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Abstract

This study documents self-selection on human capital for Ukrainian refugees. We compare the socio-demographic characteristics of a representative sample of Ukrainian refugees who registered in Belgium in the fall of 2022 with those of the Ukrainian population before the war. Contrarily to previous studies, we find negative self-selection on human capital, particularly for men and for refugees arriving from the low conflict intensity regions of Ukraine. At the same time, refugees from the low conflict intensity regions arrive with more locally-specific human capital, such as knowledge of the French language, previous visits to Belgium, and access to social networks in Belgium. Such self-selection, driven by individual incentives – economic and patriotic – has societal benefits, such as reduced brain drain for Ukraine and improved job matching in European countries offering protection.

Keywords: Russia-Ukraine war; refugees; human capital; self-selection

JEL Codes: F22; F5; H12

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1. Introduction

Russia's full-scale invasion in February 2022 forced millions of Ukrainians into fleeing their homes. According to the latest UNHCR data, approximately 6.5 million Ukrainian refugees are globally recorded out of a population of 43 million.[1] One week after the start of the invasion, the European Union activated the temporary protection directive for the first time, granting Ukrainian refugees the right to residence, work, education, housing, health care, and social security in the European country of their choice. Over one million Ukrainians fled to Germany, nearly one million to Poland, almost 400,000 to the Czech Republic, and 250,000 to the UK. Spain, Italy, the Netherlands, Moldova, Slovakia, and Ireland received over 100,000 Ukrainians each. Other European countries received tens of thousands of Ukrainian refugees.

In the days and months following the invasion, Ukrainians had to decide whether to leave and where to go. Immediately after the start of the war, hundreds of thousands of Ukrainians fled to a neighboring country - decisions largely driven by risk and uncertainty at home and the geographical proximity of a safe land. In the following months, as it became apparent that the war would last, and as the conditions of the European Temporary Protection Directive became known, many Ukrainians moved further away to a Western European country. When doing so, they had to weigh the anticipated quality of life in a Western European country against the expected quality of life at home, or in a neighboring country such as Poland or Moldova. Ukrainian refugees in Western Europe are therefore unlikely to be representative of the general Ukrainian population. The aim of this paper is to analyse their self-selection patterns, with a particular focus on differences in these patterns between high- and low-conflict intensity areas and on the role of host-specific human capital.

[1] https://data.unhcr.org/en/situations/ukraine

Self-selection is a longstanding question in international migration research (Borjas 1987; Hatton and Williamson 1988; Chiquiar and Hanson 2005; McKenzie and Rapoport 2010; Aksoy and Poutvaara 2021; Abramitsky et al. 2012; Belot and Hatton 2012; Spitzer and Zimran 2018; Borjas et al. 2019). However, studies on the self-selection of refugees are scarce. Guichard (2020) and Spörlein et al. (2020) are notable exceptions, indicating that self-selection differs by both origin and destination country. Another notable exception is Aksoy and Poutvaara (2021), who find that self-selection on human capital is contingent upon gender and conflict intensity in countries of origin: both male and female refugees from countries of origin with major conflicts positively self-select on education, while in countries of origin with minor or no conflicts, women positively self-select, while men negatively self-select on education. The differences in self-selection patterns are explained by differences in the risks related to staying in an unsafe country of origin, migration risks, and gender-specific returns to human capital.

A few recent studies examined self-selection on human capital for Ukrainian refugees,consistently finding positive selection (OECD 2023; van Tubergen et al. 2023; Kohlenberger et al. 2023; Brucker et al. 2023; Kubiciel–Lodzińska et al. 2024). Some of these studies explicitly tested for self-selection patterns using regression analyses (van Tubergen et al. 2023), while others compared higher education rates among Ukrainian refugees with those of the population of Ukraine (OECD 2023; Brucker et al. 2023; Kohlenberger et al. 2023; Kubiciel–Lodzińska et al. 2024). Existing studies also suggest heterogeneity in self-selection on education across destination countries, similarly to findings for Syrian refugees (Spörlein et al., 2020). For instance, van Tubergen et al. (2023) find that highly educated Ukrainian women are more likely to move to more distant countries, and Kohlenberger et al. (2023) find higher shares of tertiary education among Ukrainian refugees in Austria than among Ukrainian

refugees in Poland. And also an early review of available data from the OECD (2023) suggests substantial heterogeneity among European countries in terms of Ukrainian refugees' higher education rates.

Most studies of Ukrainian refugees are based on non-representative data. Some estimates are based on data from public employment agencies (OECD 2023). The drawback of such data is that refugees who register with public employment services to receive help finding a job are unlikely to be a random sample of the refugee population. Other estimates are based on survey data, in which respondents are contacted through social media platforms (van Tubergen et al. 2023; Kubiciel–Lodzińska et al. 2024) or based on convenience sampling (Kohlenberger et al. 2023). A notable exception is Brucker et al. (2023), who base their analysis on a large-scale representative survey of Ukrainian refugees in Germany. The adopted data collection method may drastically affect the estimates of higher education among the refugee population. For instance, in Germany, an online survey estimated the proportion of refugees with a tertiary education degree to be 78% (Panchenko 2022), while placement interviews conducted by the German Federal Office for Migration and Refugees suggest that only 37% had such a degree (OECD 2023). Such discrepancies arise because the profiles of the respondents who are present online, at public employment services, and at integration offices tend to differ.

Our contribution to the literature is threefold. To the best of our knowledge, this is the first paper to analyse self-selection of Ukrainian refugees using multivariate analyses on representative data. Previous studies either use non representative data (van Tubergen et al. 2023; Kubiciel–Lodzińska et al. 2024) or do not account for confounding factors (Brücker et al., 2023). Secondly, subsequent to Aksoy and Poutvaara (2021), few studies have already investigated whether self-selection of refugees is contingent on conflict intensity. An exception, also based on data for Ukrainian refugees, is van Tubergen et al. (2023). However, their analysis was based on a non-representative sample of women only, while 30% to 40% of Ukrainian

refugees in Europe are men.[2] Finally, this is the first paper to compare also host-specific human capital for refugees from low and high conflict intensity regions.

2. Theoretical Considerations

When contemplating the decision to leave behind one's life and possessions for a new start in a foreign country, individuals face challenging comparisons. This involves weighing the anticipated quality of life in the foreign country adjusted for migration costs, against the expected quality of life at home. Both prospects are shaped by individual and macro-level factors discussed below, with a particular emphasis on individual human capital.

The seminal model of Borjas (1987) shows that lower income inequality in the country of origin is a necessary condition for migrants to positively self-select on human capital. A second necessary condition for migrants to positively select on human capital in the Borjas model is a strong positive correlation between the earnings a worker expects in their home country and the earnings they expect abroad. Neither of these two conditions is satisfied for Ukrainian refugees in Belgium, as argued below.

According to the Gini coefficient, inequality in Ukraine before the war was similar to that of Belgium.[3] However, the Gini coefficient is an imperfect measure of inequality, particularly for an oligarchic economy with skewed distribution of wealth, important regional disparities and unequal access to education and healthcare, which characterised Ukraine before the war (Moskalenko, 2024). Inequality in Ukraine may be higher relatively to what is found based on the Gini coefficient, but it is not lower than that of Belgium.

[2] The share of men among Ukrainian refugees in different European countries is provided in Table A6.
[3] The Gini index of income distribution was 25.6 in Ukraine in 2020, 26.6 in Belgium in 2021: https://data.worldbank.org/indicator/SI.POV.GINI?locations=UA.

The correlation between expected earnings at home and abroad is unlikely to be high when human capital is non-transferable due to barriers such as lack of foreign language skills or lack of qualification recognition. The majority of Ukrainians who took refuge in European countries did not plan their emigration sufficiently in advance: their investments in learning foreign languages and acquiring internationally transferable skills did not anticipate the Russian war. A study conducted by the European Union Agency for Fundamental Rights, which surveyed Ukrainians in August and September 2022, found that 69% of Ukrainians with tertiary education experienced lack of sufficient language knowledge as a barrier to seeking employment, while that was only the case for 52% of Ukrainians with secondary education. Similarly, 21% of Ukrainians with tertiary education experiences lack of qualifications recognition as a barrier while seeking employment, while that was only the case for 5% of Ukrainians with secondary education (FRA, 2023). In line with these observations, early evaluations of the labour market performance of Ukrainian refugees find that much of the early employment uptake by Ukrainian refugees has been concentrated in low-skilled jobs and that skills mismatches are widespread (OECD, 2023).

Selection on human capital may also be shaped by noneconomic considerations, particularly in the case of war refugees. More educated individuals tend to possess a better understanding of foreign policy, war causes, and its consequences, potentially increasing their willingness to defend their country against foreign aggression (Reznik 2023). The relationship between education and the willingness to fight for one's country is country-specific. For instance, Torgler (2003) found positive associations for the US, negative associations for Spain and West Germany, and no significant relationship in Sweden and Switzerland. In the case of Ukraine, recent studies have suggested a positive relationship between education and the stated willingness to defend the country (Bukkvol and Steder 2023; Reznik 2023). Political

considerations should therefore contribute to negative selection on education for Ukrainian refugees. Such effects may be expected to be stronger for men than for women.

One factor which could lead to positive selection on education for Ukrainian refugees is access to knowledge, as argued by van Tubergen et al. (2023). Lack of knowledge about living conditions in Europe and lack of the necessary papers in order to obtain temporary protection were important constraints in the immediate aftermath of the war. However, such information became more widespread as time passed by. We may therefore expect lower human capital among the refugees who left Ukraine later.

Self-selection on human capital may also be contingent on conflict intensity in the region of origin, as argued by Aksoy and Poutvaara (2021). The authors extend the model of Borjas (1987) by adding a safety dimension in the country of origin and show that self-selection on human capital is more negative for migrants from low conflict intensity regions than for migrants from high conflict intensity regions, where security considerations overshadow economic considerations. In addition, the authors argue that self-selection on human capital may be gender-specific, due to cross country differences in returns to human capital between males and females.

When analysing migrants' human capital, an important distinction can be made between general human capital, such as the level of education, and location-specific human capital, such as speaking the local language. Previous literature has shown that refugees possess less location-specific human capital compared to economic migrants (Brell et al. 2020). One reason is that refugee migration is generally forced and unexpected, driven by factors such as vulnerability at home and access to resources enabling their flight, which restricts their choice of destination country (Brell et al. 2020). An extension of this argument would predict that refugees arriving

from high-conflict regions should arrive with less host country-specific human capital than refugees arriving from low conflict regions.

Other socio-demographic factors influence the decision to migrate and are correlated to human capital. Gender plays a role in the decision to migrate: in general, men have a higher propensity to migrate compared to women. This is so for a number of reasons, including gender norms and women's more limited access to resources (Anastasiadou et al. 2023). The case of Ukrainian refugees in Europe is however different. The martial law in Ukraine prohibits men between the ages of 18 and 60 from leaving the country, unless they obtain an exemption. Exemptions can be obtained for fathers of three or more children, for single fathers or fathers of a child with a disability, as well as for men who are adoptive parents, caretakers, or whose close relatives died or went missing during the war.[4] This legal restriction makes it difficult or impossible for many men to leave the country; it is likely to outweigh the socio-economic factors which generally lead to male-dominated migration flows. We therefore expect Ukrainian women to have a higher propensity to become refugees compared to men.

Age is another factor affecting the decision to leave. Younger individuals have a higher propensity to migrate because they have more years to capitalize on the investments required when one migrates (Sjaastad, 1962). In addition, learning a new language, securing employment in a foreign country, and adapting to a new environment tend to be more challenging for older individuals. The higher propensity of young adults to migrate may be even stronger in Ukraine compared to other regions of origin, because families with children have a relatively safe way of entering an EU country, while the routes for refugees from other regions

[4] Source: the State Border Guard Service of Ukraine. https://dopomoha.org.ua/en/exceptions-to-the-restriction-which-prohibits-men-to-leave-the-territory-of-ukraine/

are extremely risky for children. We therefore expect Ukrainian refugees to self-select among the younger cohorts.

Finally, conflict intensity has also a direct effect on the decision to become a refugee. The war hit some regions in Ukraine, namely the Southern and Eastern parts, harder than the Western and Central regions. Given the markedly lower expected quality of life in areas with high conflict intensity, we expect individuals from these regions to be more likely to become refugees.

To summarize, there are no clear theoretical arguments that would predict strong positive selection on human capital for Ukrainian refugees in Belgium, particularly for refugees arriving later. At the same time, self-selection on human capital may be contingent upon gender and conflict intensity. Finally, we expect women, younger individuals and individuals originating from high conflict intensity regions to be more likely to become refugees.

3. Data

We administered paper surveys to refugees queuing to be registered at the unique registration centre for Ukrainian refugees in Belgium between September and December 2022. Surveys were administered by trained Ukrainian fieldworkers. The fieldworkers went to the centre on randomly chosen days and weeks[5] and approached all Ukrainian refugees who had just completed their registration, explaining the survey's purpose, and emphasizing voluntary, anonymous participation with no impact on their legal status. Respondents could choose between a Russian-language survey and a Ukrainian-language survey. The fieldworkers were Ukrainian students proficient in both languages. We gathered responses from 1,232

[5] The fieldworkers were Ukrainian students at a Belgian University. The days they were able to work at the centre were determined by their course constraints, which varied from week to week and which has no correlation with the refugee inflow at the registration centre.

participants, representing approximately 15% of the total temporary protection permits granted by Belgium between September and December 2022.

Since all refugees asking for protection in Belgium had to pass through the same registration point in Brussels, our survey should be representative of Ukrainian refugees who arrived in Belgium in the Fall of 2022. The age and gender distributions of the refugees in our sample are indeed very similar to those of the population of Ukrainian refugees in Belgium, based on data from the Belgian Immigration data (Appendix Table A1).[6] In our sample, 41% of Ukrainian refugees who arrived in Belgium late 2022 are men. According to Eurostat data, the share of men among adult Ukrainian refugees in Belgium was 32% in 2022 and 42% in 2023. The gender distribution in our sample is thus in line with official statistics for Belgium, as well as other EU countries.

However, we cannot assume that our respondents are representative of the entire Ukrainian population who fled to Belgium. Of the 62,000 Ukrainians granted temporary protection in Belgium in 2022, approximately 12% arrived between September and December.[7] Individuals arriving at later stages may differ from those who left Ukraine immediately after the onset of the war. For example, data from the Belgian immigration office and Eurostat data show that the share of women is lower for later wave refugees (Appendix Tables A2 and A6). As discussed in the theoretical section, later-arriving refugees may also have lower levels of human capital because they chose to migrate at a moment where there was more widespread knowledge about the Temporary Protection Directive and living conditions for Ukrainians in various EU countries, and when the Ukrainian diaspora in Europe was substantially larger.

[6] The age distribution for refugees in our sample differs from the population distribution because we did not survey children. Considering only the population older than 18, the shares of individuals in the age groups 18-34, 35-64, and 65+ are very similar for our sample and the population data provided by the Belgian Immigration office.
[7] https://dofi.ibz.be/en/figures/temporary-protection

To assess the self-selection of Ukrainian refugees, we complement our survey with data from the 2020 Ukrainian Labour Force Survey (UKR LFS), which contains information on age, education, labour market status, and region of residence among a representative sample of 268 328 working age Ukrainians.

4. Method

Following Aksoy and Poutvaara (2021), we constructed a pseudo-cross-sectional sample by merging our survey with the UKR LFS. We created a variable *refugee*, taking the value 1 for respondents in our sample and 0 for respondents in the UKR LFS. We ran logistic regression models to predict the probability of an individual becoming a refugee in Belgium based on the socio-demographic indicators available in our survey and the UKR LFS.

There are five shared variables in our survey and in the UKR LFS. These variables are *gender* (coded 0 for women and 1 for men), *age* (coded into eight age groups), *education* (three categories, representing secondary education or less; vocational or technical training and higher education), [8] *labour market status* before the war (three categories, representing employed, unemployed, and inactive individuals), and *region* (six categories, representing West, Centre, North, South, East, and Kyiv city, indicating where the respondent lived in Ukraine when the invasion started). In addition, we created a dummy variable, *low conflict*, taking the value of 1 for respondents coming from Western or Central Ukraine and 0 for all other respondents.

We tested the theoretical predictions discussed in Section 2 as follows. In the first step, we regressed the refugee dummy on the variables age, gender, education, and region of origin. We expect a higher probability to become refugees for younger individuals and for women, and we

[8] Vocational or technical education is an intermediate level of education, higher than secondary but lower than tertiary (higher) education.

expect a non-positive effect for education. By contrast, residing in a high conflict intensity region may either increase or decrease the propensity to leave, depending on whether the security or emotional/patriotic factors dominate. We then add labour market status before the war as a complementary indicator of human capital, whereby employment is a signal of a higher human capital compared to unemployment or inactivity. In the second step, we test whether self-selection on human capital is contingent upon gender and conflict intensity in the region of origin. We test this contingency in two ways: (a) by running separate regressions by gender and region of origin, and (b) by using interaction terms between human capital and gender and between human capital and conflict intensity in the region of origin.

5. Descriptive Statistics

Table 1 shows the sociodemographic characteristics of Ukrainian refugees in Belgium, based on our survey data, and for the overall Ukrainian population, based on the UKR LFS. As expected, refugees in Belgium are younger and have a higher proportion of women than Ukraine's overall population. Since younger Ukrainians are, on average, more educated than older Ukrainians, and Ukrainian women are more educated than men, refugees should be more educated than the overall Ukrainian population in the absence of any selection on human capital. However, our findings indicate slightly lower education rates among refugees, suggesting a negative selection of refugees on human capital.

Table 1 also shows the strong selection of refugees among the economically active population. The share of active individuals was 55% in the Ukrainian population versus 79% among Ukrainian refugees in Belgium. This difference may be driven, at least in part, by the fact that the refugees are younger. Regression analyses shown in the next section disentangle the effects of age from those of the labour market status.

Table 1: Descriptive Statistics

		Ukraine population	Ukrainian refugees in Belgium
Education	Secondary or primary	32.75%	38.64%
	Vocational or technical	22.86%	19.53%
	Higher education	44.39%	41.84%
Gender	Female	54.50%	59.00%
	Male	45.50%	41.00%
Labour market status	Employed	49.87%	66.97%
	Unemployed	5.22%	12.12%
	Inactive	44.91%	20.91%
Region	West	26.91%	41.32%
	Centre	13.38%	4.96%
	North	13.26%	9.67%
	South	11.76%	14.05%
	East	27.09%	18.68%
	Kyiv city	7.60%	11.32%
Age group	15-24	11.56%	20.11%
	25-29	7.85%	13.74%
	30-34	9.83%	13.49%
	35-39	9.79%	13.74%
	40-49	17.18%	19.54%
	50-59	16.22%	10.22%
	60-70	15.85%	6.79%
	71+	11.73%	2.37%

Note: Data on the Ukraine population is based on the 2020 Ukraine Labour Force Survey, with a sample size of 268 328. To calculate frequencies, importance weights indicated in the UKR LFS were used. Data on Ukrainian refugees in Belgium is based on the survey conducted at the reception Centre of Ukrainian refugees in Belgium, with a sample size of 1188 for education, 1222 for gender, 990 for the labour market status, 1210 for the Region in Ukraine and 1223 for the Age group.

A caveat must be kept in mind when comparing the unemployment rates for refugees in our sample with those of the Ukrainian population. Refugee unemployment rates are based on a survey question about their labour market status in Ukraine the week before the invasion (February 16-23, 2022), while Ukrainian population unemployment rates are from the 2020 UKR LFS (the latest available UKR LFS). Thus, we compare the pre-war refugee unemployment rates with the 2020 unemployment rates for the overall Ukrainian population. According to official statistics, the unemployment rate in Ukraine was 9.5% in 2020 and 9.8% in 2021. No data are available for February 2022. Considering this caveat, we observe somewhat higher unemployment rates for refugees in Belgium (15.3% of the active population)

than for the Ukrainian population (9.5% of the active population). This difference could be due to differences in the sex ratio and age structure between the two samples. Regression analyses shown in the next section disentangle these effects.

In fall 2022, the Ukrainian regions with the highest proportion of refugee outflow to Belgium were the Western region and Kyiv City. In particular, the Chernivtsi county in the West region sent the highest flows of migrants to Belgium, proportionally to the population of this county.[9] Interestingly, Chernivtsi was also outlined in Brucker et al. (2021) as a top refugee-sending county, based on representative data of Ukrainian refugees in Germany. Since conflict intensity was lowest in the West and Central regions and highest in the South and East regions, these preliminary analyses suggest that emigration rates in the fall of 2022 were higher from regions with lower conflict intensity.

6. Results

Table 2 shows the results of the logistic regressions predicting the probability that an individual is a refugee in Belgium based on their socio-demographic characteristics. As expected, results show that Ukrainian women are more likely to become refugees compared to men, and that individuals aged 18 to 24 have a higher propensity to become refugees than any other age group. In line with our theoretical predictions, the coefficients of the education variable suggest some negative selection of refugees on human capital: individuals with secondary education or less have the highest probability of becoming refugees. The odds of becoming a refugee for individuals with higher education are about exp(-0.3)=0.7 times those for individuals with secondary education or less. Keeping in mind the caveat that unemployment rates for refugees and the rest of the population are not measured exactly at the same time, we find that

[9] The breakdown of the respondents by county of origin – not shown – is available upon request.

unemployed individuals have exp(0.450)=1.57 higher odds of becoming refugees in Belgium compared to employed individuals (Table 2; Column (5)), which further supports the hypothesis that refugees negatively select on human capital. As discussed in section two, such negative selection could be driven by economic motives (economic gains from migrating are higher for unskilled individuals because a large share of skills are non-transferable) or by political motives (educated individuals are more willing to remain and defend their country from the Russian invasion).

These results contradict previous studies of Ukrainian refugees, who found positive self-selection on human capital, particularly for refugees settling in Western Europe (Kohlenberger et al. 2023; Brücker et al., 2023; van Tubergen et al. 2023). Of the previous studies, only Brucker et al. (2023) used representative data for Ukrainian refugees in Germany. A possible explanation for the divergence in our results could lie in the fact that Brucker et al. do not control for age and gender when comparing education rates for Ukrainian refugees and those of the Ukrainian population. Ukrainian women are more educated on average than Ukrainian men,[10] and younger individuals tend to be more educated than older generations. Another difference is that they focus on refugees who arrived in Germany between February 2022 and June 2022, while we survey refugees who arrived in Belgium in the fall of 2022. As discussed in the theoretical section, we expect later arriving refugees to be less skilled on average.

Ukrainians from the Western region and Kyiv show a higher tendency to emigrate to Belgium than other regions, despite the Western region having the lowest conflict intensity in Ukraine. This result is not in line with our theoretical prediction. A possible explanation for this phenomenon could be emotional or patriotic: those directly affected by intense conflict may feel a stronger emotional drive to remain and defend their country. An online survey conducted

[10] For instance, 49% of women have higher education versus 39% of men, according to UKR LFS data.

Table 2: Self-selection of Ukrainian refugees in Belgium

	(1)		(2)		(3)		(4)		(5)	
Education (ref: secondary or less)										
Vocational or technical	-0.323	***	-0.368	***	-0.339	***	-0.247	***	-0.450	***
	(0.081)		(0.090)		(0.091)		(0.091)		(0.102)	
Higher	-0.225	***	-0.321	***	-0.344	***	-0.288	***	-0.396	***
	(0.065)		(0.076)		(0.076)		(0.076)		(0.082)	
Age (ref: 18-24)										
25-29			0.177		0.189		0.176		-0.158	
			(0.116)		(0.116)		(0.117)		(0.133)	
30-34			-0.038		-0.027		-0.027		-0.374	***
			(0.113)		(0.113)		(0.114)		(0.132)	
35-39			-0.040		-0.032		-0.042		-0.380	***
			(0.113)		(0.113)		(0.114)		(0.130)	
40-49			-0.261	**	-0.269	***	-0.258	**	-0.639	***
			(0.103)		(0.104)		(0.104)		(0.123)	
50-59			-0.855	***	-0.874	***	-0.850	***	-1.162	***
			(0.121)		(0.121)		(0.122)		(0.139)	
60-70			-1.229	***	-1.270	***	-1.223	***	-0.674	***
			(0.131)		(0.132)		(0.132)		(0.143)	
71+			-2.065	***	-2.127	***	-2.042	***	-1.320	***
			(0.197)		(0.198)		(0.198)		(0.212)	
Gender (ref: female)					-0.329	***	-0.344	***	-0.588	***
					(0.061)		(0.061)		(0.070)	
Region (ref: West)										
Centre							-1.319	***	-1.238	***
							(0.140)		(0.155)	
North							-0.668	***	-0.574	***
							(0.105)		(0.116)	
South							-0.230	**	-0.105	
							(0.092)		(0.101)	
East							-0.684	***	-0.564	***
							(0.081)		(0.090)	
Kyiv city							0.051		0.174	
							(0.099)		(0.107)	
Labour market status (ref: employed)										
Unemployed									0.450	***
									(0.107)	
Inactive									-1.217	***
									(0.112)	
Intercept	-5.255	***	-4.791	***	-4.642	***	-4.330	***	-3.933	***
	(0.047)		(0.066)		(0.071)		(0.081)		(0.120)	
Number of observations	269516		269509		269503		269487		269265	

*** p<.01, ** p<.05, * p<.1; Logistic regressions. Robust standard errors in parentheses. Observations from the UKR LFS are weighted by the importance weight given in the survey. Observations from the Belgian survey have all been given a weight equal to the average weight of the UKR LFS survey, i.e. 119,54. Weighting does not affect the number of observations.

in Ukraine in March 2022 revealed a positive correlation between attacks by Russian forces and intentions among Ukrainians to join various types of resistance (Bartusevičius et al. 2023). The authors argue that violent attacks trigger emotional responses such as anger, motivating people to engage in collective actions, including costly and risky behaviours such as joining

military combat. An alternative explanation could be related to the timing of data collection. We interviewed individuals arriving in Belgium in the fall of 2022, six to nine months after the war began. Many individuals from high conflict intensity regions had left Ukraine earlier and are not captured in our sample.

Table 3: Self-selection of refugees by conflict intensity in the region of origin

	Low conflict		High conflict		Low conflict		High conflict	
Education (ref: secondary or less)								
Vocational or technical	-0.600	***	-0.020		-0.793	***	-0.236	
	(0.127)		(0.134)		(0.143)		(0.150)	
Higher	-0.883	***	0.123		-1.027	***	0.011	
	(0.117)		(0.110)		(0.124)		(0.121)	
Age (ref: 18-24)								
25-29	0.283	*	0.124		-0.076		-0.210	
	(0.153)		(0.176)		(0.188)		(0.188)	
30-34	-0.104		0.093		-0.502	**	-0.246	
	(0.159)		(0.166)		(0.198)		(0.178)	
35-39	-0.094		0.090		-0.492	**	-0.212	
	(0.158)		(0.166)		(0.197)		(0.175)	
40-49	-0.442	***	-0.091		-0.859	***	-0.483	***
	(0.144)		(0.155)		(0.188)		(0.166)	
50-59	-1.118	***	-0.644	***	-1.322	***	-1.042	***
	(0.177)		(0.175)		(0.210)		(0.189)	
60-70	-2.455	***	-0.719	***	-1.750	***	-0.229	
	(0.300)		(0.171)		(0.309)		(0.191)	
71+	-2.582	***	-1.731	***	-1.743	***	-1.093	***
	(0.329)		(0.255)		(0.340)		(0.282)	
Gender (ref: female)	-0.193	**	-0.453	***	-0.511	***	-0.632	***
	(0.089)		(0.085)		(0.106)		(0.092)	
Labour market status (ref: employed)								
Unemployed					1.065	***	-0.558	***
					(0.132)		(0.212)	
Inactive					-1.157	***	-1.259	***
					(0.173)		(0.152)	
Intercept	-4.266	***	-5.107	***	-3.897	***	-4.539	***
	(0.093)		(0.111)		(0.165)		(0.158)	
Number of observations	118239		151264		118106		151172	

*** p<.01, ** p<.05, * p<.1; Logistic regressions. Robust standard errors in parentheses. Observations from the UKR LFS are weighted by the importance weight given in the survey. Observations from the Belgian survey have all been given a weight equal to the average weight of the UKR LFS survey, i.e. 119,54. Weighting does not affect the number of observations.

Table 3 shows regression results for the same model, estimated separately for regions with low conflict intensity (West and Centre) and those with high conflict intensity (all others). As predicted, results suggest that self-selection on human capital is contingent upon conflict intensity. Negative selection on education is only observed for refugees from low-conflict regions. In addition, unemployed individuals from low-conflict-intensity regions are more

likely to become refugees compared to their employed counterparts, whereas the opposite holds for refugees from high-conflict areas. Interaction effects models reported in Appendix Table A3 confirm these differences between low and high-conflict regions to be statistically significant. These results contradict the findings of Van Tubergen et al. (2023), who do not find any difference in self-selection on education between Ukrainian refugees arriving from low and high conflict intensity regions, but they align with Aksoy and Poutvaara's (2021) thesis that refugees from low-conflict areas exhibit more negative self-selection on human capital.

In Table 4, we subdivide our sample by gender and conflict intensity.[1] These results suggest a more negative selection in terms of qualification levels for men than for women if they flee from high-conflict-intensity regions, at least if we compare secondary education or lower with other qualification levels. In addition, women from high-conflict intensity regions are positively selected in terms of employment rates, which is not the case for men. Interaction effects reported in Appendix Tables A4 and A5 do not clearly support the hypothesis of a more negative selection for men. On one hand, having vocational or technical education implies a lower probability of becoming a refugee (compared with secondary education or less), and this negative effect is stronger for men than for women. On the other hand, no significant gender difference was found regarding higher education, while being economically active appeared to more strongly influence men's likelihood of becoming refugees in Belgium (Tables A4 and A5). Thus, our results only partially support Aksoy and Poutvaara's (2021) thesis that refugee selection on human capital is more negative for men than for women. This difference in results may be due to the fact that the refugees in Aksoy and Poutvaara (2021) originated from countries where gender inequality was substantially higher than in Ukraine.

[1] Since adding the labour market status variable does not substantially alter the other coefficients, labour market status is kept in all remaining specifications.

Table 4: Self-selection of refugees by gender and conflict intensity in the region of origin

	Low conflict intensity, women		High conflict intensity, women		Low conflict intensity, men		High conflict intensity, men	
Education (ref: secondary or less)								
Vocational or technical	-0.498	***	0.274		-1.154	***	-1.022	***
	(0.190)		(0.192)		(0.208)		(0.232)	
Higher	-0.945	***	0.255		-1.126	***	-0.350	**
	(0.161)		(0.164)		(0.195)		(0.174)	
Age (ref: 18-24)								
25-29	-0.113		-0.324		-0.116		-0.086	
	(0.258)		(0.230)		(0.264)		(0.323)	
30-34	-0.395		-0.508	**	-0.720	**	0.102	
	(0.269)		(0.225)		(0.281)		(0.293)	
35-39	-0.377		-0.447	**	-0.697	**	0.123	
	(0.259)		(0.218)		(0.299)		(0.296)	
40-49	-0.880	***	-0.583	***	-0.846	***	-0.371	
	(0.259)		(0.202)		(0.261)		(0.292)	
50-59	-1.165	***	-1.153	***	-1.624	***	-0.934	***
	(0.272)		(0.226)		(0.339)		(0.346)	
60-70	-1.547	***	-0.594	***	-2.887	***	0.493	
	(0.335)		(0.230)		(1.018)		(0.336)	
71+	-2.134	***	-1.355	***	-0.674		-0.388	
	(0.432)		(0.314)		(0.553)		(0.634)	
Labour market status (ref: employed)								
Unemployed	1.116	***	-0.669	**	1.004	***	-0.386	
	(0.183)		(0.287)		(0.190)		(0.313)	
Inactive	-0.875	***	-0.980	***	-1.815	***	-2.072	***
	(0.212)		(0.171)		(0.321)		(0.305)	
Intercept	-4.096	***	-4.667	***	-4.116	***	-4.989	***
	(0.220)		(0.188)		(0.206)		(0.265)	
Number of observations	67230		87077		50876		64095	

*** p<.01, ** p<.05, * p<.1. Logistic regressions. Robust standard errors in parentheses. Observations from the UKR LFS are weighted by the importance weight given in the survey. Observations from the Belgian survey have all been given a weight equal to the average weight of the UKR LFS survey, i.e. 119,54. Weighting does not affect the number of observations.

One of our survey questions – for which we did not have an equivalent in the UKR LFS – asked respondents who declared having been employed before the war, to describe their job. Answers to this question were coded in the standard 4 digit ISCO codes by a trained Ukrainian field worker. The first digit was then selected, and regrouped into 3 categories: high skilled jobs (ISCO codes 1 and 2), intermediate skilled jobs (ISCO code 3) and low skilled jobs (ISCO codes 4 to 9). Table 5 compares the distribution of answers to this question for refugees coming from low versus high conflict intensity regions. Results show that refugees from low conflict intensity regions are significantly less likely to have been employed in high skilled jobs, confirming our result that selection on human capital is more negative for refugees arriving from low conflict intensity regions.

Table 5: Job type by conflict intensity in the region of origin

	High conflict intensity	Low conflict intensity	Pearson chi2
Job type			
Low skilled	65.19%	71.49%	
Intermediate skilled	11.13%	9.71%	592.18***
High skilled	23.68%	18.8%	

Data is based on the sample of refugees in Belgium. The variable job type is based on an open survey question where employed respondents had to describe the job they were doing the week before the war started. Answers to this open question were coded in the standard 4 digit ISCO codes by a trained Ukrainian field worker. The first digit was then selected, and regrouped into 3 categories as follows: high skilled jobs (ISCO codes 1 and 2), intermediate skilled jobs (ISCO code 3) and low skilled jobs (ISCO codes 4 to 9).

7. Host-specific human capital

Our survey included questions which capture human capital specific to Belgium. First, respondents indicated their language skills in French, Dutch, and German (the three official languages in Belgium) and in English (an internationally used language). Second, respondents indicated whether they were hosted by friends or family upon their arrival in Belgium, which is an indicator of local social networks. Third, respondents indicated whether they had previously visited Belgium, which indicates some knowledge of the country.

Table 6 compares the distribution of the answers to these questions for refugees coming from high- and low-conflict-intensity regions in Ukraine. In line with our theoretical expectations, results show that refugees from the low conflict intensity regions are more likely to arrive with host-specific human capital. The share of refugees speaking French is nine percentage points higher; the share who had visited Belgium is eight percentage points higher, and the share having social networks in Belgium is sixteen percentage points higher among refugees arriving from low conflict intensity regions than among refugees from high conflict intensity regions. These differences are statistically significant at the 1% level. Knowledge of English – which is a general rather than a host-specific form of human capital – is substantially higher among refugees arriving from high conflict intensity regions, confirming the results obtained in the

previous section. Differences in the propensity to speak Dutch are statistically significant but negligible in terms of magnitude.

Table 6: Host-specific human capital by conflict intensity in the region of origin

	High conflict intensity	Low conflict intensity	Pearson chi2
Visited BE before	8.3%	16.3%	18.29***
Housed by friends	40.03%	55.89%	30.84***
Language skills			
German	14.68%	7.57%	14.62***
English	71.23%	48.28%	63.41***
Dutch	6.98%	5.74%	30.84***
French	14.17%	22.6%	13.74***

Data is based on the sample of refugees in Belgium. Visited BE before takes the value 1 if the respondent mentions having visited Belgium as a reason for choosing Belgium for refuge. Housed by friends takes the value 1 if the respondent is housed by friends or relatives at their arrival in Belgium. German, English, French and Dutch take the value 1 if the respondent declares speaking (a little, quite well, or very well) each of these languages.

Refugees from low conflict intensity regions are thus more likely to have human capital specific to the host country, but less likely to have higher education, compared to refugees from high conflict intensity regions.

8. Conclusion

We documented the self-selection patterns of Ukrainian refugees in Belgium. In line with other studies, we find that refugees are selected among the younger cohorts, and that females are more likely to become refugees than males. Unlike other studies, we find that Ukrainian refugees are negatively selected on human capital. Two factors can explain this pattern. First, economic incentives to settle abroad may be higher for the less skilled Ukrainians in a context in which migration has not been planned in advance and a large share of human capital is non-transferable. This may also explain why we find more negative selection on human capital for refugees from low conflict intensity regions: economic motives play a relatively bigger role in their migration decisions, compared to refugees from high conflict intensity regions, for whom immediate security concerns dominate. Second, the more educated Ukrainians may be more

willing to remain and defend their country from the Russian aggression. This may also explain our finding that negative selection on human capital is stronger for men than for women

These results have important implications for Ukraine. If refugees were mostly selected among the best and brightest, economic growth would be slower and the reconstruction of Ukraine more challenging. In addition, since more educated Ukrainians have a higher willingness to defend their country, negative selection on human capital does not harm the political capital required to maintain resistance at home.

Upon first blush, the finding that Ukrainian refugees are negatively selected on human capital seems to be less good news for countries of destination, as they typically prefer to attract the most productive migrants that are easier to integrate into the labour market. However, high-skilled refugees often have difficulty finding jobs that match their qualifications due to language barriers, while also being reluctant to accept unskilled jobs. In addition, we observe that low conflict intensity areas of Ukraine such as the West region send proportionally higher numbers of refugees and that these refugees tend to arrive with more locally specific human capital, such as French language skills, social networks, and previous contact with Belgium. These factors enhance the employment and integration prospects of Ukrainian refugees even if they are negatively selected in terms of their more general human capital.

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Appendix A: Summary Statistics

Table A1: Age and gender distribution of Ukrainian refugees in Belgium: total population vs surveyed sample

		Population of Ukrainian refugees awarded temporary permits in Belgium March-December 2022	Population of Ukrainian refugees awarded temporary permits in Belgium September-December 2022	Surveyed Ukrainian refugees September-December 2022
Gender	Female	61,2%	53,9%	59,0%
	Male	38,8%	46,1%	41,0%
Age group (years)	0-12	24,2%	17,3%	0,0%
	13-17	9,2%	6,1%	2,0%
	18-34	27,1%	33,1%	45,1%
	35-64	34,4%	38,0%	47,3%
	65+	5,0%	5,5%	5,0%

Note: Data on the population of refugees are provided by the Belgian Immigration Office, and the numbers include 2% non-Ukrainians. In total, 63356 temporary permits were registered between March and December 2022, of which 7949 between September and December 2022. Data on the surveyed Ukrainian refugees are based on 1222 observations for gender and 1225 observations for age.

Table A2: Temporary protection permits delivered by Belgium in 2022 by age and gender

	Month 2022	3	4	5	6	7	8	9	10	11	12	**Total**
Men	0-12	3784	1469	818	413	302	324	167	184	177	162	**7800**
	13-17	1406	576	307	213	152	118	70	82	81	57	**3062**
	18-34	1613	786	781	526	404	427	367	319	290	262	**5775**
	35-64	2041	1071	916	661	510	516	390	378	302	254	**7039**
	65+	367	160	84	58	39	44	30	29	28	38	**877**
	Total	**9211**	**4062**	**2906**	**1871**	**1407**	**1429**	**1024**	**992**	**878**	**773**	**24553**
Women	0-12	3676	1381	815	437	301	252	182	173	161	167	**7545**
	13-17	1380	528	290	148	117	108	68	51	40	38	**2768**
	18-34	4716	1995	1401	772	571	541	382	372	346	292	**11388**
	35-64	6503	2614	1674	958	651	670	485	440	414	359	**14768**
	65+	1005	451	189	138	108	106	61	66	78	106	**2308**
	Total	**17280**	**6969**	**4369**	**2453**	**1748**	**1677**	**1178**	**1102**	**1039**	**962**	**38777**
NA	0-12	3	2	1	0	0	0	0	0	0	0	**6**
	13-17	1	0	0	0	0	0	0	0	0	0	**1**
	18-34	5	0	0	0	1	0	0	0	0	0	**6**
	35-64	6	0	1	1	0	0	0	0	1	0	**9**
	65+	1	2	1	0	0	0	0	0	0	0	**4**
	Total	16	4	3	1	1	0	0	0	1	0	**26**
Total		**26507**	**11035**	**7278**	**4325**	**3156**	**3106**	**2202**	**2094**	**1918**	**1735**	**63356**

Source: Belgian Immigration office.

Table A3: Self-selection of refugees – Interactions by conflict intensity

	Education and conflict intensity		Labour market status and conflict intensity		Education, labour market status and conflict intensity	
Education (ref: secondary or less)						
Vocational or technical	-0.245	*	-0.531	***	-0.197	
	(0.143)		(0.102)		(0.150)	
Higher	0.031		-0.436	***	0.052	
	(0.113)		(0.081)		(0.122)	
Age (ref: 18-24)						
25-29	-0.185		-0.162		-0.178	
	(0.132)		(0.132)		(0.132)	
30-34	-0.394	***	-0.376	***	-0.392	***
	(0.130)		(0.131)		(0.131)	
35-39	-0.380	***	-0.358	***	-0.366	***
	(0.129)		(0.129)		(0.129)	
40-49	-0.677	***	-0.655	***	-0.676	***
	(0.122)		(0.122)		(0.123)	
50-59	-1.204	***	-1.180	***	-1.197	***
	(0.138)		(0.139)		(0.139)	
60-70	-0.717	***	-0.689	***	-0.732	***
	(0.143)		(0.144)		(0.146)	
71+	-1.412	***	-1.387	***	-1.417	***
	(0.213)		(0.213)		(0.213)	
gender	-0.574	***	-0.572	***	-0.576	***
	(0.069)		(0.069)		(0.069)	
low_conflict_intensity	0.608	***	-0.188	**	0.488	***
	(0.113)		(0.082)		(0.145)	
Labour market status						
Unemployed	0.423	***	-0.620	***	-0.582	***
	(0.105)		(0.212)		(0.212)	
Inactive	-1.217	***	-1.301	***	-1.128	***
	(0.113)		(0.132)		(0.139)	
Vocteclowconflict	-0.533	***			-0.612	***
	(0.190)				(0.204)	
Higherlowconflict	-1.049	***			-1.092	***
	(0.157)				(0.171)	
Unempllowconflict			1.763	***	1.683	***
			(0.250)		(0.249)	
Inactlowconflict			0.206		-0.144	
			(0.165)		(0.182)	
Intercept	-4.490	***	-4.113	***	-4.457	***
	(0.133)		(0.115)		(0.138)	
Number of observations	269278		269278		269278	

*** p<.01, ** p<.05, * p<.1

Logistic regression. Robust standard errors in parentheses. Observations from the UKR LFS are weighted by the importance weight given in the survey. Observations from the Belgian survey have all been given a weight equal to the average weight of the UKR LFS survey, i.e. 119,54. Weighting does not affect the number of observations.

Table A4: Self-selection of refugees – Interactions by gender

	Education and gender		Labour market status and gender		Education, labour marlet status and gender	
Education (ref: secondary or less)						
Vocational or technical	-0.184		-0.546	***	-0.120	
	(0.127)		(0.102)		(0.131)	
Higher	-0.328	***	-0.426	***	-0.254	**
	(0.101)		(0.080)		(0.106)	
Age (ref: 18-24)						
25-29	-0.180		-0.203		-0.221	*
	(0.132)		(0.131)		(0.131)	
30-34	-0.391	***	-0.411	***	-0.430	***
	(0.130)		(0.129)		(0.129)	
35-39	-0.383	***	-0.398	***	-0.411	***
	(0.129)		(0.128)		(0.127)	
40-49	-0.670	***	-0.678	***	-0.691	***
	(0.122)		(0.121)		(0.121)	
50-59	-1.203	***	-1.206	***	-1.225	***
	(0.138)		(0.138)		(0.137)	
60-70	-0.697	***	-0.721	***	-0.741	***
	(0.143)		(0.144)		(0.145)	
71+	-1.360	***	-1.450	***	-1.428	***
	(0.214)		(0.215)		(0.216)	
gender	-0.308	***	-0.488	***	-0.076	
	(0.112)		(0.082)		(0.133)	
low_conflict_intensity	0.052		0.050		0.050	
	(0.065)		(0.065)		(0.065)	
Labour market status (ref: employed)						
Unemployed	0.419	***	0.358	**	0.366	**
	(0.105)		(0.144)		(0.143)	
Inactive	-1.227	***	-1.075	***	-1.005	***
	(0.113)		(0.124)		(0.126)	
Voctecmale	-0.820	***			-0.988	***
	(0.194)				(0.203)	
Highermale	-0.233				-0.412	**
	(0.152)				(0.162)	
Unemplmale			0.121		0.104	
			(0.212)		(0.211)	
Inactmale			-0.605	***	-0.819	***
			(0.203)		(0.217)	
Intercept	-4.302	***	-4.211	***	-4.374	***
	(0.121)		(0.116)		(0.124)	
Number of observations	269278		269278		269278	

*** p<.01, ** p<.05, * p<.1

Logistic regression. Robust standard errors in parentheses. Observations from the UKR LFS are weighted by the importance weight given in the survey. Observations from the Belgian survey have all been given a weight equal to the average weight of the UKR LFS survey, i.e. 119,54. Weighting does not affect the number of observations.

Table A5: Self-selection of refugees – Interactions by gender, low and high conflict subsamples

	High conflict		High conflict		High conflict		Low conflict		Low conflict		Low conflict	
	Education and gender		Labour market status and gender		Education, labour market status and gender		Education and gender		Labour market status and gender		Education, labour market status and gender	
Education (ref: secondary or less)												
Vocational or technical	0.180		-0.243		0.241		-0.539	***	-0.804	***	-0.477	**
	(0.182)		(0.150)		(0.187)		(0.186)		(0.143)		(0.190)	
Higher	0.147		0.011		0.218		-1.000	***	-1.021	***	-0.929	***
	(0.150)		(0.120)		(0.158)		(0.155)		(0.124)		(0.160)	
Age (ref: 18-24)												
25-29	-0.209		-0.235		-0.257		-0.074		-0.096		-0.103	
	(0.188)		(0.187)		(0.187)		(0.188)		(0.186)		(0.186)	
30-34	-0.244		-0.271		-0.290		-0.507	**	-0.520	***	-0.535	***
	(0.178)		(0.177)		(0.177)		(0.198)		(0.196)		(0.196)	
35-39	-0.212		-0.231		-0.251		-0.494	**	-0.502	**	-0.509	***
	(0.176)		(0.174)		(0.174)		(0.197)		(0.196)		(0.196)	
40-49	-0.485	***	-0.497	***	-0.519	***	-0.860	***	-0.862	***	-0.867	***
	(0.167)		(0.165)		(0.165)		(0.188)		(0.187)		(0.186)	
50-59	-1.047	***	-1.054	***	-1.079	***	-1.324	***	-1.323	***	-1.331	***
	(0.189)		(0.188)		(0.189)		(0.210)		(0.210)		(0.209)	
60-70	-0.225		-0.246		-0.273		-1.744	***	-1.766	***	-1.772	***
	(0.191)		(0.191)		(0.194)		(0.309)		(0.309)		(0.309)	
71+	-1.052	***	-1.138	***	-1.116	***	-1.721	***	-1.799	***	-1.782	***
	(0.283)		(0.284)		(0.286)		(0.341)		(0.344)		(0.345)	
gender	-0.252		-0.549	***	0.002		-0.389	***	-0.391	***	-0.163	
	(0.177)		(0.104)		(0.214)		(0.145)		(0.136)		(0.174)	
Labour market status (ref: employed)												
Unemployed	-0.553	***	-0.656	**	-0.653	**	1.067	***	1.091	***	1.102	***
	(0.212)		(0.288)		(0.288)		(0.133)		(0.182)		(0.181)	
Inactive	-1.260	***	-1.120	***	-1.059	***	-1.156	***	-0.978	***	-0.922	***
	(0.151)		(0.163)		(0.167)		(0.173)		(0.196)		(0.197)	
Voctecmale	-1.056	***			-1.228	***	-0.533	*			-0.681	**
	(0.283)				(0.299)		(0.274)				(0.281)	
Highermale	-0.329				-0.518	**	-0.044				-0.202	
	(0.215)				(0.235)		(0.243)				(0.249)	
Unemplmale			0.218		0.218				-0.062		-0.082	
			(0.426)		(0.426)				(0.263)		(0.260)	
Inactmale			-0.624	**	-0.839	***			-0.604	**	-0.752	**
			(0.278)		(0.305)				(0.302)		(0.309)	
Intercept	-4.691	***	-4.552	***	-4.755	***	-3.950	***	-3.941	***	-4.040	***
	(0.175)		(0.159)		(0.178)		(0.171)		(0.174)		(0.181)	
Number of observations	151172		151172		151172		118106		118106		118106	

*** p<.01, ** p<.05, * p<.1

Logistic regression. Robust standard errors in parentheses. Observations from the UKR LFS are weighted by the importance weight given in the survey. Observations from the Belgian survey have all been given a weight equal to the average weight of the UKR LFS survey, i.e. 119,54. Weighting does not affect the number of observations.

Table A6: Share of men among Ukrainian refugees older than 18, by year and country of temporary protection.

	2022	2023	2024
Belgium	0,32	0,44	0,43
Bulgaria	0,22	0,47	0,47
Czechia	0,30	0,39	0,38
Denmark	0,24	0,44	0,43
Germany	0,29	0,40	0,43
Estonia	0,26	0,40	0,43
Ireland	0,31	0,39	0,46
Greece	0,23	0,27	0,23
Spain	0,30	0,47	0,49
France	0,26	0,41	0,42
Croatia	0,23	0,31	0,39
Italy	0,16	0,29	0,35
Cyprus	0,24	0,30	0,38
Latvia	0,30	0,34	0,47
Lithuania	0,21	0,34	0,34
Luxembourg	0,26	0,45	0,40
Malta	0,19	0,32	0,35
Netherlands	0,32	0,40	0,38
Austria	0,23	0,37	0,38
Poland	0,16	0,32	0,36
Portugal	0,39	0,50	0,48
Romania	0,34	0,55	0,70
Slovenia	0,24	0,39	0,42
Slovakia	0,24	0,42	0,53
Finland	0,32	0,41	0,37
Sweden	0,31	0,50	0,46
Iceland	0,36	0,42	0,43
Liechtenstein	0,31	0,37	0,34
Norway	0,30	0,42	0,44
Switzerland	0,26	0,40	0,41

Source: Authors' calculations based on Eurostat data.

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