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ABSTRACT

Refugee Exposure and Political Backlash: Poland During the Russia-Ukraine War*

This paper examines the impact of immigration on voting behaviour. Exploiting a unique natural experiment, we research parliamentary election results in Poland following the 2022 inflow of Ukrainian refugees. We exploit the variation in hosted refugees across Polish counties and utilise a shift-share instrument based on the past settlement of Ukrainian immigrants. We find increased support for far-right and right-wing (incumbent) political groups, at the expense of centre parties. There is important regional variation in this overall pattern. The more liberal areas in west Poland experienced political polarisation, with both far-right and left-wing parties gaining support. Furthermore, the rise in far-right support is particularly pronounced in rural counties, low wage counties, and those bordering Ukraine. The effects are driven by changing voter preferences, rather than election participation or natives' internal mobility, and are not rooted in adverse economic effects. Our findings show that exposure to refugees, even those with a similar background and favourable profile, can still be associated with natives' backlash.

JEL Classification: D72, D74, J15, O15

Keywords: Russia-Ukraine war, forced migration, refugee exposure, election results

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1 Introduction

International migration and forced displacement are continuously reshaping the dynamics within countries. In 2022, there were approximately 284 million international migrants in the world, comprising 3.5% of the global population (IOM, 2022). There were 35.3 million refugees and even more internally displaced individuals (UNHCR, 2023). These numbers will likely continue increasing due to ongoing conflicts and climate change (Chevalier et al., 2024). Beyond its immediate humanitarian dimensions, the arrival of foreign nationals carries profound implications for the economic and social landscape of receiving countries. Existing literature has, among others, documented the impact of immigration on natives' political preferences (Becker and Ferrara, 2019). At the same time, natives' preferences towards immigrants—particularly when expressed through right-wing support—can hinder newcomers' integration (Schilling and Stillman, 2024), underscoring the importance of understanding such dynamics to design effective migration and integration policies. To this end, this paper explores the interplay between immigration and natives' political attitudes and, particularly, researches how exposure to refugees can affect natives' voting behaviour.

We study the effects of the Russia-Ukraine-war-induced refugee flow on parliamentary election results in Poland. Poland, which was positioned at the forefront of an unprecedented wave of Ukrainian refugees following Russia's invasion in 2022, provides a unique natural experiment. Having hosted an estimated total of 2.2 million foreigners before the war,[1] the country suddenly welcomed between 1 to 1.5 million Ukrainian refugees (Duszczyk and Kaczmarczyk, 2022b). For some areas, this was an inflow equivalent to up to 4% of their population. We exploit the variation in hosted Ukrainian refugees across Polish counties. As this variation is unlikely random, we employ a shift-share instrumental variable (IV) approach. Our instrument exploits the refugee inflow following an exogenous shock, the Ukraine-Russia war, and the observation that migrants tend to

[1]Data sources on immigrants in Poland vary significantly. Some government agencies (e.g., Office for Foreigners) track residence permits, while others (e.g., Social Insurance Institution) count those employed legally. Surveys and international organisations rely on sample estimates or outdated census data. Poland lacks a centralised, real-time migration monitoring system, and coordination between different institutions is limited. As a result, estimates differ widely between sources.

settle in the same places as previous migrants from the same origin. We allocate the total inflow of Ukrainian refugees fleeing the war (shift component) across counties following the historical distribution of Ukrainians across Polish counties (share component). This historical distribution is plausibly exogenous, as it stems from the forced resettlement of Ukrainians to western Poland after World War II—an event that still shapes Ukrainian migrant settlement today. Balancing tests and robustness checks indicate that our instrument is independent of local conditions across counties, allowing us to identify the causal effect of the Ukrainian refugee inflow on natives' voting behaviour.

Our results show that the Ukrainian refugee inflow was associated with a decrease in the vote share for centre parties, despite a centre coalition winning the 2023 parliamentary elections. An inflow of 1,000 refugees into a county was associated with a change of -0.25 percentage points (pp.) in centre support. The inflow increased the vote share for far-right and right-wing (i.e., the incumbent party Law & Justice) political groupings by 0.12 and 0.11 pp., respectively. This shift to the right is driven by shifting voter preferences, not by changes in natives' election participation or mobility patterns. The effect is strongest in low wage counties and areas with limited sustained contact between natives and refugees—particularly rural counties and counties bordering Ukraine, where most newly arrived Ukrainians quickly moved on (Wiśniewski et al., 2024). We observe additional geographical variation, with the overall result being driven by the country's typically more conservative eastern regions. In contrast, western Poland experienced political polarisation, with rising support for both far-right and left-wing parties, at the expense of centre-right parties. We show that the refugees had no visible impact on the Polish labour and housing market, while their take-up of social benefits increased local expenditures. This pattern aligns with both the inter-group contact theory (Allport et al., 1954) and group threat theory (Blumer, 1958),[2] as the Ukrainian refugee inflow was associated with political backlash, especially in areas with limited contact.

[2]The inter-group contact theory highlights that contact and sustained interactions between natives and refugees can effectively reduce prejudice towards minority group members. The conflict or 'group threat' theory predicts that inter-group exposure may worsen attitudes toward immigrants due to conflict over scarce resources and a perceived cultural or economic threat. These two foundational theories from social psychology are not mutually exclusive and could be taking place simultaneously. In the Polish setting, the group threat theory seems to outweigh the contact theory.

Several studies have documented the effects of immigrant inflows on political and social preferences. Some authors exploit the quasi-random refugee assignment policies implemented in European destinations during the 2015 refugee crisis (Albarosa and Elsner, 2023; Campo et al., 2024; Dustmann et al., 2019; Bredtmann, 2022; Achard et al., 2025) in a difference-in-differences framework, comparing areas which experienced high and low inflow of refugees. As many settings do not allow for this identification strategy, due to the non-random location choices of migrants, authors have employed IV-like strategies. Many papers use a shift-share instrument based on historical migrant settlement, as was first proposed by Altonji and Card (1991) and Card (2001), either with a focus on immigrant inflows (Lonsky, 2021; Barone et al., 2016; Halla et al., 2017; Mayda et al., 2022; Edo et al., 2019) or refugee inflows (Rozo and Vargas, 2021; Lebow et al., 2024). Other papers have instead used the availability of group accommodations (Steinmayr, 2021; Vertier et al., 2023), distance to the border (Steinmayr, 2021), or stock of rental housing as instrument (Harmon, 2018).

The majority of papers find a positive relationship between immigrant or refugee inflows and far-right votes, although negative effects have also been documented. Some papers find mixed results. For instance, Mendez and Cutillas (2014) examine how economic immigrants affected Spanish elections in the early 2000s. Support for left-wing parties increased in regions with increased Latin American immigration, while support for right-wing parties increased in regions with high African immigration. Mayda et al. (2022) show that in the United States' elections from 1990 to 2016, high-skilled immigration decreased the share of Republican votes, while an inflow of low-skilled immigrants increased it. Steinmayr (2021) examines Austrian election results during the 2015 refugee crisis. He shows that municipalities where refugees settled experienced a decrease in far-right votes. Municipalities where refugees only passed through (those close to the border) experienced an increase in far-right votes, thus highlighting the importance of sustained contact. Finally, Dustmann et al. (2019) show that the same refugee crisis led to a decreased vote share for anti-immigration parties in Danish urban municipalities, where people were more likely to interact with immigrants. In rural municipalities, where the

exposure was perceived as involuntary, the inflow was associated with negative attitudes towards refugees. In sum, the previous literature suggests that the characteristics of the migration flow, the extent of contact, and similarities between migrants and natives may play an important role.

Our paper is closely related to work by Mykhailyshyna and Zuchowski (2025), who examine the political effects of two major waves of Ukrainian migration to Poland: the labour-driven inflow after 2014 and the refugee inflow following the 2022 Russian invasion. Their findings suggest that exposure to labour migration reduces support for conservative parties and increases support for pro-redistribution parties, while refugee exposure is associated with a decline in far-right voting. Our findings on the effects of the refugee inflow differ from theirs, likely reflecting differences in research design and focus. Mykhailyshyna and Zuchowski (2025) focus specifically on votes for pro-redistribution parties, grouping parties of different political leanings together. In contrast, our analysis focuses on the traditional left-right political spectrum. Methodologically, the two studies rely on different identification strategies and instrumental variables,[3] implying that we estimate different local average treatment effects. In addition, our specification includes a rich set of local controls and accounts for persistent geographical heterogeneity across regions, which may be particularly important in the Polish context. Finally, while their outcomes are constructed relative to the 2011 election—a period with a different political baseline—our study captures more recent realignments in the Polish party landscape.[4] In sum, the two papers offer complementary perspectives: while Mykhailyshyna and Zuchowski (2025) highlight how economic framing shapes electoral responses to migration, our work provides a detailed account of how refugee exposure influences political preferences in areas with distinct historical and demographic profiles.

[3] Mykhailyshyna and Zuchowski (2025) use three instrumental variables, applied separately: historic hotspots of Ukrainians, cities hosting UEFA Euro 2012, and distance to the border. In the migration literature, distance to the border is commonly used as instrument. However, due to the historic persistent presence of Ukrainians in West Poland and strong network effects, the location decision of refugees is not strongly influenced by geographical distance to the border. In our empirical specification, where we control for various county characteristics, using the distance from county's centroid to the nearest Poland-Ukraine border crossing as an instrument (F=1.95) is not appropriate.

[4] We examine the change in consecutive elections. However, in the robustness checks, we replicate our analysis using 2011 as the baseline year instead. Results are similar to our preferred specification.

We contribute to the existing literature in several ways. First, we examine an unprecedented event, as the 2022 war in Ukraine triggered the largest displacement crisis in Europe in recent decades. The refugees had a distinctive profile, consisting predominantly of children and women with relatively high levels of education, with cultural and linguistic proximity to the host population. Unlike other refugee groups, they were granted immediate access to the EU labour market and welfare systems (UNHCR, 2022; UNHCR, 2023). Second, Poland provides a unique and previously understudied setting. It remains one of the most ethnically and linguistically homogenous countries in Europe, with historically limited exposure to immigration but persistently negative attitudes toward migrants. The war caused Poland's first experience with a sudden, large refugee inflow. The refugees are culturally similar and fleeing a war instigated by a common enemy, resonating with Poland's own historical experiences. These circumstances may have tempered political backlash. Moreover, the inflow occurred during a period of relative economic strength, allowing us to assess political responses in the absence of significant economic stress. Third, by studying a context where many of the usual drivers of anti-refugee sentiment—such as economic competition or perceived cultural threat—are plausibly attenuated, we are able to rule out several alternative explanations. We show that the refugee inflow had no adverse effects on local labour or housing markets, nor did it affect native mobility or political participation. Our results highlight that political backlash may emerge, even under favourable circumstances.

The remainder of the paper is organised as follows. Section 2 provides an overview of Poland's recent migration patterns and political landscape. Section 3 describes the data and descriptive statistics, while Section 4 presents the empirical strategy. Section 5 reports the main empirical results and robustness checks. Section 6 discusses mechanisms and, finally, Section 7 ends with a discussion and conclusion.

2 Background

2.1 Migration Patterns in Poland

Post-WWII to EU Membership. After World War II, Poland fell under Soviet influence. This period was associated with significant population movements, as Polish borders had shifted and the population had to be relocated accordingly. Additionally, all minorities across the country (mainly Ukrainians) were forcibly resettled to Western Poland, to homogenise the country and avoid tensions. Other than these involuntary resettlements, population movements remained limited under the communist power (Bukowski, 2019). After the collapse of the Soviet Union in 1989, Poland lifted border restrictions and opened up to international migration flows. Mobility remained relatively low with some short-term immigration from other post-communist states, facilitated by bilateral visa-free entry agreements, and limited emigration thanks to favourable economic conditions (Dustmann et al., 2015). More details on this period can be found in Supplementary Material A.1

After joining the European Union (EU) in 2004, Polish emigration increased significantly and emigrants became increasingly younger and more educated (Dustmann et al., 2015). After a few years, emigration gradually stabilised. To counter the rising emigration, ageing population, and emerging labour market gaps, Poland facilitated access for temporary workers from selected countries in Eastern Europe, including Ukraine. As a result, short-term, circular migratory movements began, as Ukrainians searched for employment and improved living conditions in Poland. The inflow was further facilitated by well-developed transportation routes and extensive migrant networks (Hargrave et al., 2023; Duszczyk and Kaczmarczyk, 2022b).

2014 Ukraine Crisis onwards. The number of foreign workers in Poland began to continuously increase after 2014, following Russia's annexation of Crimea.[5] This annexation,

[5]The Ukrainian peninsula was seized by pro-Russian forces and declared independent, following a controversial referendum. At the same time, pro-Russian separatist forces took control over parts of the Donbas region in Eastern Ukraine, leading to continued conflict between separatists and the Ukrainian government (Walker, 2023a).

combined with the above mentioned liberal migration policies and labour market shortages in Poland, triggered a continued inflow of Ukrainians to Poland. These Ukrainians typically entered as temporary labour migrants rather than asylum seekers (Strzelecki et al., 2020).

The exact scale of the movements is difficult to assess due to lack of a consolidated administrative system. As can be seen in Figure 1, the number of Ukrainians contributing to the social security system in Poland, a lower bound estimate, has gradually increased from close to zero pre-2014 to over 627,000 at the end of 2021. Other administrative sources misestimate the number of Ukrainian immigrants even more.[6] Estimates accounting for these recording challenges suggest that in 2018 there were around 1.1 million Ukrainian immigrants working in Poland (Strzelecki et al., 2020). This has increased to 1.35 million in 2020 (GUS, 2020; Duszczyk and Kaczmarczyk, 2022b). As shown in Figure 1, the Ukrainian immigrant stock grew gradually over time. The majority of Ukrainian workers were men (60.5%), aged 25–55 (72%), and employed in industrial processing, construction, or transport (Ministry of Family, Work and Social Policy, 2025). Belarus has been the second most common origin country. Starting in 2020, Belarusian migration increased due to the political repressions faced in their home country. The Belarusian immigrants have similar characteristics as Ukrainian labour migrants, but generally settled closer to the border.[7] During this period, Poland became a net immigration country. Generally, these immigration flows into Poland were welcomed by the private sector, government and public, with little economic and social or cultural tensions (Hargrave et al., 2023). At the same time, immigration from other countries remained limited (see Figures A1

[6]Social security contribution records provide an underestimate as the number of foreign workers employed on contracts not covered by such contributions remains high (Strzelecki et al., 2020). Residence permit records (required when staying over 90 days) and work permit registrations (required for contracts longer than six months) only capture Ukrainians in Poland for longer periods of employment. However, a significant proportion of Ukrainian workers were employed on short-term contracts, recorded through employers' declarations on entrusting work to foreign workers. The latter reached 1.6 million in 2021 but is a gross overestimate since an individual may be employed on several short-term contracts, each triggering a separate statement of employment.

[7]Belarusian migration to Poland began increasing after 2020, as many fled repression under Lukashenko's regime. The inflow is much smaller than Ukrainian immigration, with around 130,000 Belarusians appearing in the 2023 social security contribution records. Although this group has a more balanced gender distribution and is relatively well-educated, they tend to work in similar sectors as Ukrainian labour migrants: industry, transport, IT, and construction (Panuciak et al., 2024).

and A2 in Supplementary Material).

2015 European Refugee Crisis. The European refugee crisis raised much more concern in Poland. Despite limited impacts in Poland itself (e.g., by 2018, only 889 Syrians were registered in the country's asylum system), the government reacted strongly. Poland openly refused to assist other EU member states and accept relocated refugees (Zaun, 2022; Klaus, 2020). Law and Justice, the governing right-wing party, increasingly restricted asylum policies. The party held a strong anti-refugee political discourse, emphasising the dissimilarities with refugees and exploiting the crisis to mobilise voter support (Pszczółkowska, 2022; Hargrave et al., 2023). Political discourse and public opinions fuelled each other, and, as a result, Polish attitudes towards migrants and refugees worsened (CBOS, 2015; Klaus, 2020).

2022 Ukraine-Russia War. Russia's invasion of Ukraine on February 24, 2022, triggered the largest refugee wave in Europe in recent decades.[8] In the first months of the war, nearly 3.5 million refugees crossed the Polish border and an estimated 1.5 million refugees were staying in the country (General Secretariat of the Council, 2023). By 2023, the inflow stabilised with around 1 million Ukrainian refugees registered in Poland (see Figure 1). Unlike earlier labour immigrants, the refugees consisted mainly of adult women (45.8%) with children (45.7%), either joining their partner already in Poland or with a partner who remained in Ukraine (Duszczyk and Kaczmarczyk, 2022a,b). Over half of the adult refugees were between 27 to 44 years old. The majority were highly educated and 65% integrated into the Polish labour market. Refugee children were integrated into the educational system and made up 2.5% of students enrolled in Polish schools (Chrostowska, 2024; Chmielewska-Kalińska et al., 2023; Kubiciel-Lodzińska et al., 2024). These circumstances significantly increased the likelihood of daily contact between Poles and Ukrainians.

[8]On February 24, 2022, Russia launched military action with forces crossing into Ukraine from Belarus, Russia, and Crimea. The operation intended to 'demilitarise and de-Nazify Ukraine' particularly in the Donbas area. Ukraine responded with counteroffensives, with the assistance of Western military, to reclaim all its sovereign territory (Walker, 2023b). Since then, more than six million individual refugees have fled Ukraine and have crossed borders into other European countries. Poland, as a large neighbouring country, was the third most common destination, after Germany and Russia (UNHCR, 2023).

Despite the prior anti-refugee stance of the incumbent party Law and Justice, the government welcomed this wave of refugees. They received support from across the political spectrum—except the far right. In accordance with the EU temporary protection directive, Poland provided immediate and collective protection. Ukrainian refugees received access to a PESEL number (i.e., the individual identification number for those legally residing in Poland), facilitating access to the labour market, education, medical assistance, and other social benefits (UNHCR, 2022). Significant level of support came from Poles themselves. Approximately 70% of Polish households offered assistance to Ukrainians early in the crisis (Myck et al., 2025) and 94% of Poles supported accepting refugees (CBOS, 2022), even in the face of rising economic costs (Halm et al., 2023). However, as expected, these favourable attitudes softened over time. As the massive refugee inflow caused various challenges in the provision of housing infrastructure, education, or regular medical care (Duszczyk and Kaczmarczyk, 2022b,a), Polish support decreased and returned to pre-war levels (50-60%) (Myck et al., 2025).

Table A1 in Supplementary Material summarises the key events and policy changes in Poland over time.

2.2 Polish Political Landscape

Poland is a parliamentary republic where the legislative branch consists of the lower house, the Sejm, and the upper house, the Senate.[9] Both houses serve four-year terms. The executive branch consists of the president (elected by popular vote every five years) and the government. The government is determined by the majority in the Sejm, with the Prime Minister typically drawn from the ruling coalition (Polish Civil Service, 2017).

In the last decades, Poland experienced alternating periods of centre-right and right-wing governance with two dominant parties competing for influence: Law and Justice (Prawo i Sprawiedliwość) (2015-2023) and Civic Platform (Platforma Obywatelska)

[9]The Sejm (lower house) consists of 460 members, directly elected in multi-seat constituencies through a party-list proportional representation system. There is a 5% threshold for single parties, with the exception of National minority committees, and an 8% threshold for coalitions. The Senate (upper house) is composed of 100 seats; members are directly elected in single-seat constituencies by a first-past-the-post system. The senators are elected to each represent one of Poland's electoral districts.

(2007-2015; 2023). However, political parties in Poland lie on the entire spectrum and the environment is dynamic, with many changes in between electoral cycles. We describe the landscape below. In Supplementary Material, we mark the timeline of the parliament's political majority in Figure A3 and map the parties according to their political leanings in Tables A2 and A3. Tables A4 and A5 summarise the Polish political parties running during the 2019 elections and their main programme topics.

Far Right. Far-right parties are not dominant but have been increasingly vocal in the Polish political landscape (e.g., Confederation Liberty and Independence held 7% in the 2023 parliament). They defend free market capitalism and economic nationalism, with a strong radical anti-elitism and rejection of established political institutions. Such parties are vocally euro-skeptical, in favour of traditional values, and and explicitly opposed to immigration. The far-right were the only parties strongly against supporting Ukrainian refugees due to the enormous associated cost. Several leading members expressed anti-Ukrainian or pro-Russian views (Markowski, 2016; Pacześniak and Wincławska, 2024).[10]

Right-Wing. Since 2015, right-wing alliances have been in power, led by the biggest party, Law and Justice. Their political programme highlights the need for modernisation and strong state welfare for Polish citizens, while maintaining traditional Catholic values and nationalist views. These parties acknowledge the usefulness of legal immigrants for the Polish labour market, but have strongly opposed previous refugee inflows—especially those from Muslim majority countries. Interestingly, the right wing was much more supportive of Ukrainian refugees, emphasising moral duty and historical ties (Markowski, 2016; Pacześniak and Wincławska, 2024; Gwiazda, 2021; Marcinkiewicz and Stegmaier, 2016). Alternative right-wing parties also exist in Poland, but play a minor role due to their size.

Centre. The main opposition party is the centre-right liberal Civic Platform. From 2007 to 2015, Civic Platform led the government in coalition with the agrarian Polish People's

[10]For instance, in September 2022, Grzegorz Braun participated in an anti-Ukrainian protest arguing for the end of "Ukrainisation of Poland" and "de-Polonisation of Poland". Slawomir Mentzen and Janusz Korwin-Mikke, both prominent figures in Confederation, argued that Poland has been too generous towards Ukrainians and were providing support at the expense of Poles.

party. In 2023, Civic Coalition (mainly composed of Civic Platform) won a majority of seats again in both chambers of the parliament. The centre parties in Poland focus mainly on economic reforms, infrastructure development, and welfare state expansions, while maintaining a pro-European stance. Their political programmes are less conservative and include socially progressive policies and a more liberal stance on migration, advocating for a structured legal framework and integration policies (Marcinkiewicz and Stegmaier, 2016; Pacześniak and Wincławska, 2024).

Left-Wing. A few left-wing parties compete in Poland. These parties generally express solidarity with refugees, support welfare state expansions, demand the protection of civil rights, and advocate for a total separation of Church from state. Their popularity has been decreasing in the past elections (Pacześniak and Wincławska, 2024; Wenzel and Żerkowska-Balas, 2021).

3 Data and Descriptive Analysis

3.1 Data

Ukrainian immigrants and refugees. To measure the past settlement of Ukrainian immigrants, we use the 2002 National Population and Housing Census of Poland, requested from the Polish Central Statistical Office. The Census combines administrative registers with data collected from respondents, and covers all permanent residents in Poland. We obtain the county-level number of residents with Ukrainian citizenship and estimate the distribution of these immigrants across counties, as required to construct our instrument. Additionally, we use other Censuses to describe the persistence in Ukrainian settlement locations over time. From the 1950 Census (Central Statistical Library, 1952, 1955; Becker et al., 2016), we obtain the number of Ukrainians as proxied by residents that lived in the USSR in 1939.[11] These disaggregated county estimates are only available

[11]Data from the 1950 Census only provides an approximation of the distribution of Ukrainians. It provides the number of residents who previously lived in the USSR in 1939 (excluding Poland, and particularly the Kresy area in eastern Poland). This captures the main migratory movements of that period. We can assume that a majority of individuals from the USSR came from current Ukraine and

for 120 counties in Western Poland. From the 2021 Census (Statistics Poland, 2023), we obtain the number of Ukrainians across all Polish counties as indicated by residents' citizenship. Other Census years are not used as they are unreliable at the disaggregated county level (Census 2011) or do not include residents' origin information (Census 1988).

To measure the inflow of Ukrainian refugees in the aftermath of Russia's invasion, we use administrative data from the Polish Government on PESEL-UKR registrations (Ministry of Digitization, 2024). PESEL (Powszechny Elektroniczny System Ewidencji Ludności, or Universal Electronic System for Registration of the Population) is the national identification number used in Poland. Although it is normally utilised for legal (temporary or permanent) residents, refugees from Ukraine could immediately register for temporary protection and, in doing so, be included in the registry (PESEL-UKR). The registration system is limited only to Ukrainians arriving post-February 2022, and is the first register of foreigners to provide reliable estimates on Ukrainians residing in Poland. Refugees who leave Poland for over 30 days are de-registered. The cumulative number of active PESEL-UKR registrations is freely available on the Polish government's open data portal (Otwarte Dane). We use the count of Ukrainians in October 2023, during the elections of our interest. Given its introduction shortly after the war and the fact that the PESEL registration grants Ukrainians more rights than any work permit, this number accurately reflects the inflow of Ukrainian refugees between February 2022 and October 2023. Data is available per county.

Election results and statistics. We use data on 2019 and 2023 parliamentary electoral outcomes at the county level, provided by National Electoral Commission (2024). Earlier elections (2005, 2007, 2011 and 2015) are used for placebo estimations. We focus on Polish parliamentary elections, taking place every four years, and the votes cast for the lower house, Sejm, the highest governing body of the national legislature.

Political party membership is dynamic in Poland with parties frequently merging, splitting, or forming coalitions between electoral cycles. To consistently track Poland's

that Ukrainians specifically made similar location choices as those from the USSR overall (Eberhardt, 2011).

political attitudes over time, we group parties based on their political ideology into *far-right*, *right-wing* (including the incumbent Law and Justice), *centre* (including the main opposition Civic Coalition), and *left-wing* parties. We categorise minority parties registered in only a few constituencies or independent parties that are difficult to classify as *others*. The political parties in Poland and their categorisation across elections are available in Supplementary Material (Tables A2 and A3). We obtain the vote shares for these political groupings. We also obtain vote shares for the few political parties that consistently competed in consecutive elections, namely the far-right party Confederation of Liberty and Independence, right-wing party Law and Justice, the centre Civic Coalition, and the centre to centre-right agrarian Polish People's Party. Additionally, we obtain statistics on the election turnout and the share of (in)valid votes. Data are available per county.

Socio-economic county characteristics. We obtain yearly county-level characteristics from the Local Data Bank of Statistics Poland (2024) on demographic characteristics (population, population by age category, population by sex), population movements (number of internal/international immigrants/emigrants), socio-economic measures (job vacancies, unemployment rate, wage level, social benefit reliance, housing capacity, business entities, crime level, educational enrolment) and public finances (municipal and county expenditures and revenues per category). We use these variables either as pre-war control variables (2019) or as outcomes (2019-2023).

3.2 Descriptive Analysis

Table 1 outlines the population, socio-economic characteristics, and election results from Polish counties. In 2019, Poland had a total population of 38.4 million. On average, each county consisted of around 100,000 residents, with a fairly balanced gender distribution and a moderately ageing population. Poland performed slightly worse than the European average in terms of indicators as the primary net enrolment rate (92%) or monthly wage level (4,444 PLN), while experiencing average unemployment rates (7%). Considerable regional variation is observed. In 2002, less than 0.01% of residents within Polish counties

held Ukrainian citizenship. By 2021, this share increased to a mean of 0.1%. After the war in Ukraine, Poland hosted close to 2,700 refugees per county, on average 2% of counties' population. In the 2023 elections, right-wing (41.3%) and centre (41.7%) parties reached the highest average vote share.

To illustrate the magnitude of refugee inflow, Figure 1 plots the stock of Ukrainian permanent residents in Poland in the last two decades and the inflow of Ukrainian refugees after the war. The number of Ukrainians living in Poland has been steadily increasing since 2015, and, depending on the administrative data source, reached up to 627,000 before the war. As discussed in Section 2, these estimates should be interpreted as a lower-bound and the Ukrainian immigrant stock likely gradually increased up to 1.35 million before the war. In 2022, the number of Ukrainians residing in the country almost doubled at the peak of war-induced refugee inflow. By October 2023, an estimated 1 million Ukrainian refugees were still remaining in Poland.[12] Compared to the Ukrainian immigrant stock and refugee inflow, immigration from other countries has been on a much smaller scale (see Figure A1 in Supplementary Material).

Figure 2 plots the share of estimated Ukrainian immigrants relative to the total population, per county. Panel (a) draws from the 1950 Census, proxying Ukrainians by USSR immigrants. Panels (b) and (c) show the share of Ukrainians (measured by citizenship) in 2002 and 2021, respectively. Figure (d) shows the share of Ukrainian refugees in 2023. We see that Ukrainians persistently locate in the west of Poland. These settlements correlate with the forced relocations of Ukrainian immigrants from across the country to western Poland after the WWII. This highlights the importance of previous migrant settlements. In the east of Poland, the capital Warsaw and its neighbouring counties became a more popular destination for Ukrainians over time. The areas bordering Ukraine have seen fewer refugees settle than other regions. In contrast, non-Ukrainian immigrants follow different settlement patterns. For instance, Belarusians tend to settle in the north-east of the country, close to the Belarusian border (see Figure A2).

To summarise Polish voting behaviour, Figure 3 plots the average vote share per

[12]This is in addition to those Ukrainians already residing in Poland pre-war.

county for groupings of political parties (left panel) and parties consistent over time (right panel) from 2005 to 2023. Law and Justice and Civic Coalition have been the dominant parties within Polish politics over the years, with support oscillating between 25% and 45%. After the centre-right rule, Law and Justice gained the majority of the votes in 2015 and 2019. In the 2023 elections, the vote share for the right wing decreased, in favour of centre parties (including among others Civic Coalition and Polish People's Party). Far-right parties gained popularity since 2015, while left-wing parties lost support over the years. This pattern is not uniform across Polish regions. Figure 4 traces the parliamentary election results (i.e., the winning political party) over time, and shows a distinct split in political preferences between the west and east of the country. East Poland has a higher vote share for the right wing, while centre parties are more popular in the west. These voting patterns coincide with and are likely the result of the historic Partitions of Poland.[13] For more detail, we plot the vote shares of all political groupings between 2011 and 2023 in Figure A4 in Supplementary Material.

4 Empirical Strategy

We estimate the effect of the inflow of Ukrainian refugees on election results using the empirical specification shown in Equation 1:

$$\Delta y_s = \beta_0 + \beta_1 UkranianInflow_s + X_s' + \gamma_p + \varepsilon_s, \tag{1}$$

where Δy_s is the change in a vote share for a given party grouping in a county s between the 2019 and 2023 elections. We separately consider five political groupings: far right, right wing, centre, left wing, and other (minority/independent) parties. We also examine the vote shares of political parties that consistently participated in both elections, the voter turnout, and the share of (in)valid votes. By focusing on changes in

[13] During the Partitions, which lasted for more than a century until 1918, Poland fell under different rulers (Russia, Austria-Hungary, and Prussia). Previous research has found a persistent effect of the Partitions of Poland on religiosity, belief in democratic values, rail-road infrastructure (Grosfeld and Zhuravskaya, 2015), schooling outcomes (Bukowski, 2019), trust toward local public services and the acceptance of corruption (Becker et al., 2016).

voting outcomes between two elections, we eliminate the effect of baseline differences in political preferences between counties. We explain voting behaviour as a function of $UkranianInflow_s$, the number of registered Ukrainian asylum seekers in a given county at the time of the 2023 election. Since the PESEL registration system only captures those arriving in Poland after February 2022, this variable can be seen as capturing the change in the number of refugees between February 2022 and October 2023. We do not adopt a formal difference-in-differences framework due to the lack of reliable data on pre-war Ukrainian immigrants.

The vector X'_s is a set of county characteristics observed before the onset of the war (2019) to account for socio-demographic differences across counties. We control for a county's share of female or male population, population share in four broad age categories (below 20, 20 to 44, 45 to 64, 65 and above), and total population. We include also region fixed effects (γ_p), to capture persistent differences between areas in Poland.[14] The error term ε_s summarises the remaining county determinants of voting behaviour that we do not capture by the included explanatory variables. We use heteroskedasticity-robust standard errors and correct the standard errors for the small sample size. We use various alternative ways of drawing inference in the robustness checks.

The coefficient of interest is β_1. However, an ordinary least squares (OLS) estimation of Equation 1 will yield inconsistent estimates of the treatment coefficient due to the sorting and self-selection among immigrants. The inflow of Ukrainian refugees is not randomly distributed across the country and likely correlated with unobserved county characteristics (and thus with the error term ε_s) that also affect election outcomes. For instance, immigrants may avoid locations with far-right support or sort themselves into locations with favourable labour market conditions. We are not able to capture all political dynamics and economic changes that potentially affected the location choice of refugees. This resulting endogeneity will bias the OLS estimates.

To address these concerns, we employ an instrumental variable approach and use a

[14]The region fixed effects capture the regions of Poland which were under different rulers during the Partition of Poland for: Russia (east), Austria–Hungary (southeast), and Prussia (northwest). As shown before, a number of outcomes, including voting preferences differ along these geographical divisions.

'shift-share' or 'past settlement' IV, as first proposed by Altonji and Card (1991) and Card (2001). This instrument leverages the observation that immigrants tend to cluster into regions with existing large immigrant populations from the same country of origin. Specifically, we use the distribution of Ukrainians across Polish counties in 2002 to predict the location choice of Ukrainian refugees fleeing the 2022 war. We employ our instrument within a two-stage least squares (2SLS) approach.[15] The first-stage regression is shown in Equation 2 and highlights the composition of our two-component instrument.

$$UkrainianInflow_s = \alpha_0 + \alpha_1 WarInflow * \delta_s^{2002} + X_s' + \gamma_p + \epsilon_s \tag{2}$$

The shift component of the instrument exploits a plausibly exogenous event that increases the propensity to migrate. In our setting, the Ukraine war caused a large and sudden increase in Ukrainian emigration and the resulting flow of refugees was exogenous for the receiving country, Poland. The shift in migration is captured by the variable $WarInflow$, which represents the cumulative inflow of Ukrainian war refugees in entire Poland in October 2023, when the parliamentary elections of our interest were held. The share component exploits that new immigrants tend to settle in the same areas as previous migrants of the same origin. We thus allocate refugees based on the distribution of the past Ukrainian migrant stock in Poland. More precisely, δ_s^{2002} represents the share of the 2002 Ukrainian immigration stock in Poland that is living in a county s. Therefore, the shift-share IV assigns the total inflow of Ukrainian war refugees to Polish counties based on the shares of Ukrainians in these areas in 2002. Unlike the typical shift-share instrument, we implement the instrument on migration from only one origin country, Ukraine. This is most fitting in the Polish context, given the limited migratory movements and the dominance of Ukrainians among the foreign-born nationals in Poland.

Identification hinges on two assumptions. First, we must have a relevant instru-

[15] In our setting, a 2SLS instrumental variable approach is preferred over GMM. If heteroskedasticity is present, the GMM estimator is more efficient (as the IV estimator would correspond to a GMM with a suboptimal weighting matrix). If errors are homoskedastic, GMM is asymptotically as efficient as IV. However, GMM can have poor small sample properties, making the IV estimator preferable (Baum et al., 2003). We find no evidence of heteroskedasticity in our system without control variables (with p-values ranging from 0.54 to 0.98 depending on the outcome variable) using the Pagan and Hall (1983) test.

ment. The historic immigrant stock should be a good predictor of where Ukrainian war refugees locate in Poland. This can be seen in Figure 2, highlighting the persistence in Ukrainian location choices over time. Additionally, Figure A5 in Supplementary Material shows the strong correlation between the predicted and observed Ukrainian refugees (Pearson's correlation = 0.93), and regression analyses will show a strong first-stage equation. We report the heteroskedastic-robust Kleibergen and Paap (2006) rk LM test for under-identification and the effective F-statistic (Olea and Pflueger, 2013), following the recommendations of Andrews et al. (2019) to detect weak instruments. We rely on the Anderson-Rubin weak-IV robust p-value for inference when possible, which is efficient regardless of the strength of the instrument (Anderson and Rubin, 1949; Finlay et al., 2013).

Second, we must have an exogenous instrument.[16] The exclusion restriction requires that the instrument affects the outcome variable—voting behaviour—only through the instrumented regressor and through no other way. Additionally, we assume that our instrument is as good as randomly assigned (conditional independence). These assumptions are likely to hold, as our instrument is constructed such that it is orthogonal to the current local characteristics and political preferences of the receiving counties. The instrument is driven by a large shock projected on exogenous historic immigrant shares and, as such, excludes other destination-specific pull factors.[17] The distribution of Ukrainians across Poland is a result of historical events immediately following WWII during

[16]Shift-share instruments can build on two distinct paths to identification. Borusyak et al. (2022)'s approach leverages many exogenous shifts while Goldsmith-Pinkham et al. (2020)'s approach leverages share exogeneity. Our setting consists of only one shift that does not bring any variation. Instrument exogeneity is thus obtained through the exogenous shares that capture exposure to the shift. The source of variation in the initial shares likely satisfies exogeneity as they arise from specific historical quasi-experiments.

[17]One further threat to identification is that using migrants' past settlement as instrument may conflate short- and long-term responses to immigration due to dynamic adjustments over time (Jaeger et al., 2018). In other words, while we want to focus on the short-term partial equilibrium impact of the recent refugee inflow, we may pick up the long-term (general equilibrium) responses to previous inflows. However, this is unlikely a concern in our identification. First, the historical Ukrainian population used as instrument was followed by little migratory movements. When Poland began attracting Ukrainian immigrants, this happened gradually over time, minimising concerns that historical migration directly affected social outcomes later. Second, the threat is less relevant for our outcome variables. Political support experiences less general equilibrium effects, especially for parties that have never come to power (i.e., far right). Overall, this minimises any concerns about ongoing responses to previous inflows. Robustness checks confirm that inflows had no impact on political support in the previous decades.

which Ukrainian minorities were forcibly resettled to the west of Poland (more information is provided in Supplementary Material A.1). These forced population movements were followed by decades of restrictions on international migration under the communist regime. We rely on the location of the 2002 Ukrainian population, which strongly correlates with these historic settlements and marks a period before Ukrainian migration to Poland intensified. Additionally, the lack of other significantly large and continuous immigration flows in the Polish setting prevents the instrument from picking up other migratory movements.

To corroborate the validity of our instrument, Table A6 reports balancing test results. We regress the change in pre-war county-level characteristics from 2015 to 2019 on either the observed (columns 1 to 3) or predicted (columns 4 and 6) refugee inflow. We find that various socio-demographic and economic county characteristics are correlated with the observed Ukrainian inflow, highlighting the selectivity of the refugees and the need for an instrument. In contrast, when controlling for county's population and region fixed effects, the predicted refugee inflow (instrument) is not correlated with any measures of counties' socio-demographic state or economic performance. We also further test the robustness of the results through use of alternative instruments, specifications, placebo tests, and control variables.

5 Estimation Results

5.1 Main Analysis

Table 2 shows the impact of Ukrainian refugees on the vote share of Polish political groupings, using our preferred IV specification with pre-war demographic county control variables and region fixed effects. The first-stage coefficient of interest is statistically significant and the effective F-statistic ($F = 22.58$) is above the required weak IV threshold. This highlights that the 2002 location of previous Ukrainian immigrants in Poland is a good predictor of refugees' destination in 2023. We find that an inflow of 1,000 Ukrainian refugees in a county is associated with a significant increase in the vote share for far-right

and (incumbent) right-wing parties of 0.12 and 0.10 pp., respectively. At the same time, the vote share for centre (main opposition) parties declines by 0.27 pp. We find no significant effect on left-wing parties or other remaining local parties. These results indicate a shift towards the (far) right in counties hosting Ukrainian refugees. At the same time, they suggest that natives' dissatisfaction with the incumbent party is limited, as overall support for them increases.

Table A7 in Supplementary Material shows that we find similar effects when analysing the vote share of political parties that consistently participated in both the 2019 and 2023 elections.[18] Table A8 in Supplementary Material shows that the changing election results are not channelled through changes in voter turnout or the share of (in)valid votes. The shift towards the right is thus driven by existing voters shifting their preferences, not by changes in political participation.

While a direct comparison with existing studies cannot be made, since most rely on migrant shares rather than absolute inflow levels, our estimates suggest a non-negligible political response to the Ukrainian refugee crisis. Given that the average Polish county hosted 2,669 Ukrainian refugees, the inflow is associated with a 4.9% increase in far-right support relative to 2019. The effects are more modest for right-wing (+0.6%) and centre (−2.1%) parties. Alternatively, a one standard deviation increase in the local refugee inflow corresponds to a 0.77 pp. and 0.64 pp. rise in far-right and right-wing support, equivalent to 0.60 and 0.30 standard deviations respectively. This movement towards the right is at the expense of centre parties (−1.69 pp./−0.59 standard deviations). These political shifts are especially relevant for the far-right. Across the country, far-right parties increased their vote share from 6.6% to 7.3% during the last election, of which more than

[18] We find a significant increase in support for the far-right Confederation Liberty and Independence and the incumbent right-wing Law and Justice. We find no significant effect on the main centre-right opposition party, Civic Coalition. Instead, the increase in (far-)right support seems entirely at the expense of the Polish People's Party. This centre-right agrarian party generally receives most support from rural and farming communities. However, during a dispute over increased Ukrainian agricultural competition, Law and Justice took a stronger stance defending the Polish farming industry, likely allowing them to sway rural voters. Following the war, Ukrainian grain exports were redirected through Poland due to Black Sea blockades. Poland lacked the infrastructure to handle this volume, resulting in massive grain surpluses, a collapse in domestic prices, and quality concerns. After farmer protests, Poland imposed its own grain bans, leading to trade tensions with Ukraine. The issue remains unresolved, with Poland, particularly Law and Justice, pushing for tighter EU-level restrictions (Myck et al., 2025).

half can be explained by increased support due to the refugee inflow. For the centre-right political field, the refugee inflow seems to have mitigated national trends. The right wing (−6.47 pp. from 2019 to 2023) would have lost even more support without the impact of the refugee inflow. Centre parties increased their support and won the elections (+8.28 pp. from 2019 to 2023), despite losing support in counties exposed to refugees. Overall, these effects are moderate in absolute terms but sizeable when viewed in the context of relatively stable party systems and limited direct economic disruption. They point to a politically meaningful reallocation of support toward more extreme parties, even in a context where cultural proximity and favourable refugee profiles might have dampened such responses.

5.2 Robustness Checks

Alternative specifications

We evaluated the robustness of the main results through a series of checks. Table A9 in Supplementary Material shows that we find similar significant effects when estimating reduced form regressions. Table A10 compares different OLS and IV specifications for all political groupings. Alternative IV specifications yield similar results, and, as expected, the self-selection of immigrants generates a downward bias in the OLS estimates.

Table A11 in Supplementary Material examines whether the results are robust to further alternative specifications. We exclude potential outliers, defined as counties with an observed Ukrainian refugee inflow above/below the 1st/99th percentile (Panel A), and use 2011 as baseline year instead of examining the change in consecutive elections (panel B). We also control for counties' pre-war share of Ukrainian (panel C) or Belarusian (panel D) immigrants to ensure that our instrument does not pick up any effects from previous modest immigrant inflows. We find similar results. In panel E, we include the squared Ukrainian refugee inflow to capture any non-linearities. The refugee inflow and its squared counterpart are jointly significant. The coefficient of the squared term is close to zero, suggesting a linear relationship. Panel F replicates the results using the counties' population as weights. This approximates the effect of refugees on the overall

election results, taking into account that denser counties elect more seats in parliament. We find that the refugee inflow had a significant impact only on far-right support, which is consistent with the discussion on our main results.

Alternative inference

Table A12 in Supplementary Material examines whether the estimated effects are robust to alternative ways of drawing inference. We report the baseline weak-instrument robust Anderson-Rubin p-value and the p-value obtained when clustering standard errors by province, relying on a wild cluster bootstrap inference due to the small number of 16 clusters. We report permutation-based p-values by constructing the empirical distribution of 500 placebo estimates that randomly assign the outcome variable across observations. The p-value captures the fraction of values in the placebo distribution that are at least as extreme as the original point estimate derived from the non-permuted data. We also report jackknife p-values, computed by systematically leaving out one observation at a time in our estimation and assessing the variability of the estimator. Using this jackknife strategy, we further illustrate that our estimates are robust to outliers in Figure A6 (Young, 2022). Finally, we account for the potential correlation within counties[19] and report p-values based on spatially clustered standard errors (Colella et al., 2019). We allow for correlation in error terms between counties within distances of 25, 50, or 100 km, while imposing a distance linear decay within the cut-off. All p-values are similar to our baseline estimates, indicating that the results are robust to parametric assumptions.

Alternative instruments

Table 3 shows the results of our estimated model using alternative instruments. In Panel A, the instrument and the instrumented Ukrainian refugee inflow are scaled by the 2019 county population. We find that a 1 pp. increase in the share of hosted Ukrainian refugees was associated with an increase in far-right votes and a decrease in centre votes by 0.77 pp. and -1.53 pp., respectively. Given that the average share of hosted refugees across counties is 2.26%, these estimates are slightly larger than the baseline estimates.

[19]Using Moran I test, we find evidence of spatial dependence within our outcome variables. We reject the null hypothesis that the error terms are i.i.d., in favour of the alternative hypothesis that residuals are correlated with nearby residuals as defined by a weighting matrix based on either contiguity, inverse distance, or both. We find $\text{chi}^2(1)$ statistics between 8.98 and 317.86, with p-values below 0.001.

The specification is, however, less reliable given the weaker instrument (F^{eff}=8.9). In Panel B, we use the 1950 share of Ukrainians to assign refugees across counties. This instrument is more likely to satisfy the exogeneity assumption, given the number of years that have passed and the history of Poland.[20] However, the historical data are only available for 120 counties in western Poland, preventing us from drawing conclusions for the whole country. Using the 1950 instrument, we find that right-wing and centre parties lose support in favour of far-right (+.35 pp.) and left-wing (+.95 pp.) groups. We thus find increased polarisation in western Poland. This is in line with results from a later specification, where we differentiate between east and west Poland (Section 6 for more details). In Panel C, we apply the Lewbel (2012) estimator. We construct an additional instrument by exploiting the heteroscedasticity in the error term of a first-stage equation with only exogenous regressors. We augment our available baseline instrument with this constructed instrument, which overidentifies the model and increases efficiency (Baum and Lewbel, 2019).[21] The estimated results using the baseline and constructed instruments jointly show a significant shift towards the (far) right. We cannot reject the Sargan-Hansen test of overidentifying restrictions, indicating that all instruments are valid.

Placebo tests

We perform several placebo tests to illustrate that our results are unlikely to be driven

[20]The 1950 instrument builds on the distribution of USSR immigrants shortly after Ukrainians and other minorities where forcibly relocated across west Poland in an effort to homogenise the country under the communist regime. After the forcible relocation of immigrants, population movements remained limited, increasing the likelihood of the instrument being exogenous. More details in Supplementary Material A.1.

[21]Let $Y_1 = X'\beta + Y_2\gamma + \varepsilon_1$ represent the outcome variable Y_1 regressed on exogenous variables (X') and endogenous variable Y_2 (i.e., the observed Ukrainian refugee inflow), where $Y_2 = X'\alpha + \varepsilon_2$. The Lewbel estimator is constructed as $(Z - \overline{Z})\hat{\varepsilon}_2$, where Z=X or a subset of X, with sample mean $\overline{Z}$. We either set Z = X (all control variables) (columns 1–2) or Z = a subset of X (population and region fixed effects) (columns 3–5), such that we obtain valid instruments and a homoskedastic first stage. The key assumptions are $Cov(Z, \varepsilon_1\varepsilon_2) = 0$ and $Cov(Z, \varepsilon_2^2) \neq 0$. Following Baum and Lewbel (2019), these assumptions likely hold under a set of sufficient conditions. A1: Y_2 is endogenous because it contains an error component (U) that appears in the error terms of both equations. In our case, local economic conditions, public policies, etc. affect both political attitudes and counties' attractiveness to refugees. A2: U^2 is not correlated with Z and is thus homoskedastic. As supportive evidence, we fail to reject that the Y_1 equation is homoskedastic (p-values between 0.11 and 0.66). Only for 'other' parties, we reject homoskedasticity (which may be due to harmless heteroskedasticity in ε_1 apart from U). A3: ε_2^2 is correlated with Z and is thus heteroskedastic. Given A2, this means that the error term besides U is heteroskedastic relative to Z. We reject homoskedasticity in the Y_2 equation (p-value < 0.001).

by random chance. Table A13 in Supplementary Material shows the results for first-stage placebo estimates. We use alternative shares to compute the shift-share instrument. Instead of using the counties' share of 2002 Ukrainian immigrants, we use shares randomly drawn from either a uniform or a normal distribution. The instrument should not have any predictive power. As expected, we find insignificant first-stage results, F-statistics close to zero, and evidence of under-identification.

Table A14 shows the results of placebo tests estimating the effect of the Ukrainian refugee inflow on previous parliamentary election results. We consider the change in vote share for various political groupings between 2005 and 2007 (panel A), 2007 and 2011 (panel B), 2011 and 2015 (panel C), or 2015 and 2019 (panel D) as the outcome variable. We find no significant impact of the 2023 refugee flow on the change in results between most older elections, as expected. These insignificant results are reassuring. We find a significant decrease in support for left-wing parties between 2015 and 2019. Our instrument likely picks up the effect of earlier Ukrainian labour immigration. Although this immigration occurred gradually—unlike the sudden influx of refugees—there seems to have been a limited impact on left-wing support. However, given that the placebo effect is concentrated in left-wing vote shares rather than the (far-)right parties emphasised in our main results, there are no concerns that our findings reflect long-term effects stemming from these older migration waves.

6 Mechanisms

6.1 Heterogeneity by County Characteristics

Polish voters shifted towards the (far) right in counties hosting Ukrainian refugees. To understand the mechanisms and mediators behind these changed voting patterns, we explore the role of local county characteristics. In Table 4, we allow the impact of the Ukrainian refugee inflow to differ according to various characteristics.

As discussed before, there is a strong political divide between West and East Poland. We explore whether this geographical division interacts with the effect of refugee inflow.

As can be seen in Panel A, East Poland, typically more conservative, drives the average results. We observe a shift towards the (far-)right at the expense of centre parties. In West Poland, typically more liberal, the centre parties lose votes in favour of far-right and left-wing parties, leading to increased polarisation. There are at least two possible explanations for this. Firstly, exposure to Ukrainian refugees likely raised concerns about the sustainability of hosting them and may have increased worries about immigration overall, causing a movement toward the conservative (far-)right parties. This shift would be visible throughout the country, but especially in areas that are already right-leaning and had little previous experience with immigration. Secondly, voters may have been dissatisfied with the parties recently in power and tired of the usual clash between the right-wing Law and Justice party, and centrist Civic Coalition. This would have redirected the votes towards more extreme groups. 'Protest' votes for the left would be more likely in more liberal areas of the country (i.e., West Poland), where such parties have a chance at obtaining seats in the parliament.

In Panel B, we find that the increase in far-right votes is more pronounced in rural counties (+0.34 pp. compared to urban counties), while no differences emerge in the vote shares for other parties. This is likely because the first wave of refugees initially arrived in Polish cities. This may have led to greater contact between refugees and the urban population—similar to findings by Dustmann et al. (2019) in the Danish context—or to natives already becoming accustomed to the presence of refugees over time—as suggested by Barone et al. (2016) in the Italian context. Next, Panel C reveals that the shift towards the far-right is significantly more pronounced in poorer counties—those with average wages below the median. Individuals in weaker economic positions are likely more concerned about the financial burden of hosting Ukrainian refugees, which was also often emphasised by far-right parties. In Panel D, we find no difference between counties with or without an incumbent (Law and Justice) local government. Finally, Panel E includes a dummy variable that indicates the counties bordering with Ukraine. Most of the Ukrainian refugees travelling to Europe passed through these counties, making them highly visible. However, this increased exposure to refugees in transit was not

accompanied by meaningful interaction with the local population, as most of them did not remain in these counties long enough (Wiśniewski et al., 2024). We find that the rise in far-right is much more pronounced in areas close to the border crossings. Overall, the results suggest that the shift to the far right signals a declining support for Ukrainian refugees, particularly in areas with limited native-refugee contact, such as rural counties or those along the Ukrainian border, and areas with poorer economic conditions.

6.2 Other Effects of the Refugee Inflow

The uncovered changes in voting behaviour likely reflect a reduced support for Ukrainian refugees, which could be a result of the associated costs. In case of the Ukrainian refugee inflow, the immediate access to social benefits, schooling, and healthcare may have complicated access for natives and caused a dent in local budgets. Immediate access to the labour market may have affected the availability of jobs and local unemployment rates. To better understand the drivers of the electoral change, we examine various standardised county-level outcomes using the same regression specification as in the main analysis.

Socio-economic outcomes

We summarise the effect of the refugee inflow on socio-economic outcomes—population movements, crime rates, and labour market and business activity measures—in Figure 5. First, we examine the rate of permanent population movements in Poland.[22] We find no impact on both the international and internal migration rate, suggesting that the refugee inflow did not systematically affect the location choice of residents. Therefore, the results are not driven by natives' changing mobility patterns, but rather by their changing political preferences. We also do not find an effect on the number of committed crimes, in total, or in the most common categories.

We find no significant effects on the labour market, measured through the number of job vacancies, the unemployment rate, or average wage level. This suggests that although the Ukrainian refugees became an active part of the labour force, the increase

[22]Migration is measured through individuals' address registrations and de-registrations. These numbers do not include Ukrainian refugees or temporary mobility. We assume that the measurement error, due to people registering late or not at all, is constant over counties and time.

in labour market competition was limited. The labour supply from Ukrainian refugees probably complemented rather than substituted that of natives. There is also no impact on the unemployment rate when differentiating by sex, age, and education category (see Supplementary Material, Figure A7). When examining the number of business entities included in the official registry of national economic subjects, we find that the refugee inflow was associated with a large increase of privately owned entities. The increase in total entities is driven by both an increasing number of newly registered businesses, as well as a decrease in the number of removed entities. We show that the increase is driven by entities active in various sectors, ranging from construction to real estate activities to social work (see Supplementary Material, Figure A7). This suggests that refugees increased economic activity, by both stimulating demand in certain sectors (housing, healthcare, schooling, etc.) and supplying labour in other sectors (transport, technology, administration, etc.).

We find no effect on the net enrolment rate in primary education, which may indicate that refugee children enrolled in school at the same rate as native children, suggesting timely school participation. On the other hand, we find that the inflow of refugee children was not enough to have had a significant effect on the total number of enrolled pupils in (nursery, primary, or secondary) school. A possible explanation for this is that during the first year of the war, many Ukrainian children continued learning online through their home education system (UNICEF, 2023). We find no significant effect on the housing market, captured through the dwelling stock per capita and real estate prices (proxied by the median price per square metre in residential property sales, as data on rental prices are unavailable). Despite the ongoing housing shortage across Poland, it appears that counties hosting refugees had the capacity to accommodate the growing population. Finally, we find an increase in the registered population, although the estimate is imprecise. Interestingly, we also observe an increase in the number of families receiving social assistance and the expenditures on child benefits.[23]

[23]Families on social assistance are defined as families with assigned help. There may be several reasons for assigning help in one family (such as unemployment, alcoholism, etc.). A family can be shown several times. Child-raising benefits are a monetary benefit (500 PLN when first introduced in 2016) to support families by partially covering the expenses of raising a child. The benefit is available for every child

Local public finances

We consider the impact on county's public finances in Figure 6. We find no significant effect on local county (powiat) expenditures or revenues. However, municipal (gmina) budgets are more relevant, due to the higher number of responsibilities assigned to them.[24] We find a significant increase in municipal expenditures, although we cannot conclude which type of expenditures (property, investment, current, or grants) drives this as estimates are imprecise. Figure A8 in Supplementary Material shows that the increase in municipality expenditures is mainly driven by education expenses, while there is no change in expenses related to, for instance, national defence, health care, or housing economy. To finance these expenditures, municipalities increased their total revenues and revenues per capita. It seems that the increase occurred through funds, taxes, as well as property revenues, although estimates by type are again imprecise.

Polish political attitudes

Ideally, we would also examine Polish political attitudes with a similar causal county-level analysis. This is not feasible due to the nature of available surveys, with their limited sample size and limited county-level information. As a result, we explore this descriptively by comparing Polish attitudes over time across provinces with varying levels of refugee exposure. We combine available survey data from the Public Opinion Research Centre (2024), the European Social Survey (2025), and the European Commission (2024) Eurobarometer in Figure A9 in Supplementary Material. We find that the core political attitudes of respondents follow a similar evolution in provinces with low, medium, or high exposure to Ukrainian refugees. Respondents have similar attitudes towards Ukrainians, Russians, or other nations, and they mention similar key issues currently facing Poland (i.e., rising prices, healthcare, etc.). We also find similar beliefs about immigrants' impact on various facets of life, as well as broader political attitudes on politicians, democracy, or equality. The absence of regional variation in attitudes is not entirely unexpected,

under 18 years old registered in Poland, regardless of family income, after submitting an application. Ukrainian families can also apply for this benefit.

[24] All responsibilities that are not explicitly assigned to other government levels, are assigned to local municipality governments. The municipal budgets account for roughly 75% of total public finances managed at the sub-national level, reflecting the higher number of tasks assigned to them. Counties and regions account for the remaining 25% of finances (European Commitee of the Regions, 2020).

as these are measured at the province level and likely mask more localised county-level effects.

7 Conclusions

This paper provides insights into the intricate relationship between immigration and natives' political attitudes. We research how exposure to refugees influenced voting behaviour in the context of Poland. Poland experienced a significant inflow of Ukrainian refugees following Russia's invasion of Ukraine in 2022. We exploit this unique natural experiment and employ a shift-share instrumental variable approach, in which we assign the refugee inflow to Polish counties based on the past settlement (2002) of Ukrainians in the country. We examine how the refugee inflow affect parliamentary election results between 2019 and 2023.

We find that the inflow of Ukrainian refugees was associated with a decreased vote share for centre parties (-0.25 pp.). Instead, it led to increased support for both right-wing ($+0.11$ pp.) and far-right ($+0.12$ pp.) political groupings. Given the average number of refugees hosted per county and the parties' initial vote shares, the shift towards the far-right translates into a sizeable effect of $+4.9\%$. It explains over half of the movement towards the far right observed during the 2023 elections. Our results are driven by the, typically more conservative, east of the country. In western Poland, typically more liberal, we find evidence of voting polarisation, as the centre parties lose votes in favour of far-right and left-wing parties. Furthermore, the shift towards the right is more pronounced in rural counties and those bordering Ukraine, where interactions between refugees and natives were likely more limited. This suggests that mere exposure without sustained contact may push voters to the far right. The shift is also more pronounced in poorer counties, suggesting that economic concerns may be driving the political effects.

We rule out that these results are driven by changes in natives' electoral participation or migration patterns, suggesting that political preferences changed. We do not observe immediate labour market effects, such as on the unemployment rate, wage level, or job

vacancies. Instead, we observe increased business activity. There is also no negative effect on crime levels or the housing market, as the dwelling stock and real estate prices remain unaffected. However, as expected, the refugee inflow was associated with increased social benefit expenditures and, as a consequence, local municipal expenditures, potentially driving the backlash against Ukrainian refugees. We cannot rule out that other measures, such as job security or access to healthcare, were unaffected as these data are unavailable. Overall, these results are consistent with—although not sufficient proof for—the hypothesis that refugee exposure affected natives' voting behaviour through their preferences towards hosting refugees.

Nevertheless, we cannot fully rule out alternative interpretations. First, refugee exposure may have affected other political attitudes (e.g., views on welfare or national identity) besides natives' support for refugees. However, this is unlikely the main driver of our findings. In Poland, views on immigration shift monotonically as you move from the political centre to the far-right—becoming progressively more anti-immigrant, and thus aligning well with our findings. In contrast, economic views are largely aligned between centre and right-wing parties, and cultural values are aligned between right and far-right parties. Second, areas with large Ukrainian communities, shaped by post-WWII forced resettlements, may respond differently to conflict due to the lasting effects of historical shocks on the provision of public goods and quality of state institutions (Charnysh, 2019). Given that the rising far-right support is also evident in regions without this history (eastern Poland), this is unlikely. Third, the exposure effect may stem from previous contact with Ukrainian labour immigrants, making natives react differently to the war. However, as pre-war Ukrainian immigration was often seasonal and concentrated in specific industrial sectors, contact was rather limited, minimising these concerns. Fourth, changing preferences may be driven by natives with Ukrainian heritage. However, the stock of second generation immigrants or already-naturalised Ukrainians is likely too small to account for the observed effect.[25] Overall, while these alternative channels are unlikely, more work

[25]In the 2021 Census, 96.28% of Poland's population identified as Polish. Only 82,440 individuals ethnically identified as Ukrainian. Furthermore, from 2015 to 2024, fewer than 40,000 Ukrainians obtained Polish citizenship (Nasz Wybir, 2025). Our analysis reveals a shift from centre (-0.27 pp. per 1,000 refugees, -0.72 pp. for the average refugee inflow) to far-right support. Given the 21,596,674 votes

needs to be done to formally rule them out.

This paper highlights the broader implications of a refugee inflow on the host country and contributes to a better understanding of the economic and political effects of forced migration. We find that even in the case of Poland, where the Ukrainian refugees come from a culturally and geographically similar background and the government and residents immediately expressed clear support, we observe natives' backlash. Our findings reveal several policy considerations. First, given the strong heterogeneity in political reactions across counties, refugee allocation policies may be useful. Policies should avoid random placement and instead account for local county characteristics, as this could reduce tensions and mitigate the shift towards the far right. Second, intergroup contact seems helpful in reducing tensions. Policies should, therefore, best focus on promoting contact and fostering meaningful interaction between refugees and host populations. Lastly, while we find no adverse effects on labour or housing markets, the rise in local expenditures may contribute to a perceived economic threat. Transparent communication about the limited economic impact, combined with financial support for high-hosting localities, can help counteract misperceptions and ease community concerns.

cast in the election and the centre vote share of 30.7%, an estimated 154,719 votes were affected. The political shift thus cannot be fully attributed to Polish citizens with Ukrainian heritage.

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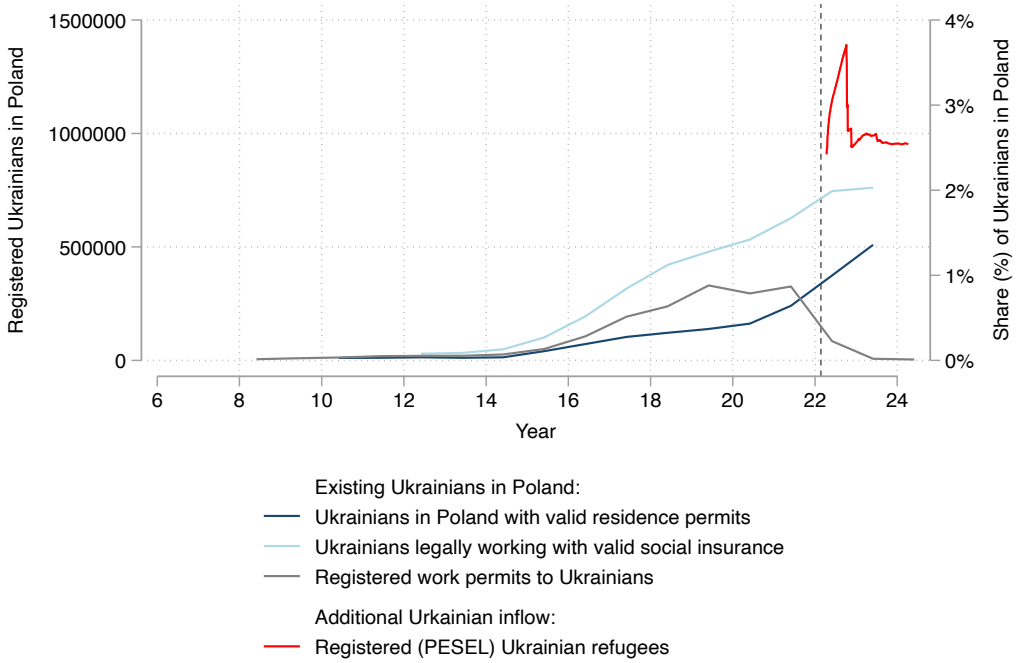
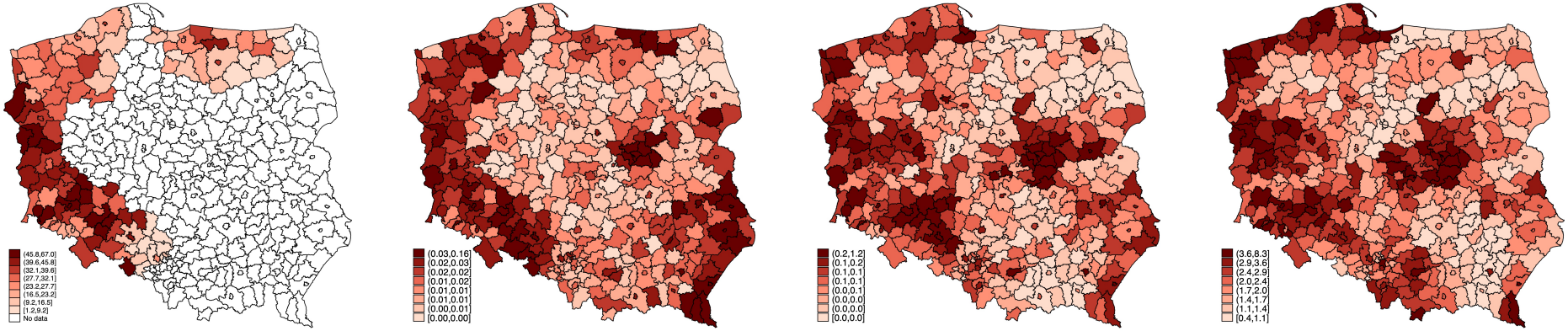
Figures

Figure 1: Ukrainians in Poland



Note: Authors' estimation of the total number of Ukrainians residing in Poland. Data are obtained from the Office for Foreigners, the Social Insurance Institution, the Ministry of Family and Social Policy, and the Polish Government's PESEL-UKR registry. The discrepancies in numbers are explained by data collection processes and the various systems capturing different subgroups of Ukrainian population in Poland.

Figure 2: Ukrainian migrants in Poland, by county



(a) Share of 1950 population living in 1939 USSR

(b) Share of 2002 Ukrainian citizens

(c) Share of 2021 Ukrainian citizens

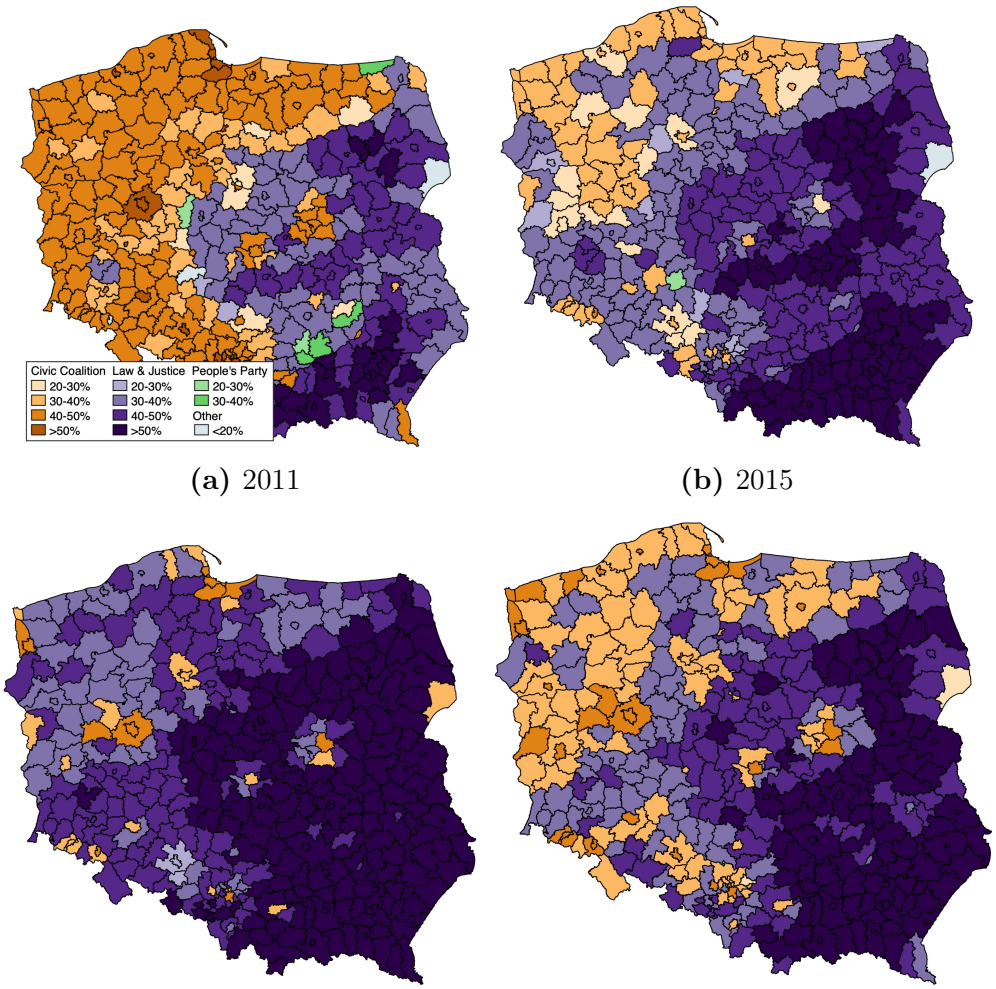
(d) Share of 2023 Ukrainian refugees

Note: Authors' estimations based on the 1950 census (a), the 2002 census (b), the 2021 census (c), and PESEL-UKR registry data (d). The share of Ukrainians in 1950 is proxied by the share of residents previously living in the USSR in 1939. The disaggregate Census is available only for 120 counties in the west of Poland (so-called Western territories). The share of Ukrainian refugees, as measured in October 2023, in panel (d) is relative to the country's total 2023 population.

Figure 3: Vote share political parties during parliamentary elections, 2005 - 2023

Note: Authors' estimations based on parliamentary (Sejm) election results obtained from the National Electoral Commission. National vote shares for groupings of political parties (left) and for political parties consistent over time (right) in Poland.

Figure 4: Winning parties by county 2011-2023

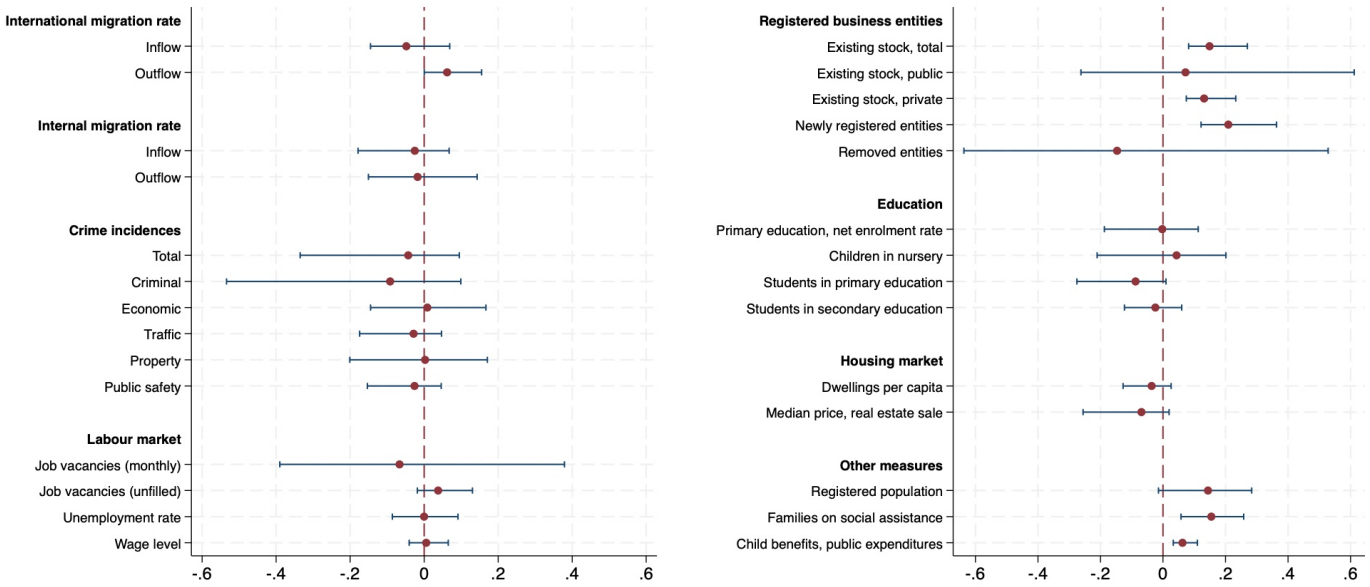


(a) 2011 **(b)** 2015

(c) 2019 **(d)** 2023

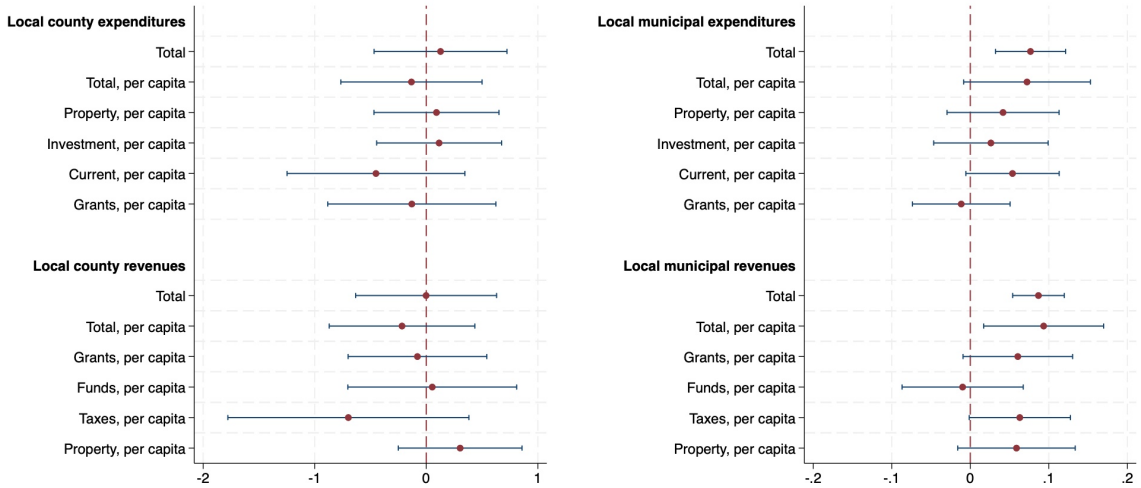
Note: Authors' estimations based on county-level parliamentary (Sejm) election results from the National Electoral Commission. The figures show the vote shares for the party with most support across parliamentary elections. We show vote shares for Civic Coalition (centre), Polish People's Party (centre), or Law and Justice (right). Other political parties are grouped. Darker shades correspond to higher percentages.

Figure 5: Impact of Ukrainian refugee inflow on local socio-economic outcomes



Note: Plot of IV estimation result on the impact of the Ukrainian refugee inflow on standardised socio-economic outcomes. Anderson-Rubin weak-instrument robust confidence intervals are shown. All specifications include a small sample correction and demographic controls for the total population, share of male population, and share of population by age category, as measured in 2019. Data on secondary education enrolments only includes upper secondary education.

Figure 6: Impact of Ukrainian refugee inflow on local public finances



Note: Plot of IV estimation result on the impact of the Ukrainian refugee inflow on standardised socio-economic outcomes. Heteroskedastic-robust (left) or Anderson-Rubin weak-instrument robust (right) confidence intervals are shown. County-level finance data (left) are available for only 314 counties (the remaining observations are municipalities with county status), weakening the instrument and limiting the use of the AR estimator, warranting caution in interpreting the results. All specifications include a small sample correction and demographic controls for the total population, share of male population, and share of population by age category, as measured in 2019.

Tables

Table 1: Summary statistics for Polish counties

	Mean	SD	P50	Min	Max
2019 demographic characteristics					
County population	101,007	119,888	76,007	19,914	1,790,658
Share male population	0.49	0.01	0.49	0.46	0.51
Share female population	0.51	0.01	0.51	0.49	0.54
Share aged below 20	0.20	0.02	0.20	0.14	0.29
Share aged 20 to 44	0.36	0.01	0.36	0.31	0.39
Share aged 45 to 64	0.27	0.01	0.27	0.23	0.30
Share aged above 65	0.18	0.02	0.17	0.12	0.28
2019 socio-economic characteristics					
Primary enrolment rate (%)	92	6	92	74	111
Job vacancies (monthly average)	296	434	176	18	4,364
Unemployment rate (%)	7	4	6	1	23
Wage level	4,443	587	4,305	3,538	8,443
Crime incidences	2,096	3,491	1,301	293	50,387
County expenditures per capita[1]	1,199	247	1,180	664	2,017
Municipality expenditures per capita	5,526	1,005	5,203	4,106	11,606
County revenues per capita[1]	1,243	244	1,212	722	2,310
Municipality revenues per capita	5,498	902	5,214	4,228	10,607
Share urban counties	0.17	0.38	0.00	0.00	1.00
Share rural counties	0.37	0.48	0.00	0.00	1.00
Population in Poland over time					
2002 total county population	100,605	116,955	75,146	21,676	1,689,201
Share of Ukrainians (Ukrainian citizenship)	0.0001	0.0001	0.0001	0.0000	0.0016
2021 total county population	100,095	123,759	74,410	19,184	1,860,281
Share of Ukrainians (Ukrainian citizenship)	0.001	0.001	0.0006	0.00	0.012
2023 Ukrainian refugees	2,669	6,353	1,518	148	104,663
Share of Ukrainian refugees	0.02	0.01	0.02	0.004	0.08
2023 elections, average vote shares (%)					
Far-right	7.26	1.24	7.11	4.23	12.31
Right-wing (incl. Law & Justice)	41.34	10.65	39.48	18.63	70.10
Centre (incl. Civic Coalition)	41.72	9.43	43.32	17.13	63.74
Left-wing	7.39	2.97	7.24	2.10	26.58
Other parties	2.29	1.48	2.01	0.80	15.66

Note: Data is obtained from Statistics Poland's Local Data Bank, the 2002, or 2021 Census, and the PESEL-UKR administrative registry. The primary net enrolment rate is the share of primary school-aged children enrolled in primary education relative to the total children of that age population. Urbanisation is measured following Statistics Poland's classification of municipalities. The table shows the share of counties consisting of either only urban or only rural municipalities. Remaining counties consist of both urban and rural municipalities. Data is available for all 380 Polish counties, unless noted otherwise ([1]: N=314, due to municipalities with county status). Wages, expenditures, and revenues are expressed in Polish złoty (≈0.23 euro).

Table 2: IV estimation results, political groupings

	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor./indep.)
Ukrainian inflow	0.12***	0.10*	-0.27***	0.03	0.04
	(0.04)	(0.06)	(0.11)	(0.08)	(0.06)
	[0.77]	[0.64]	[-1.69]	[0.22]	[0.27]
First-stage results	0.49***	0.49***	0.49***	0.49***	0.55***
	(0.10)	(0.10)	(0.10)	(0.10)	(0.16)
Observations	380	380	380	380	203
Heterosked.-robust p-value	0.005	0.105	0.012	0.647	0.461
Weak-IV robust p-value	0.000	0.061	0.004	0.655	0.430
Weak IV F^{eff}-statistic	24.12	24.12	24.12	24.12	11.77
Weak IV threshold τ=10	23.11	23.11	23.11	23.11	23.11
Mean 2019	6.60	47.81	33.43	11.08	2.03
Mean 2019-2023	0.66	-6.47	8.28	-3.68	0.50
Population control	✓	✓	✓	✓	✓
Region FE	✓	✓	✓	✓	✓
Demographic controls	✓	✓	✓	✓	✓

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. Standardised coefficients in brackets. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. We report the effective F-statistic for a confidence level of 5% and the critical value for τ=10% of the worst case bias. Control variables are pre-war socio-demographic county characteristics: total population, share male population, and share of population by age category, as measured in 2019. All specifications include a small sample correction.

Table 3: Robustness checks, alternative instruments

	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor./indep.)
A. Instrument scaled by population					
Ukrainian inflow	0.77***	0.23	-1.53**	0.24	0.94
	(0.46)	(0.37)	(0.80)	(0.44)	(0.82)
B. 1950 instrument, Western territories					
Ukrainian inflow	0.21**	-0.42**	-0.07	0.51**	0.20
	(0.13)	(0.26)	(0.24)	(0.35)	(0.14)
C. Lewbel heteroskedasticity-based instrument					
Ukrainian inflow	0.06*	0.09**	-0.19***	0.01	-0.00
	(0.02)	(0.04)	(0.06)	(0.06)	(0.03)
Chi^2 p-value	0.187	0.231	0.107	0.147	0.613

Note: Predicted Ukrainian inflow is denoted in percentages (panel A) or in 1000 (panels B and C). Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. All specifications include baseline control variables and a small sample correction. Panel B is based only on 120 (columns (1)-(4)) or 56 (column (5)) observations as the 1950 data is only available for western counties. Panel C includes the baseline instrument and the Lewbel heteresoekdasticity-based instrument. The Lewbel instrument is constructed using all control variables (columns (1)-(2)) or a subset, namely population and region fixed effects (columns (3)-(5)).

Table 4: IV estimation results on political groupings, heterogeneity by county

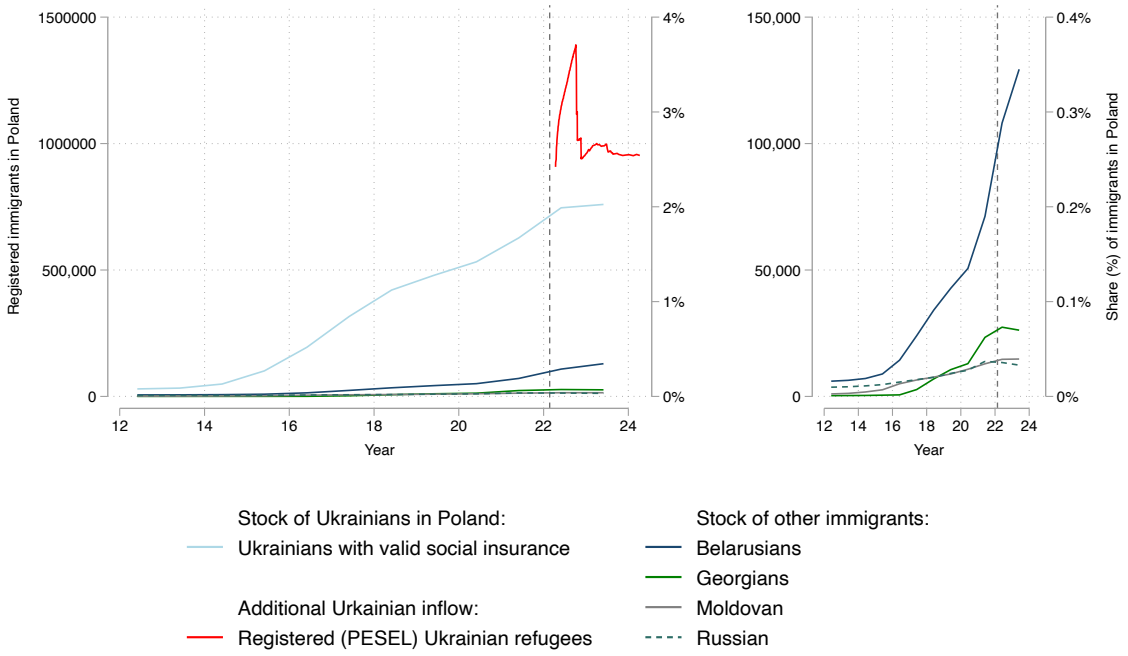
	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor./indep.)
A. East vs. West Poland					
Ukrainian inflow	0.12***	0.11**	-0.27***	0.03	0.09
	(0.04)	(0.05)	(0.10)	(0.07)	(0.12)
Inflow x west-Poland	0.00	-0.10***	0.03	0.09***	-0.04
	(0.03)	(0.02)	(0.05)	(0.03)	(0.07)
First-stage F-statistic	9.82	9.82	9.82	9.82	10.18
B. Urban vs. rural counties					
Ukrainian inflow	0.15***	0.10	-0.28**	0.04	0.04
	(0.05)	(0.07)	(0.11)	(0.08)	(0.06)
Inflow x rural county	0.29*	-0.12	0.10	0.04	-0.02
	(0.15)	(0.17)	(0.24)	(0.20)	(0.15)
First-stage F-statistic	11.04	11.04	11.04	11.04	7.61
C. Low vs. high wage counties					
Ukrainian inflow	0.14**	0.09	-0.32**	0.05	0.12
	(0.05)	(0.07)	(0.13)	(0.08)	(0.08)
Inflow x low wage	0.42*	0.17	-1.50**	0.20	0.92**
	(0.26)	(0.32)	(0.65)	(0.35)	(0.36)
First-stage F-statistic	15.65	15.65	15.65	15.65	6.37
D. Incumbent local government					
Ukrainian inflow	0.13***	0.12*	-0.30**	0.04	0.05
	(0.05)	(0.07)	(0.13)	(0.08)	(0.07)
Inflow x local right-wing gov.	0.09	0.22	-0.31	-0.00	0.09
	(0.10)	(0.16)	(0.38)	(0.15)	(0.14)
First-stage F-statistic	7.17	7.17	7.17	7.17	5.36
E. Counties bordering Ukraine					
Ukrainian inflow	0.09**	0.13*	-0.20**	-0.00	0.02
	(0.04)	(0.07)	(0.09)	(0.08)	(0.06)
Bordering counties	0.54***	-0.45	-1.24*	0.62	0.46***
	(0.17)	(0.38)	(0.63)	(0.46)	(0.17)
First-stage F-statistic	23.92	23.92	23.92	23.92	12.43

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, according to the heteroskedastic-robust p-value (as the weak-instrument robust p-value exists only for the joint significance of all instruments). All specifications include the baseline control variables and a small sample correction. In Panel A to D, the first-stage F-statistics are smaller due to the interaction term, which must also be instrumented, and range between 7.17 and 15.65. West-Poland includes regions previously under the Prussian partition, while East-Poland includes regions previously under the Russian and Austrian partitions. Rural counties are counties consisting of only rural municipalities. Low-wage counties have a mean county wage below the median (4,305 PLN). The indicator on the incumbent local government indicates whether Law and Justice gained most votes during the 2018 local elections (which is no guarantee they were in the ruling coalition). The indicator on bordering counties indicates the 25 counties closest to a border crossing with Ukraine.

Supplementary Material

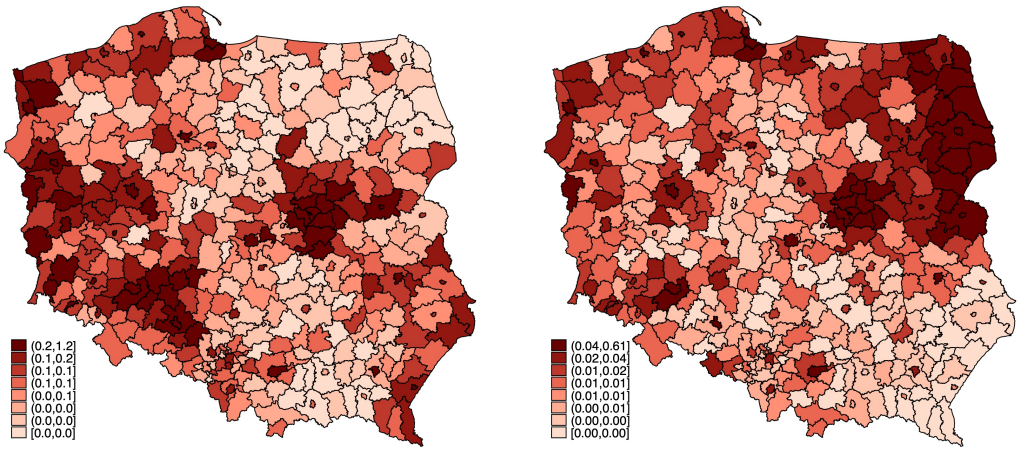
Figures

Figure A1: Immigrants by nationality in Poland, with and without Ukrainians



Note: Authors' estimation of the total number (left axis) and share (right axis) of immigrants residing in Poland. The yearly stock of immigrants is measured using data on legally employed and insured foreigners from the Social Insurance Institution. We show the most common origin countries as determined in 2023. Data on Ukrainian refugees registered for temporary protection is from the Polish Government's PESEL-UKR registry.

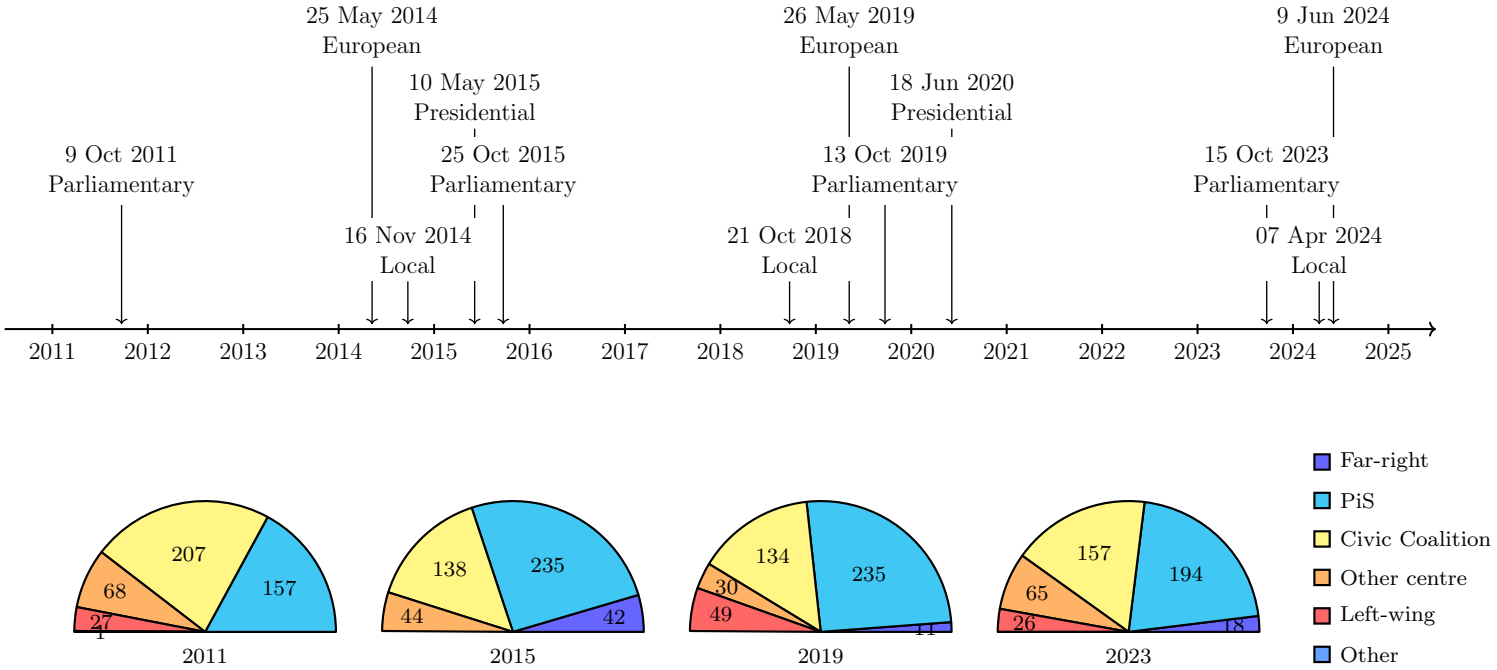
Figure A2: Ukrainian and Belarusian migrants in Poland, by county



(a) Share of 2021 Ukrainian citizens **(b)** Share of 2021 Belarusian citizens

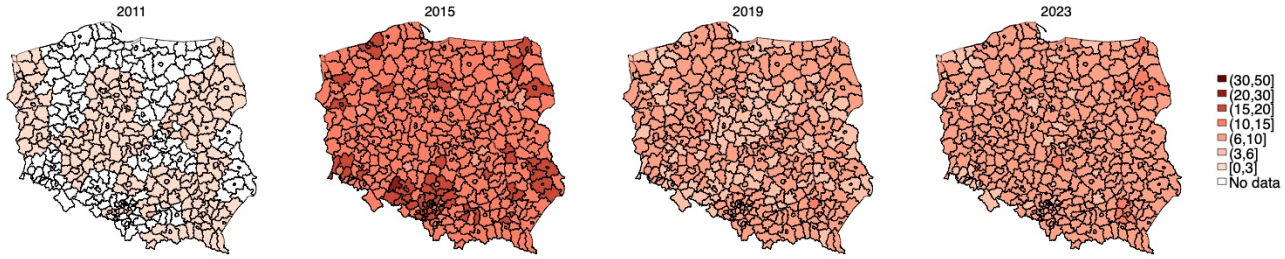
Note: Authors' estimations based on the 2021 census, showing the share (%) of immigrants by citizenship relative to the total population. The figures have different legend scales.

Figure A3: Timeline of recent elections in Poland

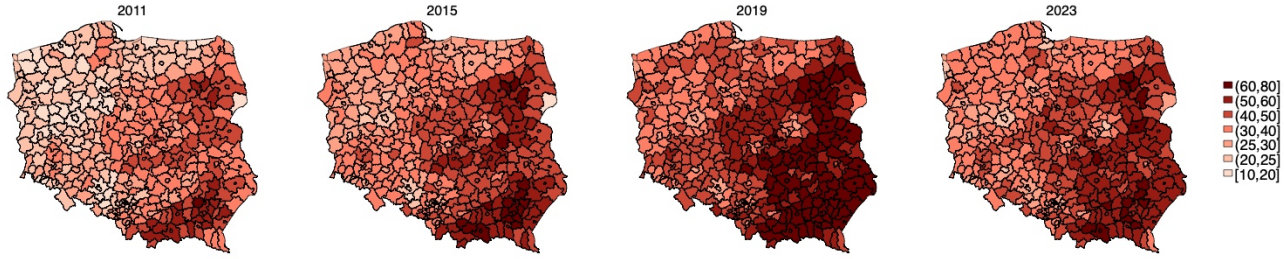


Note: Timeline of parliamentary elections and obtained parliamentary seats by political grouping in Poland, based on the National Electoral Commission.

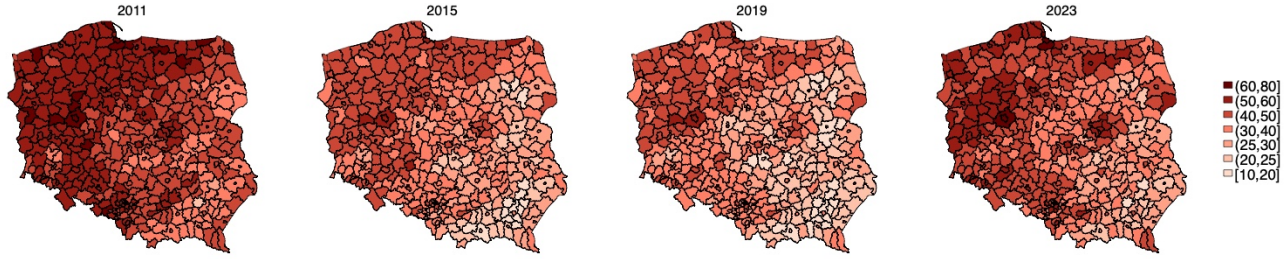
Figure A4: Change in Polish election results from 2011 to 2023 parliamentary elections



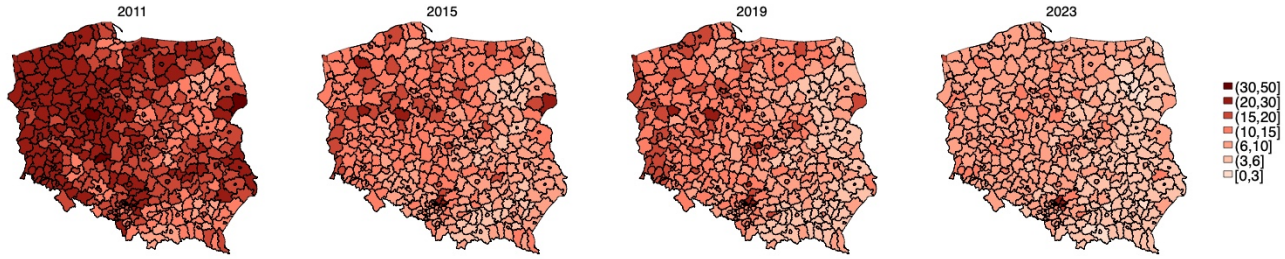
(a) Far-right parties



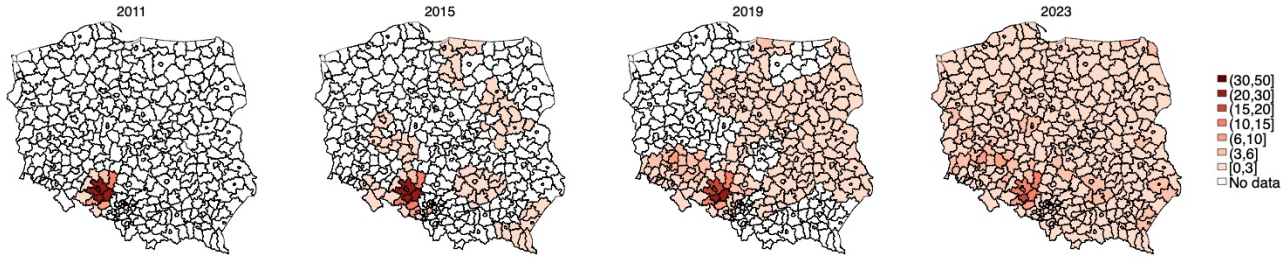
(b) Right-wing parties



(c) Centre parties



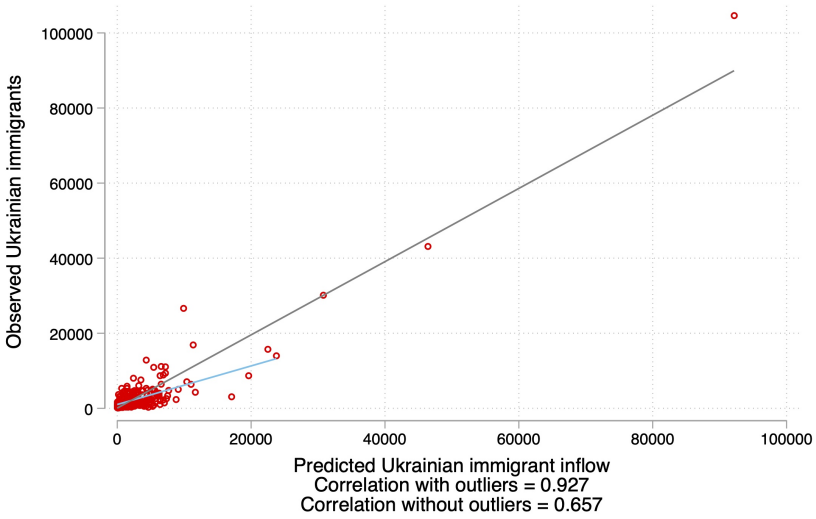
(d) Left-wing



(e) Other parties

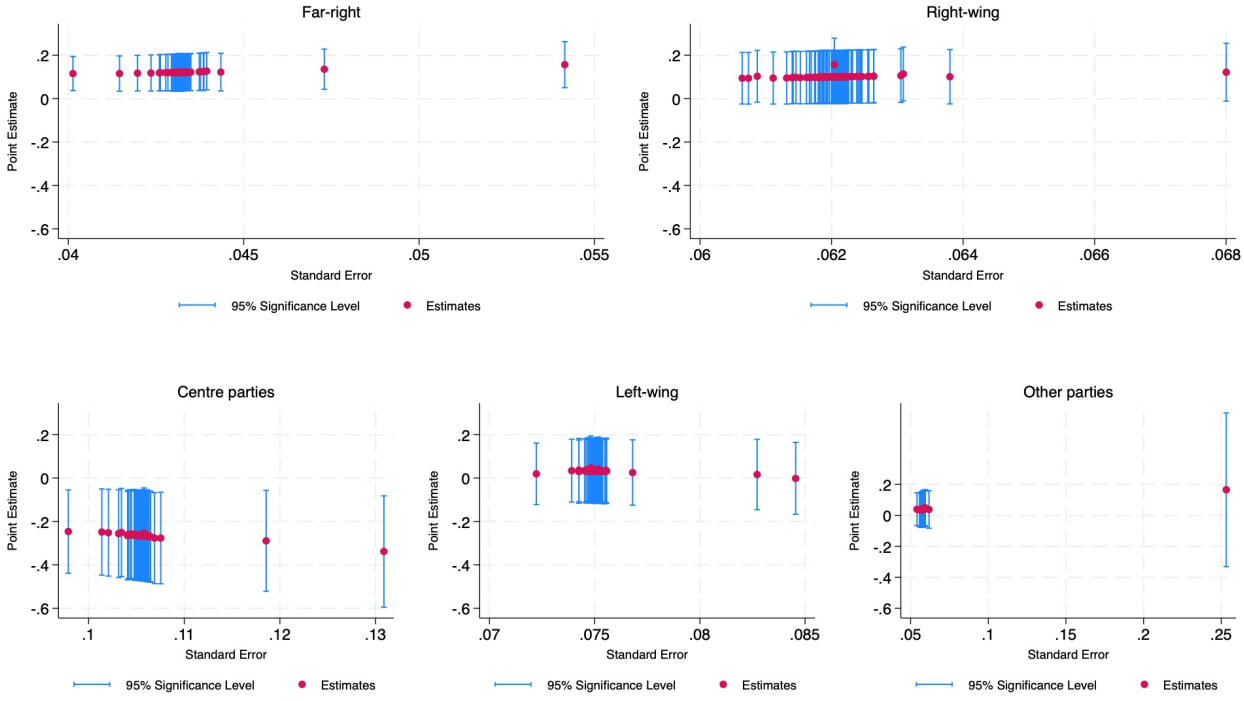
Note: Authors' estimations on vote shares for political groupings, based on county-level parliamentary (Sejm) election results from 2011 and 2023, obtained from the National Electoral Commission.

Figure A5: Relevance of the instrumental variable



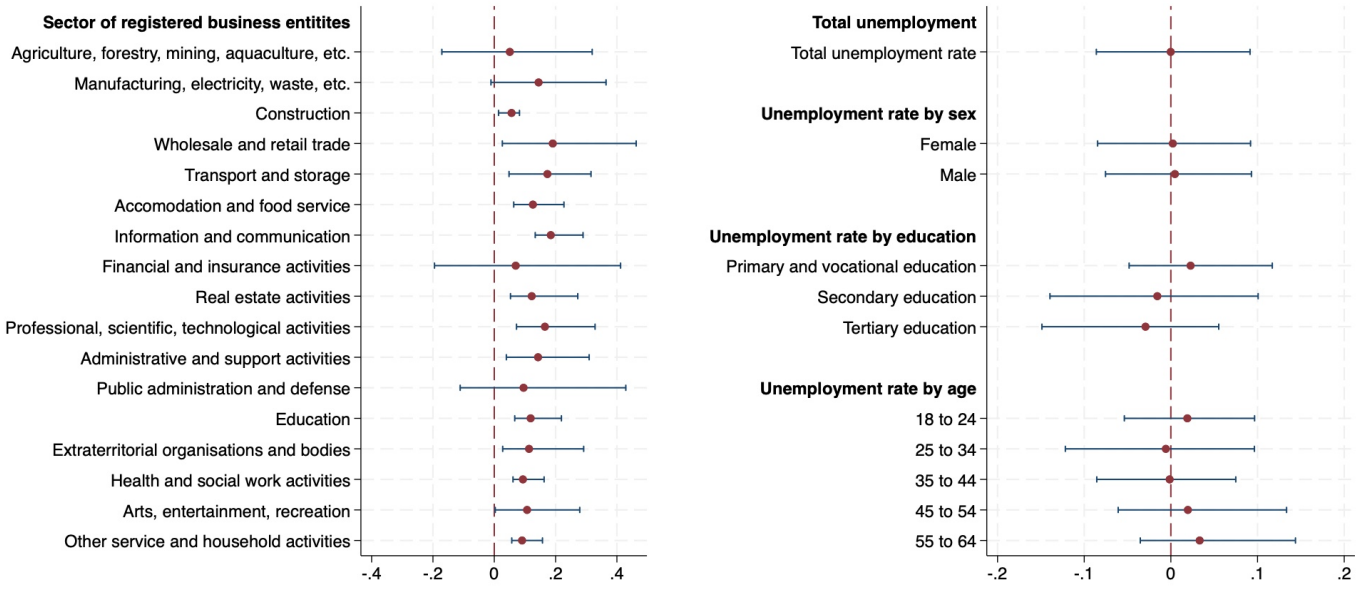
Note: Plot of the observed Ukrainian inflow per Polish county (as measured by PESEL-UKR registrations) against the inflow as predicted by the historic 2002 migrant stocks. The correlation without outlier only includes observations within the 1st and 99th percentile.

Figure A6: Leave-on-out robustness check



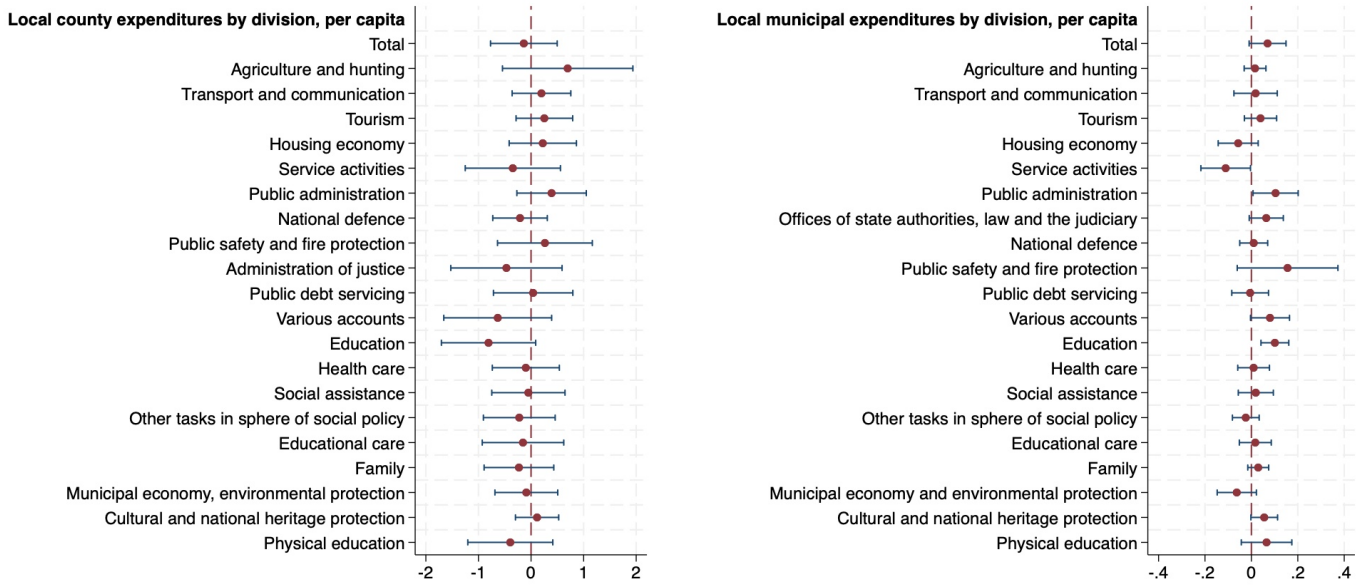
Note: IV estimation results for the baseline specification while excluding one county at the time. Figures show the estimated coefficient, 95% CI, and robust standard errors. All specifications include a small sample correction and demographic controls for the total population, share of male population, and share of population by age category, as measured in 2019.

Figure A7: Impact of Ukrainian refugee inflow on local socio-economic outcomes, detailed



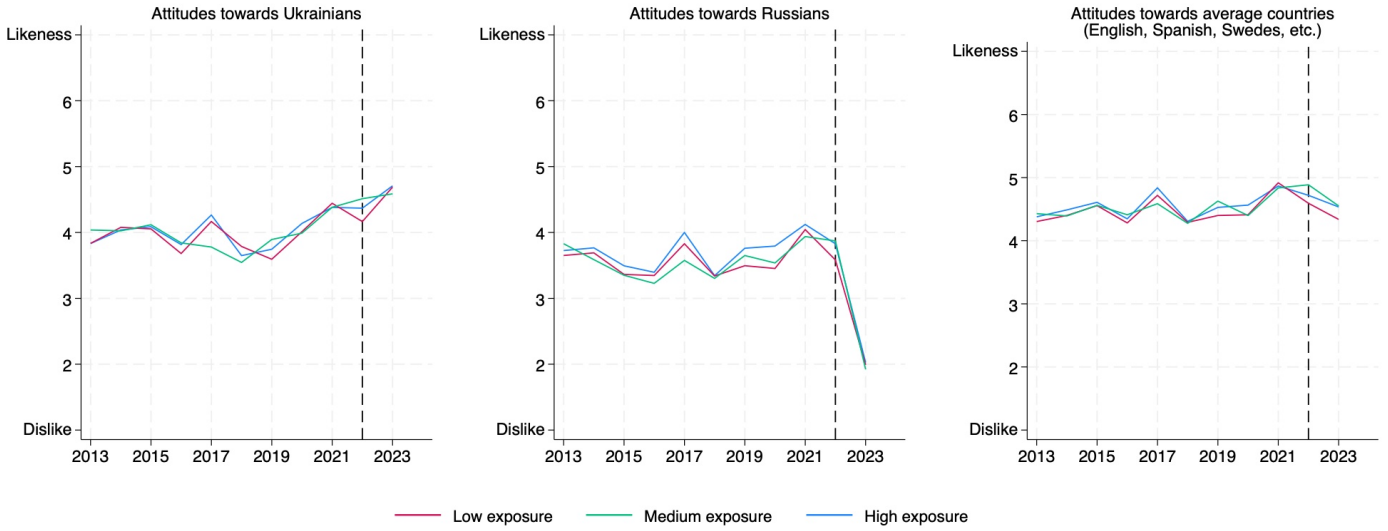
Note: Plot of IV estimation result on the impact of the Ukrainian refugee inflow on standardised socio-economic outcomes. Anderson-Rubin weak-instrument robust confidence intervals are shown. All specifications include a small sample correction and demographic controls for the total population, share of male population, and share of population by age category, as measured in 2019.

Figure A8: Impact of Ukrainian refugee inflow on local expenditures, detailed

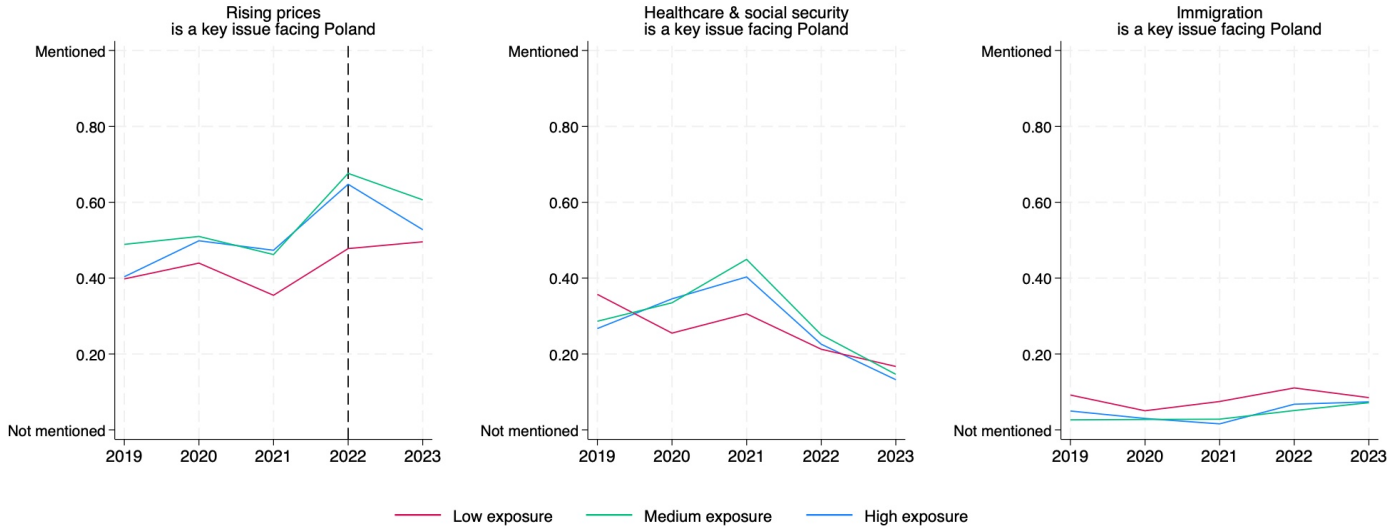


Note: Plot of IV estimation result on the impact of the Ukrainian refugee inflow on standardised socio-economic outcomes. Heteroskedastic-robust (left) or Anderson-Rubin weak-instrument robust (right) confidence intervals are shown. County-level expenditure data (left) are available for only 314 counties (the remaining observations are municipalities with county status), weakening the instrument and limiting the use of the AR estimator, warranting caution in interpreting the results. All specifications include a small sample correction and demographic controls for the total population, share of male population, and share of population by age category, as measured in 2019. All expenditures are measured relative to the counties' population.

Figure A9: Polish political attitudes, by year and region



(a) Centre for Public Opinion Research



(b) Standard Eurobarometer Survey

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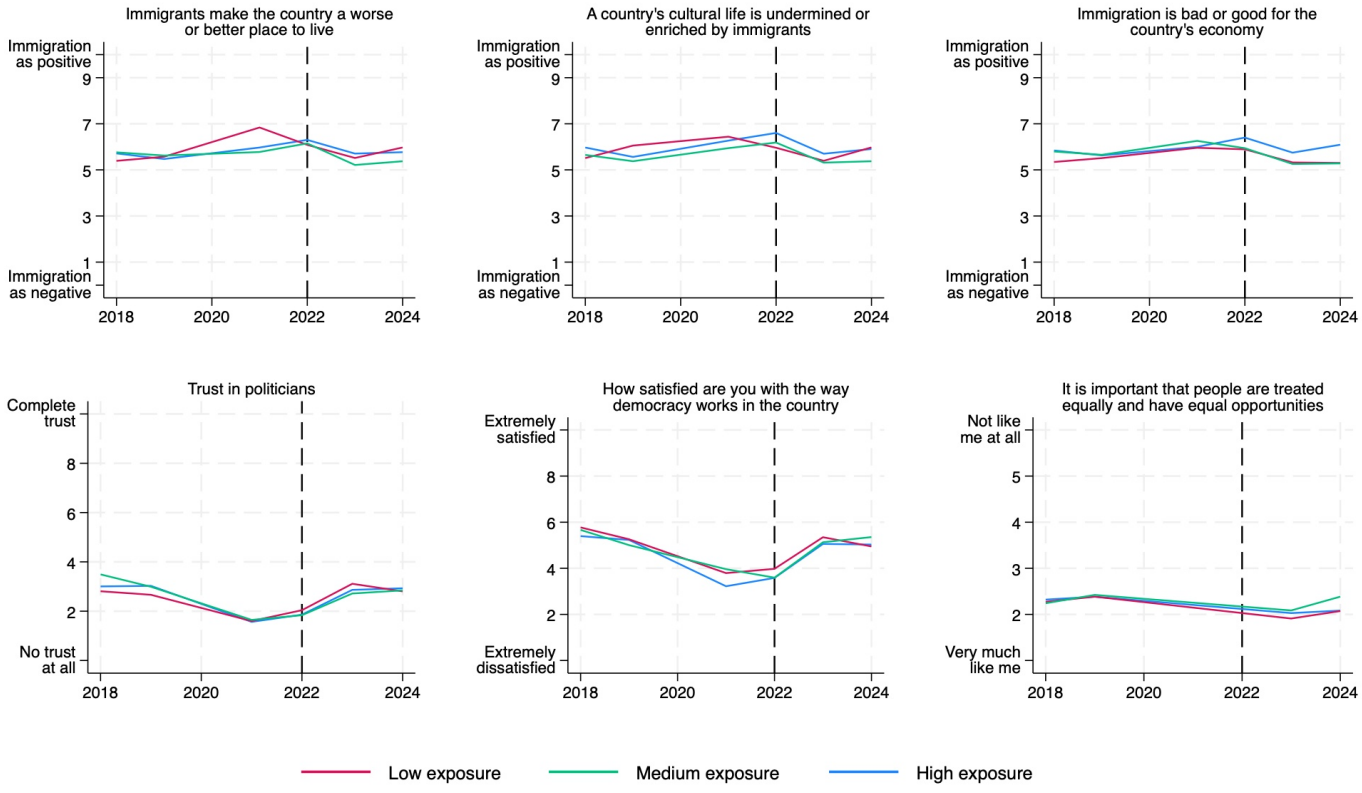
Figure A9: (Continued)



(c) European Social Survey

Note: Average survey responses across time, according to provinces' share of registered Ukrainian refugees relative to the population in 2023. Low exposure provinces (share $<$ 2%): Świętokrzyskie, Podlaskie, Podkarpackie, Warmińsko-Mazurskie, Kujawsko-pomorskie. Medium exposure provinces (share 2-3%): Lubelskie, Śląskie, Opolskie, Łódzkie, Wielkopolskie, Małopolskie. High exposure provinces (share $\geq$3%): Zachodniopomorski, Pomorskie, Lubuskie, Dolnośląskie, Mazowieckie. Panel (a) is based on the annual surveys from the Centre for Public Opinion Research (2013-2023) and shows citizens' attitudes towards Ukrainians, Russians, and 'neutral' nations (China, Czech Republic, England, France, Germany, Greece, Hungary, Italy, Japan, Latvia, Lithuania, Norway, Serbia, Slovenia, Spain, Sweden, Vietnam). Panel (b) is based on the Standard Eurobarometer (2019-2023, wave 92 to 100). Respondents were asked what they believe are the most important issues currently faced by Poland. We show the response rate of the two most commonly mentioned issues and the issue of immigration. Panel (c) is based on the European Social Survey conducted in Poland (2018-2024, wave 9 to 11). We show responses to questions on immigrants' impact and questions capturing relevant broader political attitudes. Figures on other survey questions can be provided upon request.

Tables

Table A1: Timeline on main events and migration policies in Poland

1945	• End of World War II, Poland is independent again
	• Polish borders are shifted
1947	• Poland falls under Soviet influence
	• Forced resettlement of Ukrainians to western Poland
1989	• Poland's borders open during democratic transition, following severe restrictions under communist rule (1945-1989)
1991	• Poland signs the UN Refugee Convention
1999	• Start of Second Chechen War (1999-2000), causing refugee movements into Poland
2003	• First national framework on international protection adopted
2004	• Poland joins the EU, driving high emigration and workforce shortages
2007	• Temporary work regulations introduced
2012	• Adoption of National Migration Policy
2013	• Adoption of Law on Foreigners
2014	• Russian invasion of eastern Ukraine drives migration movements into Poland
2015	• Refugee crisis in Europe. Law and Justice wins parliamentary elections
2016	• Law and Justice government cancels migration policy and participation in EU relocations; reports on pushbacks on Poland-Belarus borders
2017	• Ukrainians receive visa-free access to Schengen zone
2020	• Covid-19 pandemic and border restrictions; repressions of protests in Belarus drives refugees into Poland: Poland Business Harbor programme for IT professionals
2021	• Humanitarian crisis on Poland-Belarus border, Law on Foreigners is amended to legitimise pushbacks
2022	• Russian invasion of Ukraine triggers large-scale refugee arrivals; EU member states activate Temporary Protection Directive; Poland passes Special Law on Assistance for Ukrainian Citizens

Note: Timeline on main events and migration-related policy changes in Poland since 1945. Source: Hargrave et al. (2023).

Table A2: Political parties in Poland, 2015 - 2023

	2015	2019	2023
Far-right	Confederation for the Renewal of the Republic of Liberty and Hope (Konfederacja Odnowy Rzeczypospolitej Wolność i Nadzieja) (KORWiN) **Kukiz'15** Grzegorza Brauna "God Bless you!" (Grzegorza Brauna "Szcześć Boże!")	**Confederation Liberty and Independence** (Konfederacja Wolność i Niepodległość) Piotr Liroy-Marzec's Effective (Skuteczni Piotra Liroya-Marca)	**Confederation Liberty and Independence** (Konfederacja Wolność i Niepodległość) Anti-party (Antypartia)
Other right-wing	Congress of the New Right (Kongres Nowej Prawicy) Self-Defence of the Republic of Poland (Samoobrona Rzeczpospolitej Polskie) Stonoga Party Poland (Stonoga Partia)	Right (Prawica) Action of Disappointed Retirees and Pensioners (Akcja Zawiedzionych Emerytów Rencistów)	Normal country (Normalny Kraj) Repair Poland Movement (Ruch Naprawy Polski) There is One Poland (Polska Jest Jedna)
Right	**Law and Justice** (Prawo i Sprawiedliwość)	**Law and Justice** (Prawo i Sprawiedliwość)	**Law and Justice** (Prawo i Sprawiedliwość)
Centre parties	**Polish People's Party** (Polskie Stronnictwo Ludowe) **Civic Platform** (Platforma Obywatelska) **Modern** (Nowoczesna)	**Polish People's Party** (Polskie Stronnictwo Ludowe) **Civic Coalition**: Civic Platform (Platforma Obywatelska), Modern (Nowoczesna), Polish Initiative (Inicjatywa Polska), Greens (Zieloni)	**Third Way** (Trzecia Droga): Poland 2050 (Polska 2050), Polish People's Party (Polskie Stronnictwo Ludowe) **Civic Coalition**: Civic Platform (Platforma Obywatelska), Modern (Nowoczesna), Polish Initiative (Inicjatywa Polska), Greens (Zieloni)

Left-wing	United Left (Zjednoczona Lewica): Democratic Left Alliance (Sojusz Lewicy Demokratycznej), Your Movement (Twój Ruch), Polish Socialist Party (Polska Partie Socjalistyczna), Labour Union (Unie Pracy), Greens (Zieloni) Together (Razem) Social Movement of the Republic of Poland (Ruch Społeczny Rzeczypospolitej Polskiej)	**The Left** (Lewica): Democratic Left Alliance (Sojusz Lewicy Demokratycznej), Spring (Wiosna) Polish Socialist Party (Polska Partie Socjalistyczna)	**New Left** (Nowa Lewica): Democratic Left Alliance (Sojusz Lewicy Demokratycznej), Spring (Wiosna)
Other parties	**German Minority Electoral Committee** (Komitet Wyborczy Mniejszość Niemiecka) JOW Nonpartisan (JOW Bezpartyjni) Citizens to Parliament (Obywatele do Parlamentu) United for Silesia (Zjednoczeni dla Ślaska)	**German Minority Electoral Committee** (Komitet Wyborczy Mniejszość Niemiecka) Nonpartisan Local Government Activists (Bezpartyjni Samorzadowcy)	German Minority Electoral Committee (Komitet Wyborczy Mniejszość Niemiecka) Nonpartisan Local Government Activists (Bezpartyjni Samorzadowcy) Peace and Prosperity Movement (Ruch Dobrobytu i Pokoju)

Note: Political parties during the parliamentary Sejm elections in Poland, in 2015, 2019, and 2023. Parties that won seats are in bold.

Table A3: Political parties in Poland, 2005 - 2011

	2005	2007	2011
Far-right	Janusz Korwin-Mikke's Platform (Platforma Janusza Korwin-Mikke)	League of Polish Families (Liga Polskich Rodzin)	New Right - Janusz Korwin-Mikke (Kongres Nowej Prawicy)
	National Rebirth of Poland (Narodowe Odrodzenie Polski)	Patriotic Self-Defence (Samoobrona Patriotyczna)	
	League of Polish Families (Liga Polskich Rodzin)		
Other right-wing	**Self-Defence of the Republic of Poland** (Samoobrona Rzeczpospolitej Polskiej)	Self-Defence of the Republic of Poland (Samoobrona Rzeczpospolitej Polskiej)	Self-Defence of the Republic of Poland (Samoobrona Rzeczpospolitej Polskiej)
	All-Poland Civic Coalition Ogólnopolska Koalicja Obywatelska		Right Wing of the Republic (Prawica Rzeczypospolitej)
	Patriotic Movement (Ruch Patriotyczny)		
	Polish National Party (Polska Partia Narodowa)		
	Initiative of the Republic of Poland (Inicjatywa Rzeczpospolitej Polskiej)		
Right	**Law and Justice** (Prawo i Sprawiedliwość)	**Law and Justice** (Prawo i Sprawiedliwość)	**Law and Justice** (Prawo i Sprawiedliwość)

	2005	2007	2011
Centre parties	**Polish People's Party** (Polskie Stronnictwo Ludowe)	**Polish People's Party** (Polskie Stronnictwo Ludowe)	**Polish People's Party** (Polskie Stronnictwo Ludowe)
	Civic Platform (Platforma Obywatelska)	**Civic Platform** (Platforma Obywatelska)	**Civic Platform** (Platforma Obywatelska)
	Centre Party (Partia Centrum)		Poland Comes First (Polska jest Najważniejsza)
	Democratic Party (Partia Demokratyczna)		
Left-wing	Social Democracy of Poland (Socjaldemokracja Polska)	Women's Party (Partia Kobiet)	**Palikot's Movement** (Ruch Palikota)
	Democratic Left Alliance (Sojusz Lewicy Demokratycznej)	**Left and Democrats** (Lewica i Demokraci)	**Democratic Left Alliance** (Sojusz Lewicy Demokratycznej)
	Polish Confederation – Dignity and Work (Polska Konfederacja – Godność i Praca)	Polish Labour Party (Polska Partia Pracy)	Polish Labour Party (Polska Partia Pracy)
	Polish Labour Party (Polska Partia Pracy)		
Other parties	**German Minority Electoral Committee** (Komitet Wyborczy Mniejszość Niemiecka)	**German Minority Electoral Committee** (Komitet Wyborczy Mniejszość Niemiecka)	**German Minority Electoral Committee** (Komitet Wyborczy Mniejszość Niemiecka)
	United for Silesia (Zjednoczeni dla Ślaska)		
	Ancestral Home (Dom Ojczysty)		
	Labour Party (Stronnictwo Pracy)		
	Community Rescuers (Społeczni Ratownicy)		

Note: Political parties during the parliamentary Sejm elections in Poland, in 2005, 2007, and 2011. Parties that won seats are in bold.

Table A4: Polish political parties during 2019 elections, Manifesto Project

Classification	Political party	Family	Right-left index
Far-right	Confederation Liberty and Independence	Nationalist and radical right	37.3
Right-wing	Law and Justice	Conservative parties	11.2
Centre parties	Polish Coalition (Polish People's Party)	Christian democratic parties	-13.4
Centre parties	Civic Coalition	Liberal parties	-17.3
Left-wing	The Left	Social democratic parties	-28.2
Left-wing	Spring	Liberal parties	-20.7
Other	German Minority	Ethnic and regional parties	-3.0

Note: List of political parties available in the Manifesto Project, their classification according to our paper, and their family and right-left index according to the Manifesto Project. The party family captures the central programmatic ideas of a party and is assigned according to the Manifesto Party Family Handbook. The left-right index measures how much a party talks about left (below zero index) or right-wing (above zero index) issues. It represents the share of statements defined as left-wing subtracted from the share of right-wing statements in the parties' manifesto. The index was originally developed for western democracies and may have lower validity in Central and Eastern Europe. See Lehmann et al. (2024) for more information.

Table A5: Polish political parties during 2019 elections, Manifesto Project

	Share of statements (%) in party's manifesto by topic						
	Conf. Liberty and Indep.	Law and Justice	Polish People's Party	Civic Coalition	Spring	The Left	German Minority
Support of democracy	0.0	1.7	4.4	6.9	4.8	2.2	7.2
Governmental/administrative efficiency	7.1	2.7	1.7	3.5	4.4	3.9	0.4
Free market economy and capitalism	11.9	0.2	0.0	1.2	0.0	0.0	0.0
Technology, infrastructure, modernisation	1.6	13.5	7.1	12.4	15.5	10.5	10.6
Welfare state expansion	0.8	8.3	15.2	16.4	15.9	21.5	9.1
National way of life: nation and history	4.8	12.8	0.2	1.3	1.1	0.0	0.0
National way of life: restrict immigration	4.8	0.2	0.0	0.0	0.0	0.0	0.0
Importance personal freedom, civil rights	0.0	1.3	0.0	1.2	2.2	0.0	0.4
Improve/expand educational provision	4.8	3.5	2.7	4.0	7.0	5.5	5.3
Provision of cultural/leisure facilities	3.2	5.5	0.5	2.9	3.3	0.0	2.3

Note: Table indicates the share (percentage) of quasi-sentences in a party's manifesto related to the given category. Each quasi-sentence is allocated one category that reflects best the policy goal or issue mentioned in the statement. A quasi-sentence is a single statement. A grammatical sentence can contain more than one quasi-sentence, but a quasi-sentence can never span over more than one sentence. Data are obtained from the Manifesto project. See Lehmann et al. (2024) for more information.

Table A6: Balancing tests on local pre-war demographic and economic county characteristics - 2015-2019 trends

	Ukrainian refugee inflow (observed)			Instrument (predicted inflow)		
	(1)	(2)	(3)	(4)	(5)	(6)
A. Demographic characteristics (N=380)						
Share male	0.01***	0.02	0.03	0.01***	0.01	0.02
	(0.00)	(0.02)	(0.02)	(0.00)	(0.01)	(0.02)
Share female	-0.01***	-0.02	-0.03	-0.01***	-0.01	-0.02
	(0.00)	(0.02)	(0.02)	(0.00)	(0.01)	(0.02)
Share aged below 20	0.07***	-0.01	-0.02	0.07***	-0.03	-0.02
	(0.03)	(0.04)	(0.04)	(0.02)	(0.02)	(0.03)
Share age 20 to 59	-0.02	0.01	0.05**	-0.02*	-0.03*	-0.00
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
Share aged above 65	-0.05***	-0.00	-0.04	-0.03***	0.07***	0.02
	(0.01)	(0.02)	(0.03)	(0.00)	(0.02)	(0.02)
B. Population movements - (N=380)						
Immigration (internal)	0.03*	0.03	0.02	0.02**	-0.01	-0.02
	(0.02)	(0.03)	(0.03)	(0.01)	(0.02)	(0.02)
Emigration (internal)	-0.00	0.03*	0.03	-0.00	0.03**	0.01
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)
Immigration (international)	0.02***	0.02	0.02	0.02**	0.01	0.01
	(0.01)	(0.03)	(0.03)	(0.01)	(0.02)	(0.02)
Emigration (international)	-0.00	0.02	0.04***	-0.01	-0.04**	-0.01
	(0.00)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)
C. Economic measures - (N=380)						
Job vacancies	0.02	-0.06	-0.08	0.03	0.00	-0.01
	(0.06)	(0.12)	(0.12)	(0.06)	(0.07)	(0.08)
Unemployment rate	0.04**	0.03	0.05*	0.03***	-0.01	0.03
	(0.01)	(0.03)	(0.03)	(0.01)	(0.02)	(0.02)
Wage	0.04**	0.01	0.00	0.04***	-0.01	-0.01
	(0.02)	(0.03)	(0.03)	(0.01)	(0.02)	(0.02)
Crime incidences	-0.01	-0.01	-0.01	-0.01	0.01	0.01
	(0.03)	(0.07)	(0.07)	(0.03)	(0.06)	(0.06)
Population control		Yes	Yes		Yes	Yes
Region Fixed Effects			Yes			Yes

Continued on next page

Table A6: (continued)

D. Public finance measures - powiat (N=314)						
Revenues per capita	-0.05	0.02	0.02	-0.04	-0.01	0.02
	(0.03)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)
Total revenues	0.37***	0.08*	0.08*	0.20***	-0.00	0.02
	(0.06)	(0.04)	(0.04)	(0.05)	(0.03)	(0.03)
Expenditures per capita	-0.03	0.01	0.01	-0.01	0.01	0.03
	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)
Total expenditures	0.33***	0.09*	0.08	0.19***	0.01	0.03
	(0.06)	(0.05)	(0.05)	(0.04)	(0.03)	(0.04)
E. Public finance measures - gmina (N=380)						
Revenues per capita	0.01	0.02	0.04	0.01	-0.02	0.01
	(0.01)	(0.03)	(0.03)	(0.01)	(0.02)	(0.03)
Total revenues	0.15***	0.04*	0.04*	0.15***	0.01	0.01
	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
Expenditures per capita	0.03***	0.03	0.04	0.02**	-0.02	-0.01
	(0.01)	(0.03)	(0.03)	(0.01)	(0.02)	(0.02)
Total expenditures	0.15***	0.07**	0.08**	0.15***	0.02	0.02
	(0.01)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Population control		Yes	Yes		Yes	Yes
Partition Fixed Effects			Yes			Yes

Note: Each county characteristic is regressed either on the observed (columns 1 to 3) or predicted (columns 4 to 5) inflow using univariate OLS regressions. All outcome variables were standardised. Data is obtained from Statistics Poland's Local Data Bank. Data on county public finance measure is only available for 314 counties, due to 66 municipalities with county ('powiat') status for which the municipal and county finances are joint. Migration is measured through permanent address (de-)registrations. Job vacancies are captured by the average of job openings listed per month. Robust standard errors in parenthesis. All specifications include a small sample correction. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: IV estimation results, political parties

	(1) Far right: Conf. Liberty & Independence	(2) Right: Law & Justice	(3) Centre: Civic Coalition	(4) Centre: Polish People's party
Ukrainian inflow	0.10***	0.13*	0.09	-0.36***
	(0.04)	(0.08)	(0.11)	(0.14)
	[0.65]	[0.80]	[0.59]	[-2.28]
Observations	380	380	380	380
Heterosked.-robust p-value	0.008	0.100	0.395	0.009
Weak-IV robust p-value	0.001	0.067	0.394	0.004
Weak IV F^{eff}-statistic	24.12	24.12	24.12	24.12
Weak IV threshold τ=10	23.11	23.11	23.11	23.11
Mean 2019	6.48	47.76	23.12	10.31
Mean 2019-2023	0.77	-8.12	3.94	4.34
Population control	✓	✓	✓	✓
Region FE	✓	✓	✓	✓
Demographic controls	✓	✓	✓	✓

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. Standardised coefficients in brackets. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. We report the effective F-statistic for a confidence level of 5% and the critical value for τ=10% of the worst case bias. Control variables are pre-war socio-demographic county characteristics: total population, share male population, and share of population by age category, as measured in 2019. All specifications include a small sample correction.

Table A8: IV estimation results, electoral statistics

	(1) Voter turnout	(2) Invalid votes	(3) Valid votes
Ukrainian inflow	0.06	0.01	-0.01
	(0.06)	(0.01)	(0.01)
	[0.39]	[0.07]	[-0.07]
Observations	380	380	380
Heterosked.-robust p-value	0.318	0.272	0.272
Weak-IV robust p-value	0.310	0.265	0.265
Weak IV F^{eff}-statistic	24.12	24.12	24.12
Weak IV threshold τ=10	23.11	23.11	23.11
Mean 2019	58.10	1.34	98.66
Mean 2019-2023	13.33	0.74	-0.74
Population control	✓	✓	✓
Region FE	✓	✓	✓
Demographic controls	✓	✓	✓

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. Standardised coefficients in brackets. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. We report the effective F-statistic for a confidence level of 5% and the critical value for τ=10% of the worst case bias. Control variables are pre-war socio-demographic county characteristics: total population, share male population, and share of population by age category, as measured in 2019. All specifications include a small sample correction.

Table A9: Reduced-form estimation results, political groupings

	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor./indep.)
Shift-share instrument	0.06***	0.05*	-0.13***	0.02	0.02
	(0.02)	(0.03)	(0.05)	(0.04)	(0.03)
	[0.36]	[0.30]	[-0.78]	[0.10]	[0.14]
Observations	380	380	380	380	203
F-statistic joint	41.07	39.89	29.41	31.11	22.52
Population control	✓	✓	✓	✓	✓
Region FE	✓	✓	✓	✓	✓
Demographic controls	✓	✓	✓	✓	✓

Note: Predicted Ukrainian inflow (based on 2002 distribution) is denoted in 1000. Robust standard errors in parentheses. Standardised coefficients in brackets. *** p<0.01, ** p<0.05, * p<0.1, according to the heteroskedasticity-robust p-value. Control variables are pre-war socio-demographic county characteristics: total population, share male population, and share of population by age category, as measured in 2019. All specifications include a small sample correction.

Table A10: Comparison of OLS and IV estimation results, all political groupings

	Change in vote share for political grouping							
	OLS estimation				IV estimation			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Far-right parties								
Ukrainian inflow	0.05	0.08***	0.03*	0.04*	0.05	0.10*	0.12***	0.15***
	(0.03)	(0.03)	(0.02)	(0.02)	(0.05)	(0.05)	(0.04)	(0.05)
	[0.32]	[0.49]	[0.22]	[0.22]	[0.33]	[0.61]	[0.77]	[0.93]
B. Right-wing parties								
Ukrainian inflow	0.08**	0.00	0.04	0.06*	0.28***	0.18***	0.10*	0.07
	(0.04)	(0.04)	(0.03)	(0.03)	(0.10)	(0.09)	(0.06)	(0.06)
	[0.54]	[0.02]	[0.26]	[0.36]	[1.77]	[1.17]	[0.64]	[0.47]
C. Centre parties								
Ukrainian inflow	-0.07	-0.14*	-0.03	-0.03	-0.04	-0.28**	-0.27***	-0.26***
	(0.09)	(0.08)	(0.05)	(0.05)	(0.12)	(0.12)	(0.11)	(0.11)
	[-0.42]	[-0.91]	[-0.20]	[-0.21]	[-0.27]	[-1.76]	[-1.69]	[-1.67]
D. Left-wing parties								
Ukrainian inflow	-0.06	0.04	-0.04	-0.04	-0.21***	0.01	0.03	0.03
	(0.07)	(0.06)	(0.05)	(0.05)	(0.11)	(0.09)	(0.08)	(0.09)
	[-0.38]	[0.25]	[-0.22]	[-0.26]	[-1.33]	[0.04]	[0.22]	[0.22]
E. Other parties								
Ukrainian inflow	-0.07	-0.03	-0.05	-0.00	0.11*	0.07	0.04	0.17
	(0.05)	(0.05)	(0.04)	(0.05)	(0.09)	(0.06)	(0.06)	(0.13)
	[-0.47]	[-0.20]	[-0.34]	[-0.01]	[-0.68]	[0.48]	[0.27]	[1.10]
Weak IV F^{eff}-statistic					21.60	20.09	24.12	23.25
Weak IV threshold τ=10					23.11	23.11	23.11	23.11
Population control	✓	✓	✓	✓	✓	✓	✓	✓
Empire FE		✓	✓	✓		✓	✓	✓
Demographic controls			✓	✓			✓	✓
Economic controls				✓				✓

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. Coefficients multiplied by the dependent variable's standard deviation in brackets. *** p<0.01, ** p<0.05, * p<0.1, according to the heteroskedasiticy robust p-value for OLS and the Anderson-Rubin weak-instrument robust p-value for IV. All specifications are based on 380 observations, except for panel E that only considers the 203 counties where the 'other' political parties are active. We report the effective F-statistic for a confidence level of 5% and the critical value for τ=10% of the worst case bias, for the full sample (N=380). The null hypothesis of a weak instrument is rejected when the F^{eff} statistic exceeds the critical value Olea and Pflueger (2013). Control variables are pre-war demographic county characteristics (share male population and share of population by age category) and economic county characteristics (job vacancies, unemployment rate, mean wage level, and crime level) measured in 2019.

Table A11: Robustness checks, alternative specifications

	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor./indep.)
A. Excluding outliers					
Ukrainian inflow	0.75***	0.35	-1.54**	0.42	0.23
	(0.37)	(0.32)	(0.79)	(0.48)	(0.36)
B. 2011 as baseline year					
Ukrainian inflow	0.13**	0.27*	-0.20	-0.17	-1.18
	(0.08)	(0.16)	(0.16)	(0.21)	(2.48)
C. Control for share of pre-war Ukrainians					
Ukrainian inflow	0.13***	0.14**	-0.38***	0.07	0.15
	(0.05)	(0.07)	(0.15)	(0.10)	(0.13)
D. Control for share of pre-war Belarusians					
Ukrainian inflow	0.12***	0.10*	-0.27***	0.03	0.04
	(0.05)	(0.06)	(0.11)	(0.08)	(0.06)
E. Non-linearities					
Ukrainian inflow	0.26	0.09	-0.52	0.24	0.27
	(0.19)	(0.15)	(0.40)	(0.17)	(0.43)
Ukrainian inflow^2	-0.00	0.00	0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Joint weak-IV robust p-value	***	*	**		
Average marginal effect	0.25	0.09	-0.51	0.23	0.25
F. Weighted by county population					
Ukrainian inflow	0.05**	0.02	-0.08	0.04	0.01
	(0.03)	(0.05)	(0.06)	(0.07)	(0.04)

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. All specifications include baseline control variables and a small sample correction. Panel A excludes counties with an observed Ukrainian refugee inflow in the 1^{st} and 99^{th} percentile. Panel B is based only on 214 (column (1)) or 12 (column (5)) observations as political parties in these categories were not represented in all counties in 2011. Panels C and D control for the share of residents with Ukrainian or Belarusian citizenship as measured in the 2021 Census. Panel E reports the weak-instrument robust p-value for the joint significance of both endogenous regressors (the inflow and squared inflow) and the average marginal effect.

Table A12: Robustness checks, alternative inference

	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor./indep.)
A. Baseline estimates					
Ukrainian inflow	0.12***	0.10*	-0.27***	0.03	0.04
	(0.05)	(0.06)	(0.13)	(0.09)	(0.07)
B. Alternative inference p-values					
Weak-IV robust AR	0.000	0.061	0.004	0.655	0.430
Wild cluster bootstrap (province)	0.020	0.214	0.080	0.722	0.540
Permutation-based (500 rep.)	0.032	0.216	0.044	0.848	0.636
Jackknife	0.058	0.197	0.065	0.788	0.751
Spatial correlation (25km)	0.006	0.097	0.018	0.662	0.483
Spatial correlation (50km)	0.010	0.105	0.026	0.683	0.492
Spatial correlation (75km)	0.015	0.095	0.028	0.691	0.494
Spatial correlation (100km)	0.015	0.090	0.035	0.697	0.512

Note: Predicted Ukrainian inflow is denoted in 1000. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. Control variables are pre-war socio-demographic county characteristics: total population, share male population, and share of population by age category, as measured in 2019 We report the Anderson-Rubin weak-instrument robust p-values, p-values based on standard errors clustered by province (the sample consists of 16 clusters), permutation-based p-values using 500 placebo estimates, jackknife (leave-one-out) p-vales, and spatial correlation p-values allowing standard errors to be correlated between counties within a 25, 50, 75, or 100km cut-off, with a linear Bartlett decay.

Table A13: First-stage placebo tests

	Coefficient	Robust st. error	F^{eff} statistic	Under-id. (p)
Uniform distribution	0.03	(0.07)	0.232	0.626
Normal distribution	-0.03	(0.05)	0.440	0.503

The first-stage specifications use alternative shares in the construction of the instrument, used to instrument the baseline endogenous variable. The alternative shares are drawn from a uniform or a normal (absolute value) distribution, normalised to sum up to one. Table reports the coefficient of the instrument in the first-stage, the coefficient's robust standard error, the effective F statistic (Olea and Pflueger, 2013) for a confidence level of 5%, and the p-value for the Kleibergen and Paap (2006) rk LM test for under-identification. All specifications include the baseline control variables and a small sample correction.

Table A14: Second-stage placebo tests

	(1) Far-right parties	(2) Right-wing (Law & Justice)	(3) Centre parties	(4) Left-wing parties	(5) Other (minor.)
A. 2005-2007					
Ukrainian inflow	-0.13	-0.10	0.30	-0.06	-2.41
	(0.09)	(0.24)	(0.24)	(0.13)	(3.24)
B. 2007-2011					
Ukrainian inflow	-0.03	0.15	-0.19	-0.01	1.56
	(0.03)	(0.10)	(0.12)	(0.10)	(1.39)
C. 2011-2015					
Ukrainian inflow	0.06	0.06	-0.12	-0.01	-0.42
	(0.07)	(0.07)	(0.11)	(0.11)	(1.93)
D. 2015-2019					
Ukrainian inflow	-0.14	0.11	0.19	-0.19**	-0.06
	(0.10)	(0.10)	(0.15)	(0.11)	(0.56)

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, according to the Anderson-Rubin weak-instrument robust p-value. (Predicted) Ukrainian inflow is denoted in 1000. Control variables are pre-war socio-demographic county characteristics: total population, share male population, and share of population by age category, as measured in 2019. Column (5) consists of only 12 observations as other local/minority parties only exist in a few counties, and are thus unreliable.

Background information

A.1 Poland after World War II

Leading up to World War II, tensions rose in Europe, and Poland found itself caught between Nazi Germany and the Soviet Union. In 1939, both nations invaded Poland as they had agreed upon in the Molotov-Ribbentrop Pact. Figure A10 shows the Polish borders in 1939 and indicates how the region was split in two according to the Pact. The western part was occupied by Nazi Germany, while the eastern part was occupied by the Soviet Union, somewhat following the Curzon line. The eastern part was more ethnically diverse. Although Poles were the largest single ethnic group, Ukrainians occupied some regions in the south and Belarusians in the north. The prompt and brutal occupation marked the beginning of World War II. Both the Nazi and Soviet occupation of Poland were associated with deportations, executions, and suppressing policies. Eventually, in 1941, Nazi Germany broke the Pact and invaded the Soviet Union. The remaining areas of Poland were now also under German control (Davies, 2005). Throughout the war, Poland experienced large losses. More than 60% of the national wealth was destroyed and an estimated 17% of the population was killed (Bukowski, 2019).

The end of the Second World War meant that Poland was liberated from Nazi occupation. Poland was again an independent state, although with shifted borders (as decided in the 1945 Potsdam conference among the leaders of the Allies). The Eastern territories, known as Kresy, were lost to the Soviet Union and, in return, Poland gained former German territories, referred to as the Western or Recovered territories (Grzechnik, 2017). Figure A10 also illustrates the shifted borders. Additionally, the country fell under Soviet influence and a communist government was established after the 1947 Soviet-run elections. Overall, the period from 1945 to 1989 was characterised by political repression, the erosion of democratic institutions, and economic centralisation (Bukowski, 2019). At the same time, the decades of communism also brought expansion of education and modernisation of the country (Bukowski, 2019). Poland became a member of the Warsaw Pact and became fully integrated with other Eastern Bloc countries.

This period was also associated with significant population movements. Germans were expelled from the Western territories. Poles from the eastern territories annexed by the Soviet Union were resettled to the west.[26] Additionally, communist authorities made efforts to homogenise the populations. This involved restrictions on language use or cultural practices and the (forced) resettlement of ethnic minorities (Kordan, 1997). To facilitate these resettlements, the Polish government and Soviet Union negotiated a mutual freewill exchange of population. The Soviet population (Russian, Ukrainian, etc.) living in Poland was relocated to the Soviet Union, while Polish people abroad moved to Poland. Despite these efforts, some 200,000 Ukrainians remained in Poland, concentrated in the southeastern part. Ongoing tensions between Polish residents and Ukrainians, particularly anti-Soviet resistance fighters, further escalated (Eberhardt, 2011). Eventually, in 1947, the Polish government initiated Operation Vistula (or Wisła) as a response to Ukrainian insurgence movements. The operation involved forcibly removing Ukrainians from the southeastern territories of Poland and moving them to the recovered Western territories. The Polish communist authorities tried to secure a maximum dispersion of this population. Although they aimed to avoid higher concentrations of Ukrainian populations, some counties, the share of Ukrainians attained over one third. Approximately 140,000 Ukrainians were displaced from their homes (Kordan, 1997; Eberhardt, 2011). Figure A11 illustrates the most important population movements in Poland during the post-war period.

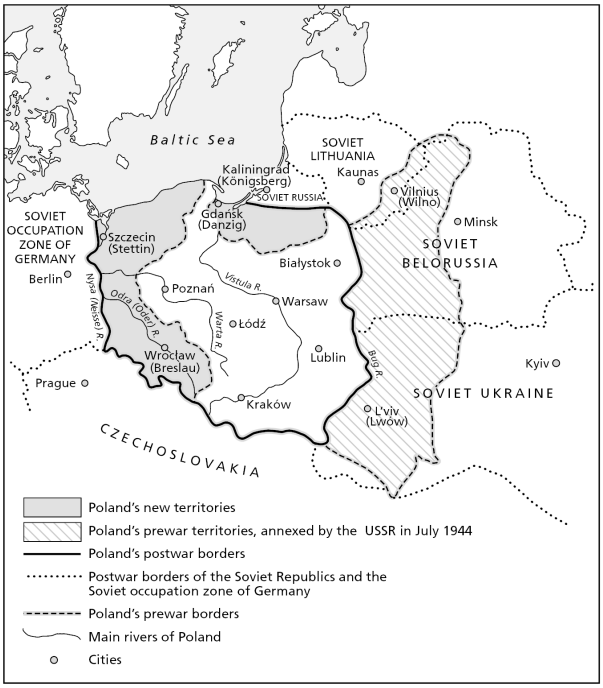
The 1980s were characterised by a growing discontent with the communist regime. Eventually, in 1989, negotiations between the government and the social resistance movement began and paved the way for democratic reforms. The first (partially) free elections were held that year and won by the democratic opposition (Bukowski, 2019). Entry restrictions were lifted and the country opened up to international migration flows (Hargrave et al., 2023). Throughout the 1990s, Poland undertook several economic and

[26]The Polish government considered them Polish citizens, while the Soviet authorities wanted them to acquire citizenship of the USSR. After negotiations, it was decided that permanent residents of the territories who had Polish citizenship before the start of the war were entitled to choose their citizenship and location between Poland and the Soviet Union. Although the resettlement was to be on a voluntary basis, this was not always the case. Especially in the Ukrainian part of the annexed territory, the resettlement was associated with much conflict (Eberhardt, 2011).

political reforms to transition from a centrally planned economy to a market-oriented one (Bukowski, 2019). Although this was paired with many challenges, the economy gradually stabilised and Poland pursued European integration. As part of the accession process, Poland implemented significant economic reforms, including privatisation and market liberalisation, aimed to bring Poland's economic and legal systems in line with EU standards. After a lengthy accession process, the country became a member of the European Union in 2004.

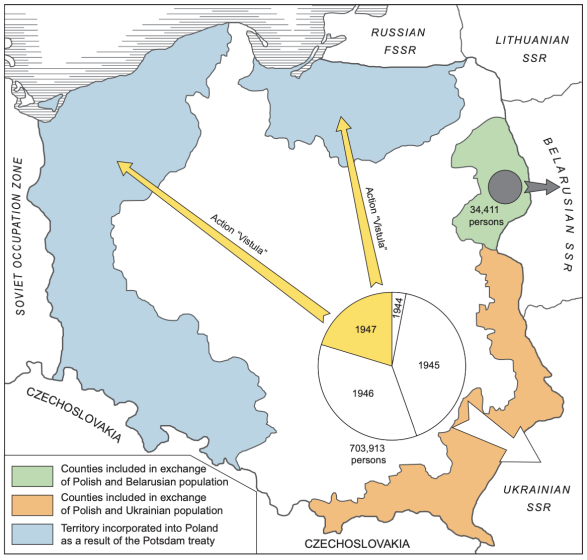
A summarised timeline of key events in Polish history can be found in Table A15 in Supplementary Material.

Figure A10: Historic borders of Poland



Source: The German and Soviet occupations of Poland, 1939–41, from *Germans to Poles: Communism, Nationalism and Ethnic Cleansing after the Second World War* by Service (2013).

Figure A11: Resettlement of the Ukrainian and Belarusian population from eastern Polish territories



Source: Resettlement of the Ukrainian and Belarussian population from the eastern border-adjacent territories, from *Political Migrations on Polish Territories (1939-1950)* by Eberhardt (2011).

Table A15: Timeline of key events in Polish history

1918	• After 123 years of foreign rule, Poland is independent again (Second Polish Republic) and under democratic rule
1919	• Various border wars fought, including the Polish-Soviet War (1919-1921)
1926	• Pilsudski stages a military coup, starting autocratic rule
1932	• Poland concludes non-aggression pact with Soviet Union
1934	• Poland concludes non-aggression pact with Nazi Germany
1939	• Poland is caught between Nazi Germany and Soviet Union; both nations invade and divide Poland as agreed in Molotov-Ribbentrop Pact
	• Start of World War II
	• Deportations, executions, and suppressing policies
1941	• Nazi Germany breaks the Pact and invades Soviet Union; whole Poland is under German control
1945	• End of World War II, Poland is independent again
	• Poland's border are shifted, as decided in the Potsdam conference among leaders of the Allies
1947	• Poland falls under Soviet influence after Soviet-run elections and is transformed into Polish People's Republic
	• Operation Vistula (Wisła) forcibly removes Ukrainians from southeastern to recovered Western territories
1955	• Poland joins the Soviet-run Warsaw Pact military alliance
1980	• Growing discontent with communist regime (rising food prices, imposition of martial law, etc.)
1989	• Negotiations between Communist government and social resistance movement (Solidarity) pave the way for democratic reforms and fall of communism in Poland
	• Democratic opposition wins first partially free elections and Mazowiecki becomes first non-communist prime minister
	• Entry restrictions are lifted
	• Fall of communist regime in other European countries
1990	• Walesa is elected president of Poland; start of several market reforms, including large-scale privatisation
1997	• Polish parliament adopts a new constitution
1999	• Poland joins NATO
2004	• After lengthy accession process (including economic reforms, an official invitation in 2002, and a Polish referendum in 2003), Poland becomes member of the EU

Note: Timeline of key events in Polish history. Sources: Hargrave et al. (2023); Davies (2005); Bukowski (2019); Grzechnik (2017); Kordan (1997).