
F-Statistic	14.434	9.437	14.434	14.434	21.434
N	106614	53799	106614	106614	130068
Number of countries	28	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports economic growth (in col. 1), euro single currency (col. 2), terrorism (col. 3) and food safety (col. 4) as a theme that the European Parliament should give priority to when deliberating. The dependent variable in column 5 is a dummy equal to 1 if the respondent reports terrorism as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording). The estimates refer to the 2SLS coefficients obtained using the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D11. Weather-induced asylum applications and environmental values. No top-5 countries of origin for asylum seekers. 2SLS estimates.

Dep. variable	CC EU Election		CC Pol Priority	
	(1)	(2)	(3)	(4)
log(Asylum Applications)	-0.000120	0.0160*	0.0145*	0.0507***
	(0.00437)	(0.00854)	(0.00760)	(0.0178)
Country FE	X	X	X	X
Year FE	X	X	X	X
Age FE	X	X	X	X
Region-by-year FE	X	X	X	X
Country-age linear trends	X	X	X	X
F-Stat		23.737		22.552
N	106614	106614	130068	130068

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 2, see Table B1 for exact wording and additional details on the construction of the variable). In columns (3) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). Asylum demands do not account for the top-5 countries of origin for asylum seekers in the sample (Afghanistan, Iraq, Russian Federation, Serbia, Syria). All columns report the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D12. Country average climate concern and leads of actual and predicted asylum demands.

Dep. variable	Asy Applications		5-year Asy Applications		Predicted Asy Applications	
	(1)	(2)	(3)	(4)	(5)	(6)
CC EU Election	-2.045		0.132		-2.498	
	(3.103)		(4.075)		(2.382)	
CC EU Pol Priority		1.483		1.659		1.005
		(1.282)		(1.224)		(0.674)
Weather Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
N	83	164	83	164	83	164
adj. R^2	0.883	0.872	0.903	0.930	0.962	0.973

Notes: All estimates are obtained from country-level regressions. The main regressors are country-average responses for CC EU Election and CC EU Pol Priority. The first two columns use one-year ahead asylum applications, columns 3 and 4 use five-year ahead cumulative asylum applications, and columns 5 and 6 use the one-year ahead predicted weather-induced asylum applications. The predicted measure of weather-induced asylum applications is constructed from the estimation of Equation (C4). All columns control for linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation, and country, and survey year fixed effects. Robust standard errors, clustered at the country level, in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D13. 2SLS Estimates: Exposure to weather-induced asylum demands by age range

	(1) CC EU Election (*Mean: 0.079*)	(2) CC EU Pol Priority (*Mean: 0.099*)
Log(Exposure$_{16-24}$)	0.0235**	0.0390**
	(0.00959)	(0.0180)
F-statistic	48.091	54.376
N	17554	21661
Log(Exposure$_{25-33}$)	0.00990	0.0409***
	(0.00635)	(0.0139)
F-statistic	41.019	37.483
N	21324	26359
Log(Exposure$_{34-42}$)	0.00889	0.0403**
	(0.00661)	(0.0150)
F-statistic	41.939	40.211
N	24389	30320
Log(Exposure$_{43-51}$)	0.00815	0.0209
	(0.00673)	(0.0135)
F-statistic	38.166	36.681
N	25698	31544
Log(Exposure$_{52-60}$)	0.00605	0.0167
	(0.00792)	(0.0145)
F-statistic	40.667	37.419
N	27558	33144
Log(Exposure$_{61-69}$)	0.00971	0.0286**
	(0.00573)	(0.0131)
F-statistic	34.782	35.594
N	24344	29936
Log(Exposure$_{70-78}$)	0.00484	0.00553
	(0.00740)	(0.0255)
F-statistic	28.925	22.865
N	15234	18158
Log(Exposure$_{79+}$)	0.0120	0.0304
	(0.0376)	(0.0352)
F-statistic	21.008	22.046
N	5269	6315
Weather Controls	X	X
Individual Controls	X	X
Country FE	X	X
Year FE	X	X
Age FE	X	X
Birth-cohort FE	X	X
Region-by-year FE	X	X
Country-age linear trends	X	X

Notes: Each cell reports the 2SLS estimate of the coefficient associated with the (log) exposure to asylum applications as the (log) of the cumulative asylum applications in the country in a given age range of an individual. The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed and whose exposure period occurs in the time period in which asylum application data are available (i.e., after 2000). The dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (columns 1 and 3, see Table B1 for exact wording and additional details on the construction of the variable). In columns (2) and (4) the dependent variable is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating (see Table B1 for exact wording and additional details on the construction of the variable). The 2SLS estimates use the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. Individual controls: Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented. Weather Controls: Exposure to average temperature and precipitation over the same time period in which exposure to asylum applications is measured and contemporaneous linear and quadratic terms of temperature and precipitation. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D14. Formative age exposure to weather-induced asylum applications and individuals' environmental values. 2SLS estimates. Alternative Instruments.

Dep. variable	CC EU Election (*Mean: 0.079*)			CC Pol Priority (*Mean: 0.099*)		
	(1)	(2)	(3)	(4)	(5)	(6)
log(Asylum Applications)	0.0213**	0.0222***	0.0260**	0.0379**	0.0386**	0.0497***
	(0.00905)	(0.00799)	(0.0104)	(0.0177)	(0.0153)	(0.0177)
Weather Controls	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Age FE	X	X	X	X	X	X
Birth-cohort FE	X	X	X	X	X	X
Region-by-year FE	X	X	X	X	X	X
Country-age linear trends	X	X	X	X	X	X
Instrument	w/ MR	Destination-weather	Destination-specific	w/ MR	Destination-weather	Destination-specific
F-Statistic	47.711	3.310	53.500	51.456	2.848	42.149
N	17554	17554	17554	21661	21661	21661
Number of countries	28	28	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-3 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 4-6 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. Each column uses a different instrument for predicted weather-induced asylum applications, constructed from the predicted values in the estimation of Equation (C2), (C3) and (C4). All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, birth-year, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D15. Exposure to weather-induced asylum applications and individuals' environmental values. 2SLS estimates. Alternative definitions for formative age.

Dep. variable	CC EU Election						CC Pol Priority					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
log(Asylum Applications)	0.0235**	0.0379**	0.0130*	0.0123*	0.01097	0.01196*	0.0383**	0.0461*	0.0282*	0.0286*	0.0307**	0.0303**
	(0.00959)	(0.0160)	(0.00721)	(0.00750)	(0.00772)	(0.00716)	(0.0153)	(0.0261)	(0.0147)	(0.0148)	(0.0138)	(0.0129)
Weather Controls	X	X	X	X	X	X	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X	X	X	X	X	X	X
Country FE	X	X	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X	X	X
Age FE	X	X	X	X	X	X	X	X	X	X	X	X
Birth-cohort FE	X	X	X	X	X	X	X	X	X	X	X	X
Region-by-year FE	X	X	X	X	X	X	X	X	X	X	X	X
Country-age linear trends	X	X	X	X	X	X	X	X	X	X	X	X
Formative age	16-24	16-25	17-24	17-25	18-24	18-25	16-24	16-25	17-24	17-25	18-24	18-25
F-Statistic	26.020	20.808	27.368	27.073	29.487	29.414	46.347	33.767	45.758	44.988	43.767	44.128
N	17554	9542	18230	18230	18704	18704	21661	11915	22384	22384	22956	22956
Number of countries	28	28	28	28	28	28	28	28	28	28	28	28

Notes: The sample is restricted to survey respondents that have the same nationality as the country in which they are interviewed. The dependent variable in columns 1-6 is a dummy equal to 1 if the respondent reports climate change as a theme that the European Parliament should give priority to when deliberating. The dependent variable in columns 7-12 is a dummy equal to 1 if the respondent reports climate change as a theme that should be discussed as a matter of priority during the electoral campaign for the next European Parliament elections (see Table B1 for exact wording and additional details on the construction of the variable). Asylum Applications is the sum of the asylum applications in a given country in the five years preceding the survey year, as defined in Equation 1. The 2SLS estimates use the predicted asylum applications constructed from the gravity-predicted asylum application flows as described in Equation (2) in the text. All columns control for individual characteristics (Gender, Education (Up to 15 years; 16-19 years; 20 years or older; still studying; no education), Unemployed, Left-wing oriented) and country-level covariates (Linear and squared five-year average temperature and total precipitation, linear and squared annual temperature and total precipitation), and country, survey year, age, birth-year, region-by-survey-year fixed effects and country by age linear trends. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

D.3 Robustness Checks for Country Level Analysis

Table D16. Green party votes and leads of actual and predicted asylum demands

Dep. variable	Actual asylum demands	Predicted asylum demands
	(1)	(2)
% EP Green Party votes	0.0454	-0.00227
	(0.0300)	(0.00860)
Country Controls	X	X
Weather Controls	X	X
Country FE	X	X
Year FE	X	X
N	42	42
adj. R^2	0.957	0.999

Notes: The table reports the OLS estimates associated with the % of Green party votes in EP elections on the leads of actual and predicted weather-induced asylum demands in logarithm as constructed in Equation (C3). Robust standard errors, clustered at the country level, in parentheses. Country Controls: (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old. Weather Controls: Linear and squared average temperature and total precipitation in the country. All columns account for country- and year-specific fixed effects. F-statistic refers to the Kleibergen-Paap F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D17. Weather-induced asylum applications and Green party votes in European Parliament elections. 2SLS estimates. Alternative instruments.

Dep. variable	% Green Party votes in EP elections (*Mean: 9.84*)			
	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
Log(Asylum Applications)	-2.952	-2.733	-3.255	-3.670
	(1.745)	(1.751)	(2.083)	(2.371)
Instrument	w/out MR	w/ MR	Destination-weather	Destination-specific
Country Controls	X	X	X	X
Weather Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
F-Statistic	18.779	16.925	14.819	16.805
N	65	65	65	65
Number of countries	20	20	20	20

Notes: The table reports the 2SLS coefficients on (log) of total asylum applications in the five years preceding the European Parliament elections. The dependent variable is the share of votes of Green parties in European Parliament elections after 2000 in an EU country. Respectively, in each column, asylum demands are instrumented with its predicted counterpart as described in Equations (2), (C2), (C3) and (C4). Country Controls: (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old between the two election rounds and in the year of the elections, voter turnout. Weather Controls: Linear and squared average temperature and total precipitation in the country between the two election rounds and in the year of the elections. All columns control for country- and year-specific fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the Kleibergen-Paap F-statistic for weak instrument. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D18. Weather-induced asylum applications and other parties' votes in EP elections. 2SLS estimates. Other parties.

Dep. variable: % votes	Socialist/Left	Social democrats	Liberal	Christian democrats	Conservative	Nationalist
	(1)	(2)	(3)	(4)	(5)	(6)
log(Asylum Applications)	4.399	-1.287	-0.884	-0.447	2.434	-4.895**
	(2.840)	(1.617)	(3.839)	(2.807)	(2.376)	(2.059)
Country Controls	X	X	X	X	X	X
Weather Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
N	67	99	83	65	73	84
F-stat	15.273	16.410	25.556	10.922	13.949	22.641
Number of countries	20	27	24	18	20	25

Notes: The table reports the 2SLS coefficients on (log) of total asylum applications in the five years preceding the European Parliament elections. The dependent variable is the share of votes of other parties by party family as classified in the Manifesto database in European Parliament elections after 2000 in an EU country. The (log) of total asylum applications in the five years preceding the elections is instrumented with the gravity-predicted (log) of total asylum applications described in Equation (2) in the text. Country Controls: (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old between the two election rounds and in the year of the elections, voter turnout. Weather Controls: Linear and squared average temperature and total precipitation in the country between the two election rounds and in the year of the elections. All countries control for country-specific, year-specific fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the Kleibergen-Paap F-statistic for weak instrument. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D19. Weather-induced asylum applications and electoral turnout in EP elections

Dep. variable	% Voter Turnout (*Mean: 46.134*)			
	OLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)
Log(Asylum Applications)	1.097	-3.785	-2.428*	-3.256*
	(1.617)	(3.061)	(1.360)	(1.912)
Country Controls	X	X	X	X
Weather Controls	X	X	X	X
Country FE	X		X	X
Year FE	X	X	X	X
Regional linear time trends				X
F-Statistic		9.468	15.536	11.083
N	65	65	65	65
Number of countries	28	28	28	28

Notes: The table reports the OLS (column 1) and 2SLS (columns 2 to 4) coefficients on (log) of total asylum applications in the five years preceding the European Parliament elections. The dependent variable is the share of electoral turnout in European Parliament elections after 2000 in an EU country. The (log) of total asylum applications in the five years preceding the elections is instrumented with the gravity-predicted (log) of total asylum applications described in Equation (2) in the text. The sample is the same as in baseline results using Green party votes. Country Controls: (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old between the two election rounds and in the year of the elections, voter turnout. Weather Controls: Linear and squared average temperature and total precipitation in the country between the two election rounds and in the year of the elections. All countries control for country-specific, year-specific fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the Kleibergen-Paap F-statistic for weak instrument. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D20. Weather-induced asylum applications and environmentalism in national elections. 2SLS Estimates. Alternative instruments.

Dep. variable	National Elections Environmentalism Index			
	(1)	(2)	(3)	(4)
log(Asylum Applications)	0.232	0.193	0.602	0.300
	(0.343)	(0.252)	(0.806)	(0.381)
Instrument	w/out MR	w/ MR	Destination-weather	Destination-specific
Country Controls	X	X	X	X
Weather Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
N	119	119	119	119
F-Stat	16.030	24.236	12.467	13.813

Notes: The dependent variable is the normalized index of environmentalism of national elections where the share of quasi-sentences that positively referred to the environment in each party's manifesto is weighted by its vote share in the national elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other. Respectively, in each column, asylum demands are instrumented with its predicted counterpart as described in Equations (2), (C2), (C3) and (C4). All columns control for the normalized right-left ideological index provided in the MPD. Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. All columns control for country, year, and party fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D21. Weather-induced asylum applications and other dimensions of national elections. 2SLS Estimates.

	Europe +	Europe -	Multiculturalism +	Multiculturalism -	Refugees +	Cultural Autonomy +
	(1)	(2)	(3)	(4)	(5)	(6)
log(Asylum Applications)	0.226	0.0865	-0.232	0.156	-0.186	0.287
	(0.182)	(0.174)	(0.160)	(0.343)	(0.150)	(0.353)
Country Controls	X	X	X	X	X	X
Weather Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
F-Stat	16.030	16.030	16.030	16.030	16.030	16.030
N	119	119	119	119	119	119

Notes: The dependent variable is the normalized index of each topic of national elections where the share of quasi-sentences that referred to each topic as described in Table B3 in each party's manifesto is weighted by its vote share in the national elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other, obtained using an instrumental variable approach, where the instrument is constructed using the predicted values in Equations (C3), Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

D.4 Robustness Checks for Party Level Analysis

Table D22. Weather-induced asylum applications and environmental agenda of parties. 2SLS estimates. Alternative instruments.

	Party's Standardized Environmentalism			
	(1)	(2)	(3)	(4)
Panel A: Unweighted				
log(Asylum Applications)	-0.119	-0.123	-0.103	0.523
	(0.107)	(0.105)	(0.0842)	(0.975)
F-Stat	51.412	61.676	57.782	10.524
Panel B: Weighted by votes				
log(Asylum Applications)	-0.194*	-0.194*	-0.0989	-0.404
	(0.111)	(0.103)	(0.0738)	(0.876)
F-Stat	40.407	48.326	58.945	0.362
Instrument	w/out MR	w/ MR	Destination-weather	Destination-specific
Right-left ideological index	X	X	X	X
Country Controls	X	X	X	X
Weather Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Party FE	X	X	X	X
N	520	520	520	520

Notes: The analysis is over a sample of parties that are running in multiple elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other. The dependent variable is the (normalized) share of quasi-sentences that positively referred to the environment in each party's manifesto in the national elections. All columns report the 2SLS estimates where (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications respectively described in Equations (2), (C2), (C3) and (C4). All columns control for the normalized right-left ideological index provided in the MPD. Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. All columns control for country, year, and party fixed effects. Panel B weighs each party's observation by the vote gained in the national elections. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D23. Weather-induced asylum applications and environmental agenda of parties. 2SLS estimates. Alternative vote cutoffs.

	Party's Standardized Environmentalism			
	(1)	(2)	(3)	(4)
Panel A: Unweighted				
log(Asylum Applications)	-0.0583	-0.334**	-0.365**	-0.347**
	(0.108)	(0.145)	(0.165)	(0.153)
F-Stat	32.421	25.869	20.066	15.168
Panel B: Weighted by party votes				
log(Asylum Applications)	-0.158	-0.274*	-0.314*	-0.297*
	(0.116)	(0.147)	(0.160)	(0.148)
F-Stat	27.312	23.909	19.597	14.649
Votes above	5%	10%	15%	20%
Right-left ideological index	X	X	X	X
Country Controls	X	X	X	X
Weather Controls	X	X	X	X
Country FE	X	X	X	X
Year FE	X	X	X	X
Party FE	X	X	X	X
N	469	293	210	170

Notes: The analysis is over a sample of parties that are running in multiple elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other. The dependent variable is the (normalized) share of quasi-sentences that positively referred to the environment in each party's manifesto in the national elections. All columns report the 2SLS estimates where (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications respectively described in Equations (C3). Panel B weighs each party's observation by the vote gained in the national elections. Column (1) only considers parties that gained at least 5% of the votes, column (2) only considers parties that gained at least 10% of the votes, column (3) only considers parties that gained at least 15% of the votes, column (4) only considers parties that gained at least 20% of the votes. All columns control for the normalized right-left ideological index provided in the MPD. Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. All columns control for country, year, and party fixed effects. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D24. Weather-induced asylum applications and environmental agenda by party family. 2SLS Estimates.

	Green/Ecologist	Socialist/Left	Social democrats	Liberal	Christian democrats	Conservative	Nationalist
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Unweighted							
log(Asylum Applications)	-3.200	-0.542	-0.274	-0.0154	0.872	0.353	-0.0183
	(2.885)	(2.005)	(0.171)	(0.149)	(1.104)	(0.206)	(0.0777)
F-Stat	1.289	2.491	25.802	47.751	2.713	10.025	46.526
Panel B: Weighted by party votes							
log(Asylum Applications)	-3.498	4.474	-0.355**	0.0478	-5.050	0.440	-0.0829
	(3.845)	(14.88)	(0.155)	(0.156)	(24.31)	(0.293)	(0.0916)
F-Stat	1.605	2.080	34.013	64.349	2.060	5.542	50.383
Right-left ideological index	X	X	X	X	X	X	X
Country Controls	X	X	X	X	X	X	X
Weather Controls	X	X	X	X	X	X	X
Country FE	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X
Party FE	X	X	X	X	X	X	X
N	52	73	105	84	72	66	68

Notes: The analysis is over a sample of parties that are running in multiple elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other. The dependent variable is the (normalized) share of quasi-sentences that positively referred to the environment in each party's manifesto in the national elections. Each column only considers the parties belonging to a specific party family as defined by the Manifesto database. The coefficients reported are the 2SLS estimates where (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. All columns control for the normalized right-left ideological index provided in the MPD. Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. All columns control for country, year, and party fixed effects. Panel B weighs each party's observation by the vote gained in the national elections. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D25. Weather-induced asylum applications and other dimensions of parties' manifestos. 2SLS Estimates.

	Europe +	Europe -	Multiculturalism +	Multiculturalism -	Refugees +	Cultural Autonomy +
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Unweighted						
log(Asylum Applications)	-0.269	0.0538	0.0161	-0.0953	-0.0899	-0.164
	(0.314)	(0.103)	(0.172)	(0.0791)	(0.0886)	(0.159)
F-Stat	51.412	51.412	51.412	51.412	51.412	51.412
Panel B: Weighted by party votes						
log(Asylum Applications)	-0.0494	0.0756	-0.0217	-0.135	0.000911	-0.000171
	(0.181)	(0.0803)	(0.0829)	(0.0894)	(0.000963)	(0.00318)
F-Stat	40.407	40.407	40.407	40.407	40.407	40.407
Right-left ideological index	X	X	X	X	X	X
Country Controls	X	X	X	X	X	X
Weather Controls	X	X	X	X	X	X
Country FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Party FE	X	X	X	X	X	X
N	520	520	520	520	520	520

Notes: The analysis is over a sample of parties that are running in multiple elections. The table reports the coefficients associated with (log) of the sum of asylum applications in the period between one election year and the other. The dependent variable is the (normalized) share of quasi-sentences that refers to each dimension as described in Table B3 in each party's manifesto in the national elections. The coefficients reported are the 2SLS estimates where the (log) of asylum applications is instrumented with the gravity-predicted (log) of asylum applications described in Equation (2) in the text. Robust standard errors, clustered at the country level, in parentheses. All columns control for the normalized right-left ideological index provided in the MPD. Country controls: averages between two elections of (log) GDP per capita, % tertiary education, unemployment rate, population rate between 18 and 23 years old, and in the year of the elections. Weather controls: averages between two elections of linear and squared temperature and precipitation and in the year of the elections. All columns control for country, year, and party fixed effects. Panel B weighs each party's observation by the vote gained in the national elections. Robust standard errors, clustered at the country level, in parentheses. F-statistic refers to the K-P F-statistic for weak instruments. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.