Migration and Integration in European Labour Markets

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Document Summary

This manuscript is organised into two chapters. In the first, we examine the labour market integration of migrants across the EU on a wide set of dimensions; in the second, we focus on the distributive effects of migration on native workers relying on German individual microdata.

Chapter 1: Recent Trends in Migrants' Labour Market Integration in Europe Page 4

The integration of migrants into European Union (EU) labour markets presents a significant policy challenge with broad implications for economic development, social cohesion, inequality, and the welfare of EU residents. The EU has faced unprecedented waves of migration in recent years, driven by factors such as conflict, persecution, economic opportunity, and demographic changes. This report analyses these migration trends and their impact, focusing on migrant integration into host country labour markets on several dimensions, including employment, income, and job quality. We pay particular attention to the quality of migrants' jobs in terms of atypical employment (e.g., temporary contracts, involuntary part-time work, and unsocial hours). We then identify potential mechanisms and institutional barriers to integration, including qualification recognition, self-reported horizontal and vertical skill mismatch, and language challenges. The report is structured into six sections, with the initial section outlining the stocks and flows of recent migration waves, and the subsequent sections detailing the specific dimensions of integration. The report culminates with a final section that offers closing remarks and policy recommendations based on a synthesis of the results.

Chapter 2: The Effect of Migration on the Earnings Distribution Page 112

A large literature investigates the effects of immigration on the wages of natives in an absolute sense. Yet, very little is known about how immigration affects the distribution of wages or earnings. For Germany—where the share of foreign workers almost doubled in less than a decade—we show how foreign workers have become increasingly overrepresented at the bottom of the earnings distribution. Using individual administrative data, we analyse increased (low-skill) migration to Germany in light of the EU eastern enlargement of 2004. Our results show that wages across the breadth of the wage distribution are not depressed by immigration. Rather, wages increase at the top of the income distribution—in line with the idea of complementarity between workers in different skill groups. However, foreign-born workers at the lower end of the wage distribution, the group that is the closest substitute to the new migrant arrivals, experience wage losses.

Chapter 1: Recent Trends in Migrants' Labour Market Integration in Europe

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Data Disclaimer

This report is based on data from Eurostat, EU Labour Force Survey 2010 to 2022. The responsibility for all conclusions drawn from the data lies entirely with the authors.

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Executive Summary

The integration of migrants into European Union (EU) labour markets presents a significant policy challenge with broad implications for economic development, social cohesion, inequality, and the welfare of EU residents. The EU has faced unprecedented waves of migration in recent years, driven by factors such as conflict, persecution, economic opportunity, and demographic changes. This report analyses these migration trends and their impact on EU labour markets, focusing on employment, income, job quality, occupational mismatch, and welfare take-up among migrants.

Our analysis, based on the European Labour Force Survey (EU-LFS), examines the labour market integration of migrants across EU countries, Iceland, Norway, Switzerland, and the UK (pre-2021). Key findings include:

1. Migration patterns and employment rates: Migrants' employment rates range from 60 to 70 percent in both EU-15 and non-EU-15 countries, with around 20 percent in training or education, comparable to native employment rates. Migrants are more likely to work in shortage occupations.
2. Job quality and income distribution: Migrants generally face lower job quality, with higher rates of temporary contracts, unfavourable working conditions, and lower wages. They are overrepresented at the lower end of the income distribution and face difficulties in claiming social assistance.
3. Job search and employment stability: Migrants rely more on personal networks and direct employer contact for job searches, are less likely to use public or private job services, and return to employment faster following career interruptions.
4. Asylum seekers and refugees: Asylum seekers face lower employment rates due to institutional barriers, particularly due to the recognition of foreign qualifications. This issue is more pronounced in EU-15 countries.
5. Skill mismatches: Migrants experience higher rates of horizontal (different field of study) and vertical (overqualification) mismatch compared to natives, with significant variation across EU countries.
6. Occupational task content: Migrants work in occupations with different occupational task intensities to natives. Further, against a background of de-routinisation and a declining manual job share across Europe, in some regions, migrants are more at risk of job loss.

Based on these findings, we recommend several policy measures to improve migrant integration:

- Enhance recognition of foreign qualifications: Simplify and standardise the process across the EU to facilitate faster integration and reduce skill mismatch.
- Address job quality disparities: Promote fair employment practices to ensure fair wages, job security, and favourable working conditions for migrants.
- Reduce institutional barriers for asylum seekers: Allow asylum seekers to work while their applications are processed and shorten wait times for long-term work permits.
- Monitor and evaluate integration policies: Continuous assessment is needed to ensure policies remain effective and responsive to changing migrant dynamics.

Implementing these recommendations will likely enhance the labour market integration of migrants in the EU, fostering a more inclusive and cohesive society as well as profit the public budget by making use of the labour force potential of migrants.

1. Introduction

The integration of migrants into European Union (EU) labour markets has emerged as a critical policy challenge, with implications not only for economic development at the regional and national level, but also for social cohesion, inequality, and the individual welfare of EU residents. In recent years, the EU has experienced unprecedented waves of migration, driven by factors ranging from conflict and persecution to economic opportunity and demographic change.

Notwithstanding, Europe has been already a prime destination of migrants for many decades since the end of the Second World War. According to Garcés-Mascareñas and Penninx (2016), three main periods can be distinguished in the history of recent migration. In the first period, Europe was a frequent destination for economic migrants with the deployment of guest worker schemes and immigrants from former colonies. This first period ended with the occurrence of the first oil crisis in 1973, which simultaneously marked the beginning of the second period which lasted until the fall of the Iron Curtain. In this period regular migration was often restricted but the number of asylum applications increased, with the migration flows slowly also shifting towards former emigration countries in Southern Europe. The third period is marked by the increasing influence and control through the European Union of both intra-European and third-country migration. This non-EU migration intensified in the last decade and reached a peak in the year 2015, with an estimated unprecedented one million refugees arriving in the EU, with a majority of the refugees fleeing from the Syrian civil war (Sansus et al. 2020). This peak was also classified as a migration crisis by, amongst others, Baldwin-Edwards et al. (2019). After 2015, migration remained at an overall higher level, with more than 2 million migrants entering the European Union annually, and peaked again in 2019 with an estimated 2.7 million immigrants from non-EU countries migrating to the EU (Eurostat, 2024a). While the number of non-EU immigrants decreased slightly with the start of the COVID-19 pandemic in 2020, it has since risen to an all-time high of 5.1 million in 2022 (Eurostat, 2024b), in part driven by the Russian invasion of Ukraine.

This inflow poses both opportunities and challenges for host economies. Understanding the dynamics and consequences of migrant flows and migrant integration is therefore of key importance for both policy-makers and other stakeholders. In this report, we analyse the labour market integration of migrants within EU countries. We focus on classic measures of labour market integration such as employment and income. Furthermore, we go beyond these traditional measures and also investigate the quality of employment, occupational mismatch, and welfare take-up of migrants. Where the data allows, we not only look at cross-country statistics but also at sub-national variation. The goal of this report is to obtain a comprehensive picture on immigrant integration and assimilation in EU countries' labour markets.

In the following, we also distinguish between asylum seekers and other migrants. The literature on labour market assimilation has generally tended toward not distinguishing between economic migrants and humanitarian migrants. Though there is a limited literature on refugees from the US, mostly driven by exogenous shocks (e.g. the Mariel boatlift), until recently the literature contextualising refugee outcomes in a broader setting has been relatively scarcer (see, e.g., Borjas and Monras, 2017). This is primarily due to data limitations. Not every asylum seeker is ultimately recognised as a refugee, though due to the length of the process, individuals often experience significant wait times while participating in early integration activities. Information on later outcomes is thus somewhat scarce, largely due to attrition. Recently, however, there has been increased recognition that refugees are fundamentally different from other economic migrants on several important dimensions, and these factors may ultimately affect their integration into the host country's economy (Chin and Cortes, 2015).

Our main data set is the European Labour Force Survey (EU-LFS), a harmonised survey across EU member states, four EU candidate countries, and three non-EU EFTA members. Our analysis includes current EU members, Iceland, Norway, Switzerland, and the UK (pre-2021). The survey uses standardised methods and multi-stage stratified random sampling to ensure consistency and representativeness of the EU population's demographic and socio-economic diversity. We primarily analyse the 2019-2022 waves, with a focus on the 2021 wave for migrant-specific data from the ad hoc module on migration-related issues, and also use the 2010-2018 waves to study pre- and post-migration shock periods (2010-2014, and 2015-2019, respectively). The main household respondent is our focus, with household composition variables controlling for family-level differences. Please consult Appendix A for more information on our dataset.

Our key findings can be summarised as follows. First, we assess recent migration patterns to EU member countries. We document differences between EU-15 and non-EU-15 countries and visualise how immigration has changed over time within and across EU destination countries. Second, we turn to describing the labour market position of migrants in the EU. One major finding is that employment rates for migrants vary between 60 and 70 percent for both, EU-15 and non-EU-15 countries. This is topped up by, on average, about 20 percent of the migrant population currently being in some form of training or education. These rates are comparable to native employment rates for most destination countries. In addition, we find that migrants are more likely to work in shortage occupations.

However, we also document that the job quality of migrants is, on average, lower, meaning that migrants more often work on temporary contracts, have unfavourable working conditions (to include non-social hours), and earn lower wages. Looking at differences in job quality for migrants, we find a large degree of heterogeneity across destination countries. When explicitly focusing on the income distribution, we see

that migrants are heavily overrepresented at the lower end. At the same time, we do not find evidence for migration into welfare, but see that recent arrivals are less likely to take-up benefits than previous arrival cohorts. In addition, migrants that are not in the labour force seem to have difficulties claiming social assistance.

When looking for a job, migrants rely more heavily on networks or contact employers directly than natives. Conversely, migrants are less likely to make use of public or private job search services. Nonetheless, migrants return to employment faster following a career interruption, likely due to lower reservation wages and/or reservation job quality, fewer outside options if they are not fully covered by the local social security system, or country-specific institutional frameworks that require migrants to find new employment quickly to maintain residency.

We also analyse the situation of asylum seekers and refugees more closely. As documented by the previous literature, we find that asylum seekers are less likely to be employed than other types of migrants—irrespective of the time since arrival. This is largely due to notable institutional barriers for asylum seekers. Especially in the EU-15 countries, recognition of foreign qualifications seems to be a critical issue for asylum seekers, with many not even applying due to perceived irrelevance of their previous qualifications or the complexity of the process.

Finally, we look at mismatch between the skill-sets of migrants and the occupations in which they work in order to explain our previous findings. We see that migrants more often experience horizontal mismatch, i.e. working in an occupation that is different from their field of study, and vertical mismatch, i.e. being overqualified for their current job, than natives. We document a large degree of heterogeneity in mismatch across the EU, though generally these two types of mismatch tend to go hand-in-hand.

Based on our findings, we would like to encourage policy makers to focus on enhancing the recognition of foreign qualifications by simplifying and standardising the process across the EU, which would facilitate faster integration and reduce skill mismatch. Addressing job quality disparities through fair employment practices, ensuring fair wages, job security, and favourable working conditions is another crucial dimension of long-term integration. Reducing institutional barriers for asylum seekers, such as allowing them to work while their applications are processed and shortening wait times for work permits, will also better utilise their labour market potential. Finally, continuous monitoring and evaluation of integration policies are necessary to ensure their effectiveness and responsiveness to evolving migrant dynamics. Implementing these recommendations will likely significantly improve the labour market integration of migrants in the EU.

This report continues as follows. We begin by introducing exploring recent trends in migration flows. We then characterise the labour market characteristics of these migrants in detail, have a close look at asylum seekers, and identify key integration challenges. Finally, we conclude and discuss potential avenues for policy makers to improve the integration of migrants in the EU.

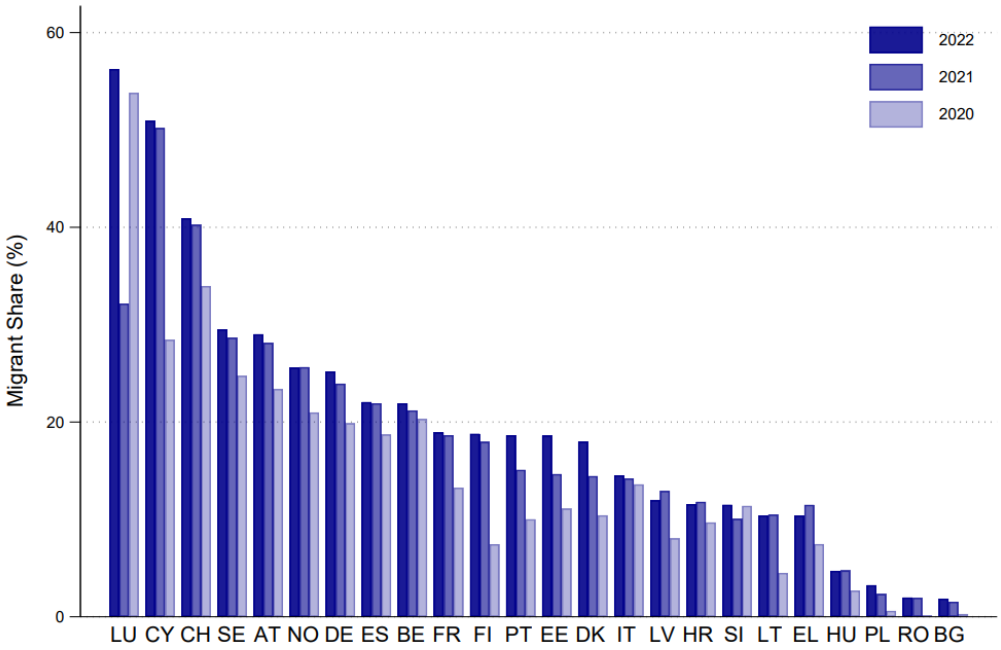
2. Migration in and Across Europe

2.1. Geographic Mobility of Migrants in Europe

To measure geographic mobility in an inter-country sense, we consider both the size and structure of stocks and flows. Figure 1 illustrates the weighted relative migrant stock by EU-LFS reporting country for the three most recent survey waves. What is immediately apparent is the heterogeneity across Europe, wherein for some countries over 50% of the working-age population consists of individuals with a migration background in the most recent wave (e.g., Luxembourg and Cyprus), while for countries like Hungary, Poland, Romania, and Bulgaria less than 5% of the adult workforce possesses a migration background. For many countries, year-on-year differences are small, though for certain countries, e.g. Luxembourg, the decrease in migrant workers in 2021 may indicate return migration post-COVID-19 or correspondingly reduced inflows.

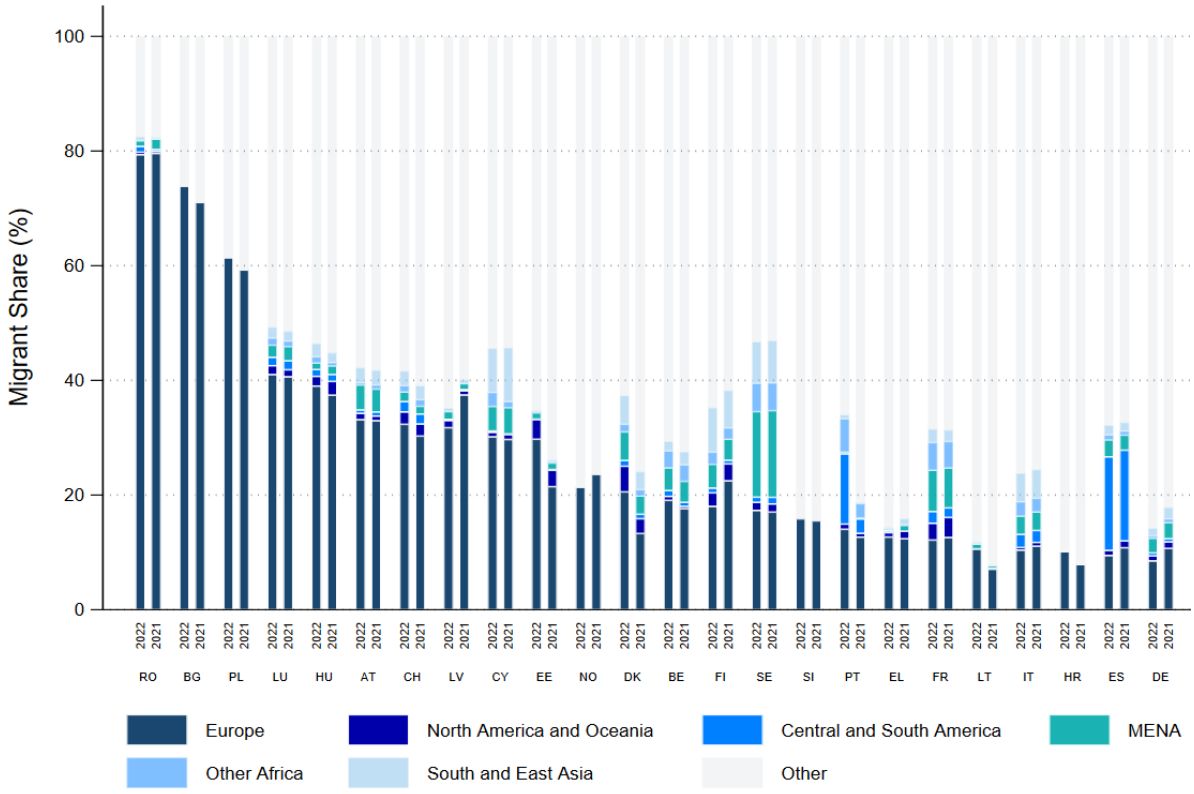
For a more detailed view of the composition of these migrant shares, Figure 2 illustrates the relative distribution by region of origin. However, not all migrants disclose their region of origin, and some countries choose not to report statistics on the origin of non-European migrants. Figure B1 illustrates the proportion of those migrants for which the region of origin cannot be identified. Figure 2 indicates that, overall, Romania, Bulgaria, and Poland host the highest share of migrants of European origin, while among the EU-15 countries, Luxembourg hosts the highest share in the most recent wave, closely followed by Austria. At the other end of the scale, the country with the lowest share of migrants from other European regions is Germany, though the disclosure rate of non-EU migrants is much lower in the German case (see also Figure B1). Perhaps unsurprisingly, the largest share of the working-age migrant population in Spain (who disclosed their region of origin) are those from South or Central America, which likely speaks to a combination of favourable visa processes and a shared language.

Figure 1. Working Age Migrant Share Relative to Total Working Age Population (%) by Country of Residence for 2019, 2021, and 2022



Source: EU-LFS 2020-2022, own calculations.

Figure 2. Working Age Migrant Share by Region of Origin Relative to Total Working Age Migrant Population in Percent by Country of Residence for 2021 and 2022



Source: EU-LFS 2021-2022, own calculations.

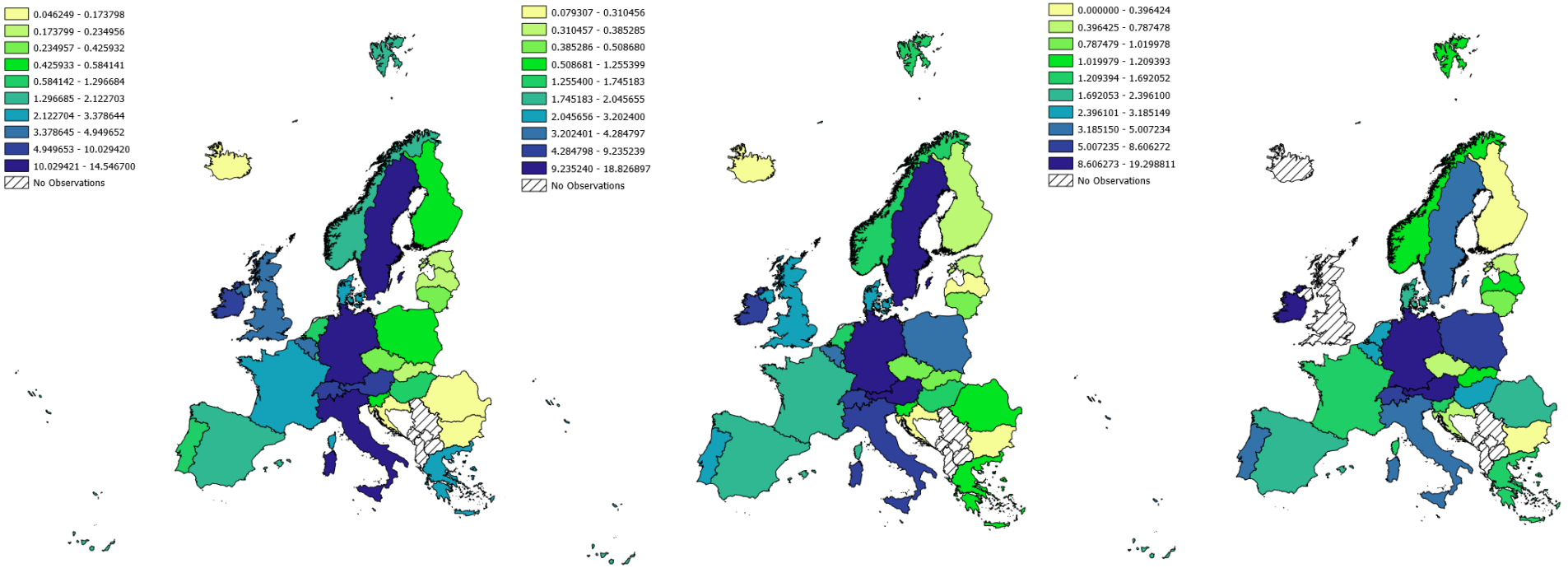
These differences in migrant stock composition, in terms of migrant shares with a European and non-European origin, should be borne in mind for the remainder of this report. Countries with a larger share of European migrants may be relatively less affected by issues of qualification recognition, given the homogenisation of European education that followed the Bologna Reform process, and migrants with a European background may be less affected by matters related to e.g., low reservation job quality etc. if they are not reliant on stable employment to maintain visa status.

In terms of migration flows, however, it is also a helpful exercise to examine the relative distribution of migrant inflows over the past decade. In particular, whether more recent arrivals are spatially located in different places to earlier arrivals. Pooling the 2010-2022 waves of the EU-LFS, we select a sample of migrants based on year of arrival assigning migrants to one of three cohorts; 2010-2014, 2015-2019, and 2020-2022, to reflect the pre-refugee inflow period, the refugee inflow period, and the COVID/Post-COVID era, respectively. In Figure 3 we illustrate the relative concentration of where migrants are resident today conditional on arrival cohort at the country level, and in Figure 4 we plot the within-spatial-unit change over time at the country (**A**) and augmented NUTS 2[1] (**B**) levels, between the first and third cohort, to illustrate shifting dynamics between the pre-refugee inflow period and more recent arrivals. In Figures B3 and B4 in the Appendix, we repeat this analysis while differentiating between EU and non-EU migrants.

[1] Modifications were made to shapefile boundaries to account for limitations to the EU-LFS data. The variable recording sub-national region is missing for DE, FI, FR, IT, NO, UK, and statistics can thus be computed at the country level only. Similarly, for HR, IE, and LT, a change in NUTS organisational structure part way through the reporting period requires top-level aggregation when harmonising data from older waves, though more recent waves are unaffected. Further, AT only reports region of residence at the NUTS 1 level. See Figure B2 in the Appendix for technical details.

Figure 3. The Relative Distribution of Migrants by Arrival Cohort in Deciles

(**A**) 2010-2014 (**B**) 2015-2019 (**C**) 2020-2022

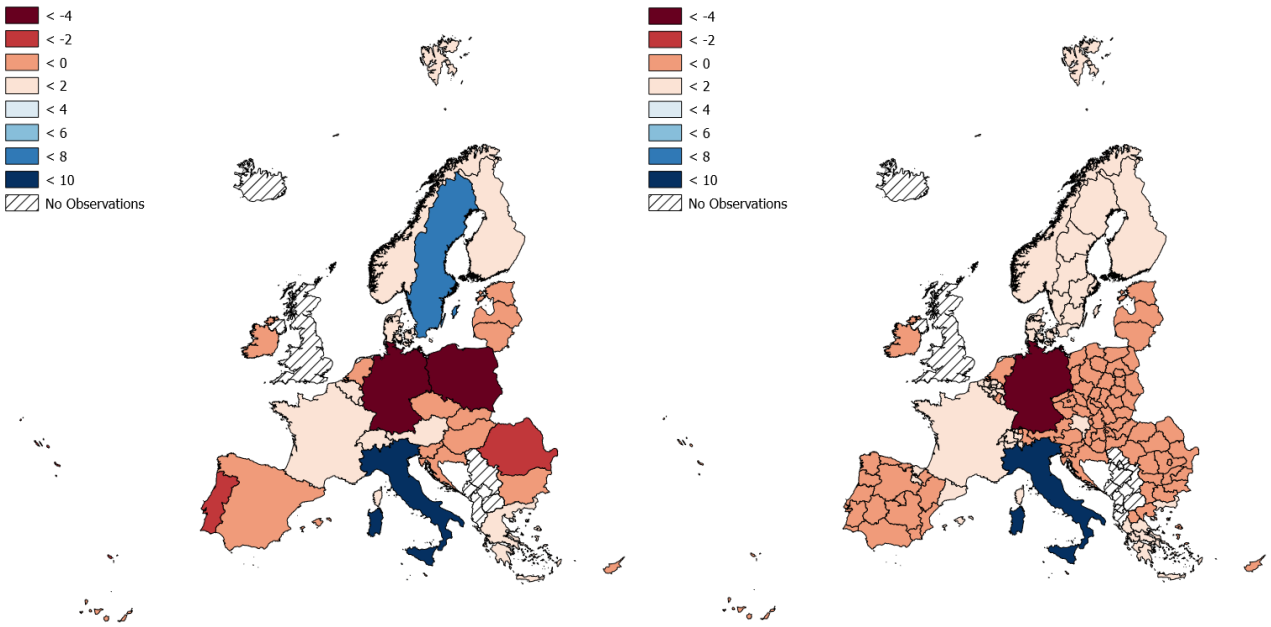


Source: EU-LFS 2010-2022, own calculations.

Figure 3 illustrates three groups of countries: those that have a rather stable relative inflow of migrants in a rank order sense, while some countries attract more migrants over time and others seem to receive proportionally fewer arrivals. The first group is the largest, consisting of Germany, Spain, and Switzerland, as well as the Baltic countries, Czechia, Slovakia, Denmark, Ireland, and Austria. Clear upward trends in immigration are visible for Poland, Portugal, the Netherlands, Romania, and Bulgaria, which received a proportionally larger share of migrants in recent years while immigration appears to have declined in a relative sense in Italy, France, the UK, and the other Scandinavian countries according to the EU-LFS data and the chosen time periods.

Figure 4. Change in Migrant Share between Baseline Arrivals Pre-Refugee Shock (2010-2014) and Recent Arrivals (2020-2022) in Percentage Points

(**A**) Country (**B**) Sub-national Region



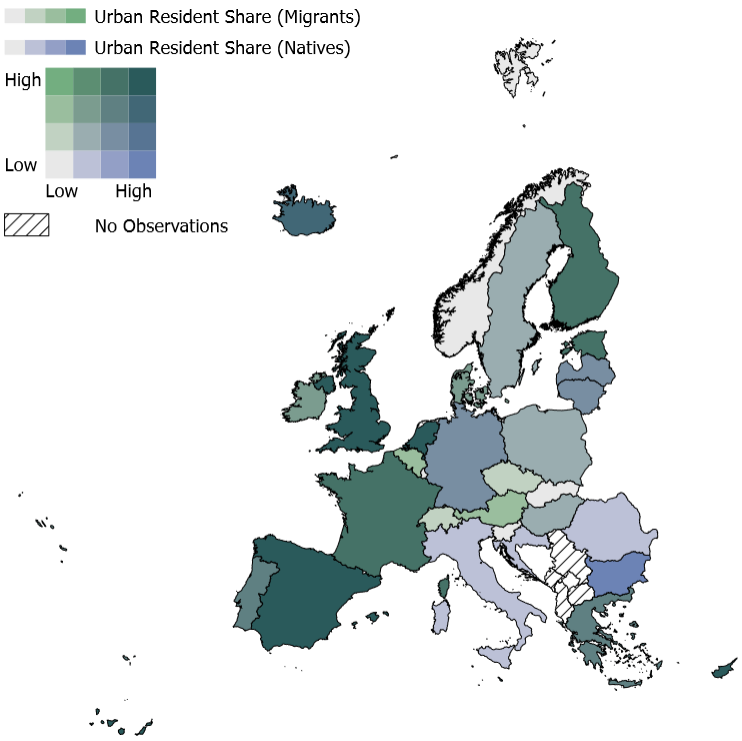
Source: EU-LFS 2010-2022, own calculations.

In addition to the relative distribution depicted in Figure 3, we additionally report the within-spatial unit change over time in Figure 4. Here we depict the change (in percentage points) between the relative share of arrivals in the baseline period pre-refugee inflow 2010-2014, and the most recent arrivals 2020-2022. A negative score indicates that arrivals pre-refugee inflow were lower than today, while a positive score indicates that the share of arrivals was higher in the baseline period. For countries like Germany, and much of Central and Eastern Europe, migrant arrivals today are much higher. In Germany, for example, the share of arrivals pre-refugee inflow was more than four percentage points lower in the baseline period. For countries like Italy, on the other hand, the number of migrant arrivals was higher in the baseline period and has declined over time. For many countries, the change at the regional level is less extreme

than at the national level, indicating that in larger countries migrants are generally well-distributed across regions. In Belgium and Switzerland, on the other hand, the increased arrivals have disproportionately settled in certain regions relative to the migrant distribution in the baseline period.

In addition to the total migrant population considered here, Figures B3 and B4 in Appendix B additionally report results while distinguishing between EU and non-EU migrants. There are several notable differences. In the baseline period, some countries, e.g., Germany, Belgium, Norway and Italy received relatively more non-EU migrants than EU migrants in the baseline period. Others, like Poland and Hungary, received a much higher share of EU migrants (Poland, for example, is in the 8th tercile for EU migration but only the 3rd for non-EU migration). In Poland's case, this pattern has reversed for the most recent cohort of arrivals, and they now receive comparatively more non-EU arrivals (which may in part be driven by conflict in Ukraine). For most of Europe, Figure B4 demonstrates declining numbers of non-EU migrants in the most recent period relative to the baseline period, with the exception of Germany, even as EU migration rises.

Figure 5. The Joint Spatial Distribution of Recently Arrived Migrants and Natives Urban Shares in Quartiles for 2018-2022



Source: EU-LFS 2018-2022, own calculations.

While the regional pattern in Figure 4 (**B**) seems to suggest that migrants are quite proportionally distributed across EU member states, the level of aggregation at the NUTS 2 level is still quite high,

masking urban and rural differences. By limiting the analysis to migrants who arrived in the most recent five-year period for which data is available (e.g. pooling rounds 2018-2022), we use the degree of urbanisation to establish the relative urban concentration of migrants based on the joint distribution of migrants and natives. Figure 5 demonstrates that for many countries, migrants are proportionally overrepresented in urban spaces.

2.2. The Socio-demographic Composition of Recent Arrivals

In part due to selection on a number of socio-economic background characteristics when deciding to migrate, and in part due to differences in the sending country's socio-demographic composition, migrant populations typically possess different socio-demographic and economic backgrounds compared to host-country natives. Tables 1 and 2 provide an overview of the socio-demographic composition of recent arrivals, limited to those who arrived five years ago or less from the date they were surveyed in 2022, the most recent wave for which we have data. The sample is restricted to those not born in the country of residence, and who are of working age.

Analysing the socio-demographic data of migrants in various EU member states, including both EU-15 and non-EU-15 countries, reveals several interesting insights into their labour market integration. The age distribution among migrants shows notable variation. Sweden and Norway have the highest shares of migrants in the age bracket 15-25, suggesting a youthful migrant population likely driven by education or early-career opportunities, as well as the immigration of young refugees. In contrast, Greece and Croatia have the lowest shares in this age group, indicating fewer young migrants possibly due to economic instability or fewer educational opportunities. The 25-34 age group is also significantly represented in countries like Luxembourg, Germany, Cyprus, and Poland, reflecting strong labour markets attracting young professionals. The 35-44 age group is relatively evenly distributed across countries, with Finland and Poland having the highest share. Older migrants, particularly those aged 55-64, are most prominent in Portugal and Croatia, indicating possible retirement migration or older workers remaining in the labour force longer.

In terms of gender, the balance is fairly evenly distributed across Europe, with a slight tilt towards more females in Greece, Italy, Cyprus, and Latvia, which could indicate migration patterns influenced by family reunification or labour demand in sectors that tend to employ more women. On the other hand, countries like Bulgaria and Romania show a significant male over-representation among migrants. Given that the age distribution tends toward younger workers in these countries, this possibly indicates migration for manual labour-intensive job purposes, particularly given the relatively high share of low-educated migrants.

Table 1. Weighted Socio-demographic Composition of Recent Working Age Migrants in Percent by EU-15 Country of Residence

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Age													
15-25	9.55	12.29	9.97	8.85	3.55	11.55	9.50	9.57	8.82	10.01	6.97	15.86	9.71
25-34	22.20	21.41	22.35	21.23	14.83	19.09	21.36	19.34	19.95	23.09	17.50	22.61	20.41
35-44	26.87	25.79	25.85	25.03	27.61	26.84	28.47	25.11	27.85	26.23	21.31	25.61	26.05
45-54	23.64	23.50	22.92	26.34	31.96	26.66	23.79	24.01	26.91	24.19	29.02	20.08	25.25
55-64	17.74	17.01	18.90	18.55	22.06	15.85	16.87	21.97	16.46	16.49	25.21	15.84	18.58
Gender													
Male	48.61	48.03	50.38	48.64	46.59	47.56	48.23	48.40	46.39	51.57	47.73	49.73	48.49
Female	51.39	51.97	49.62	51.36	53.41	52.44	51.77	51.60	53.61	48.43	52.27	50.27	51.51
Education													
Low	24.31	33.98	36.09	22.01	28.14	39.33	16.93	26.57	46.37	22.66	37.96	30.07	30.37
Medium	39.28	33.11	34.63	31.44	38.82	29.43	39.54	30.07	39.95	22.02	33.32	27.02	33.22
High	36.42	32.91	29.28	46.55	33.05	31.24	43.53	43.35	13.68	55.32	28.71	42.91	36.41
Labour Market Status													
Employed	66.50	61.01	69.40	74.15	64.89	65.85	71.31	66.34	62.80	69.44	76.86	65.84	67.86
Education/Training	8.30	10.11	8.17	10.25	2.81	7.57	10.49	6.69	5.21	9.52	4.36	15.99	8.29
Unemployed	9.56	8.80	8.48	5.02	15.99	16.53	9.63	12.08	14.39	5.83	9.60	10.84	10.56
Inactive	15.46	20.56	13.40	10.62	16.42	10.28	8.33	15.10	17.52	14.97	9.27	7.31	13.27
Region of Origin													
Europe	33.13	19.06	8.50	20.54	12.67	9.44	18.02	12.14	10.38	41.01	14.03	17.30	18.02
N. America & Oceania	1.11	0.69	0.88	4.47	0.75	0.89	2.35	2.92	0.45	1.54	0.91	1.41	1.53
South & Central America	0.59	1.04	0.52	1.02	0.32	16.32	0.84	2.05	2.30	1.47	12.23	0.91	3.30
MENA	4.35	3.96	2.56	4.98	0.29	2.96	4.15	7.22	3.20	2.12	0.32	14.93	4.25
Other Africa	0.37	2.95	0.39	1.31	0.13	0.85	2.12	4.81	2.47	1.23	5.82	4.92	2.28
South & East Asia	2.65	1.68	1.38	5.05	0.18	1.74	7.77	2.37	5.00	1.92	0.73	7.27	3.14
Other	57.79	70.62	85.77	62.62	85.67	67.80	64.76	68.49	76.20	50.72	65.97	53.26	67.47

Source: EU-LFS 2022, own calculations.

Table 2. Weighted Socio-demographic Composition of Recent Working Age Migrants in Percent by Non-EU-15 Country of Residence

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Age													
15-25	7.36	8.29	7.95	4.19	2.09	8.69	4.67	5.18	12.55	5.74	8.91	10.14	7.15
25-34	24.80	19.80	30.60	19.34	14.20	21.04	22.89	17.99	22.31	24.77	25.86	17.14	21.73
35-44	21.87	27.54	27.83	23.39	20.21	30.60	22.31	19.54	28.88	36.82	26.64	24.18	25.82
45-54	28.19	24.55	18.01	23.42	26.27	25.21	19.16	21.28	21.77	20.07	27.41	22.11	23.12
55-64	17.78	19.83	15.60	29.66	37.23	14.46	30.98	36.01	14.50	12.60	11.18	26.43	22.19
Gender													
Male	58.61	50.08	47.60	51.29	49.08	50.00	54.40	48.47	50.86	56.40	60.96	51.03	52.40
Female	41.39	49.92	52.40	48.71	50.92	50.00	45.60	51.53	49.14	43.60	39.04	48.97	47.60
Education													
Low	20.18	26.39	13.87	9.37	18.31	10.97	6.98	7.19	28.92	6.66	29.78	23.31	16.83
Medium	57.73	29.25	26.52	42.18	58.23	49.94	51.74	53.75	26.44	55.37	57.71	57.60	47.20
High	22.08	44.36	59.61	48.45	23.46	39.10	41.28	39.07	44.64	37.97	12.51	19.08	35.97
Labour Market Status													
Employed	65.05	73.63	79.63	75.90	66.01	79.19	75.47	67.17	69.17	79.14	63.11	68.56	71.83
Education/Training	6.33	6.77	3.23	3.05	1.58	6.03	3.18	2.13	12.96	3.91	3.52	6.71	4.95
Unemployed	20.58	4.42	6.56	7.02	11.58	5.74	10.47	9.31	6.59	5.29	7.35	9.85	8.73
Inactive	7.74	14.74	10.48	14.07	20.71	9.42	10.61	21.38	11.28	11.71	23.41	14.86	14.20
Region of Origin													
Europe	73.86	32.33	30.15	29.72	10.11	39.00	10.58	31.74	21.36	61.36	79.34	15.85	36.28
N. America & Oceania	0.00	2.16	0.78	3.43	0.00	1.69	0.04	1.24	0.00	0.00	0.45	0.00	0.82
South & Central America	0.00	1.81	0.24	0.08	0.00	1.20	0.00	0.21	0.00	0.00	1.03	0.00	0.38
MENA	0.00	1.67	4.29	1.08	0.00	1.15	0.84	1.36	0.00	0.00	0.97	0.00	0.95
Other Africa	0.00	1.11	2.42	0.20	0.00	1.08	0.03	0.00	0.00	0.00	0.11	0.00	0.41
South & East Asia	0.00	2.58	7.72	0.24	0.00	2.32	0.32	0.63	0.00	0.00	0.59	0.00	1.20
Other	26.14	58.35	54.41	65.23	89.89	53.56	88.19	64.82	78.64	38.64	17.52	84.15	59.96

Source: EU-LFS 2022, own calculations.

In general, there is significant variation in the education distribution among migrants. Italy and Spain in the EU-15, and Romania and Poland in the non-EU-15 countries all have high shares of low-educated migrants, possibly associated with employment in low-skilled sectors. Conversely, Finland, Luxembourg, Cyprus, and Estonia have high percentages of highly educated migrants, suggesting these countries attract or select for high-skilled labour. Labour market status also varies substantially, and while Portugal,

Denmark, Cyprus, and Hungary have high employment rates among migrants, indicating successful migrant integration into employment, Greece, Spain, and Bulgaria have lower employment rates and higher unemployment rates, reflecting ongoing economic challenges. Sweden and Norway have notable percentages of migrants in education or training, indicating strong integration programs, while high inactivity rates in Belgium and Latvia might indicate challenges to labour market entry for certain migrant groups.

The region of origin for migrants shows considerable diversity. Austria, Luxembourg, Bulgaria, and Romania have high percentages of European migrants, reflecting regional mobility within Europe. Countries like France, Sweden, and Switzerland show significant representation from MENA and South & East Asia, likely due to historical ties and asylum policies.

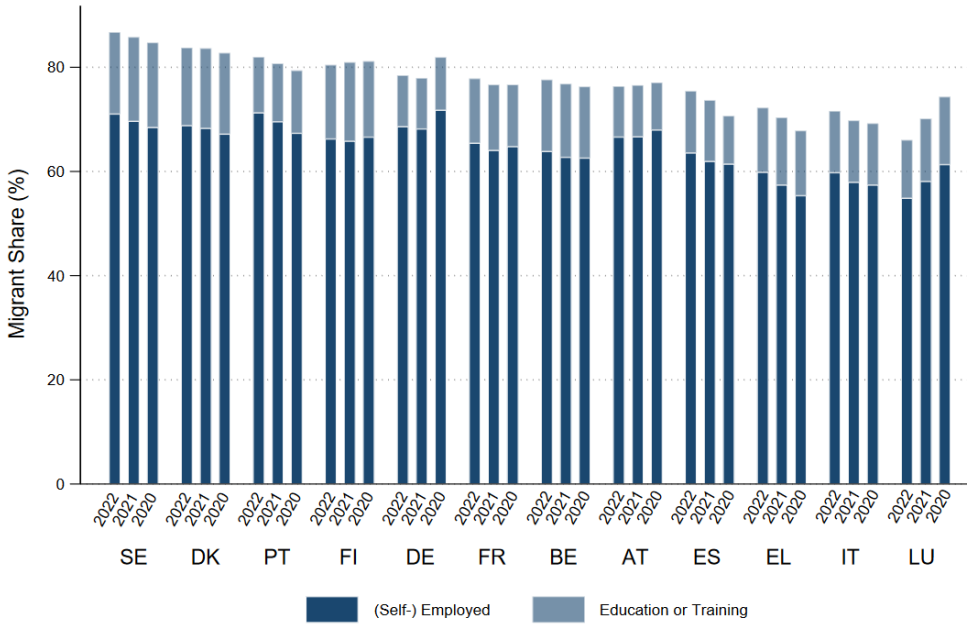
3. Labour Market Integration of Migrants in Europe

The previous section gave an overview on recent migration trends to EU member states. It also gave already some first indications about the labour market integration of migrants. The analysis in this section builds on this and provides an in-depth view on the integration and assimilation process of migrants in the EU.

3.1. Employment

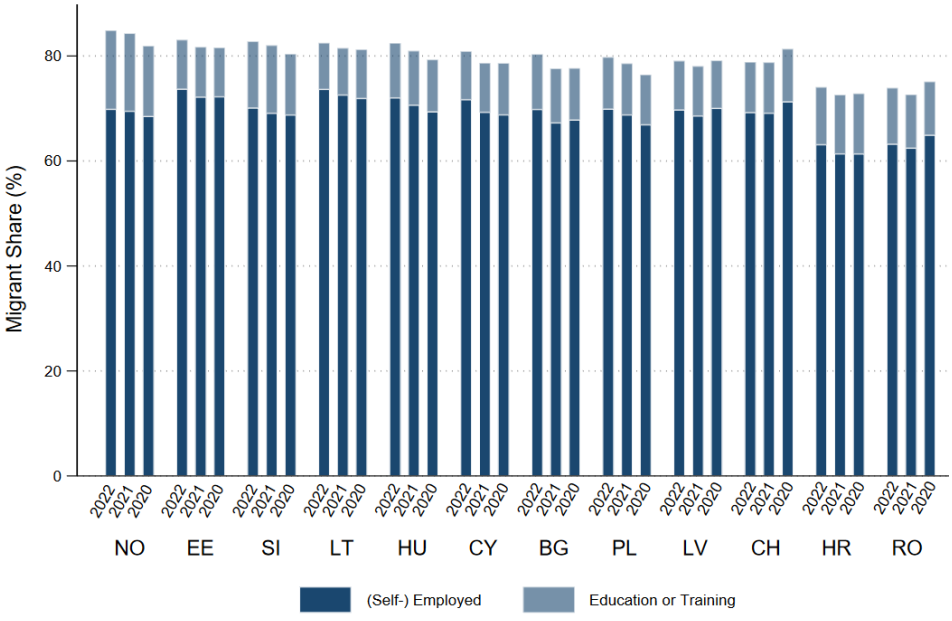
One indicator of how well migrants are able to integrate into host economies is whether or not they can find employment. As demonstrated in Figures 6 and 7, the weighted share of working-age migrants whose primary labour market status is either a) (self-) employed, or b) in some form of education or training, is broadly similar across Europe. Similarly, in 2022 there are only small differences evident in the employment rates of working-age migrants and natives (see Tables C1 and C2 for EU-15 and non-EU-15 countries, respectively), with less than one percentage point difference between the two groups for most countries (except Belgium, Germany, and Cyprus). For many countries, the difference is half a percentage point or less.

Figure 6. Working Age Migrant Share of (Self-) Employed or in Education/Training Relative to Total Working Age Migrant Population in Percent by EU-15 Country of Residence for 2020, 2021 and 2022



Source: EU-LFS 2020-2022, own calculations.

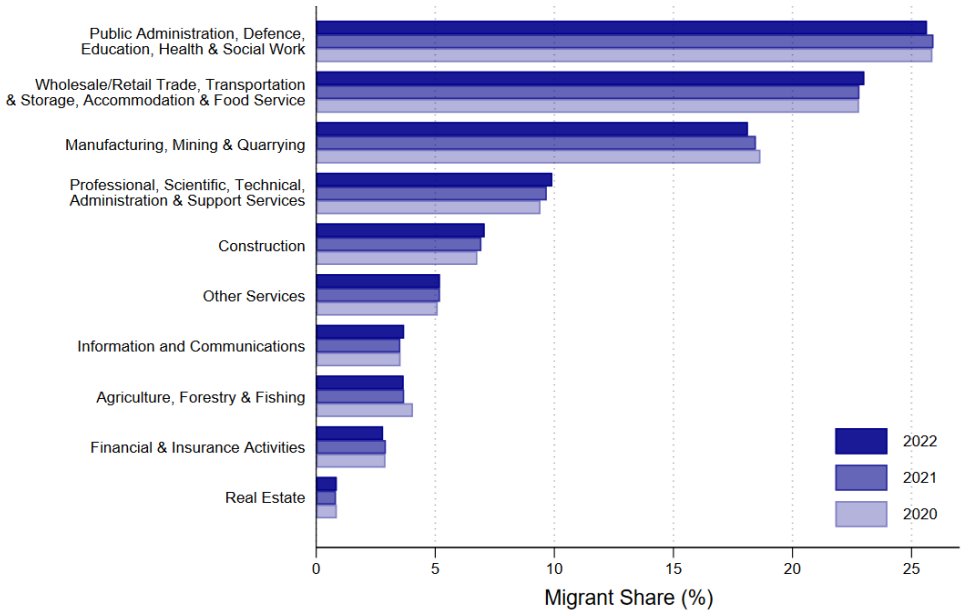
Figure 7. Working Age Migrant Share of (Self-) Employed or in Education/Training Relative to Total Working Age Migrant Population in Percent by Non-EU-15 Country of Residence for 2020, 2021 and 2022



Source: EU-LFS 2020-2022, own calculations.

There are differences, however, in the rate at which migrants participate in some form of education or training as their primary labour market activity. In Figures 6 and 7, the relative proportion of migrants participating in education appears to be approximately stable over time and is similar across much of Europe. Tables C1 and C2 suggest, however, that migrants are less likely to participate in education than natives, with a difference greater than one percentage point for many countries. The difference is substantial for some countries in particular, e.g., for Luxembourg and Cyprus, the difference is four and six percentage points, respectively. In part, this may be driven by the selective migration of educated migrants who already completed some form of education or training before migrating, some of whom may be resident in their host country on the basis of a skilled-worker visa (in the case of non-European migrants).

Figure 8. Distribution of (Self-) Employed Migrants by Industry (NACE Rev 2, 1 digit) in Percent for 2020, 2021, and 2022

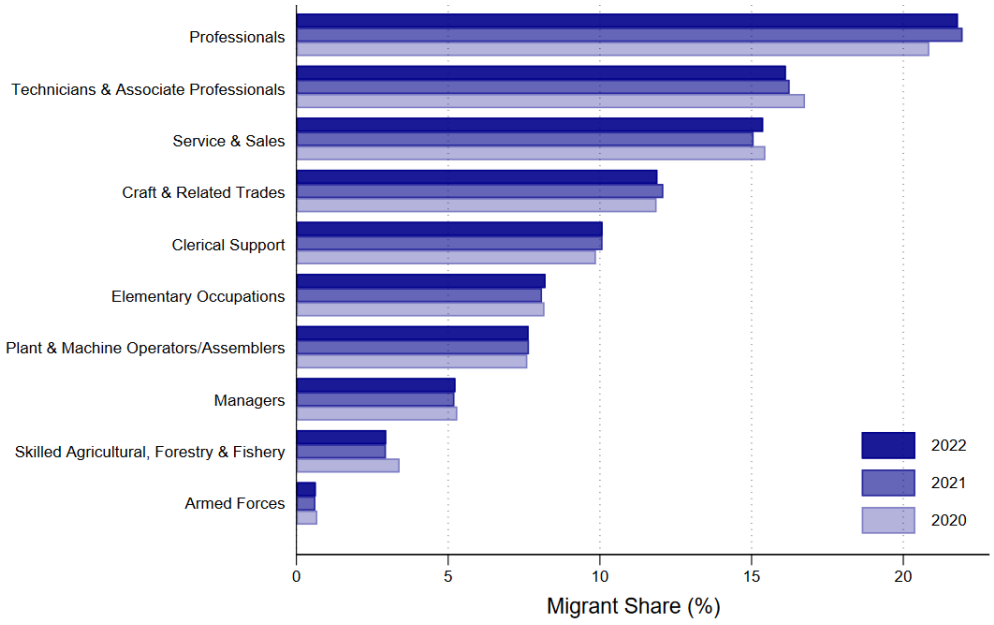


Source: EU-LFS 2020-2022, own calculations.

Although we are not able to observe the conditions under which an individual resides in their host country, the distribution of migrants over industries and occupations supports this idea. Restricting the sample to migrants who are currently (self-)employed, Figures 8 and 9 illustrate the distribution of migrants between industries (NACE Rev 2, 1 digit) and occupations (ISCO-08, 1 digit), respectively. In Appendix B, Figures B5 and B6 depict the disaggregated distribution by region of origin. Migrants are most likely to work in professional occupations and are most heavily concentrated in three industries specifically. Benchmarking these figures against the distribution of natives across industries and

occupations in 2022 (see Tables C3 and C4 for industries and occupations, respectively), reveals the share of migrants and natives is extremely similar across industries and occupational groups.

Figure 9. Distribution of (Self-) Employed Migrants by Occupation (ISCO-08, 1 digit) in Percent for 2020, 2021 and 2022



Source: EU-LFS 2020-2022, own calculations.

One very important policy question regarding immigration and labour markets for many EU member states is whether migration helps to alleviate labour shortages. Given our data, we can investigate this question and analyse whether immigrants select into shortage occupations in the country of destination. After defining whether or not an individual works in a shortage occupation (based on ISCO-08, 4-digit occupations aggregated at the 3-digit level, due to EU-LFS data restrictions)[2], using logistic regression we estimate the likelihood that a migrant worker is employed in a shortage occupation. To do so we pool the most recent five waves of the EU-LFS (2018-2022), and control for a) socio-demographic characteristics (i.e., age and its square, gender, and level of education), b) migrant-specific characteristics (i.e., time since

[2] Shortage occupations are defined in Table 3 of the following European Labour Authority report: https://www.ela.europa.eu/sites/default/files/2023-03/eures-labour-shortages-report-2022.pdf. Shortages are not individualised by country. To be included, the occupation must have been reported as in-shortage by at least 38% of the respective labour statistical offices. Our results can therefore be understood as an intensive margin, as additionally considering localised shortages could additionally reveal an extensive margin of migrant over-representation.

arrival), and c) fixed effects for the year surveyed and the country of residence. In a further specification, we additionally control for the region of residence, excluding those countries for which information about the sub-national unit is unavailable.

Table 3. Marginal Effects of Migrant Status on Employment in a Shortage Occupation for 2018-2022

	(1)	(2)	(3)	(4)
Migrant	0.0795***	0.0768***	0.112***	0.109***
	(0.000573)	(0.000594)	(0.00100)	(0.00118)
Socio-demographic Controls		X	X	X
Migrant-specific Controls			X	X
Year Fixed Effect	X	X	X	X
Country Fixed Effect	X	X	X	
Region Fixed Effect				X
Observations	7,032,224	6,264,436	6,264,436	4,442,188

Source: EU-LFS 2018-2022, own calculations.

Even after the inclusion of control variables, migrants are much more likely to be employed in shortage occupations. There is little change when including region fixed effects instead of country fixed effects, suggesting that the results are not primarily driven by regional sorting. Figure B7 in Appendix B demonstrates, however, that the probability of employment in a shortage occupation is larger for non-EU migrants than for EU migrants.

3.2. Quality of Employment

While the ability of migrants to obtain employment may suggest integration on one dimension, a related concern is whether or not these are so-called 'low-quality' jobs. That is, jobs that are a poor match for the individual's skills (e.g., horizontal and vertical mismatch), jobs that have non-social working hours (e.g., shift work, night work, weekend work etc.), or jobs that are (by design) only partially covered by the social security system (e.g., part-time or temporary contracts). We address the first issue in Section 6.1,

and the latter two here. First, based on the most recent two waves of the EU-LFS[3], and limiting the sample to (self-) employed individuals, Tables 4 and 5 summarise the non-wage job characteristics of migrant workers—and the differences between migrants and natives—for 2021 and 2022, respectively.

Though the figures here do not control for compositional differences between migrants and natives in terms of age, gender, or occupation, there are immediate aggregate differences evident between migrant and native populations, particularly for certain host countries. Migrants tend to work longer hours in countries like Romania and Lithuania, while in Finland and Germany, they typically work fewer hours. The number of jobs held by migrants shows minimal variation from natives across countries, suggesting migrants are not working multiple low-wage informal sector jobs, such as Uber, food delivery etc., as has been documented in other countries. However, a notable desire to work more hours is found in Sweden and Germany, contrasting with a lower desire in Cyprus and Malta.

There are also notable differences in employment relations both between migrants and natives, and between countries. For example, temporary contracts are more common among migrants, especially in Spain and Romania, whereas countries like Portugal and Croatia exhibit a reverse relationship. Shift work is also notably higher for migrants in Slovenia and Malta, but lower in Croatia and Finland. Fully remote work is more prevalent among migrants in France and Finland, but less so in Belgium and Cyprus. The frequency with which migrants work non-social hours also varies. Night work is more common for migrants in Germany and Malta, while it is less common in Hungary and Greece. Evening work shows significant positive differences for migrants in Malta and Bulgaria, yet occurs less frequently for those in Greece and Croatia. Migrants are also more frequently engaged in Saturday work (Malta and Slovakia) and Sunday work (Malta and Bulgaria) in some countries but are less likely to work on weekends in others (Finland, Portugal, Luxembourg, and Croatia).

To better illustrate the distributional differences, we pool data from the EU-LFS waves conducted 2018-2022 and restrict the migrant sub-sample to those who arrived within said five-year period. Then, separately for migrants and natives, we compute the weighted share of the working population who are working more than one job and the share who are working in impermanent temporary contract positions.

[3] Variables measuring non-social working hours were absent from the most recent round of the EU-LFS.

Table 4. Weighted Non-Wage Job Characteristics of (Self-) Employed Migrants and Migrant-Native Differences by Country for 2021

	# hours (avg.)	diff.	# jobs (avg.)	diff.	wish to work more (%)	diff.	temp contract (%)	diff.	fully remote (%)	diff.	night work (%)	diff.	evening work (%)	diff.	shift work (%)	diff.	Saturday work (%)	diff.	Sunday work (%)	diff.
AT	132.13	0.61	1.05	-0.01	8.48	3.36	6.63	0.16	16.28	0.50	3.67	0.70	6.34	1.08	3.80	0.99	8.15	1.09	4.98	0.58
BE	135.21	0.86	1.03	-0.02	11.08	1.98	9.91	4.36	23.59	-2.53	9.37	-0.74	31.64	-4.48	11.01	-0.18	30.64	-4.98	18.52	-2.70
BG	139.50	-0.67	1.04	0.03	1.68	0.75	9.33	6.38	9.87	7.21	15.26	2.82	38.56	9.70	17.82	0.25	54.96	18.82	31.29	9.87
CH	131.47	1.05	1.08	-0.01	12.24	4.00	7.58	0.14	19.81	5.75	13.22	1.02	42.07	5.28	16.03	5.13	33.81	1.44	19.61	1.29
CY	136.18	0.52	1.03	0.00	15.95	-0.04	15.32	8.90	9.83	6.96	7.61	-2.88	23.99	2.13	10.37	-2.89	43.89	5.35	25.63	2.98
CZ	140.00	0.06	1.03	0.00	2.32	0.96	9.74	4.29	9.24	2.28	17.65	3.19	34.63	8.94	24.42	3.08	39.67	6.86	30.86	8.98
DE	130.21	-1.27	1.05	0.01	4.80	1.63	11.73	3.66	16.32	-1.44	11.10	2.42	32.37	5.02	16.56	4.07	31.75	5.14	18.07	3.30
DK	131.94	0.24	1.09	0.01	13.97	4.17	9.68	2.08	18.47	-1.08	13.42	3.50	47.04	5.45	9.29	3.19	40.27	5.57	36.16	3.71
EE	133.57	-0.72	1.07	0.00	3.97	1.60	1.46	0.23	12.62	-2.50	14.04	1.73	42.05	-0.07	17.73	3.03	37.35	2.57	29.46	1.45
EL	139.27	-1.44	1.03	0.01	12.67	3.32	10.85	4.09	7.72	1.38	15.25	-1.70	53.35	-5.43	18.67	-1.79	52.23	-2.18	25.90	-1.52
ES	135.38	-0.65	1.03	0.01	16.39	6.70	24.14	5.80	11.24	2.21	10.68	0.19	31.53	1.86	15.72	-2.36	37.41	4.86	23.63	4.23
FI	130.45	-2.72	1.10	0.03	15.98	6.97	15.11	3.61	32.42	7.95	16.25	-1.73	51.88	1.24	16.67	-1.99	44.33	-0.18	34.93	-1.36
FR	130.74	-1.24	1.08	0.01	23.29	2.19	13.33	2.25	23.99	8.31	8.98	-1.37	30.64	3.18	4.51	-1.62	39.34	-0.57	23.22	0.65
HR	138.87	0.48	1.02	0.00	11.55	3.45	8.86	-2.39	7.39	3.42	16.09	-0.88	37.24	-2.55	23.81	-6.90	57.91	-1.15	30.50	0.88
HU	136.92	-0.68	1.02	0.01	3.15	1.87	4.71	-0.44	10.81	6.46	11.18	-2.30	31.10	0.44	14.36	-3.68	36.46	-1.40	22.24	0.42
IE	133.86	-0.31	1.04	0.00	15.25	1.96	6.52	0.45	37.26	5.96	13.09	1.44	43.40	3.88	21.46	5.46	34.80	0.14	24.01	1.30
IT	134.83	-1.87	1.02	0.01	8.33	4.29	16.40	5.04	4.99	-3.72	12.25	2.27	22.20	3.14	15.17	-0.16	47.76	6.24	21.33	1.57
LT	143.52	1.23	1.08	0.00	4.86	1.95	2.07	0.45	8.13	-0.17	8.45	2.01	22.89	1.74	10.25	0.71	24.65	2.01	17.16	1.24
LU	139.02	-0.99	1.06	0.00	10.89	3.78	7.45	1.29	34.49	6.00	11.88	-2.53	38.07	-0.01	14.01	0.93	29.20	-3.73	19.03	-6.26
LV	134.30	-0.37	1.05	-0.01	12.30	2.72	2.67	0.16	13.37	2.52	9.24	-0.56	25.39	0.94	17.28	0.87	27.49	0.18	18.92	0.13
MT	137.93	3.62	1.03	-0.03	12.46	4.78	8.88	4.43	16.31	1.86	23.67	7.88	35.12	12.52	24.18	6.69	59.67	11.22	44.05	13.20
NL	128.59	2.62	1.07	-0.03	13.21	5.30	23.94	8.25	24.52	0.36	18.37	2.73	57.72	-3.83	14.49	3.30	50.89	-2.63	39.41	-2.49
NO	130.16	0.52	1.07	-0.01	8.68	3.62	9.83	3.85	16.88	-0.44	3.77	-0.19	11.23	0.71	5.18	1.85	11.45	2.52	8.10	0.81
PL	135.89	-0.48	1.05	0.01	8.93	4.73	19.40	8.02	12.44	5.63	17.29	1.37	40.64	0.61	20.47	-3.12	45.85	0.91	21.53	0.35
PT	137.36	-0.58	1.06	0.01	17.84	0.27	12.67	-0.72	15.57	1.30	10.04	-0.03	24.53	0.80	11.41	-2.36	39.82	0.50	23.05	0.59
RO	145.45	4.55	1.00	0.00	4.16	1.20	10.25	8.48	3.91	1.61	13.65	-3.55	47.60	4.15	21.51	-4.93	64.36	9.89	27.42	-1.93
SE	136.39	0.98	1.05	-0.01	9.25	4.12	15.54	7.70	26.16	-2.02	10.61	1.21	25.48	0.95	16.09	2.42	27.53	3.03	24.40	1.88
SI	137.24	1.30	1.02	-0.02	13.81	2.07	11.09	4.43	6.29	-4.68	19.43	5.23	39.85	7.17	36.35	11.88	54.79	13.64	24.12	2.87
SK	138.86	-0.03	1.03	0.03	1.70	1.08	4.77	1.84	13.53	7.01	17.08	-0.63	38.63	6.96	18.55	-3.43	37.68	0.45	27.58	3.63

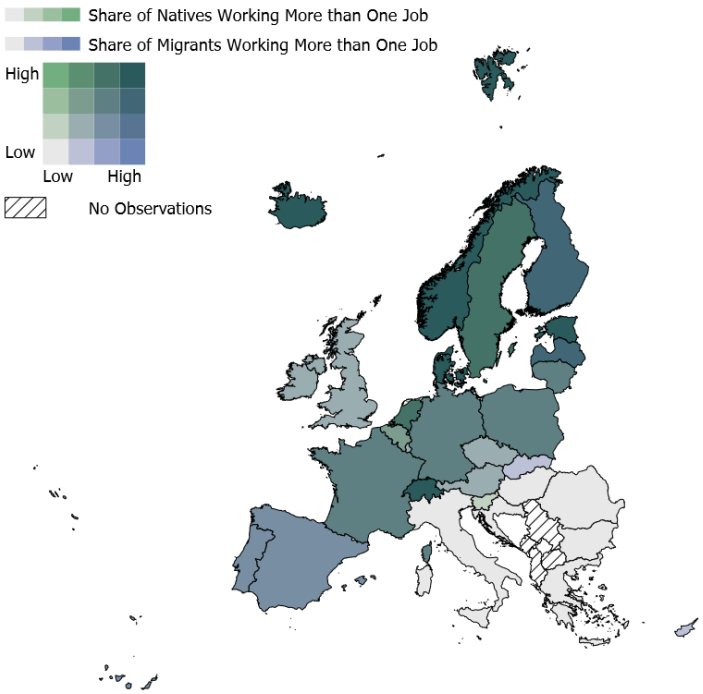
Source: EU-LFS 2021, own calculations.

Table 5. Weighted Non-Wage Job Characteristics of (Self-) Employed Migrants and Migrant-Native Differences by Country for 2022

	# hours (avg.)	diff.	# jobs (avg.)	diff.	wish to work more (%)	diff.	temp contract (%)	diff.	fully remote (%)	diff.
AT	132.31	0.98	1.05	-0.01	8.26	3.64	6.76	0.30	13.63	1.16
BE	135.25	0.65	1.03	-0.02	10.83	3.78	11.37	6.45	14.74	-1.95
BG	141.27	1.20	1.02	0.02	3.20	2.20	8.32	4.75	2.31	0.71
CH	131.16	1.31	1.08	-0.01	7.99	2.47	7.45	0.00	12.70	3.44
CY	136.29	-0.27	1.03	0.01	14.77	-0.07	13.43	7.67	6.70	4.87
CZ	137.29	0.60	1.03	0.00	2.51	1.23	9.87	4.56	9.47	3.49
DE	129.76	-1.57	1.06	0.01	3.85	1.24	11.52	2.83	13.98	-1.24
DK	130.08	-1.22	1.10	0.02	7.45	2.37	7.90	0.31	16.08	3.79
EE	133.65	-0.69	1.08	0.00	3.20	0.94	1.67	-0.80	12.87	0.78
EL	142.06	0.36	1.02	0.00	11.57	3.48	10.96	4.42	4.69	2.46
ES	136.32	0.30	1.03	0.00	16.26	7.27	20.51	4.62	9.08	1.89
FI	131.71	-1.25	1.09	0.01	17.49	6.34	15.98	5.29	29.97	7.89
FR	130.48	-1.99	1.08	0.02	21.92	1.56	13.11	1.38	16.83	5.16
HR	139.51	0.50	1.02	0.00	11.61	2.41	13.92	2.37	5.95	1.63
HU	136.65	-1.07	1.03	0.01	1.43	0.68	3.51	-1.25	7.42	4.79
IE	135.22	1.47	1.03	-0.02	15.49	3.64	5.03	-0.07	31.39	7.85
IT	135.29	-1.47	1.02	0.00	7.81	4.34	17.46	5.80	3.90	-1.44
LT	146.62	2.75	1.07	-0.01	3.75	0.84	1.71	0.09	7.28	1.53
LU	139.33	0.11	1.04	0.00	9.61	2.97	5.59	0.64	23.98	12.41
LV	132.50	-1.20	1.08	0.00	6.68	-0.69	1.85	-0.57	9.75	1.12
MT	137.36	2.84	1.03	-0.03	13.47	7.56	9.31	5.70	16.54	6.49
NL	129.20	3.27	1.07	-0.03	12.33	5.23	24.83	9.13	20.96	1.91
NO	130.32	-0.89	1.08	0.01	7.65	2.72	7.55	2.20	8.79	-0.01
PL	136.64	-0.13	1.05	0.00	6.45	2.86	19.53	7.97	7.96	3.21
PT	137.60	0.44	1.06	-0.01	17.65	2.65	15.93	3.05	10.40	3.44
RO	145.13	4.36	1.00	0.00	4.18	1.79	8.41	6.73	3.97	2.61
SE	136.01	1.09	1.06	-0.01	9.06	4.59	14.53	6.55	18.35	-0.25
SI	137.86	2.37	1.02	-0.03	12.97	1.90	10.48	3.82	4.93	-4.18
SK	138.35	-0.34	1.03	0.02	2.23	1.67	4.29	1.31	12.46	7.60

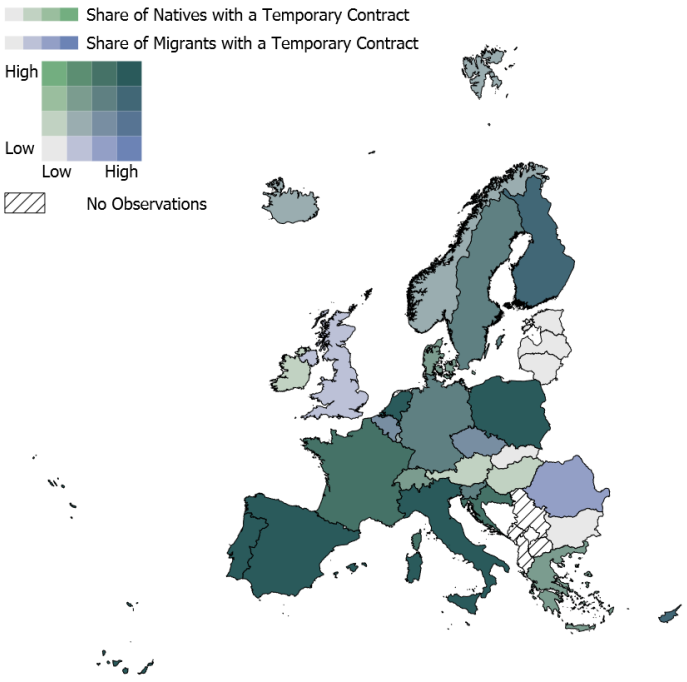
Source: EU-LFS 2022, own calculations.

Figure 10. The Joint Spatial Distribution of Migrants and Natives Working More than One Job



Source: EU-LFS 2018-2022, own calculations. *Notes*: Both distributions are quartiled.

Figure 11. The Joint Spatial Distribution of Migrants and Natives Working Temporary Contracts



Source: EU-LFS 2018-2022, own calculations. *Notes*: Both distributions are quartiled.

We present the bivariate distributions of these results in Figures 10 and 11, respectively, where the results are presented in quartiles.

Confirming the findings discussed previously in relation to Tables 4 and 5, Figures 10 and 11 demonstrate that in most countries migrants and natives are similarly subject to these employment conditions, suggesting that it is not an issue of migrant sorting, but rather the relative prevalence of these jobs as an overall proportion of available jobs. However, when it comes to working more than one job, Spain, Portugal, Slovakia, and Malta stand out. In these countries, the relative prevalence of working more than one job is high for migrants but low for natives. For temporary working contracts, Bulgaria, the UK, Belgium, Luxembourg, and the Czech Republic have a relatively high share of migrants working in fixed-term contracts while natives do not.

To examine potential differences in job quality in a more systematic way, we construct a job-quality index (JQI) based on a modification of the parameters used to construct the European Job Quality Index[4]. Table 6 describes how responses to individual EU-LFS items were used to construct the various dimensions of the JQI, as well as the weight given to each sub-dimension. The index is constructed such that a higher value on each dimension implies better job quality and, for the purpose of later analysis, the composite score is rescaled on the unit interval.

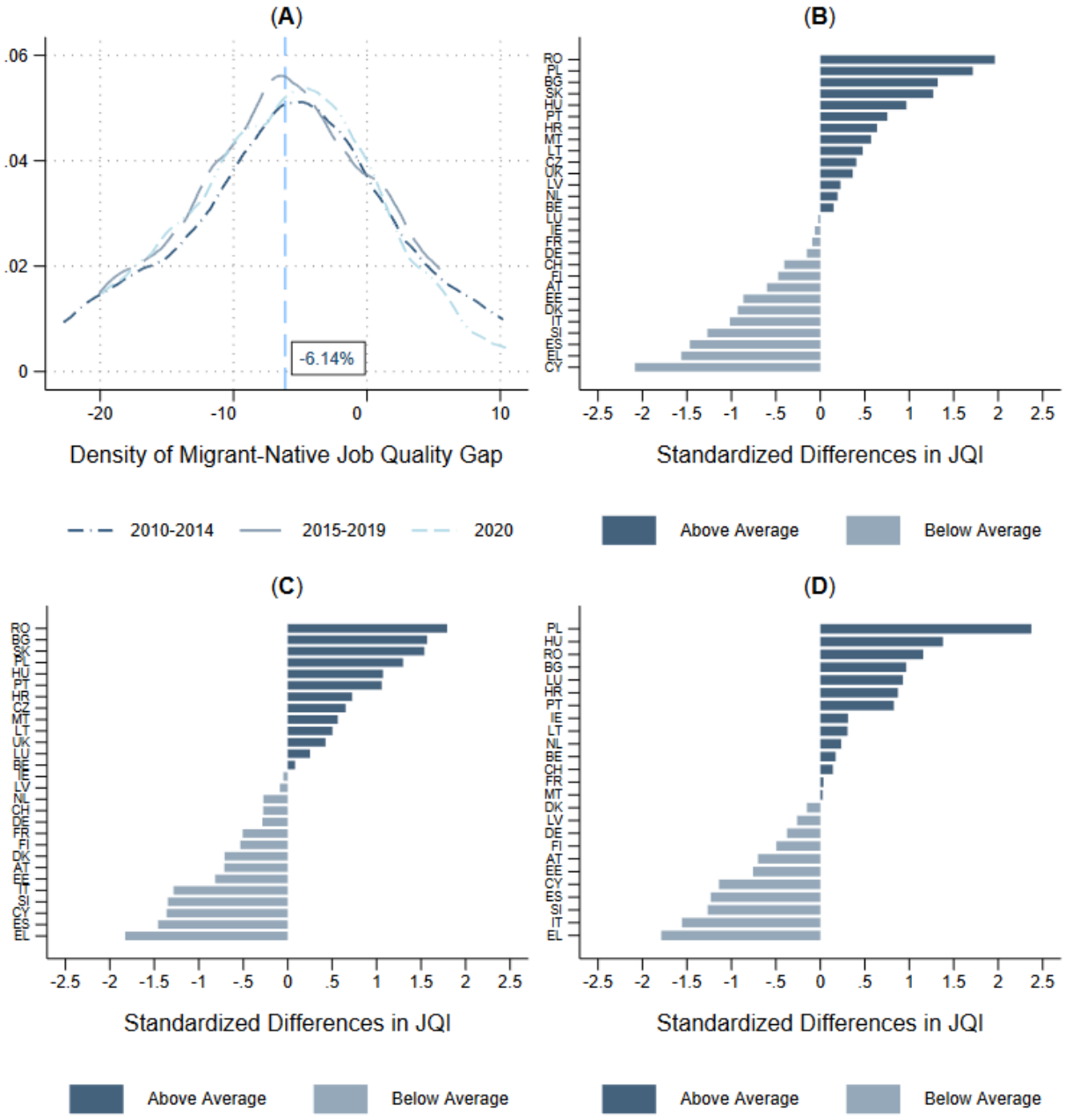
[4] See https://www.etui.org/sites/default/files/2023-05/Job%20quality%20in%20turbulent%20times-An%20update%20of%20the%20European%20Job%20Quality%20Index_2023.pdf.

Table 6. Individual Job-Quality Index (JQI) Criteria and their Weighting Factors

Dimension	Criteria	Weight*	Variables
Income	Income sufficiency: above median income. Income quality: decile in decimal form.	0.5 0.5	INCDECIL INCDECIL
Type of employment	The individual is not in temporary employment (for reasons other than education, training, not wanting a permanent job, or probation). The individual is not involuntarily part-time employed (for reasons other than education or personal circumstances e.g. health and family-related responsibilities).	0.5 0.5	TEMP (qualified using TEMPREAS) FTPT (qualified using FTPTREAS)
Work-life balance	Not working more than 48 hours per week. The individual never works unsocial hours, e.g. shift work, on weekend days, nights or evenings. The score is averaged across the five types.	0.5 0.5	HWUSUAL; HWUSU2J NIGHTWK; EVENWK; SHIFTWK; SATWK; SUNWK
Working conditions	Work autonomy – individual able to work from home.	1	HOMEWORK
Skills and career development	Participation in education/training, either formal or informal, in the 4 weeks prior to the survey.	1	EDUC4WEEKS

* weight within dimension

Figure 12. Differences in Job Quality between Migrants and Natives by Country of Residence



Source: EU-LFS 2022, own calculations. *Notes*: Panels (B-D) depict the standardised differences in job quality for migrants and natives for the years 2010-2014, 2015-2019, and 2020, respectively.

Given that income deciles are not available in the most recent two waves of the EU-LFS, the composite index is only available until 2020. Using this JQI measure, we pool the 2010-2020 waves of the EU-LFS into three distinct time periods: pre-refugee inflow (2010-2014), the refugee inflow period (2015-2019), and the post-inflow COVID-era (2020), respectively. We then compute weighted country-level JQI averages for migrants and non-migrants and construct the migrant-native gap in job quality. Figure 12 illustrates, respectively, the distribution of these country-level average differences in percentage form (**A**),

and the ranked standardised differences in job quality by time period (**B-D**). On average, migrant workers have a JQI score approximately 6.14% lower than that of native workers for the period 2010-2020. The migrant-native gap is, on average, relatively stable over time, with only small distributional changes evident in (**A**).

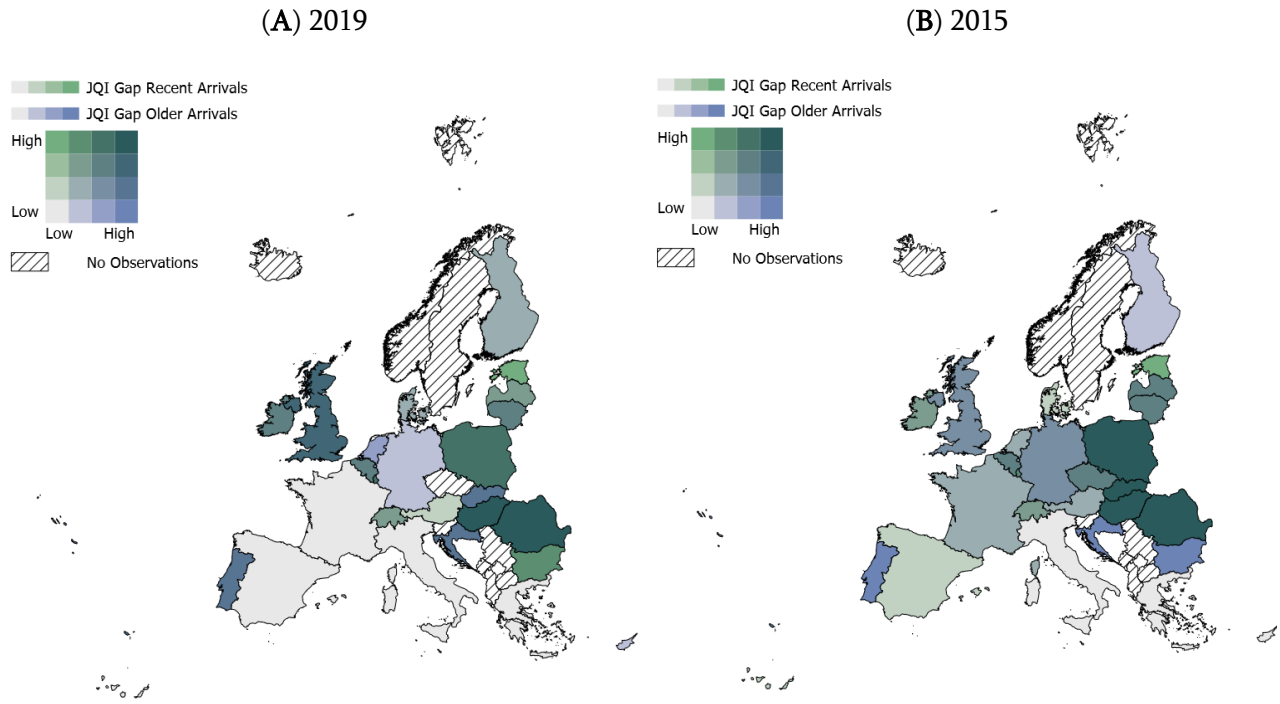
However, this pan-European average obscures substantial heterogeneity at the national level. Though for some countries the gap in job-quality between migrants and natives pre- (**B**) and post- (**D**) migration inflow remained similar (e.g., Croatia, Lithuania), in some the negative gap narrowed substantially (e.g., Cyprus, Denmark), in some it became positive in favour of migrants (e.g., Ireland, the Netherlands), while in others the average job quality of migrants compared to natives declined (e.g., Germany). Counter-intuitively, a number of countries commonly thought of as having robust worker protections, collective bargaining agreements, and a history of trade unions (e.g., Finland, Germany, Denmark) are among those countries with a notable migrant-native gap in job quality in the most recent period. This may suggest that migrants are particularly vulnerable to atypical employment challenges and that existing institutional structures do not function as effectively for migrant workers as they do for natives.

In part, however, country-level differences in the composition of migrant stocks may also help explain inter-country heterogeneities. On the one hand, migrants who are reliant on their employer for a visa may be more likely to tolerate worse working conditions than natives in exchange for continued sponsorship, while those arriving on job-seeking visas with a limited job search duration may have lower reservation wages and reservation job quality standards. In this scenario, we may expect to find a lower average JQI among migrants who are reliant on visa support from waged employment (e.g., non-EU/EEA migrants). On the other hand, some countries restrict access to work permits for jobs that are not entirely covered by the social security system (e.g., part-time or temporary contracts), or which do not meet minimum income requirements. This implies that the average migrant JQI score may be lower in countries with a proportionally larger stock of migrants whose residency is *not* conditional on maintaining a work permit (e.g., migrants from other European countries, protected persons, or those with family reunification visas).

However, it is also possible that differences between migrants and natives are not time constant and that, with more time spent in the host country labour market, differences between migrants and natives decline. Given the different settlement patterns of recent arrivals discussed in Section 3.1, the rank order changes in Figure 12 may, in part, be explained by the entry of more recent arrivals to specific host country labour markets. To more deeply examine potential heterogeneities between migrants based on *time of arrival*, we limit the analysis to two years, 2015 and 2019, or the beginning and end of the large migrant

inflow period. We then construct weighted national JQI averages for a) migrants who arrived five years ago or fewer, b) migrants who arrived more than five years ago, and c) non-migrants. We use these averages to obtain the migrant-native job-quality differences depicted in Figure 13. All statistics are reported based on quantiles, wherein the quantiles are computed with respect to the reference time period. This abstracts from level effect changes over time and allows us to focus on rank order changes. A higher rank implies a better position for migrants, relative to natives.

Figure 13. Joint Spatial Distribution of Migrant-Native Job-Quality Difference for Recent Arrivals and Older Arrival Cohorts in Quartiles for 2019 and 2015



Source: EU-LFS 2015, 2019, own calculations. *Notes*: Both distributions are quartiled.

In 2015, the migrant-native difference in JQI for more recent arrivals and older migrant cohorts appears to be similarly distributed. For example, much of Eastern Europe is in the highest quartiles for both, France, the Netherlands and Austria are in the second quartile for both, and Italy, Greece, and Cyprus are in the lowest quartile for both. Only Estonia, Bulgaria, Croatia, and Portugal demonstrate substantially high job inequality between more recent arrivals and older arrival cohorts. In Estonia's case, more recent arrivals are better off than older cohorts, while for the latter three, older cohorts are better off than more recent arrivals. In 2019, however, at the end of the massive migration inflow into Europe, there are substantial changes in rank order evident.

For example, Southern Europe is now characterised by a relatively low JQI for migrants relative to natives for both recent and older arrival cohorts. Independent of the fact that migrants are worse off than natives

in these countries in terms of level effect, as was shown in Figure 12, for Southern Europe there is also no indication of declining inequality with time spent in the host country. For many European countries, however, the JQI migrant-native difference is now comparatively larger for more recent arrivals relative to older cohorts, which suggests generally that more recent migrants are comparatively closer to natives in terms of job quality. Croatia, the Netherlands, Portugal, Slovakia, and to a lesser extent Germany are exceptions to this, however. The relative rank in JQI migrant-native difference has declined, implying that the gap between migrants and natives has widened for recent arrivals. Further, persistence in the bottom quartile of both distributions e.g., Italy and Greece, and the top quartile e.g., Romania and Hungary, suggests that, for some countries, inequality is persistent over time.

3.3. Income

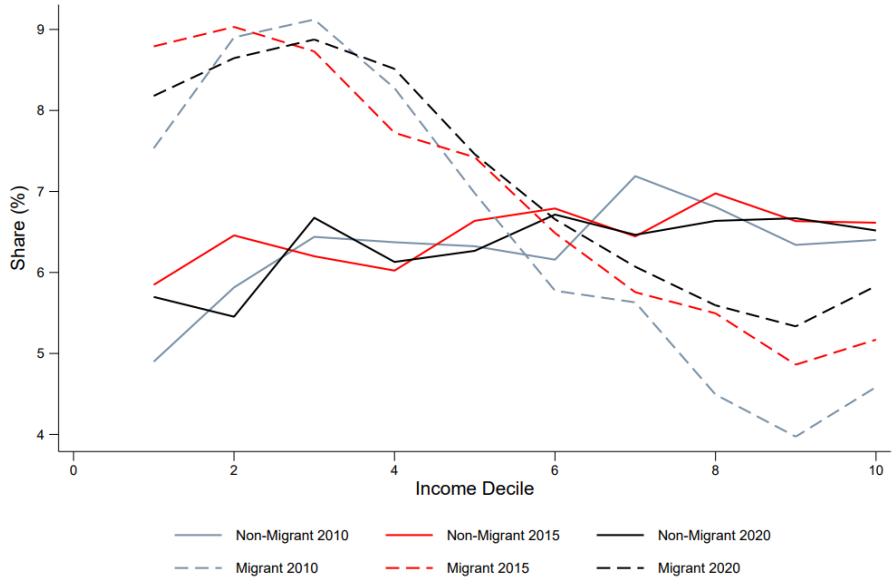
After analysing employment and job quality, we now focus on the earned income of migrants in EU member states. Although we are not able to directly observe wages, we have information on the monthly take-home pay from an individual's main job in deciles[5] where deciles are computed at the country level. In Figure 14 we plot the relative density of the wage distribution for migrants and natives. We pool over country, as level differences are implicitly accounted for given that deciles in the EU-LFS are computed by country.

Figure 14 demonstrates that while the income distribution for the native population is approximately uniformly distributed, which is to be expected given that income is measured in deciles, income for the migrant population is comparatively over-represented in the lower income deciles and declining in share as deciles increase. However, the cohort of migrants in EU countries in 2020 earns on average higher relative wages than the cohorts in 2010 or 2015. This implies that the income position relative to natives may have improved over time. This could be due to compositional changes between migrant cohorts or due to a longer stay in the host country for migrants who arrived during the large inflow period around 2015/16. Increased time spent in the host country may also be commensurate with higher levels of host-country specific human capital (i.e., language abilities), host-country labour market experience, as well as

[5] Recall that in Section 4.2 we demonstrated that, on average, migrants do not work more jobs than native workers. We are therefore not concerned by potential bias arising from this measure not taking into account other sources of labour income. In addition, information on income is not available for the most recent two waves of the EU-LFS and we are therefore restricted to earlier waves.

increased network formation. Thus, there may be corresponding differences in income conditional on time since arrival.

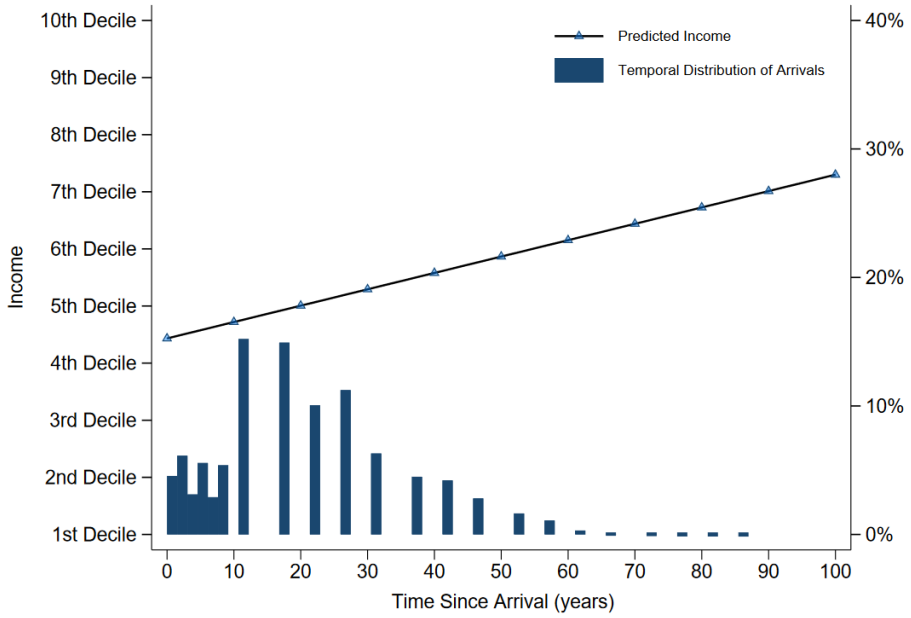
Figure 14. Weighted Share of Migrants and Natives' Income Deciles



Source: EU-LFS Survey 2010, 2015, 2020, own calculations.

In the following, we analyse the influence of time spent in the country by pooling the most recent three waves of the EU-LFS (2018-2020) for which information about income is available and limit the sample only to those adult migrants who are in some form of waged (self-) employment. Then, we regress the individual income decile on time since arrival, controlling for a) socio-demographic characteristics (i.e., age and its square, gender, and level of education), b) job-specific characteristics (i.e., typical working hours, and occupation and industry controls to account for structural differences between local labour markets), and c) fixed effects for the year surveyed and the country of residence. Plotting the marginal effects conditional on the distribution of time since arrival, we obtain the results presented in Figure 15. There is a substantial degree of heterogeneity in income evident, even after controlling for the factors described above. The results presented in Figure 15 are, thus, in line with the interpretation that longer time spent in the host country is indeed associated with higher earnings, a relationship that is well-established in the migration literature (see, for instance, Borjas, 1985 or Berbée and Stuhler, 2023).

Figure 15. Income Predictions by Time Since Arrival



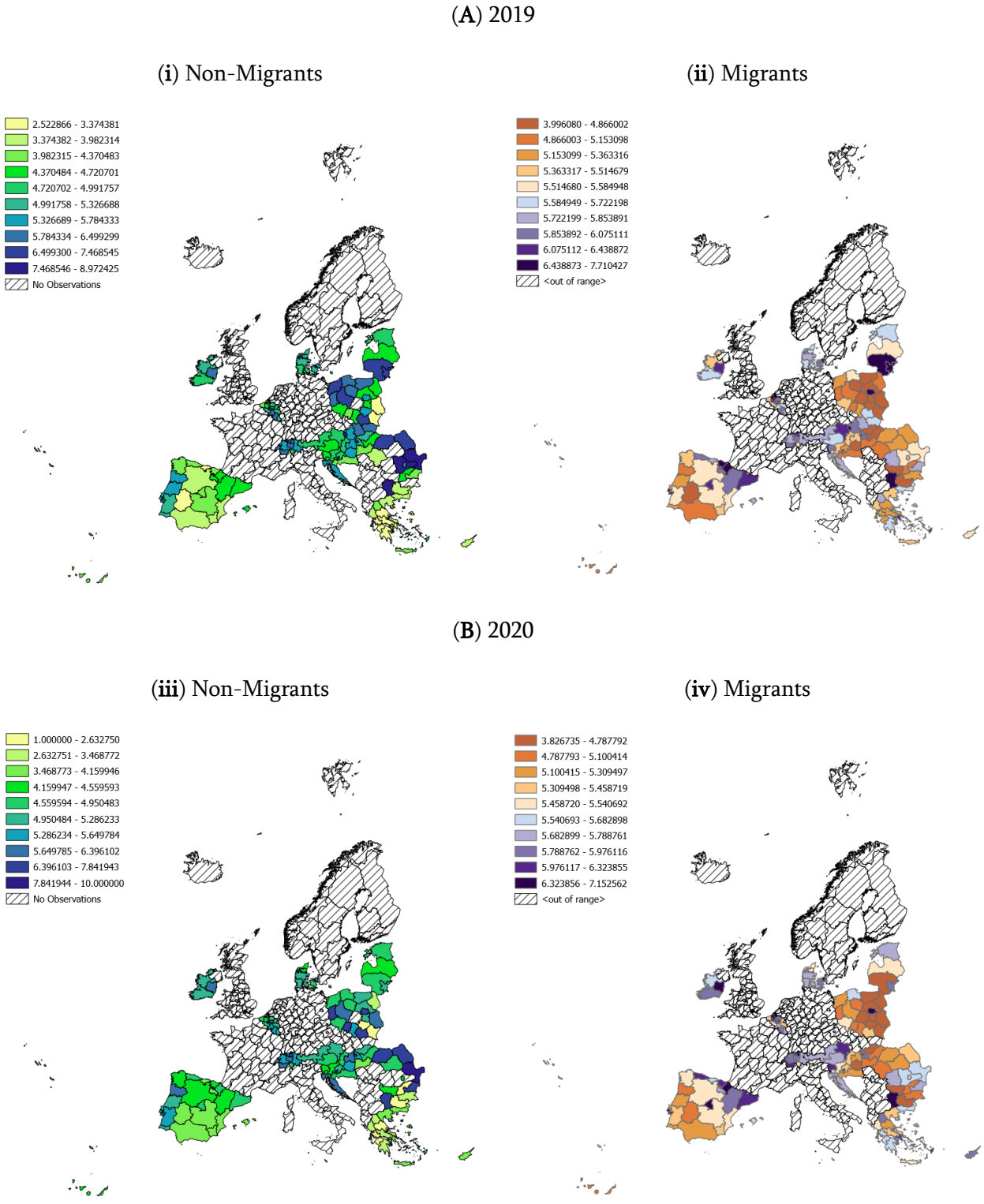
Source: EU-LFS 2018-2020, own calculations.

However, so far we have only controlled for country-specific differences and thus may be missing inter-regional heterogeneity. This is particularly important if there is bunching in the income distribution at the sub-national level, particularly when the spatial distribution of this income concentration differs for migrants and natives. Using 2019 and 2020 data, Figure 16 presents the regional income distribution in four panels for migrants and natives who are (self-) employed and of working age.

Figure 16 corroborates the national-level findings that migrants are, on average, overrepresented in lower income deciles with a few exceptions. The regional decomposition shows, however, that in some sub-national regions the upper end of the migrant income distribution seems to be more concentrated than that of natives. This is likely due to the effect of urban areas and capital cities, for instance, Lisbon, Warsaw, Madrid, or the Barcelona area. The regional disaggregation indeed makes sub-national variation in the income distribution between natives and migrants visible. This is consistent with our findings in Figure 5, in which we document a more urban concentration of migrants relative to natives.

As urban areas are usually associated with wage premiums, the greater concentration of migrants in urban areas may in part explain their higher position in their respective earnings distribution for these areas. On the other hand, there seems to be less spatial bunching in the income distribution of natives, who are able to earn higher wages even when located away from major metropolitan agglomerations. In terms of year-to-year changes, the distributions appear to be quite stable from 2019 to 2020.

Figure 16. The Distribution of Income for Migrants and Natives by Region of Residence for 2019 and 2020



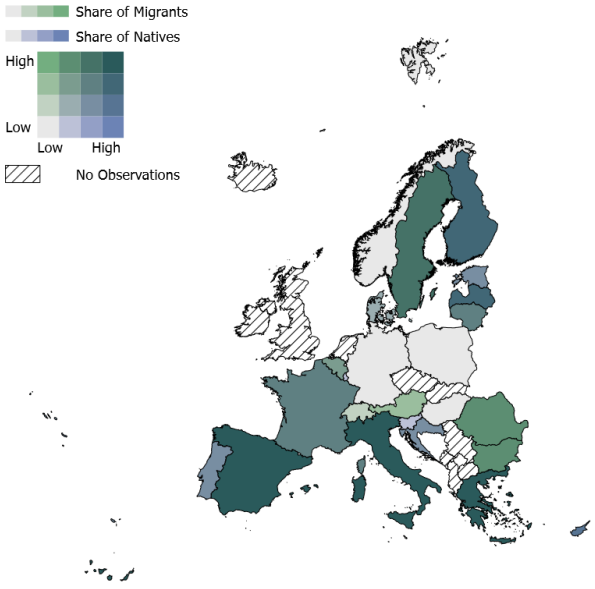
Source: EU-LFS 2019-2020, own calculations.

3.4. Unemployment and Non-employed Household Labour

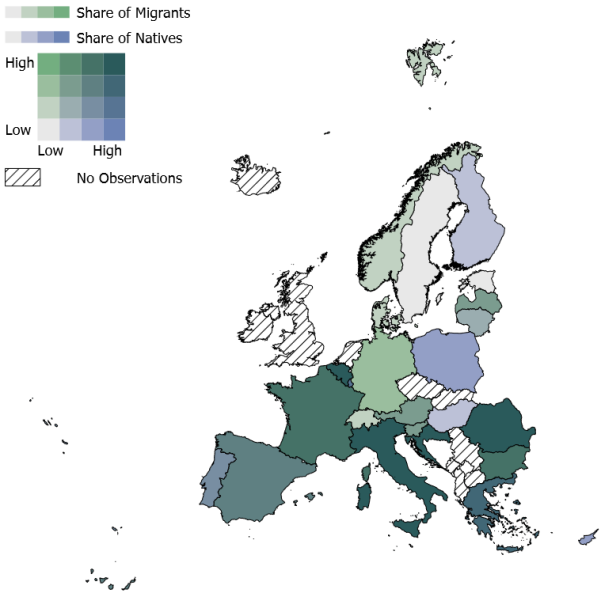
After providing comprehensive coverage of immigrant employment, job quality, and earnings, we now turn to unemployment and those migrants who are out of the labour force. Using the most recent 2022 wave, we restrict the sample to working age individuals and compute the rate of a) unemployment and b) the share of those outside of the labour force for both migrants and natives. Figure 17 displays the joint distribution of unemployment (**A**) and those who have exited the labour force (**B**) in quartiles.

Figure 17. The Joint Spatial Distribution of Unemployment and Labour Force Non-Participation for Migrants and Natives in Quartiles for 2022

(**A**) Unemployment



(**B**) Outside of the Labour Force

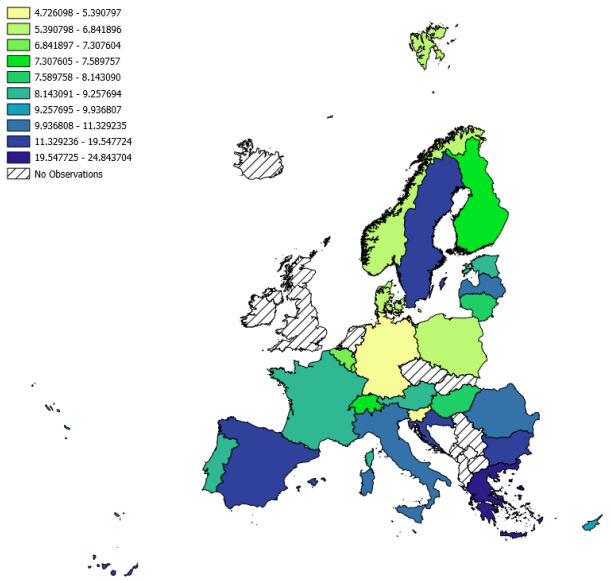


Source: EU-LFS 2022, own calculations.

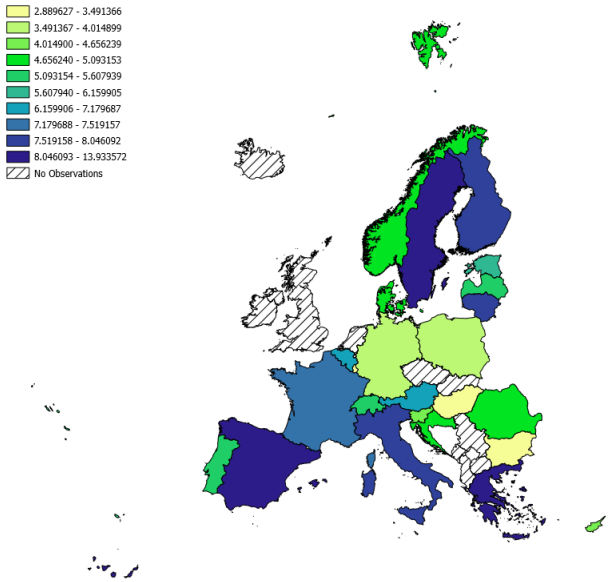
Panel (**A**) of Figure 17 documents that the unemployment rates of natives and migrants are similarly distributed across most countries. For some countries, e.g., France, Sweden, Austria, Romania, and Bulgaria, native unemployment rates are concentrated mainly in lower quantiles than immigrant unemployment rates. Few countries show the reverse pattern (Portugal, Estonia, and Croatia). Panel (B) shows a very similar pattern for those who are out of the labour force. However, it seems that in most countries migrants more often exit the labour force than the native population, who are more likely to remain "unemployed". In part, this may be due to differences in benefits receipt and national welfare policies. Notable exceptions seem to be Poland, Portugal, Hungary, and Finland.

Figure 18. The Spatial Distribution of Unemployment for Recent Migrants (Within 5 Years) and Older Arrivals (More Than 5 Years) for 2021-2022

(**A**) Recent Migrants



(**B**) Older Migrants



Source: EU-LFS 2021-2022, own calculations.

To better understand how time spent in the host country affects the unemployment of migrants, we pool the two most recent waves to increase the sample size, and divide migrants into two cohorts conditional on time of arrival; a) those who arrived in the last five years, and b) those who arrived more than five years ago. Restricting the sample to working-age individuals, in Figure 18 we compute the rate of unemployment by cohort. For most countries, the unemployment rate for immigrants who recently arrived is lower than the unemployment rate for longer term migrants. This observation could be rationalised by several explanations. First, migrants who recently moved to a new country may do so primarily because they have found a job in the host countries. These new arrivals are typically economic migrants moving directly into employment. Second, this observation suggestively contradicts the argument that migrants base their location decisions primarily on the availability of welfare and other social support, as they appear to predominately move into employment directly. The lower unemployment rates for recently arrived migrants than for longer term migrants may suggest that welfare is not the predominant reason for migration (we discuss this in detail in the next subsection). Third, this observation may also be explained by restrictions in immigration policies for non-EU migrants. If the host country requires non-EU migrants to have a job before relocating, then unemployment among recent arrivals will naturally be lower than for long-term stayers. Furthermore, the differences across countries could in part be explained by different migrant population stocks, such as the presence of comparatively more non-EU

economic migrants or migrants who do not migrate for work purposes, i.e. asylum seekers or those migrating for family reasons.

To more closely investigate the characteristics of those who are not participating in the labour force, for the most recent survey wave in 2022 we compute summary statistics illustrating the characteristics of those migrants who are of working age, but are neither employed nor job-seeking. We present these results in Table 7 for EU-15 countries and in Table 8 for non-EU-15 countries. Among the EU-15, the majority of non-participating migrants are older, with a high proportion in the age brackets 55-64 and 65-74. Most are female, have a low level of education, and previously held elementary occupations. Many have been out of employment for a long time, averaging 137 months, and have been residing in the host country for around 26 months. Retirement is the primary reason for non-participation, followed by domestic responsibilities and health issues. In non-EU-15 countries, the age distribution is much more varied, with a higher percentage of younger migrants. There is a greater representation of males and individuals with medium to high education levels. Most have previously been employed, with significant proportions in elementary and craft-related trades. The average duration since last employment is similar, at 135.86 months, and they have typically been in the host country for approximately 25.86 months. Retirement remains the predominant reason for non-participation, with other activities and domestic responsibilities also notable.

Table 7. Weighted Socio-demographic and Labour Market Characteristics of Working Age Migrants Not Participating in the Labour Force by EU-15 Country of Residence

	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	EU-15 Average
Age															
15-25	10.48	16.55	11.16	9.90	5.12	16.34	10.94	8.99	8.29	12.93	19.47	11.71	6.71	19.78	12.03
25-34	8.35	9.82	10.50	10.42	6.91	9.00	8.22	7.04	4.27	14.00	5.98	12.69	3.53	9.88	8.61
35-44	8.44	10.76	10.25	10.07	8.77	9.05	9.24	7.75	8.16	15.45	7.94	16.62	2.55	7.53	9.47
45-54	8.13	10.32	8.87	11.81	9.26	9.26	7.90	6.42	8.04	14.26	8.42	17.99	4.11	6.67	9.39
55-64	15.09	14.25	12.38	18.05	15.26	10.81	9.59	13.59	11.42	13.74	19.72	23.06	12.24	10.29	14.25
65-74	24.29	24.00	22.91	28.31	24.58	20.98	31.36	29.21	21.16	14.12	22.70	14.15	29.75	25.24	23.77
75+	21.38	15.28	21.52	11.45	28.34	21.55	22.76	27.01	38.67	11.01	15.77	3.77	36.59	20.60	21.12
Gender															
Male	40.65	42.55	40.81	41.21	36.16	41.00	45.69	46.21	40.57	31.16	45.41	38.53	44.71	41.09	41.13
Female	59.35	57.45	59.19	58.79	63.84	59.00	54.31	53.79	59.43	68.84	54.59	61.47	55.29	58.91	58.87
Education															
Low	38.08	53.93	48.42	34.90	44.12	55.65	37.96	41.94	30.04	56.87	37.38	46.37	75.47	42.08	45.94
Medium	38.86	29.49	30.94	32.28	33.68	22.19	31.63	32.32	34.43	32.87	30.28	27.19	12.51	31.09	29.98
High	23.06	16.58	20.64	32.82	22.20	22.16	30.41	25.73	35.53	10.26	32.35	26.44	12.02	26.83	24.07
Occupation															
Elementary Occupations	21.88	21.48	23.01	26.82	24.82	28.68	14.24	16.55	13.69	29.36	15.77	20.99	15.91	15.88	20.65
Plant & Machine Operators/Assemblers	7.08	7.37	8.92	3.82	3.71	7.18	5.74	6.45	4.66	5.77	4.68	4.39	7.90	3.51	5.80
Craft & Related Trades	12.85	12.51	11.30	5.89	9.76	8.77	6.68	10.99	7.01	10.13	6.63	7.61	17.47	7.22	9.63
Skilled Agricultural, Forestry & Fishery	0.69	0.27	0.69	0.61	5.22	2.43	1.36	2.42	1.17	1.64	1.37	1.26	2.74	1.57	1.68
Service & Sales	24.25	17.24	17.67	22.63	17.33	27.10	25.01	20.64	25.28	35.20	14.25	21.53	23.01	32.74	23.14
Clerical Support	6.01	8.93	8.40	5.95	7.76	5.53	5.64	8.09	10.13	5.11	8.62	9.54	4.70	6.51	7.21
Technicians & Associate Professionals	9.76	11.29	11.81	7.79	4.45	5.89	15.15	11.22	8.71	4.68	13.02	12.75	6.68	11.11	9.59
Professionals	14.57	12.95	15.11	21.27	21.66	11.15	22.79	16.39	23.06	5.97	31.07	18.93	13.61	19.59	17.72
Managers	2.80	7.19	2.92	4.80	4.65	3.27	2.97	6.96	6.09	1.71	4.28	3.00	7.59	1.87	4.29
Armed Forces	0.12	0.76	0.16	0.43	0.64	0.00	0.41	0.30	0.21	0.42	0.31	0.00	0.40	0.00	0.30
Prev. Employed															
Yes	82.42	56.51	68.80	80.78	71.82	73.86	82.21	70.50	82.64	53.65	76.63	63.15	88.38	39.68	70.79
Yes, Part Time	1.03	2.01	1.92	4.98	4.27	6.68	4.41	7.56	1.09	9.80	4.85	3.84	1.23	4.58	4.16
No	16.55	41.49	29.28	14.24	23.91	19.46	13.38	21.95	16.27	36.56	18.52	33.00	10.40	55.73	25.05
Alt. Activities															
Other	20.62	24.94	30.89	31.45	12.64	32.47	24.56	21.17	17.76	31.38	28.69	36.38	13.00	42.99	26.35
Domestic Responsibility	14.28	21.36	15.46	3.37	27.33	21.89	3.80	12.39	13.91	39.44	12.90	23.40	12.39	5.11	16.22
Health	5.85	14.07	4.44	28.42	4.36	4.08	8.04	6.51	9.94	3.56	3.57	22.84	6.98	17.46	10.01
Retirement	59.25	39.63	49.21	36.76	55.68	41.56	63.60	59.93	58.40	25.62	54.84	17.38	67.63	34.45	47.42
Time Since Employment (months, avg.)	139.1	145.4	147.3	102.5	155.2	133.5	115.6	162.0	149.8	125.9	135.8	123.2	171.5	111.5	137.0
Time Since Arrival (months, avg.)	25.67	23.10	24.01	26.07	29.15	20.74	28.15	37.49	22.11	21.59	24.86	26.87	28.69	26.21	26.05

Source: EU-LFS 2022, own calculations.

Table 8. Weighted Socio-demographic and Labour Market Characteristics of Working Age Migrants Not Participating in the Labour Force by Non-EU-15 Country of Residence

	BG	CH	CY	CZ	EE	HR	HU	LT	LV	MT	NO	PL	RO	SI	SK	Non-EU-15 Average
Age																
15-25	12.29	8.93	10.30	9.86	2.80	1.15	12.00	5.44	2.81	10.81	30.09	8.88	14.32	9.60	4.84	9.61
25-34	11.96	6.06	10.43	7.36	3.17	2.83	7.54	4.31	4.92	8.11	22.48	7.36	16.39	4.98	3.79	8.11
35-44	9.26	8.44	7.16	5.79	3.55	2.38	7.97	4.00	3.73	9.01	26.89	8.79	14.08	5.03	5.89	8.13
45-54	15.62	9.05	7.81	2.82	3.42	6.63	4.23	5.58	4.45	10.81	26.92	4.93	15.97	4.96	3.26	8.43
55-64	12.30	13.81	15.10	8.76	11.63	18.03	8.30	14.95	11.24	24.77	27.41	8.37	11.81	21.19	16.09	14.92
65-74	25.87	24.87	29.82	31.61	36.16	37.42	30.19	32.40	37.03	20.72	31.86	29.19	9.41	34.46	39.54	30.04
75+	9.56	28.84	19.38	33.80	40.26	31.67	25.74	32.08	34.91	15.77	16.35	33.39	1.03	15.58	26.60	24.33
Gender																
Male	47.50	38.50	42.96	34.29	37.02	44.18	38.60	43.64	34.79	43.80	49.77	44.37	45.35	45.67	42.27	42.18
Female	52.50	61.50	57.04	65.71	62.98	55.82	61.40	56.36	65.21	56.20	50.23	55.63	54.65	54.33	57.73	57.82
Education																
Low	26.73	35.22	27.32	26.37	21.89	41.57	20.86	13.12	11.86	45.13	41.42	19.61	47.51	39.19	19.27	29.14
Medium	55.95	35.56	29.63	54.76	43.12	45.48	49.42	57.32	56.73	30.36	33.26	57.93	45.96	46.28	56.72	46.57
High	17.32	29.22	43.05	18.88	34.99	12.95	29.72	29.56	31.41	24.51	25.32	22.46	6.54	14.53	24.02	24.30
Occupation																
Elementary Occupations	32.43	14.99	13.67	11.61	22.28	17.52	9.07	22.32	22.96	15.11	14.21	12.73	37.16	12.78	8.83	17.85
Plant & Machine Operators/Assemblers	7.55	4.10	3.63	12.57	11.85	8.05	9.18	7.36	7.28	1.74	7.08	9.84	9.75	9.46	17.26	8.45
Craft & Related Trades	22.52	8.27	8.82	7.25	17.63	14.98	9.09	21.28	12.42	5.62	9.09	22.63	23.06	9.23	10.10	13.47
Skilled Agricultural, Forestry & Fishery	2.54	0.58	0.97	3.40	0.51	1.48	1.41	1.67	1.18	0.00	1.18	4.93	4.13	0.59	1.59	1.74
Service & Sales	18.23	19.16	20.09	15.73	16.41	23.84	16.15	10.93	18.03	26.82	38.68	17.61	18.10	11.32	14.57	19.05
Clerical Support	1.15	12.32	10.87	10.90	4.69	7.49	12.84	5.56	2.37	7.65	6.45	5.86	0.93	5.13	17.99	7.48
Technicians & Associate Professionals	3.05	10.97	11.05	7.31	9.57	10.65	11.78	7.61	8.71	13.27	6.38	8.84	2.44	5.87	6.28	8.25
Professionals	11.59	22.60	24.74	25.05	15.33	9.64	23.24	18.16	19.41	20.26	9.71	11.62	4.28	6.75	17.87	16.02
Managers	0.95	7.00	5.29	6.17	1.73	6.16	7.24	5.12	7.65	9.52	6.51	5.66	0.15	3.88	4.21	5.15
Armed Forces	0.00	0.00	0.86	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.72	0.27	0.00	34.98	1.29	2.55
Prev. Employed																
Yes	78.49	55.48	83.95	86.36	95.63	79.20	87.02	93.98	96.64	54.50	54.70	91.57	59.87	78.67	89.85	79.06
Yes, Part Time	8.14	3.38	2.45	2.09	0.95	0.88	0.12	0.55	0.48	15.32	22.17	1.14	2.90	2.13	1.16	4.26
No	13.37	41.14	13.60	11.56	3.42	19.92	12.86	5.47	2.88	30.18	23.13	7.29	37.23	19.20	8.99	16.68
Alt. Activities																
Other	36.63	24.13	16.23	14.77	7.79	6.62	18.10	14.66	6.72	17.57	50.36	14.31	35.09	18.90	10.47	19.49
Domestic Responsibility	6.40	20.62	21.32	13.00	5.55	11.74	9.21	4.22	8.48	41.89	5.90	8.05	30.58	7.35	5.50	13.32
Health	5.23	6.71	5.88	0.32	5.66	3.68	4.04	7.78	4.96	4.95	33.98	5.30	3.43	2.33	5.29	6.64
Retirement	51.74	48.54	56.57	71.91	81.00	77.96	68.65	73.34	79.84	35.59	9.76	72.34	30.90	71.41	78.75	60.55
Time Since Employment (months, avg.)	96.41	141.59	147.47	137.40	146.10	190.63	157.37	143.69	152.44	139.46	61.57	152.23	92.26	149.93	129.30	135.86
Time Since Arrival (months, avg.)	11.96	31.16	22.76	27.58	44.65	36.30	22.10	38.22	42.80	13.74	12.82	23.61	4.95	31.93	23.29	25.86

Source: EU-LFS 2022, own calculations.

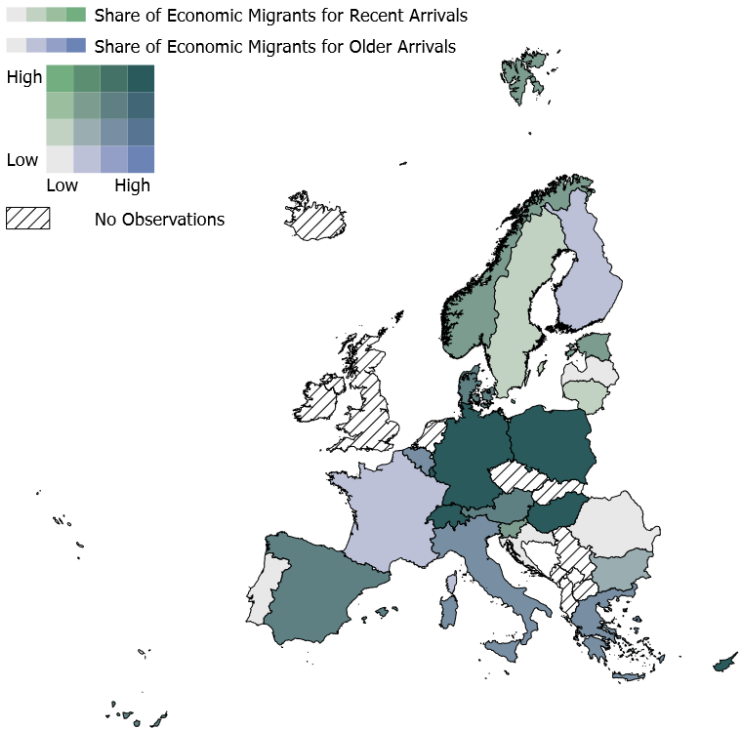
3.5. Benefits Take-Up

When discussing the benefits and cost of immigration for host countries and the integration of migrants, it is crucial to evaluate the extent to which migrants are net-contributors or net-beneficiaries of the welfare state. Research on this question is methodologically tricky and sensitive to definitions of migrant populations and what are considered to be fiscal contributions and welfare benefits. This methodological issue translates into inconclusive findings (Hennessey and Hagen-Zanker, 2020). Another important hypothesis in this strand of literature is the welfare magnet hypothesis. It claims that migrants tend to move to countries that offer the most attractive welfare benefits. However, this claim is contested and there is evidence both in favour of this hypothesis (Agersnap et al., 2020) and against it (Ferweda et al., 2023).

In the following, we examine two potential channels that may affect benefits take-up. The first is the relative distribution of economic migrants versus those arriving for family reunification purposes. The latter case refers to e.g., spouses and children who are eligible for residency based on the residency status (or citizenship) of their sponsoring relative. In terms of the effect on the social security system in the host country, those who migrate for family reunification purposes may be eligible for specific family benefits based on the employment status of their sponsor, even if they do not personally contribute to the economy.

Using the 2021 wave of the EU-LFS that records the individual's reason for migrating, and limiting the sample to working-age migrants, we can examine distributional differences as well as differences over time by arrival cohort. Figure 19 depicts the relative share of economic migrants versus family reunification migrants for two cohorts: recent arrivals (less than five years prior to the date surveyed) and older arrivals. France, for example, has a comparatively low proportion of economic migrants both in a historical sense, and for the most recent five-year period (e.g., after the bulk of asylum seeker arrivals to Europe that characterised the last decade). Switzerland, on the other hand, has a comparatively high proportion of economic migrants. We may therefore expect the welfare burden to be comparatively larger in France. However, we cannot assess the fiscal position of migrants (relative to natives) in terms of long-term contributions, and whether or not those arriving for family-reunification purposes ultimately become net-contributors.

Figure 19. The Joint Spatial Distribution of Economic Migrant Shares among Recent Arrivals (Less than Five Years Ago) and Older Arrivals (More than Five Years Ago) for Migrants Surveyed in 2021

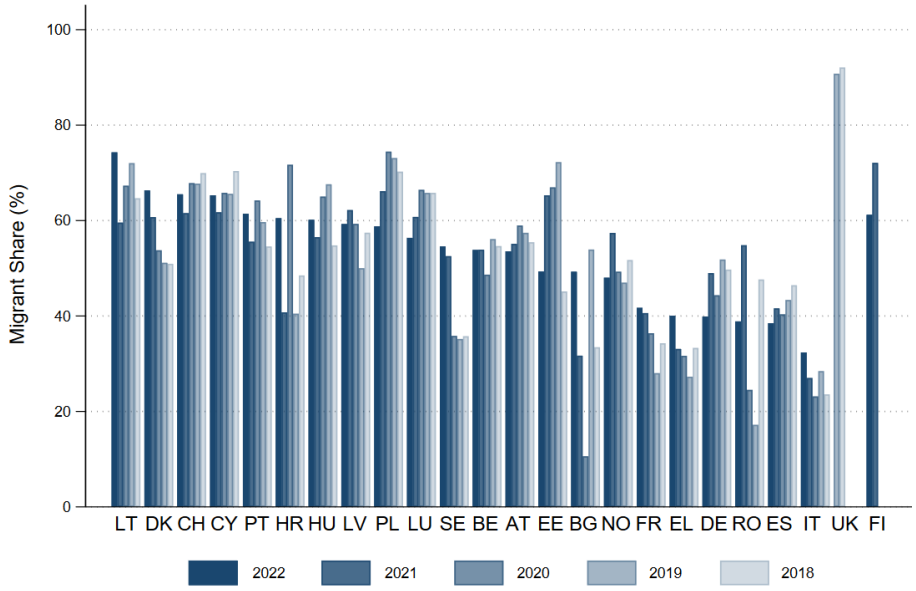


Source: EU-LFS 2021, own calculations.

A second key channel are those individuals who have difficulty finding waged employment. For recent migrants (at the time of interview) we can examine employment take-up. That is, whether or not people "migrate into jobs" or "migrate into unemployment". Pooling the last five survey waves and restricting the sample to working-age, recently-arrived migrants, i.e., those who arrived one year or less from the survey date, Figure 20 demonstrates a substantial degree of heterogeneity in employment shares.

For most countries, initial employment shares are over 50 percent, in particular for the post-COVID years. Initial employment take-up also appears to depend on the composition of the most recent immigrant inflows. Countries that received many asylum seekers, such as Italy, Greece, or Germany, show lower initial employment rates than countries which predominantly received economic migrants.

Figure 20. Employed Share of Recently Arrived (One Year or Less) Working Age Migrant Populations for 2018-2022

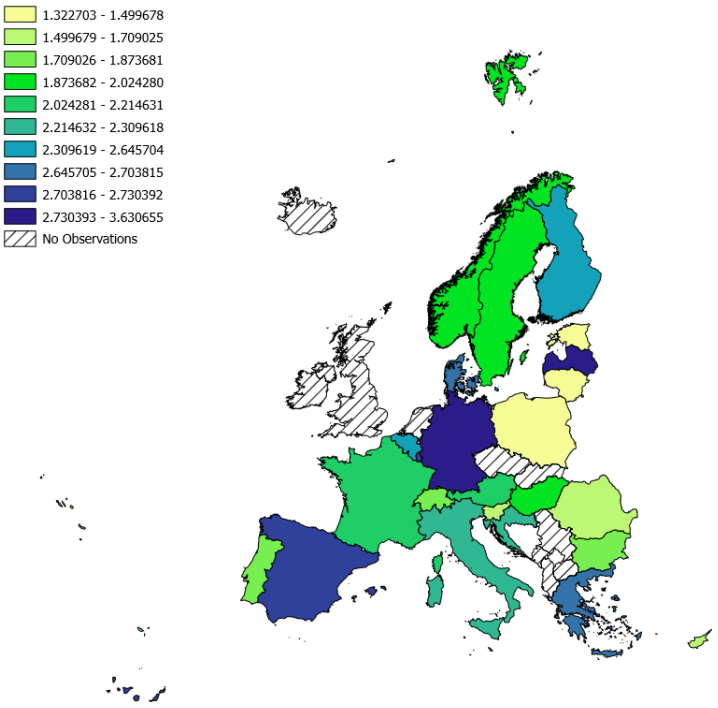


Source: EU-LFS 2018-2022, own calculations.

For the 2021 wave, we can examine the issue more closely though for a smaller sample of migrants, using *time until first paid job in host country*, recorded as part of the 2021 special migration module. Answers to this question are categorical, and scaled between 1 (less than 3 months) and 7 (more than four years), we eliminate possible responses 8 and 9 implicitly (the individual has never found a job), by restricting the sample to working age migrants currently in some form of paid employment or training. Figure 21 plots the average job search duration following migration (grouped into deciles).

The average categorical response for most countries indicates a job search duration of less than one year (3 or less), though there is a large degree of heterogeneity. In Germany, Spain, and Latvia the job search period is highest, on average, while it is lowest in Lithuania, Poland, and Estonia. One possible driving force behind this is the localised composition of migrant arrivals; Germany, for example, receives a proportionally large number of asylum seekers, who generally face restrictions on paid work for the first few years post-arrival. Average job search duration may also obscure heterogeneity in the job-search distribution by country. Figure B8 in Appendix B therefore additionally presents the joint distribution of those whose job search lasted less than (more than) one year, as a share of the total working age migrant population. Countries in the highest quantile for both have a high overall rate of migrant employment (relative to the rest of Europe), while countries in the lowest quantile for both have a low overall rate of migrant employment (relative to the rest of Europe) and this is not driven by a greater job search duration.

Figure 21. The Distribution of Job Search Duration Following Migration, for 2021



Source: EU-LFS 2021, own calculations.

What is interesting, however, are the off-axis countries. For example in Germany, relatively few migrants find a job after less than a year compared to other European countries, but they are ranked quite highly for migrant employment with a job search duration of more than one year. This suggests a lengthy job-search period in Germany may drive short-term unemployment figures among newly arrived migrants. Conversely, Lithuania is in the third quartile for migrant employment after less than one year, but is in the lowest tercile for job-searches lasting more than one year. This may imply that a relatively short integration period is important in some countries, and if employment is not found relatively soon following migration, finding a job becomes more difficult over time. An extended job search period is one reason that migrants who are otherwise willing to work could instead affect the benefit take-up rate. However, this is not necessarily the fault of individuals, particularly if the problem is more systemic due to institutional or bureaucratic hurdles. In the following section, we examine these factors more closely.

3.6. Land of Opportunity or Bureaucratic Minefield?

For those working age migrants who are not working or are in some form of job-related education or training, we compute summary statistics of job-loss characteristics. That is, how the job-loss occurred, and how the individual has responded to the event. Tables 9 and 10, for EU-15 and non-EU-15 countries, respectively, are computed based on a pooled sample of the EU-LFS 2010-2022. Migrants are assigned to one of three arrival cohorts: 2010-2014, 2015-2019, and 2020-2022, to reflect pre-refugee inflow, the

refugee inflow period, and the COVID/Post-COVID era, respectively. Tables C5 and C6 in Appendix C additionally present the migrant-native differences in job-loss characteristics, in order to contextualise the statistics.

The average characteristics of migrants in the EU-15 host countries who are not in training or employment reveal notable differences across the arrival periods of 2020-2022, 2015-2019, and 2010-2014. Among the 2020-2022 arrivals, the predominant reasons for not being in employment or training include job dismissal or business closure, and the expiration of fixed-term contracts. The fraction of those searching for employment is relatively low, at 31.85%, though a higher proportion of migrants indicate they are actively searching for employment compared to earlier periods. Conversely, the earlier arrivals (2010-2014) show higher instances of migrants not searching for jobs and being registered for benefits but not receiving assistance, suggesting a prolonged disengagement from the labour market. There are also significant variations in illness and disability, with recent arrivals reporting higher instances of labour market exits due to health-related shocks.

In non-EU-15 host countries, the 2020-2022 arrivals show a high percentage of job dismissals and business closures as the primary reason for not currently being in employment or training, which may in part be due to the effect of COVID if migrants found it more difficult to recover from a labour market interruption during this time. Notably, a large proportion of recent migrants in these countries are also actively searching for employment, similar to the EU-15 trends. Earlier arrivals (2015-2019) cite a higher percentage of care responsibilities and other personal or family reasons as the primary reason for not being employed. Moreover, a significant number of migrants from the earlier periods are not registered for benefits or assistance, indicating potential barriers to accessing social support systems. The contrast between the recent and earlier periods highlights a shift in the reasons and behaviour of migrants concerning employment and training across different host countries.

For those who are currently employed and of working age, we are also able to examine differences in job seeking behaviour; that is, how the current job was found. The method via which an individual found their current job was only asked from 2021 onward, and so we are limited to the two most recent waves. Tables 11 and 12 present summary statistics for migrants, and Tables C7 and C8 in Appendix C additionally report the migrant-native differences in job-seeking behaviour in order to contextualise the findings.

Table 9. Weighted Job-Loss Characteristics of Working Age Migrants Not in Employment or Training by EU-15 Country of Residence for 2010-2022

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
2020-2022 Arrivals													
Dismissal or business closed	25.62	22.27	21.59	22.11	20.45	18.02	16.64	14.59	30.20	13.76	30.44	25.57	21.77
A fixed-term job has ended	8.69	24.95	10.43	8.07	50.61	49.96	35.89	33.97	40.17	14.24	21.03	34.71	27.73
Care responsibilities	6.17	2.15	9.38	3.74	2.64	3.14	6.36	2.85	5.09	2.89	4.68	2.81	4.32
Other personal or family reasons	7.98	6.66	13.71	10.39	6.77	3.10	3.36	4.23	6.82	9.82	9.19	6.25	7.36
Education or training	0.92	0.52	1.20	4.48	0.19	0.46	1.87	0.84	0.18	0.87	0.79	3.52	1.32
Own illness & disability	16.30	23.79	15.14	27.28	4.97	10.25	13.46	11.25	5.28	13.57	15.45	11.76	14.04
Retirement	16.86	8.07	8.52	9.06	4.20	2.30	5.98	15.25	3.57	30.61	5.75	2.66	9.40
Other personal reasons	17.45	11.58	20.04	14.87	10.17	12.77	16.45	17.02	8.69	14.24	12.68	12.71	14.06
Searching for employment	26.06	22.02	20.46	25.02	40.42	44.23	42.22	26.88	22.66	24.05	29.10	59.04	31.85
Found job, starts < 3 weeks	3.49	0.66	0.80	1.18	3.50	2.65	1.37	1.35	1.58	1.56	0.61	1.76	1.71
Found job, starts > 3 weeks	0.72	0.18	0.36	0.51	4.80	0.39	0.12	0.21	0.25	1.14	0.07	0.16	0.74
Job found, started	0.24	0.12	1.36	1.18	0.10	0.27	0.12	0.53	0.53	0.78	0.29	0.11	0.47
Person not searching	69.49	77.02	77.02	72.10	51.17	52.47	56.16	71.03	74.98	72.47	69.94	38.92	65.23
< 1 month	52.47	29.89	44.37	53.48	24.24	38.92	58.54	41.51	31.66	41.87	39.50	49.50	42.16
1-2 months	17.16	16.55	17.70	16.04	14.98	15.94	18.99	14.84	14.66	18.70	15.51	20.00	16.76
3-5 months	16.09	19.84	17.38	17.56	16.56	16.90	11.08	18.03	21.37	20.33	14.80	20.32	17.52
6-11 months	14.28	33.72	20.55	12.92	44.23	28.25	11.39	25.62	32.32	19.11	30.19	10.18	23.56
Used active search method	99.55	97.01	91.80	98.26	99.85	99.11	99.12	97.68	99.00	97.63	99.02	99.09	98.09
Not used active search method	0.45	2.63	5.46	1.64	0.05	0.89	0.88	2.14	0.99	1.72	0.98	0.91	1.56
Other method	-	0.36	2.73	0.10	0.10	-	-	0.18	0.01	0.65	-	-	0.59
Registered, receives benefit/assistance	22.12	21.39	27.40	16.39	16.00	20.21	40.54	16.33	12.13	8.55	14.00	26.12	20.10
Registered, no benefit/assistance	5.91	9.88	2.76	4.82	32.29	34.06	9.56	23.08	11.27	9.30	17.59	35.08	16.30
Not registered, receives benefit/assistance	1.12	0.76	69.84	-	-	0.36	-	-	1.62	-	-	-	14.74
Not registered, no benefit/assistance	70.85	67.97	-	78.79	51.72	45.37	49.90	60.58	74.98	82.15	68.41	38.80	62.68
2015-2019 Arrivals													
Dismissal or business closed	19.17	17.05	24.71	26.36	32.61	14.90	15.56	20.23	39.02	15.96	30.02	21.19	23.06
A fixed-term job has ended	8.27	24.49	9.30	10.08	37.69	56.81	44.72	35.97	38.20	12.55	26.66	34.93	28.31
Care responsibilities	6.24	2.39	11.05	2.86	1.65	2.79	7.92	1.32	7.43	3.50	3.82	3.45	4.54
Other personal or family reasons	3.58	3.31	4.46	7.66	4.93	1.77	2.36		2.57	8.91	5.89	2.78	4.38
Education or training	0.61	0.57	2.03	3.58	0.09	0.90	1.94	0.27	0.23	1.18	0.73	2.14	1.19
Own illness & disability	18.34	19.89	10.99	31.26	3.70	9.06	7.92	8.46	4.81	18.46	11.23	16.44	13.38
Retirement	14.83	6.49	6.23	3.49	5.59	1.50	1.94	13.00	2.34	23.83	6.26	4.35	7.49
Other personal reasons	28.96	25.80	31.23	14.70	13.74	12.27	17.64	20.75	5.40	15.60	15.40	14.72	18.02
Searching for employment	25.25	28.04	21.02	29.99	50.34	49.24	41.60	29.81	28.11	24.22	40.12	45.37	34.42
Found job, starts < 3 weeks	0.81	0.73	0.75	1.22	1.59	3.84	2.72	2.46	1.78	2.54	0.73	1.52	1.72
Found job, starts > 3 weeks	0.04	0.34	0.13	0.35	2.27	0.21	0.47	0.22	0.20	0.82		0.09	0.47
Job found, started													
Person not searching	73.90	70.89	78.09	68.44	45.81	46.72	55.21	67.50	69.92	72.42	59.15	53.02	63.42
< 1 month	47.90	24.98	39.25	45.21	18.97	30.62	54.33	25.32	26.95	45.35	30.74	48.92	36.54
1-2 months	17.41	13.40	15.35	19.97	10.95	13.21	18.27	13.18	13.78	19.28	13.03	25.51	16.11
3-5 months	16.95	17.79	15.82	19.80	19.52	17.61	12.98	18.22	21.64	16.58	16.39	15.74	17.42
6-11 months	17.74	43.83	29.58	15.01	50.56	38.56	14.42	43.28	37.63	18.78	39.84	9.83	29.92
Used active search method	99.50	96.84	88.20	98.70	99.45	98.97	98.65	95.96	99.42	98.10	99.01	97.74	97.54
Not used active search method	0.46	2.50	9.36	0.71	0.46	1.03	1.13	3.65	0.52	1.06	0.99	1.72	1.97
Other method	0.04	0.66	2.43	0.58	0.08		0.23	0.39	0.06	0.85		0.54	0.59
Registered, receives benefit/assistance	19.28	25.52	23.87	18.24	8.33	17.52	50.87	14.78	5.27	9.34	12.37	20.28	18.81
Registered, no benefit/assistance	7.34	11.47	6.39	8.52	33.23	38.07	9.83	24.38	19.97	11.98	24.63	46.44	20.19
Not registered, receives benefit/assistance	1.46		7.79			0.24			0.81				2.57
Not registered, no benefit/assistance	71.92	63.01	61.94	73.24	58.43	44.17	39.30	60.84	73.95	78.67	63.00	33.28	60.15
2010-2014 Arrivals													
Dismissal or business closed	22.47	19.38	27.91	35.14	43.03	22.34	16.82	23.26	39.34	14.61	35.57	25.98	27.15
A fixed-term job has ended	8.35	22.73	10.88	8.29	29.96	54.52	49.18	28.05	36.90	10.20	27.24	30.78	26.42
Care responsibilities	5.31	2.10	11.66	2.19	2.59	2.98	11.33	2.63	7.34	5.14	2.58	3.23	4.93
Other personal or family reasons	3.37	4.07	5.24	10.60	5.43	1.29	1.10	4.35	2.70	15.01	5.10	2.89	5.10
Education or training	0.42	0.37	4.11	5.08	0.10	0.60	1.65	0.22	0.13	0.68	0.62	2.27	1.35
Own illness & disability	20.58	16.05	10.02	29.40	4.23	5.68	6.58	9.37	3.99	18.09	7.72	20.11	12.65
Retirement	18.21	5.71	7.52	0.96	3.29	1.43	2.19	20.62	3.27	23.80	5.81	4.52	8.11
Other personal reasons	21.31	29.59	22.65	8.35	11.38	11.16	11.15	11.50	6.33	12.46	15.35	10.23	14.29
Searching for employment	21.12	28.95	23.13	36.54	52.69	59.08	38.53	29.94	27.70	20.90	53.10	39.12	35.90
Found job, starts < 3 weeks	0.83	0.77	0.64	1.65	0.60	2.94	1.66	2.37	1.77	0.83	0.40	1.50	1.33
Found job, starts > 3 weeks	0.02	0.34	0.13	0.10	0.47	0.20	0.12	0.13	0.22	0.05	0.02	0.10	0.16
Job found, started													
Person not searching	78.02	69.94	76.10	61.71	46.24	37.79	59.69	67.56	70.32	78.22	46.47	59.28	62.61
< 1 month	52.34	26.46	35.85	45.41	27.72	29.45	57.09	28.62	29.79	42.26	28.07	48.47	37.63
1-2 months	18.33	15.52	15.34	20.69	15.87	16.47	13.18	15.36	16.31	21.28	16.75	25.56	17.56
3-5 months	15.71	19.63	14.82	20.19	24.99	23.66	16.89	20.97	22.67	19.81	22.17	16.32	19.82
6-11 months	13.62	38.39	33.99	13.72	31.41	30.42	12.84	35.04	31.23	16.64	33.01	9.65	25.00
Used active search method	99.38	94.63	91.82	99.20	99.43	99.01	99.07	94.75	99.62	99.60	99.04	97.92	97.79
Not used active search method	0.57	4.50	6.72	0.19	0.40	0.99	0.62	4.36	0.31	0.40	0.96	1.68	1.81
Other method	0.05	0.86	1.46	0.61	0.17		0.31	0.89	0.07			0.40	0.54
Registered, receives benefit/assistance	16.41	28.01	45.48	23.35	10.04	25.21	43.18	14.48	4.07	8.66	19.89	21.83	21.72
Registered, no benefit/assistance	4.95	11.53	8.74	9.93	20.92	37.25	7.83	18.88	22.91	9.63	26.78	46.07	18.78
Not registered, receives benefit/assistance	2.89		3.76			0.29			0.29				1.81
Not registered, no benefit/assistance	75.75	60.45	42.02	66.72	69.04	37.25	48.99	66.65	72.74	81.71	53.34	32.11	58.90

Source: EU-LFS 2010-2022, own calculations.

Table 10. Weighted Job-Loss Characteristics of Working Age Migrants Not in Employment or Training by Non-EU-15 Country of Residence for 2010-2022

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
2020-2022 Arrivals													
Dismissal or business closed	13.29	23.67	17.40	22.05	14.62	44.26	13.03	20.65	16.08	17.89	17.71	13.35	19.50
A fixed-term job has ended	42.20	13.50	14.06	9.71	24.68	9.40	12.89	10.91	19.29	16.23	23.04	15.98	17.66
Care responsibilities	4.62	5.91	7.65	9.98	1.92	10.17	2.46	2.65	2.77	13.00	4.79	1.49	5.62
Other personal or family reasons	20.23	12.82	27.34	8.71	6.07	6.35	23.47	23.89	6.87	16.58	27.03	4.64	15.33
Education or training		0.52	0.78	0.27	0.08	0.19	0.48		2.22	0.09	0.27	0.46	0.54
Own illness & disability	4.62	16.74	8.23	24.68	10.70	11.15	19.58	20.65	37.25	4.01	6.79	7.63	14.34
Retirement	7.51	8.66	6.38	12.25	32.51	12.12	14.19	14.75	1.77	16.40	9.72	46.03	15.19
Other personal reasons	7.51	18.17	18.15	12.34	9.42	6.35	13.92	6.49	13.75	15.79	10.65	10.41	11.91
Searching for employment	25.64	30.87	27.17	28.86	11.97	21.62	33.12	26.77	30.43	23.09	23.52	17.59	25.06
Found job, starts < 3 weeks	7.26	1.31	2.76	1.29	0.79	0.67	0.63	0.41	0.69	2.41	1.03	0.63	1.66
Found job, starts > 3 weeks	2.14	0.28	1.02	0.07	0.25	0.08	0.18			0.55	0.18		0.53
Job found, started		0.25		0.27	0.13	0.13	0.09	0.20	0.06	0.11		0.11	0.15
Person not searching	64.96	67.29	69.05	69.51	86.86	77.50	65.97	72.62	68.82	73.83	75.27	81.67	72.78
< 1 month	36.36	38.75	46.60	51.89	41.90	48.69	41.10	48.12	56.07	55.89	50.86	37.80	46.17
1-2 months	22.08	16.44	20.01	21.16	20.31	17.60	19.14	21.05	15.69	22.27	21.48	14.43	19.31
3-5 months	27.27	21.74	16.83	13.81	16.71	18.54	17.14	13.53	20.92	14.99	17.78	21.28	18.38
6-11 months	14.29	23.07	16.56	13.14	21.08	15.17	22.62	17.29	7.32	6.85	9.88	26.49	16.15
Used active search method	100.0	98.25	98.09	97.42	100.0	97.09	99.86	100.0	98.31	99.76	99.74	98.91	98.95
Not used active search method		1.46	1.91	2.35		2.72	0.14		1.50	0.24	0.26	1.09	1.30
Other method		0.30		0.23		0.19			0.19				0.23
Registered, receives benefit/assistance	2.10	12.84	6.06	17.78	4.16	7.09	15.38	10.21	13.51	2.86	1.61	8.50	8.51
Registered, no benefit/assistance	8.82	4.11	10.93	18.94	13.89	6.82	20.41	9.64	7.65	16.17	0.89	18.14	11.37
Not registered, receives benefit/assistance		0.10				0.46		0.38	16.71				4.41
Not registered, no benefit/assistance	89.08	82.95	83.02	63.28	81.96	85.63	64.21	79.77	62.14	80.97	97.50	73.36	78.66
2015-2019 Arrivals													
Dismissal or business closed	7.14	24.43	25.04	30.35	15.26	21.83	9.02	20.30	26.36	10.97	31.25	18.99	20.08
A fixed-term job has ended	19.05	11.81	18.03	6.48	15.26	14.59	13.01	10.33	13.87	20.16	6.25	18.00	13.90
Care responsibilities	14.29	7.81	5.22	10.63	1.43	20.68	1.35	1.11	5.04	13.06		0.81	7.40
Other personal or family reasons	11.90	11.10	30.13	4.34	4.53	5.74	9.49	16.97	3.40	19.35	6.25	1.77	10.42
Education or training		0.75	0.48		0.10	0.06	1.35		3.15			0.39	0.90
Own illness & disability	9.52	15.45	6.63	25.67	6.10	8.67	21.09	18.97	35.06	8.23	25.00	6.81	15.60
Retirement	23.81	8.92	4.59	17.38	31.20	19.24	26.01	30.70	1.64	10.00	31.25	46.60	20.94
Other personal reasons	14.29	19.74	9.89	5.15	26.13	9.19	18.69	1.62	11.48	18.23		6.65	12.82
Searching for employment	7.23	29.22	29.15	20.14	17.35	18.73	23.06	20.98	33.20	22.24	23.75	19.27	22.03
Found job, starts < 3 weeks	1.20	3.63	3.94	0.61	0.73	0.64	0.53	0.42	1.20	2.45		0.70	1.46
Found job, starts > 3 weeks		0.11	1.75	0.23	0.24	0.20		0.19	0.12	0.20			0.38
Job found, started													
Person not searching	91.57	67.04	65.15	79.02	81.68	80.43	76.40	78.41	65.48	75.10	76.25	80.04	76.38
< 1 month	28.57	37.94	42.81	50.11	30.43	30.26	33.10	27.69	51.03	61.16	52.63	29.43	39.60
1-2 months	42.86	17.38	14.97	16.93	13.73	17.91	18.25	19.56	16.54	17.36	15.79	13.42	18.72
3-5 months	14.29	19.97	18.23	14.67	14.99	19.13	16.41	12.31	21.03	12.81	31.58	22.11	18.13
6-11 months	14.29	24.72	23.99	18.28	40.85	32.70	32.25	40.44	11.41	8.68		35.04	25.69
Used active search method	100.0	98.32	98.64	99.77	99.66	99.46	100.0	100.0	97.79	98.62	100.0	99.22	99.29
Not used active search method		0.48	1.31			0.18			1.05	1.38		0.71	0.85
Other method		1.19	0.04	0.23	0.34	0.36			1.17			0.07	0.49
Registered, receives benefit/assistance	1.16	11.54	6.97	8.24	2.89	7.31	7.97	5.80		1.46		8.65	6.20
Registered, no benefit/assistance	5.81	5.74	16.05	8.19	21.42	8.36	15.61	11.23		13.04	5.00	21.05	11.95
Not registered, receives benefit/assistance		0.44	0.01			0.07		1.00					0.38
Not registered, no benefit/assistance	93.02	82.28	76.98	83.57	75.69	84.27	76.43	81.97		85.51	95.00	70.31	82.28
2010-2014 Arrivals													
Dismissal or business closed	23.94	22.54	34.40	43.40	25.07	34.42	24.33	32.48	16.88	16.01	53.85	27.63	29.58
A fixed-term job has ended	15.49	9.90	12.45	8.91	17.77	9.86	11.93	8.43	16.32	18.84	23.08	13.35	13.86
Care responsibilities	11.27	8.44	5.72	5.86	1.09	19.35	0.84	0.95	5.91	7.69		0.63	6.16
Other personal or family reasons	9.86	13.33	21.38	3.36	3.67	1.86	3.59	11.07	4.22	10.68		1.59	7.69
Education or training		0.68	0.49	0.20	0.22		0.11		8.16	0.63		0.33	1.35
Own illness & disability	7.04	16.79	5.90	16.76	2.21	9.70	18.47	13.54	32.63	9.58		8.27	12.81
Retirement	19.72	9.70	5.34	16.71	36.88	20.57	23.69	28.00	1.83	26.69	23.08	43.05	21.27
Other personal reasons	12.68	18.61	14.32	4.79	13.08	4.24	17.04	5.52	14.06	9.89		5.14	10.85
Searching for employment	20.75	25.23	35.44	31.14	24.89	20.91	35.85	28.48	23.68	19.89	12.16	22.24	25.05
Found job, starts < 3 weeks		2.73	2.62	0.04	0.18	0.26	0.25	0.62	0.63	0.72		0.40	0.85
Found job, starts > 3 weeks		0.08	0.89		0.10	0.09	0.21	0.08	0.08	0.48		0.01	0.22
Job found, started													
Person not searching	79.25	71.96	61.05	68.82	74.83	78.74	63.70	70.81	75.62	78.92	87.84	77.35	74.07
< 1 month	22.73	38.09	44.85	27.77	21.34	29.48	24.24	23.35	57.09	39.38	44.44	27.87	33.39
1-2 months	18.18	19.25	21.27	12.67	14.31	20.13	20.63	18.03	14.53	17.37	11.11	16.91	17.03
3-5 months	13.64	20.13	21.59	24.85	19.92	20.68	20.43	21.34	22.15	24.32	33.33	23.65	22.17
6-11 months	45.45	22.53	12.29	34.71	44.43	29.70	34.70	37.28	6.23	18.92	11.11	31.57	27.41
Used active search method	100.0	98.94	97.93	100.0	99.93	99.78	99.21	99.93	97.85	100.0	100.0	99.39	99.41
Not used active search method		0.19	2.07			0.11	0.69	0.07	0.83			0.61	0.65
Other method		0.87			0.07	0.11	0.10		1.32				0.49
Registered, receives benefit/assistance	2.83	10.49	7.47	6.13	5.04	9.05	7.68	5.74		1.61	2.70	12.00	6.43
Registered, no benefit/assistance	5.66	5.60	15.41	13.30	25.25	9.32	23.94	17.31		12.45		19.04	14.73
Not registered, receives benefit/assistance		0.34	0.04			0.23	0.49						0.28
Not registered, no benefit/assistance	91.51	83.58	77.08	80.56	69.71	81.40	67.89	76.95		85.93	97.30	68.96	80.08

Source: EU-LFS 2010-2022, own calculations

In terms of job advertisements, EU-15 countries like Denmark (35.79%) and Germany (33.62%) show high reliance on this job-search method, and the overall average is slightly higher for the EU-15 countries (22.94%) compared to non-EU-15 countries (22.14%). Among the migrant populations in the non-EU-15 countries, Norway (38.84%), Poland (31.67%), and Switzerland (31.49%) show a significant reliance on job advertisements, but others like Estonia (0.43%) and Cyprus (13.85%) show that this channel is relatively less important for migrants.

Networking through friends, relatives, or acquaintances is crucial for both groups, though slightly more so in non-EU-15 countries (37.47%) compared to the EU-15 countries (32.75%). Within the EU-15, Greece (54.07%) and Italy (50.55%) show notable reliance on this method, while among the non-EU-15 countries, Bulgaria (50.72%), Croatia (48.81%), and Romania (48.23%) stand out.

Table 11. Weighted Job-Seeking Characteristics for Working Age Migrants in Employment by EU-15 Country of Residence for 2021-2022

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Job Advertisements	31.58	21.22	33.62	35.79	13.08	9.63	29.11	23.29	2.96	26.77	15.25	32.97	22.94
Friends, Relatives or Acquaintances	35.74	21.08	30.01	22.79	54.07	42.86	19.31	33.22	50.55	20.57	44.44	18.36	32.75
Public Employment Service	5.35	11.06	3.87	3.73	1.74	1.60	6.15	5.68	0.74	4.60	4.36	10.07	4.91
Private Employment Agency	2.72	9.95	2.34	6.83	0.27	6.32	3.53	8.90	7.21	3.57	2.24	4.45	4.86
Education/Training Institution, Internship, Previous Job	3.95	2.72	3.48	7.17	1.74	3.53	9.14	5.01	5.28	3.94	1.26	5.31	4.38
Contacted Employer Directly	9.53	18.56	5.26	5.61	16.02	21.63	13.40	11.32	24.57	15.24	17.26	14.63	14.42
Employer Contacted Directly	7.50	7.53	4.63	10.26	3.34	6.03	14.13	8.57	4.97	15.83	8.03	10.42	8.44
Applying via Public Competition	1.52	3.53	2.62	0.31	4.41	4.60	-	1.42	2.32	2.41	4.59	0.04	2.52
Other method	2.11	4.34	14.18	7.50	5.34	3.80	5.24	2.59	1.38	7.08	2.58	3.75	4.99
Yes	15.04	11.95	13.40	8.86	2.85	3.27	17.05	10.96	1.42	10.07	5.68	18.93	9.96
No	84.96	88.05	86.60	91.14	97.15	96.73	82.95	89.04	98.58	89.93	94.32	81.07	90.04

Source: EU-LFS 2021-2022, own calculations.

The use of public employment services is generally low across Europe for migrants, but is slightly higher among the EU-15 countries (4.91%) compared to non-EU-15 countries (3.51%). Belgium (11.06%) and Sweden (10.07%) have higher reliance among the EU-15, while Hungary (7.68%) and Slovenia (5.85%) are notable among the non-EU-15 countries. Overall, private employment agencies see slightly higher average use in non-EU-15 countries (4.25%) compared to the EU-15 (4.86%). Belgium (9.95%) and France (8.90%) lead the EU-15, while Switzerland (11.16%) and Cyprus (12.79%) show higher reliance in non-EU-15 countries.

Directly contacting employers is a common method in both groups, with non-EU-15 countries (16.54%) showing slightly higher average reliance on this method than the EU-15 average (14.42%).Spain (21.63%) and Italy (24.57%) show high reliance of migrant populations on this method of job-search, while among

the non-EU-15 countries, the share for Poland (29.08%) and Bulgaria (28.71%) are particularly notable. Employers contacting migrants directly is more common among the EU-15 countries (8.44%) compared to the non-EU-15 (5.56%). In particular, Finland (14.13%) and Luxembourg (15.83%) demonstrate a higher degree of headhunting among the EU-15, while Switzerland (12.58%) and Cyprus (12.63%) are notable in the non-EU-15 group. In part, this may reflect the underlying industrial and occupational structures of these countries, given that employer-proposing head hunting strategies are more common in e.g. the IT, Finance, and Banking sectors, or when hiring for C-Suite level roles.

Table 12. Weighted Job-Seeking Characteristics for Working Age Migrants in Employment by Non-EU-15 Country of Residence for 2021-2022

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Job Advertisements	11.96	31.49	13.85	0.43	15.60	22.67	25.14	29.16	38.84	31.67	13.31	31.52	22.14
Friends, Relatives or Acquaintances	50.72	22.26	40.34	34.60	31.21	48.81	25.60	47.55	31.14	25.86	48.23	43.38	37.47
Public Employment Service	2.87	1.25	0.93	2.89	6.38	3.11	7.68	1.37	5.30	2.56	1.89	5.85	3.51
Private Employment Agency	1.44	11.16	12.79	10.60	0.76	1.22	1.23	0.39	3.35	1.75	2.32	4.00	4.25
Education/Training Institution, Internship, Previous Job	0.48	4.16	0.59	3.04	0.25	1.99	0.61	0.20	5.52	0.97	0.61	1.06	1.62
Contacted Employer Directly	28.71	11.24	17.31	16.87	15.77	15.25	14.97	9.98	5.75	29.08	28.51	4.99	16.54
Employer Contacted Directly	1.91	12.58	4.17	12.63	6.63	2.02	5.08	8.02	4.19	3.98	1.16	4.38	5.56
Applying via Public Competition	1.44	-	3.52	17.45	20.64	4.74	2.63	1.76	-	0.70	3.05	2.39	5.83
Other method	0.48	5.87	6.52	1.49	2.77	0.19	17.06	1.57	5.92	3.42	0.92	2.43	4.05
Yes	6.74	4.44	1.32	6.76	21.38	6.52	12.41	6.12	12.86	4.98	3.39	10.39	8.11
No	93.26	95.56	98.68	93.24	78.62	93.48	87.59	93.88	87.14	95.02	96.61	89.61	91.89

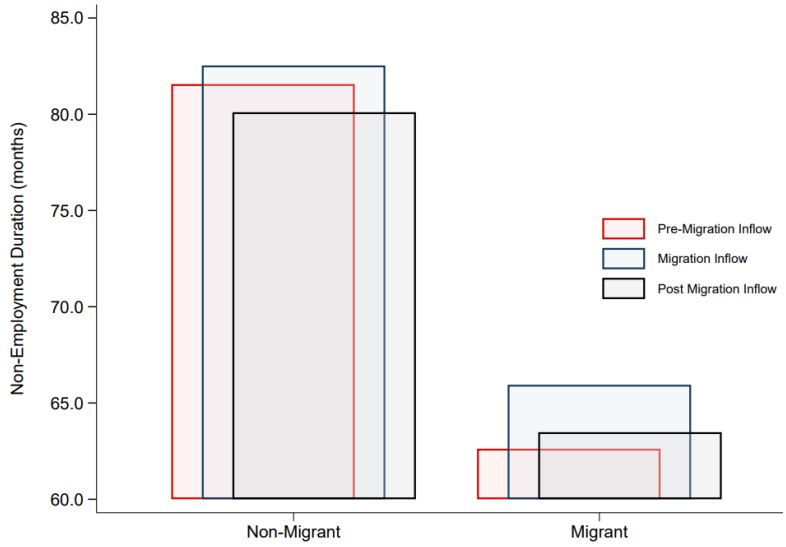
Source: EU-LFS 2021-2022, own calculations.

These insights suggest that while some job search methods are universally important, notable differences exist in the reliance on certain methods between EU-15 and non-EU-15 countries. Networking remains a critical method for finding employment, and direct approaches to employers are also significant across both groups. Public employment services and private agencies are less commonly used, with public competition being much more prevalent in certain non-EU-15 countries.

One important dimension of resilient integration into a host countries' labour markets is whether migrants are able to find new employment as fast as natives following an interruption to their career. To elucidate on this question, we pool the 2010-2022 waves of the EU-LFS and define an analytical sample based on the following criteria: individuals who were of working age at the time they were surveyed, who had previously been in some form of waged (self-)employment, but who were not currently working or participating in some form of full-time education.

In Figure 22, we regress non-employment duration on an indicator of whether the individual is a migrant, controlling for a) socio-demographic characteristics (i.e., age and its square, gender, and level of education), b) job-interruption characteristics (i.e., age at the time the person transitioned into non-employment, indicators for whether individual left the last job because of a health shock, business closure, or the end of a fixed term contract), and c) fixed effects for the year surveyed and the country of residence. Plotting the marginal effects conditional on migration status and a time dimension representing 2010-2014, 2015-2019, and 2020-2022, to reflect pre-refugee inflows, the refugee inflow period, and the COVID/Post-COVID era, respectively, we obtain the results presented in Figure 22.

Figure 22. The Effect of Migrant Status on Non-Employment Duration



Source: EU-LFS 2021, own calculations.

We find that migrants are in non- employment for a shorter duration, on average, following an employment interruption. This rose slightly during the migration inflow period 2015-2019, but declined again in the most recent period.

However, as discussed in Section 4.2, being in employment is not necessarily commensurate with being in *quality* employment. Migrants across much of Europe work in jobs with lower JQI scores than otherwise comparable natives, are over-represented in the lower income deciles, and are more likely to report that they work in temporary job roles on fixed-term contracts. Migrants may therefore return to employment faster following an interruption for several reasons, including a lower reservation wage or reservation job quality, fewer outside options if they are not fully covered by the local social security system, or country-specific institutional frameworks that require migrants to find new employment quickly to maintain residency.

While we cannot examine differences in job-finding speed conditional on job quality due to data limitations, it is an illustrative exercise to examine those self-reported factors and difficulties that migrants see as bureaucratic barriers or institutional constraints to finding fulfilling, quality employment. In the 2021 wave of the EU-LFS, an ad-hoc module aimed at evaluating the labour market situation of migrants and their descendants sought to measure some of these dimensions.

In terms of skill equivalence in a post-migration job, a higher percentage of migrants in the non-EU-15 countries state that their jobs required the same level of skills as pre-migration (26.10% compared to 20.98% among the EU-15 countries). However, a notable proportion of migrants in both the non-EU-15 countries and the EU-15 had not worked prior to migration (51.44% vs. 51.87%, respectively). Job satisfaction shows greater variation; for instance, satisfaction to a large extent is higher among the non-EU-15 countries (52.87%) compared to the EU-15 (45.02%). In terms of foreign qualification equivalence, a significantly higher percentage of migrants in the non-EU-15 countries applied for and had their qualifications partially or fully recognised (23.59%) compared to the EU-15 average (17.47%). Interestingly, an average of 62.82% of migrants among the non-EU-15 countries have not applied for qualification recognition because it was not needed, which is notably higher than the EU-15 average of 49.03%.

Barriers to work also differ, with a higher percentage of migrants in the EU-15 countries facing language skill barriers (7.04%) compared to the non-EU-15 countries (5.26%). The lack of formal qualification recognition was also a slightly more significant barrier among the EU-15 (2.86%) than in non-EU-15 (1.51%). Moreover, a considerable proportion of migrants in both groups reported no obstacles to employment (65.17% for the EU-15 and 71.72% for the non-EU-15 countries, respectively), with migrants resident in one of the EU-15 countries facing slightly more diverse obstacles to employment.

Table 13. Weighted Institutional Barriers to Employment for Migrants by EU-15 Country of Residence for 2021

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Skill Equivalence Main Job Pre- Post-Migration													
Higher Now	17.44	15.05	15.84	18.70	3.95	17.64	27.26	12.92	5.95	33.44	8.77	23.78	16.73
Lower Now	12.97	7.88	11.53	11.27	7.38	15.00	13.99	8.28	13.72	10.63	3.90	8.51	10.42
Same	27.16	22.71	15.29	20.79	24.19	25.53	19.83	14.03	28.17	27.35	6.24	20.53	20.98
Did Not Work Prior	42.44	54.36	57.34	49.25	64.49	41.83	38.92	64.78	52.17	28.57	81.09	47.18	51.87
Job Satisfaction													
Satisfied to a Large Extent	52.71	50.75	36.96	62.90	48.81	51.78	38.54	39.10	55.13	33.80	22.30	47.40	45.02
Satisfied to Some Extent	40.23	42.62	52.60	32.28	41.81	39.47	52.89	47.13	41.42	52.61	63.57	43.68	45.86
Satisfied to a Small Extent	5.71	5.15	7.46	3.09	8.51	6.79	7.05	10.08	2.08	9.50	11.68	6.51	6.97
Not Satisfied At All	1.35	1.48	2.98	1.73	0.86	1.96	1.52	3.68	1.36	4.08	2.44	2.42	2.16
Foreign Qualification Equivalence													
Applied: Qual Partially/Fully Recognised	10.39	8.91	27.23	16.78	22.41	14.80	10.80	7.88	5.37	23.61	34.95	26.54	17.47
Applied: Qual Not Recognised	0.68	2.30	7.58	3.94	0.31	3.25	3.34	4.53	0.65	2.15	3.37	4.50	3.05
Applied: Still Pending	2.11	1.32	1.82	1.03	0.21	3.20	-	0.84	0.53	0.47	1.26	1.90	1.33
Has Not Applied: Not Needed	63.74	62.32	29.68	46.58	58.64	37.22	59.90	38.53	65.36	47.62	38.74	40.05	49.03
Has Not Applied: Not Aware How	7.62	5.90	5.45	8.22	3.56	4.55	4.63	9.31	8.51	10.73	4.84	5.92	6.60
Has Not Applied: Costs/Complexity	6.93	2.77	8.54	3.60	1.47	11.08	5.66	5.95	11.85	1.54	2.95	2.61	5.41
No: Not Possible	4.11	2.52	4.00	4.79	0.21	1.58	2.57	6.04	4.11	1.07	1.26	2.61	2.91
No: Other Reason	4.42	2.86	15.70	15.07	11.31	18.21	13.11	10.99	1.75	6.30	4.63	15.88	10.02
No Formal Education	-	11.09	-	-	1.88	6.12	-	15.93	1.87	6.51	8.00	-	7.34
Barriers to Work													
Lack of Language Skills	8.79	7.35	6.76	8.90	3.35	2.29	16.77	6.90	2.84	9.83	1.12	9.58	7.04
Lack of Formal Qualification Recognition	3.25	2.46	5.66	2.27	1.77	4.68	1.78	4.12	2.62	1.51	0.89	3.31	2.86
Restricted Right to Work	1.85	1.72	0.48	0.44	0.84	1.95	0.63	4.48	0.79	0.71	0.45	0.72	1.25
Discrimination	1.74	1.55	1.22	2.79	3.07	1.23	5.45	1.92	1.66	1.71	0.67	4.57	2.30
No Suitable Job	3.70	3.45	3.73	3.58	4.83	4.37	4.09	3.37	3.68	5.65	7.60	4.12	4.35
Other Obstacle	1.59	1.85	3.35	5.85	3.44	6.87	4.19	7.47	24.64	5.09	4.10	9.85	6.52
No Obstacles	69.74	62.63	59.46	70.68	71.56	69.30	63.42	55.66	49.62	67.32	78.76	63.92	65.17
Never Looked for Work	9.33	18.99	19.34	5.50	11.15	9.32	3.67	16.07	14.16	8.17	6.41	3.94	10.50

Source: EU-LFS 2021, own calculations.

Table 14. Weighted Institutional Barriers to Employment for Migrants by Non-EU-15 Country of Residence for 2021

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Skill Equivalence Main Job Pre- Post-Migration													
Higher Now	2.78	30.77	17.04	10.44	5.31	19.69	6.36	7.39	15.30	28.45	-	13.52	14.28
Lower Now	11.11	8.88	9.31	6.68	7.96	12.79	1.75	6.34	12.36	12.93	18.18	4.22	9.38
Same	36.11	24.85	37.42	23.59	14.59	24.55	16.23	11.62	25.07	35.34	45.45	18.38	26.10
Did Not Work Prior	50.00	35.50	36.23	59.29	72.15	42.97	75.66	74.65	47.27	23.28	36.36	63.88	51.44
Job Satisfaction													
Satisfied to a Large Extent	34.23	64.29	66.14	57.93	50.10	65.27	43.90	71.26	50.93	38.81	30.93	60.71	52.87
Satisfied to Some Extent	49.66	30.40	28.97	33.45	44.55	31.99	50.48	23.08	43.02	53.60	58.86	34.62	40.22
Satisfied to a Small Extent	12.75	3.86	4.27	6.76	4.16	1.77	4.68	3.85	4.99	5.43	6.91	3.57	5.25
Not Satisfied At All	3.36	1.45	0.62	1.86	1.19	0.96	0.95	1.82	1.06	2.17	3.30	1.10	1.65
Foreign Qualification Equivalence													
Applied: Qual Partially/Fully Recognised	52.63	10.87	6.60	9.75	20.00	29.66	15.56	28.57	26.86	22.46	37.84	22.23	23.59
Applied: Qual Not Recognised	-	3.06	0.66	0.23	0.85	-	0.86	0.65	2.64	-	-	1.44	1.30
Applied: Still Pending	-	1.02	0.25	-	0.56	0.85	0.29	-	0.71	0.72	2.70	0.61	0.86
Has Not Applied: Not Needed	44.74	62.23	86.99	80.73	73.80	64.97	70.89	64.29	40.36	60.87	37.84	66.16	62.82
Has Not Applied: Not Aware How	2.63	3.96	2.65	6.80	0.85	1.41	1.44	1.95	4.43	2.90	5.41	2.28	3.06
Has Not Applied: Costs/Complexity	-	3.28	0.03	0.45	0.56	1.13	1.15	1.95	3.36	2.17	-	0.76	1.49
No: Not Possible	-	2.21	0.28	0.91	0.56	0.56	1.15	-	2.29	5.80	-	1.21	1.66
No: Other Reason	-	12.34	1.29	0.91	2.25	0.56	7.20	1.95	12.79	0.72	8.11	4.32	4.77
No Formal Education	-	1.02	1.23	0.23	0.56	0.85	1.44	0.65	6.57	4.35	8.11	0.99	2.36
Barriers to Work													
Lack of Language Skills	9.26	4.73	2.39	10.15	0.46	1.79	1.94	7.12	9.75	8.61	4.44	2.48	5.26
Lack of Formal Qualification Recognition	1.85	4.17	0.59	-	0.61	0.40	0.15	0.25	3.09	3.31	-	0.70	1.51
Restricted Right to Work	-	0.67	0.41	0.31	0.76	0.40	-	-	0.13	3.31	-	0.81	0.85
Discrimination	-	1.42	0.86	0.31	0.30	0.60	-	-	1.09	0.66	-	0.86	0.76
No Suitable Job	5.56	3.03	2.25	6.62	9.89	6.76	3.13	3.31	5.83	5.96	-	3.29	5.06
Other Obstacle	1.85	6.81	2.21	1.38	2.59	1.39	1.04	1.27	17.93	3.97	2.22	2.21	3.74
No Obstacles	59.26	74.75	79.90	77.38	73.21	77.93	89.10	83.21	53.87	63.58	48.89	79.59	71.72
Never Looked for Work	22.22	4.41	11.40	3.85	12.18	10.74	4.63	4.83	8.31	10.60	44.44	10.04	12.30

Source: EU-LFS 2021, own calculations.

This section has provided insights in the employment and unemployment structure, quality of jobs, benefits take-up, job search behaviour, and reasons to migrate for migrant populations across the EU member states. The results, although interesting in themselves, are likely very sensitive to the type of migrant under study. Where possible and reasonable, we differentiated between EU and non-EU migrants and those who migrated for economic reasons or family reunification purposes. In the next section, we will look more closely at a subgroup that was subsumed in our migrant definition thus far: asylum seekers.

4. Asylum Seekers in Context

Using the EU-LFS 2021 ad-hoc module, which focuses on the labour market experiences of migrants, it is possible to identify asylum seekers separately from other migrants. In the following, we rely on this 2021 wave to re-examine key findings from the migration literature in recent years.

There is a sizeable body of evidence suggesting that both refugees and asylum seekers are under-represented in employment statistics, or conversely, overrepresented in terms of social welfare recipients (for Finland, see Sarvimäki, 2011, 2017; for Denmark, see Husted et al., 2001, Bratsberg et al., 2014, 2016, 2017, and Schultz-Nielsen, 2017; and for Sweden, see Lundborg, 2013, and Åslund et al., 2017). Tables C9 and C10 in Appendix C report the average asylum seeker unemployment rate by country, and the between-group differences between migrants and natives, asylum seekers and natives, and asylum seekers and other migrant groups. These employment statistics confirm that asylum seekers fare considerably worse in terms of employment than natives in almost all EU-15 countries. For the non-EU-15 countries the issue is more mixed. In particular, in some Eastern European countries asylum seekers tend to outperform natives in terms of employment.

One reason for the largely lower employment rates of asylum seekers in most EU-15 countries could be restrictions from participating in local labour markets shortly after arrival (Fasani et al., 2021). At least in the initial arrival period, this presents a structural barrier to employment. We, therefore, re-compute the average asylum seeker unemployment rate and between-group differences for a restricted sample of migrants and asylum seekers that have been present in the host country for 4 years or more, the results of which are presented in Tables C11 and C12 in Appendix C. The asylum-seeker-to-natives employment gap decreases, but remains quite high at about ten percentage points on average for EU-15 countries.

However, this may also be due to initial differences in human capital between asylum seekers and the host country's native-born population when they first arrive. Unlike economic migrants, asylum seekers typically have less time to plan a smooth migration transition, and may not even know in which country they will ultimately end up claiming international protections before migrating. These circumstances

affect factors which are important for successful labour market integration such as, e.g., pre-departure language acquisition. They also may not carry documents with them that are necessary for, e.g., foreign qualification recognition processes, and, depending on the institutional structure and political situation in their sending country, may no longer be able to acquire said documents post-departure. In Tables 15 and 16 we repeat the analysis from the previous section, this time focusing on asylum seekers.

Table 15. Weighted Institutional Barriers to Employment for Asylum Seekers by EU-15 Country of Residence for 2021

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Skill Equivalence Main Job Pre- Post-Migration													
Higher Now	12.91	7.44	19.31	9.63	-	13.75	27.45	9.00	5.66	12.07	1.08	23.83	12.92
Lower Now	16.46	11.63	14.64	9.63	6.67	37.50	17.65	19.00	16.98	10.34	2.15	8.81	14.29
Same	16.46	13.49	13.40	11.85	17.78	28.75	9.80	10.00	20.75	12.07	-	12.44	15.16
Did Not Work Prior	54.18	67.44	52.65	68.89	75.56	20.00	45.10	62.00	56.60	65.52	96.77	54.92	59.97
Job Satisfaction													
Satisfied to a Large Extent	53.67	48.84	36.51	63.24	50.00	48.10	51.85	34.13	69.23	34.48	18.09	43.22	45.95
Satisfied to Some Extent	39.49	42.33	53.97	33.82	45.65	44.30	42.59	45.19	26.92	48.28	61.70	47.24	44.29
Satisfied to a Small Extent	6.08	7.91	6.80	1.47	4.35	3.80	3.70	12.50	3.85	3.45	17.02	7.04	6.50
Not Satisfied At All	0.76	0.93	2.72	1.47	-	3.80	1.85	8.17	-	13.79	3.19	2.51	3.92
Foreign Qualification Equivalence													
Applied: Qual Partially/Fully Recognised	11.22	7.44	27.07	12.09	9.33	12.15	10.71	4.84	1.41	30.00	46.15	21.70	16.18
Applied: Qual Not Recognised	2.15	5.95	9.61	2.20	-	4.67	10.71	7.26	1.41	6.00	7.69	4.72	5.67
Applied: Still Pending	3.82	4.76	4.37	1.10	-	7.48	-	1.61	-	-	-	1.89	3.57
Has Not Applied: Not Needed	47.26	33.93	20.52	38.46	70.67	13.08	50.00	16.53	57.75	10.00	7.69	22.64	32.38
Has Not Applied: Not Aware How	8.83	8.93	3.93	5.49	1.33	5.61	3.57	13.31	5.63	8.00	7.69	6.60	6.58
Has Not Applied: Costs/Complexity	12.17	5.06	11.35	5.49	-	29.91	10.71	8.47	19.72	2.00	7.69	3.77	10.58
No: Not Possible	8.83	4.76	9.17	8.79	1.33	4.67	3.57	11.69	9.86	2.00	-	5.66	6.39
No: Other Reason	5.73	3.87	13.97	26.37	17.33	21.50	10.71	15.73	-	20.00	-	33.02	16.82
No Formal Education	-	25.30	-	-	-	0.93	-	20.56	4.23	22.00	23.08	-	16.02
Barriers to Work													
Lack of Language Skills	13.70	9.31	11.41	10.13	1.98	1.52	15.15	9.66	6.17	24.42	-	10.32	10.34
Lack of Qualification Recognition	5.28	4.21	7.40	3.08	1.98	12.88	4.04	7.87	4.94	5.81	1.57	6.13	5.43
Restricted Right to Work	4.79	7.10	1.29	0.88	-	9.09	-	9.89	2.47	4.65	-	1.29	4.60
Discrimination	3.14	2.44	1.29	2.64	1.98	0.76	7.07	2.02	3.70	4.65	0.79	7.42	3.16
No Suitable Job	3.30	4.21	4.98	3.96	4.95	9.09	1.01	2.02	3.70	4.65	9.45	6.77	4.84
Other Obstacle	1.49	3.10	4.50	6.17	4.95	9.85	7.07	11.46	23.46	6.98	3.15	14.52	8.06
No Obstacles	55.12	42.79	40.19	63.00	63.37	45.45	58.59	41.12	48.15	36.05	83.46	50.00	52.27
Never Looked for Work	13.20	26.83	28.94	10.13	20.79	11.36	7.07	15.96	7.41	12.79	1.57	3.55	13.30

Source: EU-LFS 2021, own calculations.

Among the EU-15 countries, asylum seekers face notable institutional barriers to employment. Skill equivalence between pre- and post-migration jobs is mixed, with significant proportions of asylum seekers now working in lower-skilled positions or not working prior to migration. Job satisfaction varies widely, with moderate levels of satisfaction generally prevailing. Recognition of foreign qualifications is a critical issue, with many not applying due to perceived irrelevance or the complexity of the process. Language skills and formal qualification recognition are the primary barriers to employment, along with restricted rights to work and discrimination. However, a substantial proportion of asylum seekers report facing no obstacles or have never sought work.

Table 16. Weighted Institutional Barriers to Employment for Asylum Seekers by Non-EU-15 Country of Residence for 2021

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Skill Equivalence Main Job Pre- Post-Migration													
Higher Now	-	-	14.29	-	5.88	44.44	-	-	8.42	-	-	12.12	17.03
Lower Now	-	-	22.86	-	10.78	11.11	-	50.00	12.28	-	-	-	21.41
Same	-	11.11	42.86	-	19.61	22.22	-	50.00	13.33	-	-	18.18	25.33
Did Not Work Prior	100.00	88.89	20.00	-	63.73	22.22	-	-	65.96	-	-	69.70	61.50
Job Satisfaction													
Satisfied to a Large Extent	50.00	64.18	40.00	-	48.04	66.67	-	100.00	45.95	-	-	66.67	60.19
Satisfied to Some Extent	50.00	31.34	51.43	-	43.14	22.22	-	-	43.37	50.00	-	27.27	39.85
Satisfied to a Small Extent	-	1.49	8.57	-	7.84	11.11	-	-	9.06	50.00	-	3.03	13.02
Not Satisfied At All	-	2.99	-	-	0.98		-	-	1.62	-	-	3.03	2.15
Foreign Qualification Equivalence													
Applied: Qual Partially/Fully Recognised	-	7.55	2.15	-	27.35	14.29	-	-	21.61	-	-	14.81	14.63
Applied: Qual Not Recognised	-	5.66	-	-	1.71	-	-	-	4.52	-	-	-	3.96
Applied: Still Pending	-	1.89	-	-	-		-	-	1.51	-	-	-	1.70
Has Not Applied: Not Needed	100.00	33.96	80.65	-	64.96	85.71	-	100.00	23.62	100.00	-	77.78	74.07
Has Not Applied: Not Aware How	-	5.66	2.15	-	1.71	-	-	-	4.02	-	-	-	3.39
Has Not Applied: Costs/Complexity	-	7.55	-	-	-	-	-	-	6.03	-	-	-	6.79
No: Not Possible	-	5.66	-	-	0.85	-	-	-	4.02	-	-	-	3.51
No: Other Reason	-	28.30	1.08	-	2.56	-	-	-	16.58	-	-	7.41	11.19
No Formal Education	-	3.77	13.98	-	0.85	-	-	-	18.09	-	-	-	9.17
Barriers to Work													
Lack of Language Skills	-	11.11	7.37	-	1.14	7.69	-	100.00	9.00	50.00	-	-	26.62
Lack of Qualification Recognition	-	8.89	3.16	-	1.71	-	-	-	3.07	-	-	-	4.21
Restricted Right to Work	-	2.22	2.11	-	0.57	-	-	-	0.20	-	-	2.38	1.50
Discrimination	-	2.22	1.05	-	0.57	-	-	-	1.43	-	-	4.76	2.01
No Suitable Job	-	2.22	4.21	-	16.00	23.08	-	-	6.95	-	-	2.38	9.14
Other Obstacle	-	8.89	5.26	-	2.86	-	-	-	22.90	-	-	4.76	8.93
No Obstacles	100.00	57.78	43.16	-	65.14	61.54	-	-	40.49	50.00	-	80.95	62.38
Never Looked for Work	-	6.67	33.68	-	12.00	7.69	-	-	15.95	-	-	4.76	13.46

Source: EU-LFS 2021, own calculations.

Among the non-EU-15 countries, asylum seekers similarly encounter substantial barriers, though there are differences. Job satisfaction is generally higher, with many reporting satisfaction to a large or some extent. The recognition of foreign qualifications is less problematic, although many still do not apply, citing complexity or irrelevance. Language skills and formal qualification recognition are again primary barriers, alongside discrimination and a lack of suitable jobs. Despite these challenges, a significant proportion of asylum seekers report no barriers to employment, though a notable percentage have never looked for work.

There is a body of evidence that demonstrates better assimilation prospects are commensurate with improved host-nation language skills (i.e. for asylum seekers in Germany, see Lange and Pfeiffer, 2019; for refugees in the UK, see Cheung and Phillimore, 2013, among others), and "on-the-job" vocational language training has shown to be a particularly effective integration tool for many OECD countries (Liebig and Huddleston, 2014). We compute the asylum seeker-native employment gap by host country language ability (see Tables C13 and C14 in Appendix C, for the EU-15 and non-EU-15 countries, respectively).

This exercise is particularly illustrative, and results are consistent with the previous literature. The gap in employment between asylum seekers and natives substantially decreases with improved language skills. Among the EU-15 countries, for those who report they are advanced users of the host nation language the employment gap is, on average, 11 percentage points. For those who report they are beginners, the gap is over 42 percentage points. Similarly, among the non-EU-15, the shares are 9 and 56 percentage points, respectively.

We are also able to look at employment differences by whether or not an individual has participated in a course for the host country host language (see Tables C15 and C16 in Appendix C, for the EU-15 countries and non-EU-15 countries, respectively). Work-specific language courses appear to be more effective than general language courses in terms of asylum seeker-native differences in unemployment, but for both the EU-15 and non-EU-15 countries the employment gap is substantially higher for those who state they have not participated in a language course at all because their language skills are already sufficient. One possible channel affecting employment opportunities could therefore be an overestimation of one's host-nation language abilities. In some countries, participation in a host-nation language course is required to access certain benefits. We might expect the effect of such policies to reduce the asylum-seeker-native gap, on average.

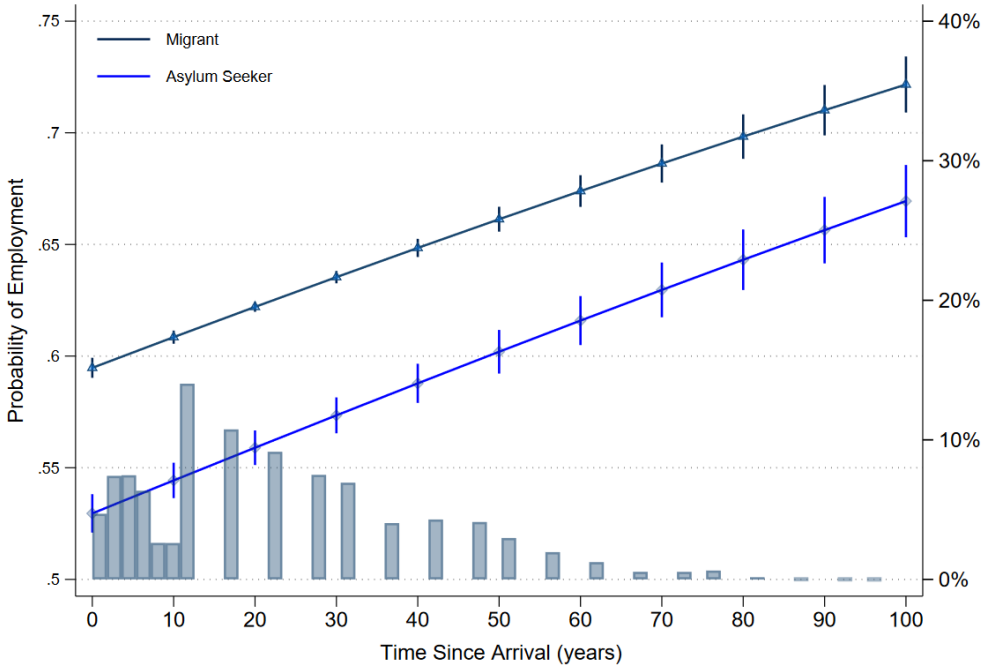
Evidence from the US suggests that refugees, after an initial dependence on state support, become net contributors over time (Cortes, 2004; Evans and Fitzgerald, 2017, among others), and assimilate faster into the labour market than other types of migrants (Borjas, 1982; Cortes, 2004; and Chin and Cortes, 2015). However, evidence from Europe is more mixed. While results from 2008 and 2014 EU-LFS-based studies suggest that the employment gap between refugees and natives decreases over time, consistent with US findings (Borjas, 1982 and Cortes, 2004), there is also evidence that despite relatively high short-term gains in the employment rate, these effects level off between 10-15 years post-arrival, and in some cases even decline (Bratsberg et al., 2016, 2017). That is, refugees initially assimilate at a faster rate than other types of migrants, including economic migrants, yet a gap remains several years post-arrival (for Sweden, see Hansen and Loftstrom, 2003 and Lundborg, 2013).

We limit the sample only to those adult migrants or asylum seekers who are in some form of waged (self-)employment or in some form of job-related education or training. Then we use logistic regression to regress an indicator of whether or not an individual is employed on time since arrival, controlling for a) socio-demographic characteristics (i.e., age and its square, gender, and level of education), and b) fixed effects for the year surveyed and the country of residence. Plotting the marginal effects conditional on the

distribution of time since arrival, we obtain the results presented in Figure 23.

After controlling for these factors, we find that not only do asylum seekers have a lower probability of being in employment than other types of migrants in terms of level effect, but this gap narrows only slightly over time. There is also a larger degree of variation compared to other types of migrant. This suggests that even many years after the process of seeking refugee status or other international protections, there are persistent long-term effects over the life course on labour market opportunities, above and beyond those experienced by other migrants.

Figure 23. Predictive Margins of Asylum Seeker and Migrant Employment Conditional on Time Since Arrival in Host Country



Source: EU-LFS 2021, own calculations.

One other consideration regarding asylum seekers, is that labour market participation is not necessarily limited to employment by a firm. Successful labour market assimilation may mean an asylum seeker starting their own business, and opportunities to do so may be important to new arrivals' long-term labour market success. Surveys conducted in a number of European countries indicate a large degree of self-employment among asylum seekers prior to migrating. However, in the literature on the labour market integration of asylum seekers, there is a marked absence of discussion of pilot programs and interventions supporting self-employment and entrepreneurship efforts. One of the reasons there exists this emphasis on labour market integration via waged employment may simply follow from the fact that, in many

countries, such interventions have not yet been undertaken, or are still early stage; the data for a more long-term analysis of outcomes may therefore simply be not yet available.

In Germany, for example, one of the largest destination countries for asylum seekers during the recent mass refugee inflow to Europe, the first major project only began in 2017 in Berlin-Brandenburg ("Start-Up Your Future") and remains a regional pilot. Yet, the IAB-BAMF-SOEP linked survey suggests that for those arriving 2013-2016, around 30% of asylum seekers were previously self-employed in their country of origin. Other countries, like Sweden and Norway, have been more forthright with their efforts and have dedicated services offering advice and support to prospective entrepreneurs with a non-native background (for Sweden, see OECD, 2014; for Norway, see Liebig, 2007).

On the one hand, self-employment among the low-skilled may require a large degree of subsidisation, and small firms in particular may remain below the threshold for taxation and social security contributions. In terms of long-term integration, self-employment of this type may not be particularly productive. On the other hand, we have demonstrated thus far that networks are a particularly important avenue of job-seeking among migrant populations, and migrant-owned businesses often serve a two-fold purpose as both economic activities and points of within-community social interaction and knowledge exchange. Further, one common finding in the migration literature is a lack of incentives to invest in host country human capital and institutional knowledge by asylum seekers who may ultimately intend to return home. Entrepreneurship may therefore have non-fiscal benefits in the form of incentives to invest in local knowledge and country-specific human capital beyond immediate monetary returns.

5. Potential Mechanisms Driving (Non-) Assimilation Effects

Dustmann and Frattini (2013) demonstrate using the ISEI skill index that in most European countries, immigrants from both within the EU and outside of the EU tend to work in less skilled occupations than otherwise comparable native-born individuals. There are several plausible explanations for this phenomenon. The first, is that migrants may be less-skilled than otherwise comparable natives in occupations or fields of study for which there is labour demand. The second, is that the skill distributions among migrants and natives are similar, but migrants nevertheless work in less skilled occupations, on average.

In the following section we first examine issues of qualification mismatch, both vertical and horizontal. We find that migrants, on average, tend to be overqualified for their current roles and are also more likely to not work in an occupation commensurate with their field of study. We then examine human capital adjustments post-migration event, and demonstrate that individuals who migrate as adults are more likely

to be employed if they complete a secondary level qualification in their host country of residence, implying that one driving factor may be qualification recognition. Finally, we examine occupational skills on an alternative dimension, using matched O*NET classifications, and find that migrants are much more likely than natives to work in routine manual and non-routine manual occupations.

5.1. Occupation and Qualification Mismatch

Eurostat proposes experimental indicators for use with EU-LFS data that can be used to measure "vertical" and "horizontal" skills mismatch.[6] That is, whether or not the individual is qualified above the expected level for their occupation, and whether or not the individual is working in a field commensurate with their field of study. In the following, we implement these measures and horizontal and vertical mismatch.

5.1.1. Horizontal Skill Mismatch

"Horizontal" mismatch focuses on a fundamental misalignment between an individual's field of study (based on ISCED fields of education and training), based on the highest level of qualification they have obtained, and their occupation (ISCO 2008 3-digit). Horizontal mismatch is neither inherently positive nor negative. On the one hand, individuals working outside of their field may face frustrations if there is a lack of direct return to their human capital investments, particularly if they have studied at the tertiary level in a country or region that charges tuition fees. On the other hand, workers may select into high-wage sectors outside of their field of study, which would result in a positive horizontal "mismatch".

For migrants, it can also be indicative of individual responses to labour markets with a) a different industry or occupational structure to the migrant's region of origin, or b) excess labour demand concentrated in certain areas of the economy conditional on native labour supply characteristics. If migrants are able to apply transferable skills to a new field with relatively few frictions, horizontal labour market adjustments may allow individuals to avoid structural unemployment in the face of industry and occupational differences. Further, for natives it may imply adaptation to structural change, technological change, or occupational change over time.

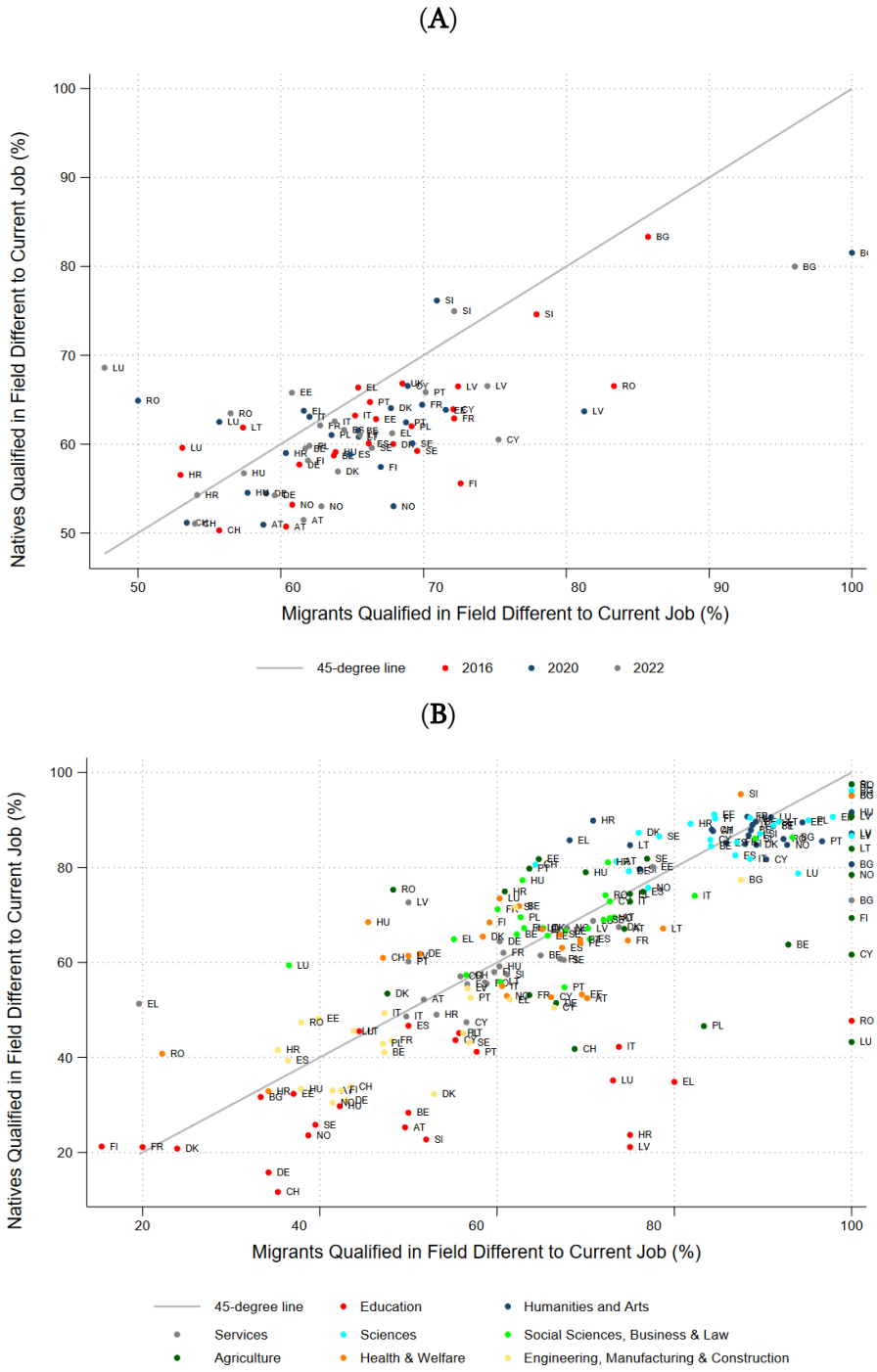
In the following, fields of education (ISCED-F) and occupations (ISCO 2008 3-digit) are matched based on the assumption of congruence between skill-requirements of occupations, and skills obtained via specific education or training pathways (following Wolbers, 2003; see Table C17 in Appendix C). Per Eurostat

[6] See https://ec.europa.eu/eurostat/documents/7894008/9596077/Methodological_note.pdf.

instructions for constructing this indicator of mismatch, we limit the analysis to those individuals who are employed and of working age, and who fall into one of the following two overlapping categories: i. less than 34 years of age, and who have obtained at least a secondary-level qualification (ISCED levels 3 to 8), and ii. 25-34 years of age, and who have obtained at least a tertiary-level qualification (ISCED level 5 to 8). This is necessary because the EU-LFS limits collecting information about the field of study to those individuals who have successfully completed their highest level of education within 15 years of the date they were surveyed. To address concerns about migrants who may return to education later in life, in particular post-migration, in Section 5.2 we additionally examine post-migration human capital adjustments.

In Figure 24, we compare migrants to natives using the full sample, examining the relative share of workers not working in a job commensurate with their highest field of education over time in Panel (**A**), and pooling the three most recent waves of data and examining differences by field of study in Panel (**B**). Figure B9 in Appendix B additionally reports results for a more intensive margin, restricting the sample to those who are 25-34 years of age, and who have obtained at least a tertiary-level qualification (ISCED level 5 to 8). We find that, generally, migrants are much more likely than natives to make horizontal adjustments (**A**). This is true in almost all countries, and in some has even increased over time (exceptions are Luxembourg and Slovenia, for which the trend has moved in the opposite direction). These horizontal adjustments are even more evident when controlling for the field of education (**B**). For certain fields, like Education, natives are very likely to work in a job commensurate with their field of study. In some countries, this is also true for migrants, although there is greater variation for migrants than natives. At the other end of the spectrum, many who have a qualification in the Arts or Sciences work in occupations not commensurate with their education, and the shares are similar for both migrants and natives.

Figure 24. Weighted Shares of Employed Migrants and Natives Working in an Occupation Different to the Field of Highest Qualification by Country of Residence

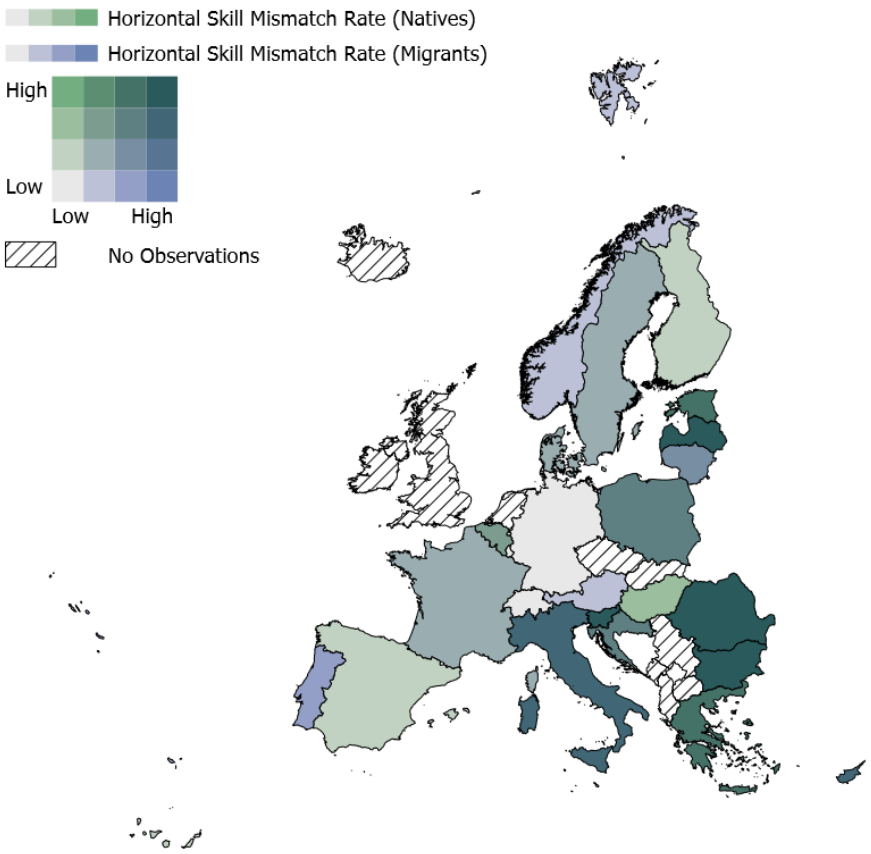


Source: EU-LFS 2016-2022, own calculations.

Then, pooling the three most recent waves of data, we estimate the horizontal skill mismatch rate by country based on the more extreme definition, wherein a worker is deemed "horizontally mismatched" if they have attained some form of tertiary education (ISCED 2011 1-digit, levels 5-8) and work in an

occupation with skill requirements different to their field of study.[7] We estimate the overqualification rate separately for migrants and natives.

Figure 25. Joint Spatial Distribution of Horizontal Skill Mismatch Rates for Migrants and Natives, 2020-2022 (Pooled)



Source: EU-LFS 2020-2022, own calculations.

Figure 25 presents the results of this exercise. Horizontal skill mismatch is relatively uncommon for both groups in Germany and Switzerland (lowest quartile for both), and less common in Denmark, Sweden, and France (second quartile for both). Horizontal mismatch for migrants and natives alike seems to be quite common in many Eastern European countries, however, such as Romania, Bulgaria, Croatia, and Latvia. For some countries, migrants seem to be relatively more exposed to horizontal mismatch than

[7] Technically, we calculate horizontal mismatch as one minus the weighted fraction of those with tertiary education (ISCED 2011 1-digit, levels 5-8) who are working in an occupation (ISCO 2008 3-digit) aligned with the field (ISCED-F) in which they achieved their highest level qualification divided by the total number of employed individuals.

natives. This is particularly the case for Portugal, but is also true to a lesser degree for Italy, Cyprus, Lithuania, Norway, and Austria.

5.1.2. Vertical Skill Mismatch

"Vertical" mismatch focuses on discrepancies between an individual's level of educational attainment (at the ISCED 2011 1-digit level) and their occupational code (at the ISCO 2008 1-digit level). This type of skill mismatch can be interpreted as more of a problem than horizontal mismatch. If an individual works in an occupation that demands lower skills than the individual has accumulated by education or training, this is usually interpreted as an overqualification bias. Typically, such a mismatch comes with lower wages and other adverse working conditions. For migrants, such a mismatch is commonly referred to as downgrading, i.e. the phenomenon that migrants work in lower-skilled jobs post-migration than their actual skill level.

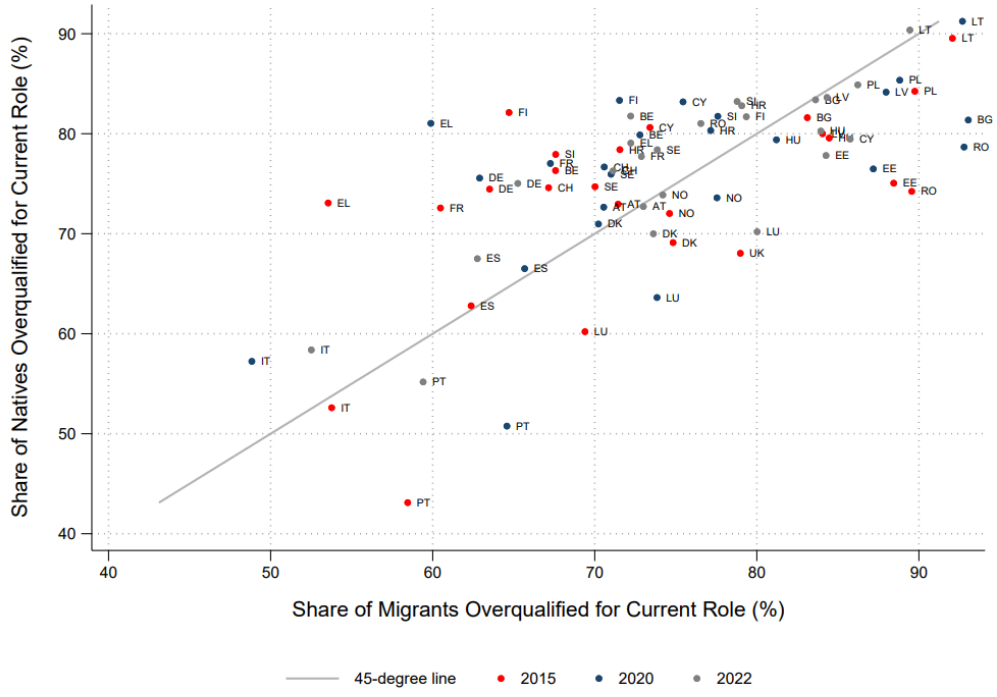
Table C18 in Appendix C presents a table based on the correspondence between occupations and level of education proposed by the ILO[8]. In the following, we focus on overqualification as our measure of vertical mismatch and use Table C18 to identify those working in occupations with skill requirements below their actual level of educational attainment. In Figure 26, we then present the relative shares of migrants and natives who are overqualified by country of residence, focusing on the beginning of the refugee inflow period (2015), the beginning of the post-inflow period (2020), and the most recent year for which data is available (2022). The sample is restricted to those who are of working age and in some form of employment at the time they were surveyed.

Countries to the right of the 45-degree line indicate a higher share of migrants than natives working in a role for which their level of education exceeds the job requirements per the definitions in Table C18 in Appendix C. This is notably higher for certain countries, and appears to at least in part be persistent over time. Several patterns are apparent. First, there are those countries for whom the share of overqualified workers is both similar for migrants and natives and is relatively stable over time, though the level effects may differ and be low (i.e., Spain), medium (i.e., Norway, Austria), or high (i.e., Latvia, Lithuania, Bulgaria, Poland). Second, there are countries who have experienced changing dynamics in overqualification over the last decade, but the magnitude and direction of these changes may differ for migrants and natives. For

[8] See https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/ (last retrieved on July 25, 2024).

example, on the one hand, there are countries like Luxembourg, where the share of overqualified workers has increased over time for both migrants and natives, but the "gap" between migrants and natives appears to have remained constant. On the other, are countries like Finland, where the share of overqualified workers among natives has remained approximately constant, even as it has risen among migrants.

Figure 26. Weighted Shares of Employed Migrants and Natives who by ILO Definition are Overqualified for their Current Role, by Country of Residence

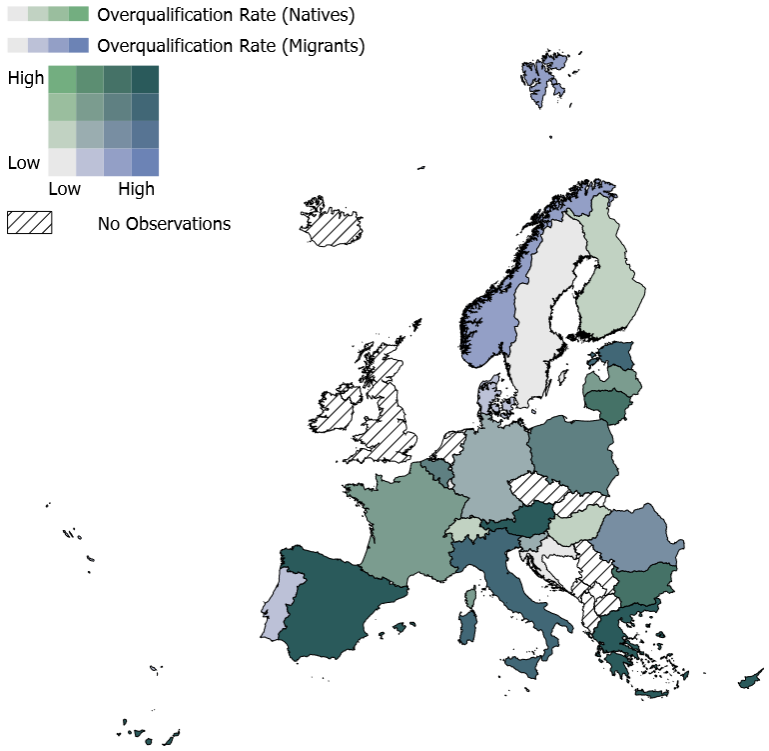


Source: EU-LFS 2015, 2020, 2022, own calculations.

Pooling the three most recent waves of data, we then estimate the overqualification rates by country based on a more intensive definition, wherein a worker is deemed "overqualified" if they have attained some form of tertiary education (ISCED 2011 1-digit, levels 5-8) but work in an occupation that does not require tertiary level study (e.g., ISCO 2008 1-digit, major groups 4-9). This includes i.e. clerical support workers, or those working in the service industry.[9] Based on a sample of working age employed individuals, we estimate the overqualification rate separately for migrants and natives.

[9] Technically, we compute the weighted fraction of those with tertiary education (ISCED 2011 1-digit, levels 5-8) who are working in a low-skill occupation (ISCO 2008 1-digit, major groups 4-9) divided by the total number of employed individuals who are tertiary educated.

Figure 27. Joint Spatial Distribution of Overqualification Rates for Migrants and Natives, 2020-2022



Source: EU-LFS 2020-2022, own calculations.

Figure 27 presents the results of this exercise. Overqualification seems to be a prominent issue (relative to other EU countries) for both migrants and natives in Spain, Austria, Greece, Bulgaria, Lithuania, and Cyprus. Countries with a relatively low degree of overqualification include Sweden and Croatia, as well as, to a lesser extent, Germany and Slovenia. Migrants suffer disproportionately from overqualification in Portugal, Norway, Denmark, and Romania. The first two countries also reported a relatively large degree of horizontal mismatch for migrant workers. Combined with relatively high levels of vertical mismatch, migrants working in Norway and Portugal seem to be disproportionately adversely affected by skill mismatch.

5.1.3. The Joint Distribution of Mismatch

Based on the results discussed thus far in this section, in addition to qualification recognition concerns, one possible reason migrants are more likely than natives to be in a horizontally mismatched occupation is that lateral career moves may allow an individual to avoid structural unemployment if the skills they gained via their educational background are not as "in-demand" in the host country as they were in their region of origin. Similarly, migrants may be more likely to make (downward) vertical adjustments, to a

job that is at a lower "level" than the level of education they have obtained, in the face of an oversupply of graduates in certain fields if their reservation wage or job-quality is low (e.g., due to needing employment to maintain a visa, etc.).

On the one hand, these two measures may be positively correlated. Against a background of widening tertiary accession in much of Europe, regions with an oversupply of graduates, particularly in certain fields, may see movements of workers into other fields and, when the graduate job market is saturated, into non-graduate jobs. On the other hand, these two mechanisms may be compensatory. For example, in countries with a strong vocational sector, downward vertical adjustments, even within the same general "field", may be less feasible due to structured training requirements even for "low-skill" jobs. Similarly, countries with a high level of "direct match" between tertiary education field and job may make entering a related field more difficult, particularly when the process of qualification recognition is lengthy. Migrants may be therefore more likely than natives to make a vertical adjustment when a horizontal adjustment is less feasible.

To examine this idea more closely, in Figure 28 we present the joint distribution of horizontal and vertical mismatch.[10] We limit the sample to working age migrants and natives and compute the results separately for 2016, 2020, and 2022 to represent the beginning and end of the refugee-inflow period and the most recent survey year.[11] Figure 28 presents the results of this exercise for migrants (**A**) and natives (**B**). Indeed, at the beginning of the mass-refugee inflow that characterised the middle of the last decade in Europe, the relationship between horizontal and vertical mismatch rates was negative for migrants, and the overqualification rate tended to be lower in regions with a greater degree of horizontal adjustments. Today, however, the relationship appears to be much more similar to that of natives. This implies that, at

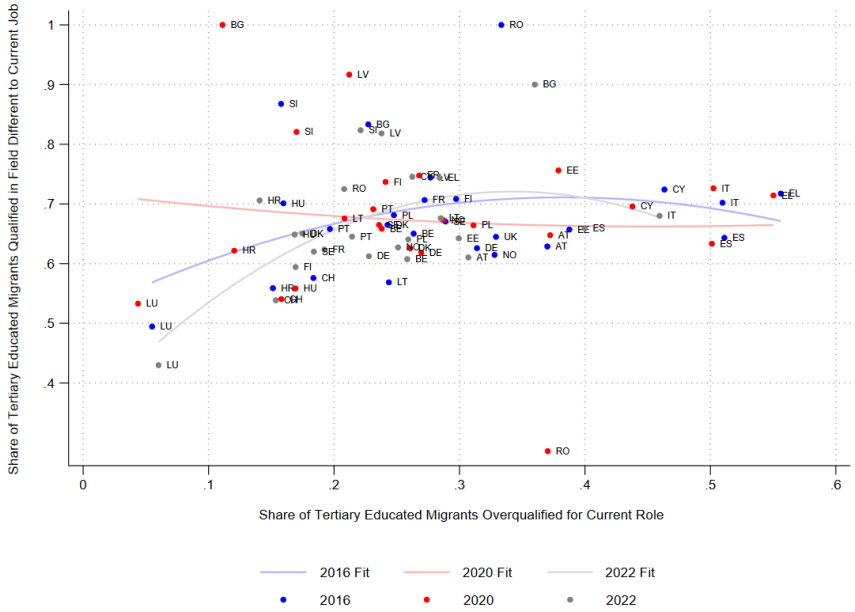
[10] The horizontal skill mismatch rate is computed as one minus the weighted fraction of those tertiary-educated (ISCED 2011 1-digit, levels 5-8) individuals who are working in an occupation (ISCO 2008 3-digit) aligned with the field (ISCED-F) in which they achieved their highest level qualification divided by the total number of employed individuals).The overqualification rate is the weighted fraction of those tertiary-educated (ISCED 2011 1-digit, levels 5-8) individuals who are working in a low-skill occupation (ISCO 2008 1-digit, major groups 4-9) divided by the total number of employed tertiary-educated individuals.

[11] Unfortunately, we cannot compute results for 2015—the true first year of the mass inflow period—as the variables we require to do so are not available prior to 2016.

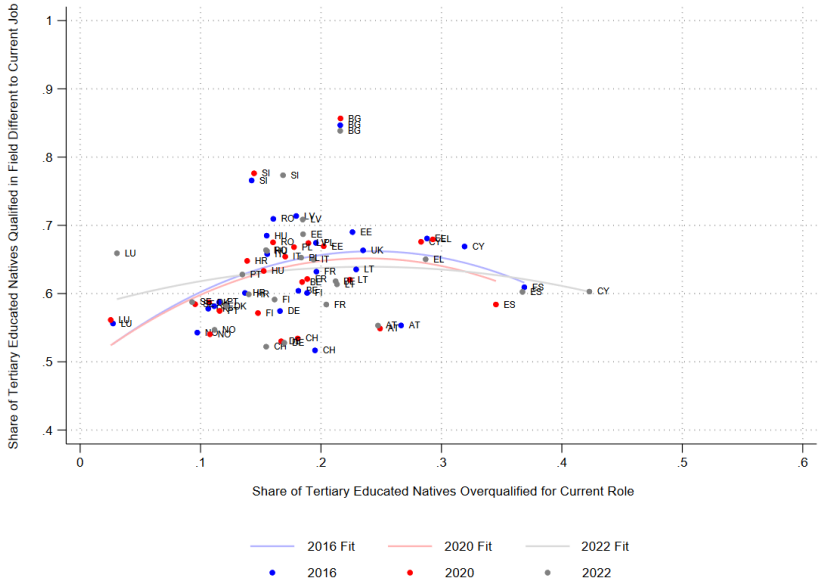
present, downward vertical adjustments are not predominately happening in regions where horizontal career changes are not as easy. Rather, the two go hand-in-hand.

Figure 28. The Joint Distribution of the Horizontal and Vertical Mismatch Rates for Migrants and Natives for 2016, 2020, and 2022

(A)



(B)



Source: EU-LFS 2016, 2020, 2022, own calculations.

Given the results discussed in Section 4.1, i.e., that the share of migrants and natives is extremely similar across industries and occupational groups, and that migrants, particularly non-EU migrants, are more likely to be working in a shortage occupation, the results in this section are consistent with the adaptation

explanation. That is, migrants may be responding to labour markets with a different industry or occupational structure to their region of origin by making horizontal career adjustments, particularly when there is excess labour demand concentrated in certain sectors, by adjusting their job search to a field not commensurate with their field of study. However, in doing so some may also need to take an occupational downgrade.

5.2. Human Capital Adjustments

In the previous section, our measure of horizontal mismatch was limited due to data constraints to those who were within fifteen years of typical education completion. To address concerns about migrants who may return to education later in life, in particular post-migration, we examine post-migration human capital adjustments in this section.

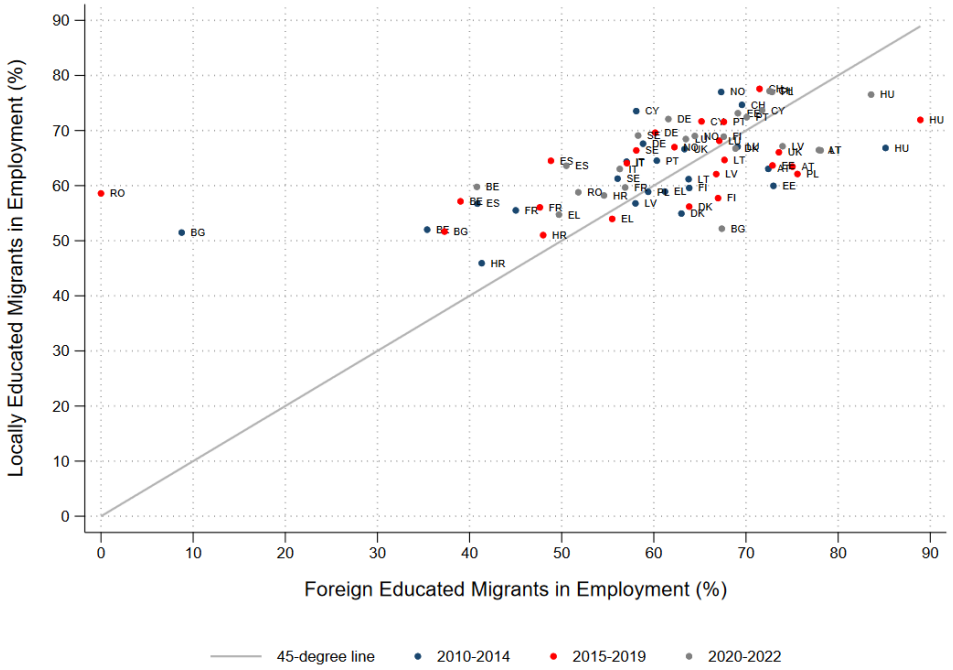
Conditional on investing in local human capital via education or workplace-based training, and establishing networks via engagement with local institutions, migrant outcomes may be heterogeneous relative to peers with a similar level of educational attainment and the same country of origin, but who were educated abroad. The results obtained thus far do not take into account where an individual's education was completed, and thus countries that receive a relatively higher proportion of education-seeking migrants may demonstrate more favourable integration outcomes if local human capital investments are linked to income or employment opportunities.

In the following, we restrict the sample to migrants who were eighteen or older at the time the migration event occurred. Then, for three time periods 2010-2014, 2015-2019, and 2020-2022, to reflect the period pre-refugee inflow, the mass refugee inflow period, and the COVID/Post-COVID era, respectively, we compute the relative employment shares of those who completed their highest level qualification pre- and post-migration.

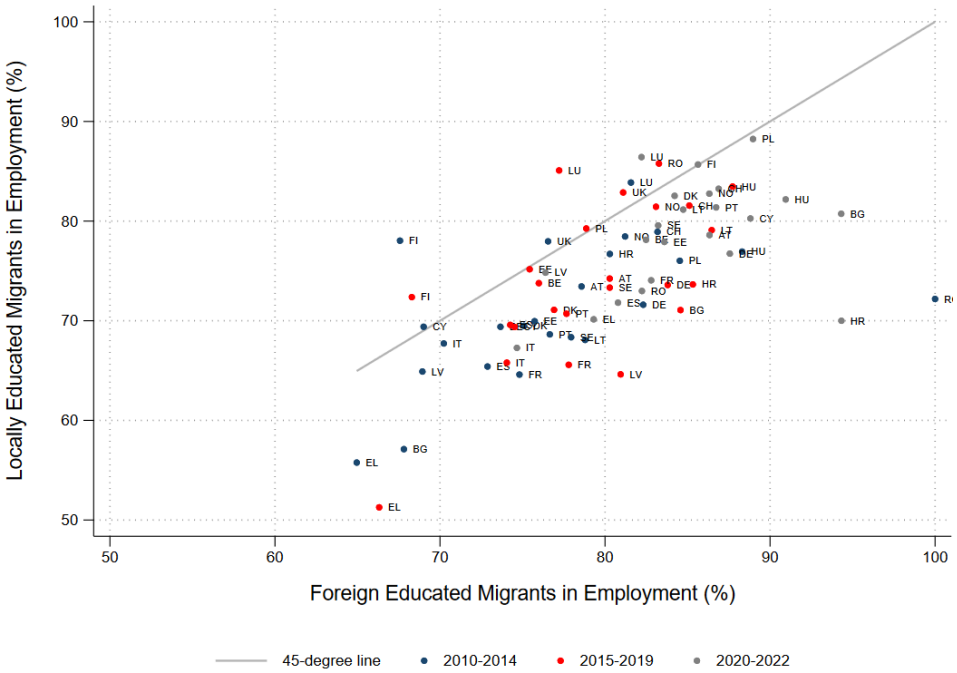
Overall, we find that the employment shares of those who are locally educated are generally within a 10 percentage point range of those who received a foreign qualification, wherein for some countries the rate is higher for foreign-educated migrants, and in others, it is higher for locally educated migrants (see Figure B10 in Appendix B). Figure 29, however, presents the relative employment shares while additionally distinguishing between secondary and tertiary-educated individuals.

Figure 29. The Joint Distribution of Migrant Employment by Foreign/Domestic Education Status and Education Type, for 2010-2022

(**A**) Secondary Educated



(**B**) Tertiary Educated



Source: EU-LFS 2010-2022, own calculations.

Here it is evident that while the share of migrants educated abroad is generally around 5 percentage points higher, on average, for those with tertiary education. This is likely driven in part by economic migrants with job offers pre-migration event based on their completed tertiary qualification (e.g., the European "Blue Card"). However, the inverse is true for secondary-educated migrants. It is particularly interesting that a secondary-level qualification completed in the host country matters very much for employment, in some cases exceeding a 10 percentage point difference in employment shares (e.g., Spain, Bulgaria, Belgium, Romania, Luxembourg), given that the sample is restricted to people who were at least eighteen years of age when migrating. These results are therefore not driven by migrant children who were raised in the host country and attended the normal education path of natives.[12] Rather, they may reflect issues with qualification recognition below the tertiary level.

Issues regarding the recognition and validation of foreign qualifications largely focus on the tertiary sector, in part likely due to the fact that education-based job search visas or residence permits are often limited to those with a tertiary-level qualification. However, for individuals with an alternative migration status (e.g., asylum seekers, family reunification etc.) the recognition of secondary-level qualifications may additionally represent an important institutional barrier to employment or participation in higher education. Further, the lack of a standardised recognition process across the EU implies that naturalised migrants may face future barriers to internal EU mobility given the lack of portability of their qualifications between EU member states.

The recommendation in this report of a standardised approach to qualification recognition across the EU (e.g., for non-European countries not covered by the Bologna Reform process) should therefore be understood to also include pre-tertiary level qualifications.

5.3. Occupational Task Groups

Finally, using the cross-walks provided by Lewandowski et al. (2020), we allocate occupations (ISCO 2008 3-digit) to five occupational task groups, based on the dominant task intensity. For example, an occupation is classified as routine manual if the routine manual task intensity of said occupation is higher than that

[12] In Figure B11 in Appendix B we additionally report results disaggregated by age instead of qualification level, and find that while the absolute level of employment declines with age, the relative distribution of employment shares for foreign versus locally educated migrants is similar. These results are therefore also not driven by a relatively young migrant composition during the most recent waves of arrivals in the last decade.

of other task content measures. The task content measures are derived from the O*NET-based measures proposed by Acemoglu and Autor (2011) and are constructed using O*NET data. Based on the relative task-intensities of their current job role, each individual is assigned to one of five task groups; i. non-routine cognitive analytical (NRCA), ii. non-routine cognitive personal (NRCP), iii. routine cognitive (RC), iv. non-routine manual (NRM), and v. routine manual (RM).

5.3.1. Overall Trends in Task Composition

First, we examine how the compositional structure of the European workforce in terms of occupational task content has changed over time. Restricting the sample to employed, working-age individuals, we construct an index of occupational task share with 2011 as the base year.[13] Figure 30 illustrates that in the decade before the COVID-19 pandemic, the evolution of task content among the EU-15 countries was largely similar for migrants and non-migrants. That is, although migrants more often worked in RM and NRM jobs than natives, while natives were much more likely to work in an RC task-intensive role (see Table C19 in Appendix C), the onset of the COVID-19 pandemic appears to have spurred a change in the relative task composition of migrant workers in parts of Europe. There is also substantial heterogeneity in dynamic changes over time between European regions.[14]

Several key trends are immediately apparent; while Panel (**A**) demonstrates that the migrant share in NRCA tasks increased overall among the EU-15 countries, this was primarily driven by the EU-15 South, and to a lesser extent the EU-15 Continental countries. Conversely, the EU-15 North saw relatively similar trends for both migrants and natives. The steep decline of RM and NRM jobs among natives that can be observed from 2020 onward was much larger in the EU-15 Continental and Northern countries, and while a decline can also be observed in the South, it was much smaller in magnitude.

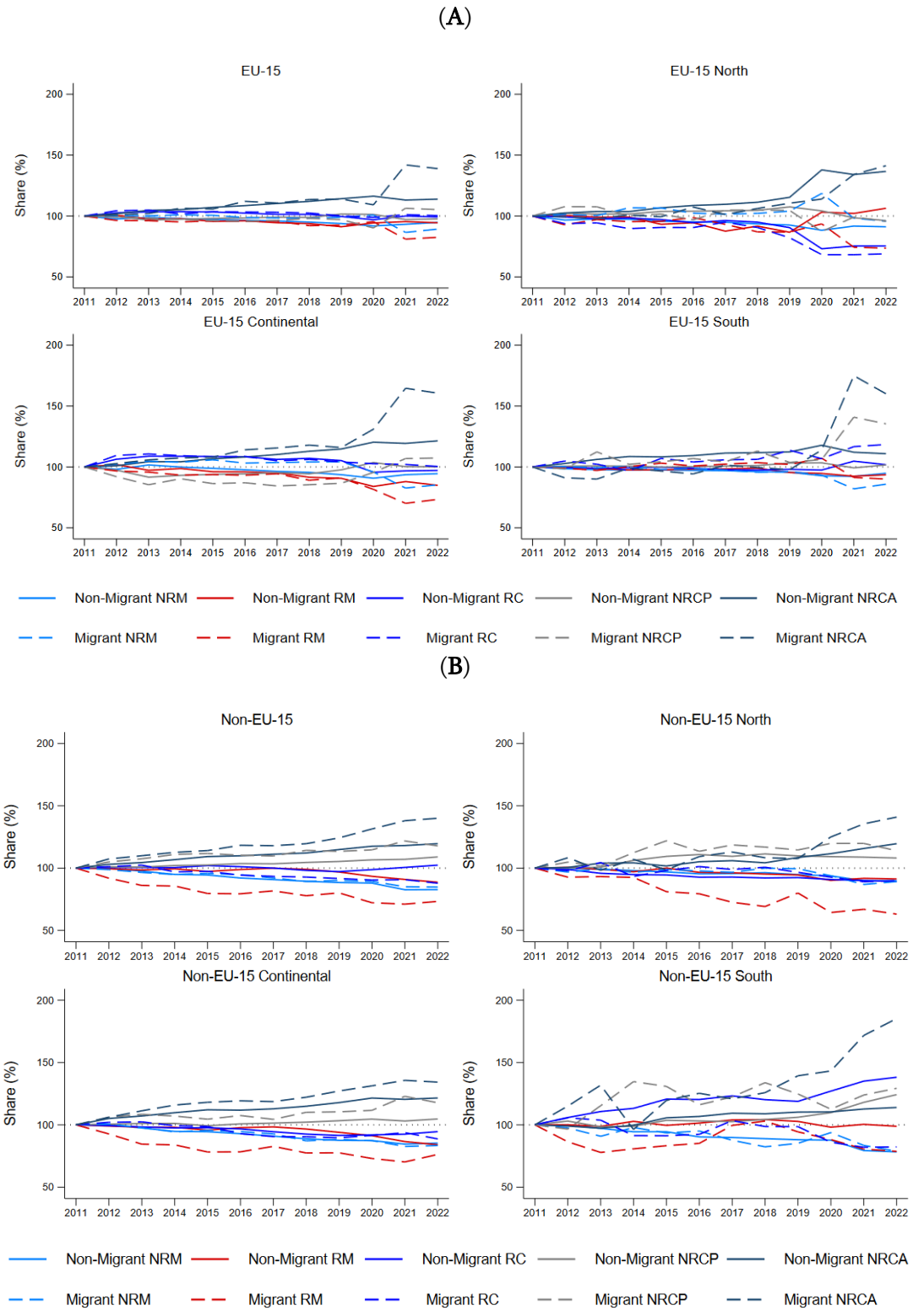
Among the non-EU-15 countries, however, Panel (**B**) illustrates a rather different picture. The non-EU-15 Continental group exhibited a declining migrant share in RM jobs from the beginning of the period under consideration here, and an increasing share of NRCA jobs. Similarly, in the non-EU-15 South, the share of RM declined at the beginning of the decade, rose during the period of mass migration inflow to

[13] The EU-LFS occupational codes underwent a change from ISCO-88 to ISCO-08 beginning in 2011.

[14] In the following, the EU-15 North includes IE, DK, FI, SE, and UK, the EU-15 Continental include BE, AT, DE, NL, and FR, the EU-15 South includes IT, ES, EL, and PT, the non-EU-15 North includes NO, EE, LV, and LT, the non-EU-15 Continental include SI, HU, SK, PL, and CH, and the non-EU-15 South includes RO, BG, HR, and CY.

Europe that characterised the middle of the decade and was declining again by 2019. NRCA job-growth among migrants also accelerated beginning in 2018. The share of migrants in NRM jobs has also steadily declined over time, even as it has increased for natives.

Figure 30. Changes in Occupational Task Shares in Europe 2011-2022



Source: EU-LFS 2011-2022, own calculations.

The COVID/post-COVID period among the EU-15 countries therefore appears to have catalysed a change in the occupational task structure of migrants in particular, but among the non-EU-15 countries, these recent changes appear to be part of an ongoing process of change in the structure of industries and occupations, particularly since there are also changes evident for native workers. For example, the increase in NRCA jobs over the last decade and a half that we observe for natives among the non-EU-15 North and Continental countries is also present to a lesser extent among the EU-15 in recent years, but we also observe e.g., an increase in RC jobs in the non-EU-15 South even as the RC job-share has declined for natives in most other EU-15 and non-EU-15 regions.

5.3.2. Occupational Task Shares in Transition: Human Capital and Unemployment Effects

Given the results we have presented in this report thus far, it is an illustrative exercise to examine who gains and who loses as a result of the changes described in the previous section. In this section, we first investigate how the change in employment shares by dominant task-intensity differs by skill level. We then alternatively apply the procedure used in Section 5.3.1 to identify the dominant task intensity of an individual's *previous* occupation for those who are currently unemployed and examine changes in non-employment shares conditional on the occupational task content of the previous job.

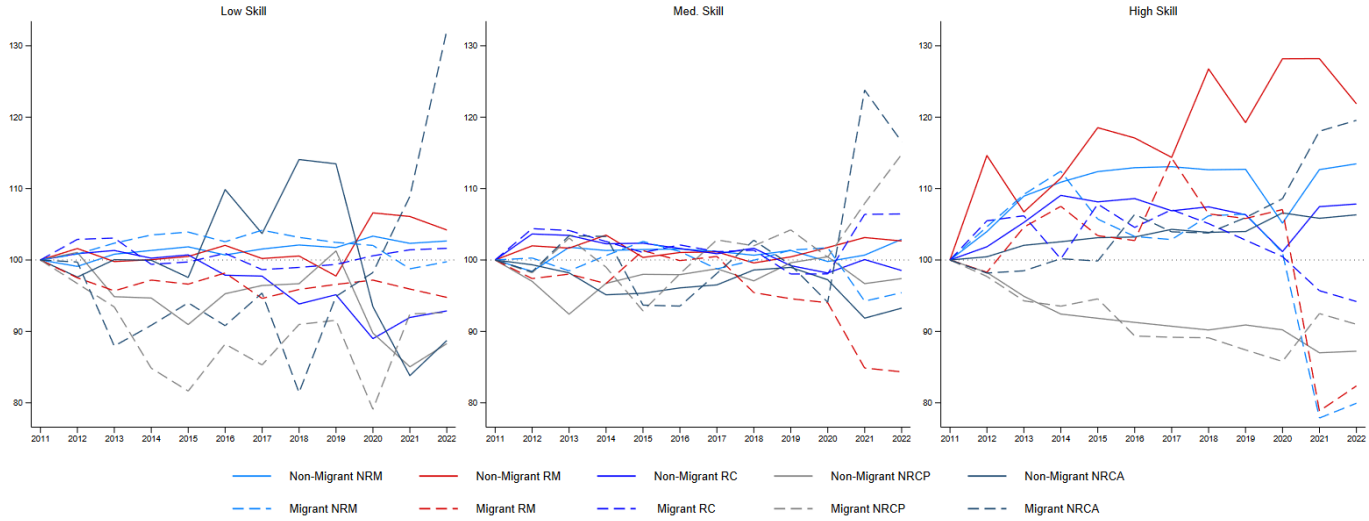
First, after applying the same procedure used in Section 5.3.1 to identify the dominant task intensity of each occupation, we assign individuals to a skill level conditional on their level of education; low (ISCED 1-2), medium (ISCED 3-4), and high (ISCED 5-8). Then, for each year and each task type, we construct an index of occupational task share by education level-migration status cell, with 2011 as the base year. We limit the sample of migrants to those individuals who were at least eighteen at *time of arrival* in the host country. Figure 31 presents the weighted average results for the EU-15 countries (**A**) and the non-EU-15 countries (**B**), respectively.

What is immediately apparent is that for the EU-15 countries, the growth in the NRCA task content share for migrants is highest among the low-skill group, while the decline in RM tasks we observed previously is driven predominately by the high-skill group. As RM tasks have declined among high-skill migrants, and to a lesser extent medium-skill migrants, there has also been a corresponding increase for high-skill natives. The decline in NRM jobs we observed previously for natives is also driven by this high-skill group. Further, there appears to have been a resorting of RC jobs conditional on skill type, as the share has declined for high-skill migrants even as it has increased for medium-skill migrants. The pattern we observed previously in regard to the COVID/Post-COVID period is also evident here, however, it appears to have primarily affected the medium- and high-skill groups. With the exception of NRCA jobs, for low-

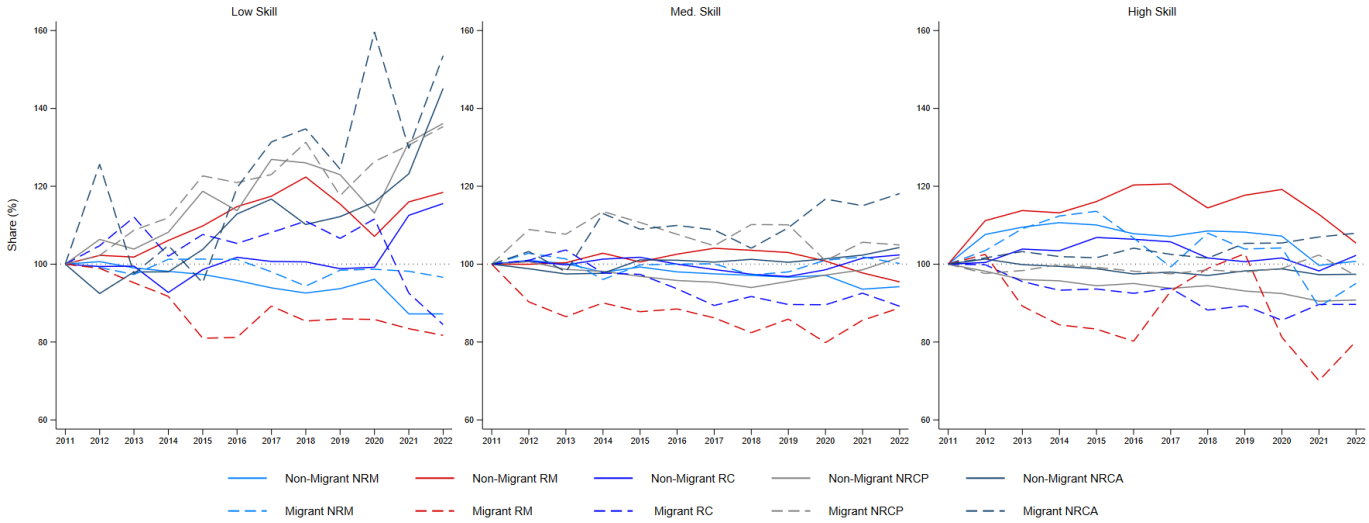
skill migrants the changes we observe toward the end of the period considered here appear to be a continuation of existing trends.

Figure 31. Changes in the Task Content Shares by Skill Level in Europe 2011-2022

(**A**) EU-15



(**B**) Non-EU-15



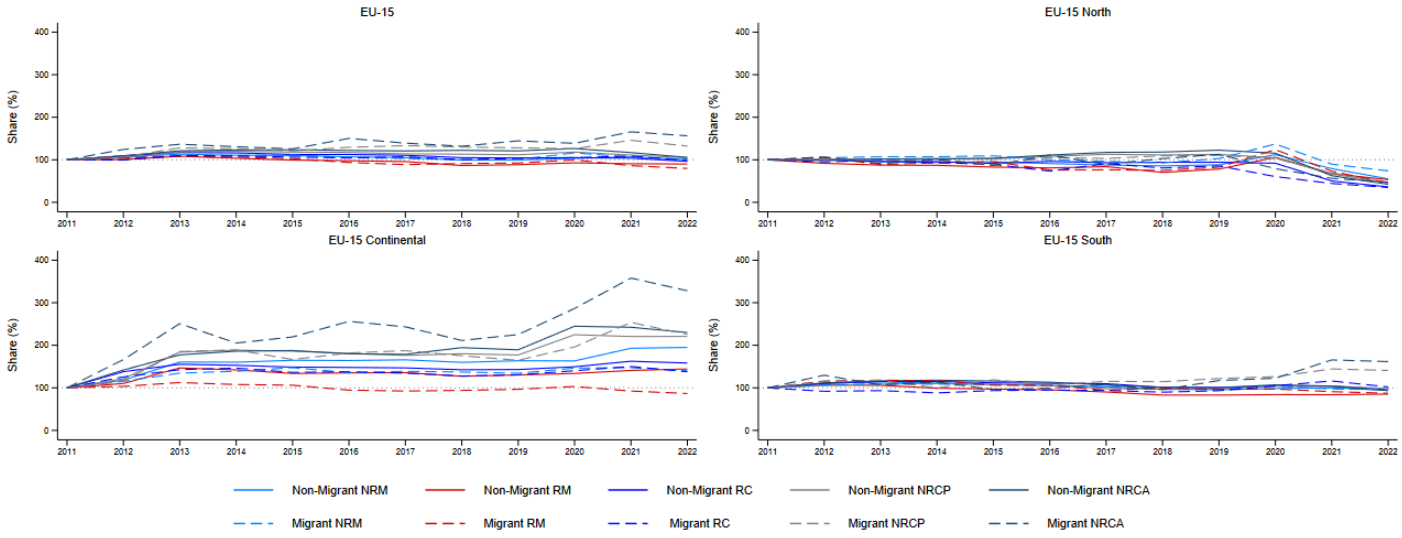
Source: EU-LFS 2011-2022, own calculations.

After accounting for skill-differences, the trends for the non-EU-15 countries remain substantially different to the EU-15 countries. For example, among the low-skill group the share of NRCA and NRCP jobs has increased substantially in recent years for both migrants and natives, though the rate of change is higher for migrants in the latter case. On the other hand, the share of migrants working in RM occupations increased in the most recent periods for medium-skill and high-skill migrants and in NRM occupations among high-skill migrants. Among native workers, on the other hand, the higher an individual's skill-

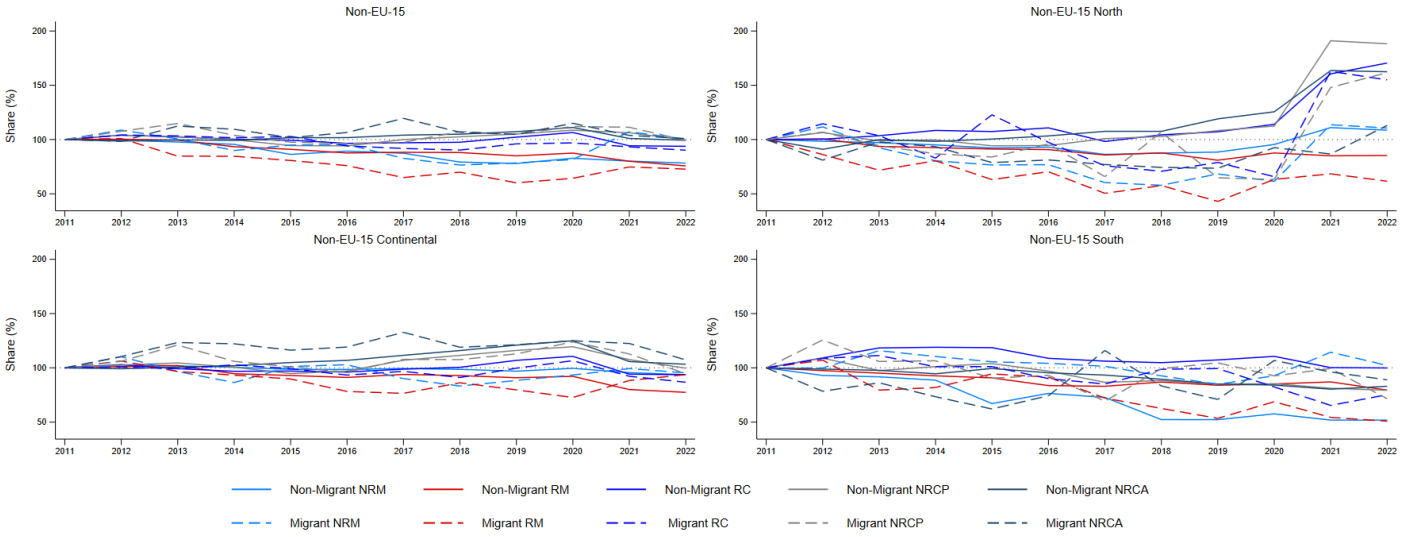
level the lower the share of manual tasks and the higher the share of cognitive tasks (see Table C19). The increase in high-skill migrants working in manual tasks, even as the native share declines, is illustrative of the increasing rates of vertical mismatch described in Section 5.1 for migrants.

Figure 32. Changes in Unemployment by Occupational Task Content of the Last-Held Job 2011-2022

(**A**) EU-15



(**B**) Non-EU-15



Source: EU-LFS 2011-2022, own calculations.

Finally, applying the same procedure used in Section 5.3.1 to identify the dominant task intensity of an individual's *previous* occupation, for those who are currently unemployed, we construct an index of relative unemployment separately for migrants and non-migrants with 2011 as the base year. There are

immediate differences evident between the EU-15 and non-EU-15 countries, as well as a large degree of heterogeneity in the latter group. A common theme, however, is that the risk of job-loss has increased for migrants more than natives when employed in a manual occupation (RM in the case of the non-EU-15 Continental countries, and NRM in the case of the non-EU-15 South countries, and the EU-15 North). Generally, changes in unemployment risk by occupational task content are similar when looking at higher levels of regional aggregation (e.g., EU-15 and non-EU-15). This may obscure localised differences in job-loss risk for vulnerable groups, something which is particularly important for policymakers to pay attention to as Europe undergoes a transition in the task composition of occupations.

6. Implications and Conclusion

As the EU navigates the complexities of migration in a changing global landscape, fostering effective integration policies is essential for building resilient and cohesive communities. This report provides a comprehensive understanding of the current state of migrant integration in the EU and thus contributes to informed policymaking.

We have highlighted several potential barriers to integration, including skill-mismatch, language barriers, and administrative concerns, which may ultimately manifest as migrant-native wage differences, employment opportunities, and job quality differences even several years post-arrival. It becomes clear that the integration of migrants into EU labour markets is a complex and multifaceted problem. In the future, policymakers and other key stakeholders could foster improvements in integration outcomes by developing and implementing policies that promote fair and inclusive labour markets, and aim at overcoming the barriers highlighted herein. Based on our findings, we would like to draw policymakers' attention to the following areas which could prove to be fruitful avenues for improving migrant integration.

First and foremost, policymakers should focus on enhancing the recognition of foreign qualifications. One way forward would be to simplify and standardise the recognition process across the EU. Further, in Section 5.2, we demonstrate the importance of secondary level recognition. Although often excluded from the discussion regarding foreign qualification recognition, given job seeker and work visas typically have tertiary requirements, below tertiary recognition may be particularly important for certain demographics (e.g., asylum seekers, or those who arrive via the family reunification route etc.). Developing a streamlined, EU-wide framework for recognising foreign qualifications would make it easier and faster for migrants, and in particular asylum seekers, to have their credentials recognised, and to be able to move within the EU without repeating the procedure with every relocation. Furthermore, migrants seem to

need more advisory services to navigate the recognition process and understand its importance. Investing in this may very likely improve the employment outcomes of thousands of migrants by faster integration into appropriate job sectors and reduced skill mismatches.

Second, job quality disparities need to be taken seriously. Even though migrants have similar employment rates to natives, job quality is largely worse for migrants. They often face poorer working conditions and lower wages. Ensuring fair treatment can improve their economic stability and improve their fiscal contributions. Policymakers should promote fair employment practices ensuring fair wages, job security, and favourable working conditions for migrants. This could be done by focussing on employer accountability; introducing incentives for employers to adhere to fair employment standards and penalties for those who do not.

Third, the labour market potential of migrants needs to be used for good. A direct way to do so is to reduce institutional barriers for asylum seekers. Allowing asylum seekers to work while their applications are being processed, would be a start. This should go hand in hand with a reduction in waiting times for asylum seekers to receive work permits and resident status.

Finally, policymakers are well-advised to monitor and evaluate integration policies. Doing so ensures that policies remain effective and responsive to the changing dynamics of migrant integration.

Implementing these policy recommendations would likely lead to significant improvement in the labour market integration of migrants in the EU. By addressing barriers to qualification recognition, ensuring fair employment practices, and reducing institutional barriers, the EU can foster a more inclusive and cohesive society, benefiting both migrants and the fiscal position of the public budget.

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Appendix A

A.1 Data and Measurement

The EU-LFS is a harmonised survey conducted across the European Union (EU) member states, the four EU candidate countries, and the three non-EU European Free Trade Association (EFTA) members. In this report, based on EU-LFS micro-data, our analysis is restricted to the current EU member states, with the addition of Iceland, Norway, Switzerland, and the UK (pre-2021 only).

The EU-LFS relies on a standardised approach to data collection, sampling, and the coding of responses, to ensure consistency and comparability of data across participating countries. Methodologically, multi-stage stratified random sampling is used wherein the units (private households) are selected systematically from national registers or household surveys. The survey aims to achieve a representative sample illustrative of the resident EU population's demographic and socio-economic diversity. It comprises a comprehensive set of variables related to labour market participation, employment status, and socio-demographic background characteristics at the individual and household levels.

In the following, we primarily rely on the most recent three waves of the EU-LFS 2019-2022, with an extended analysis of the 2021 wave that records additional information about migrants. We additionally make use of the 2010-2018 waves to augment our analyses, and examine differences before and after the large-scale migration shock that took place from 2014 to 2019. We focus on the main household respondent in the annual EU-LFS data, though household composition variables (such as number of children, and cohabitation with a partner) are used to control for family-level differences in labour market participation.

A.1.1 Migrant Operationalisation

The EU-LFS does not permit the recording of multiple citizenships, and in the case that a respondent has multiple citizenships the survey records with preference the citizenship of the country in which they reside. This convention means that naturalised migrants who have acquired citizenship, and local nationals born abroad (including those more than one generation removed) who have returned as adults, are not easily identifiable. Further, the second-generation offspring of migrants who have not themselves obtained local citizenship may be misidentified as migrants when the migrant share is computed on the basis of nationality. Often, migrant shares computed on this basis capture host country differences in naturalisation processes and sending country rules about multiple citizenships. For this reason, we primarily rely on time since arrival for the identification of migrants and restrict the migrant sample to

those not born in the host country. For the purpose of heterogeneity analyses, we additionally distinguish between European and non-European migrants where possible.

A.1.2 Identifying Asylum Seekers

In the following, we address issues that concern both refugees and asylum seekers, or so-called "forced migrants", jointly. In the 2021 round of the EU-LFS, additional in-depth questions were included on the topic of migration. One of these questions enables the indirect joint identification of refugees and asylum seekers, specifically the question regarding the main reason for the respondents' latest migration experience into the host country. Possible responses include "international protection or asylum", in addition to employment, family reasons, education or training, and retirement. It should be noted that this category does not reflect the official migration status of the respondent, i.e. if the respondent has been formally recognised as a refugee or is currently applying for asylum. Responses to this question were recorded for all survey participants between the ages of 15 and 74 whose country of birth differs from their current country of residence. In our analysis, we therefore jointly refer to this category as asylum seekers with the understanding that it consists of eligible respondents who indicated seeking international protection or asylum as their primary reason for migrating to the host country, independent of whether or not the attempt to obtain recognised refugee status was successful.

A.2 Limitations

The data suffers from potential left-tail censoring. If migrants are not able to nominally integrate (find a first job, somewhere to live, or learn some of the local language) they may leave shortly after arrival, and we thus do not observe them. Over time, we may also expect a declining balance by arrival cohort, particularly following job-loss or major life events.

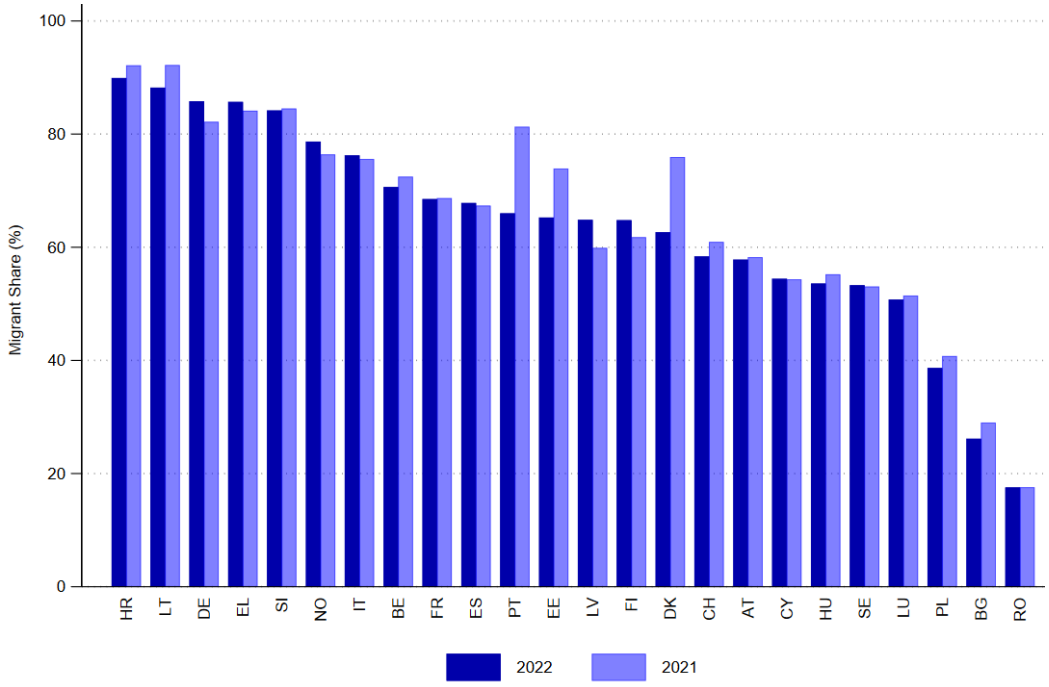
Second, we presume that migrants and natives are working in the country of residence. If a large proportion of individuals are not working in the host country, this poses a potential issue regarding discussions of assimilation into host country labour markets—particularly when discussing issues of job quality, wages, and qualification recognition. We test this in the data and find that the share of cross-border commuters among migrants is very low, at 1.3-3% of the overall working migrant population conditional on country of residence. We are therefore not concerned that this is driving our findings.

Finally, among the group of EU-27 nationals who migrated from another EU country to their current country of residence, we are unable to determine using the available data whether their country of origin was in the EU at time of arrival. As new member states' EU accession in recent years is unlikely to retroactively confer benefits to those who arrived e.g., 20 years ago, migrants from the EU-12 may have

faced a harder integration period pre-EU accession (i.e., qualification recognition, visa restrictions etc.). Without accounting for heterogeneity within the EU-27 origin group, effects may be over or under-estimated.

Appendix B

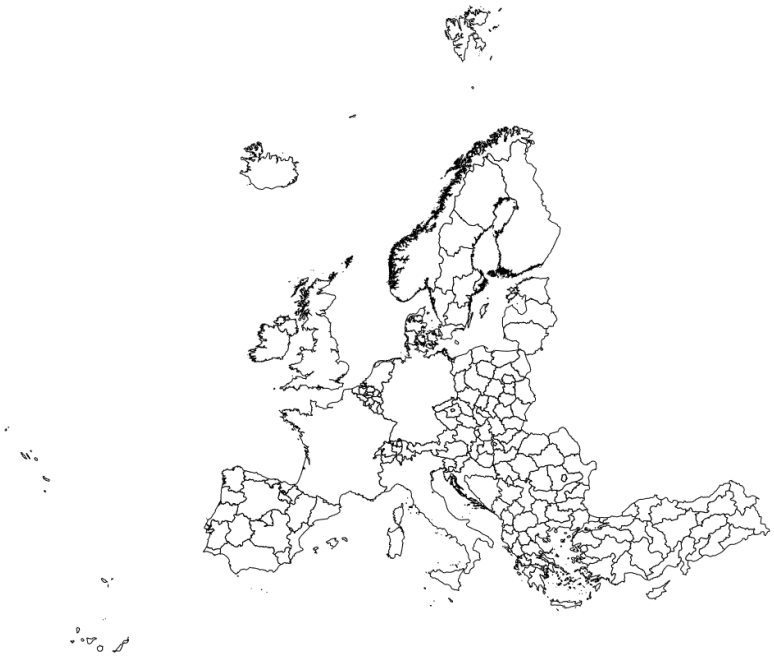
Figure B1. Proportion of Working Age Migrant Share for whom Region of Origin Information is Unavailable Relative to Total Working Age Migrant Population (%) by Country of Residence for 2021 and 2022



Source: EU-LFS 2021-2022, own calculations.

Figure B2. Modified Shapefiles to Include Non-Standard NUTS Regional Boundaries.

(**A**)



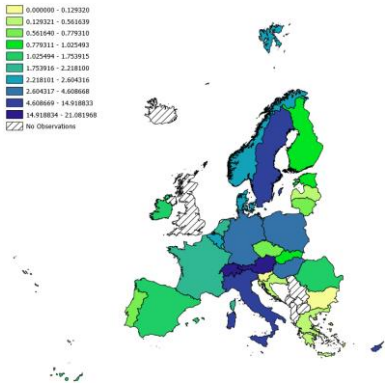
(**B**)

Source: European Commission – Eurostat/GISCO and ESRI. *Notes*: In (**A**) polygon boundaries at the NUTS 0 (country-level) level for DE, FI, FR, IT, NO, UK, IE, HR, LT and NUTS 1 level for AT are used to augment the NUTS 2 level shapefile, based on modifications to the Eurostat/GISCO shapefile "NUTS_RG_01M_2021_3857_LEVL_2.shp". In (**B**) NUTS 1 level polygon boundaries for AT are used to augment the existing NUTS 2 level shapefile. Modifications were conducted in ArcGIS Pro 3.3.0, using the "add join", "append", "merge", "export features" tools.

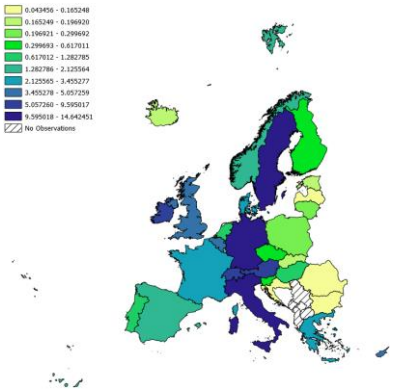
Figure B3. Distribution of Migrants by Arrival Cohort for EU and Non-EU Migrants (deciles)

(**A**) 2010-2014

(**i**). EU Migrants

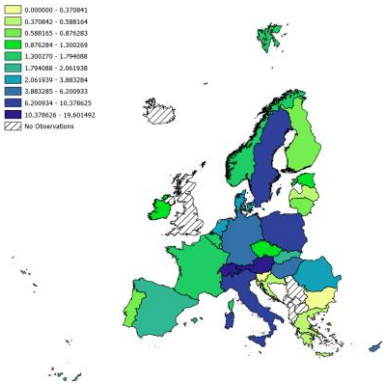


(**ii**). Non-EU Migrants

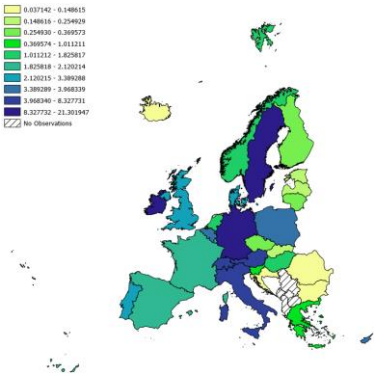


(**B**) 2015-2019

(**i**). EU Migrants

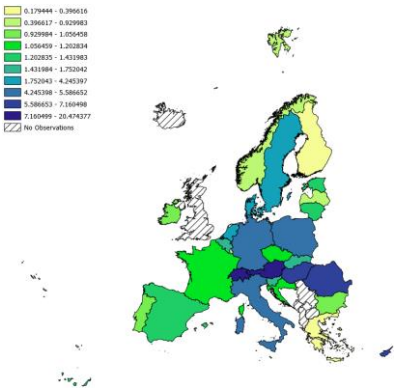


(**ii**). Non-EU Migrants

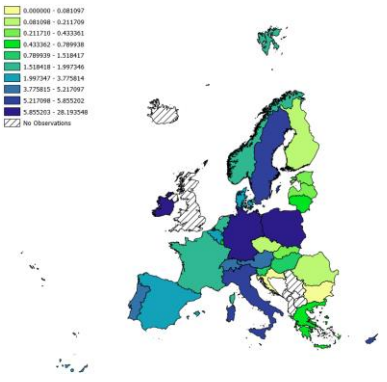


(**C**) 2020-2022

(**i**). EU Migrants



(**ii**). Non-EU Migrants

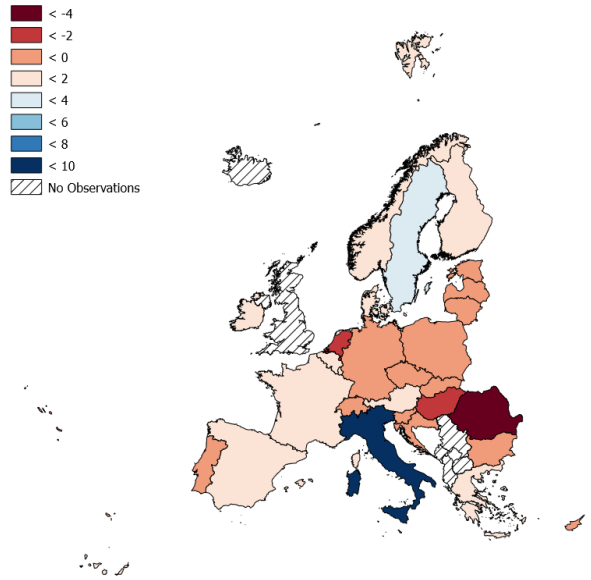


Source: EU-LFS 2010-2022, own calculations.

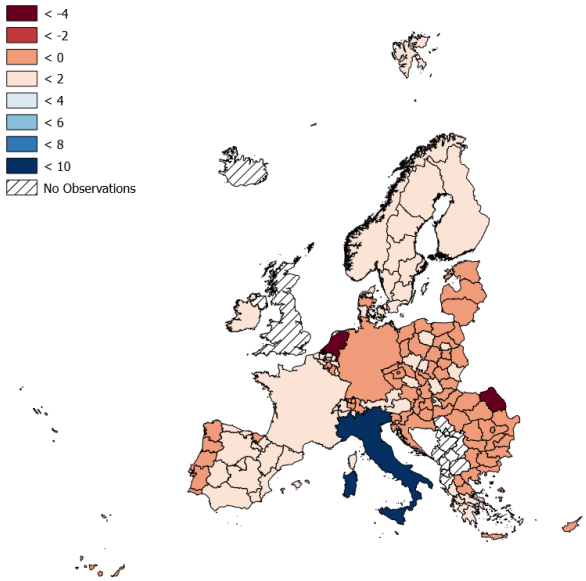
Figure B4. Change in Migrant Share between Baseline Arrivals Pre-Refugee Shock (2010-2014) and Recent Arrivals (2020-2022) for EU and Non-EU Migrants (percentage points)

(**A**) EU Migrants

(**i**). Country

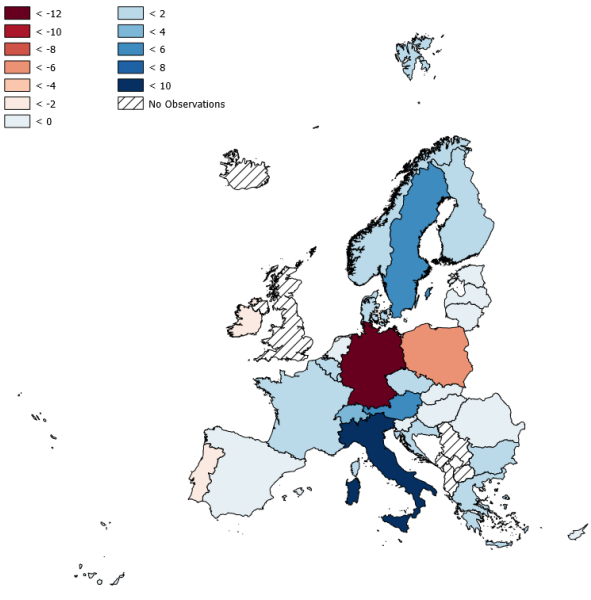


(**ii**). Sub-national Region

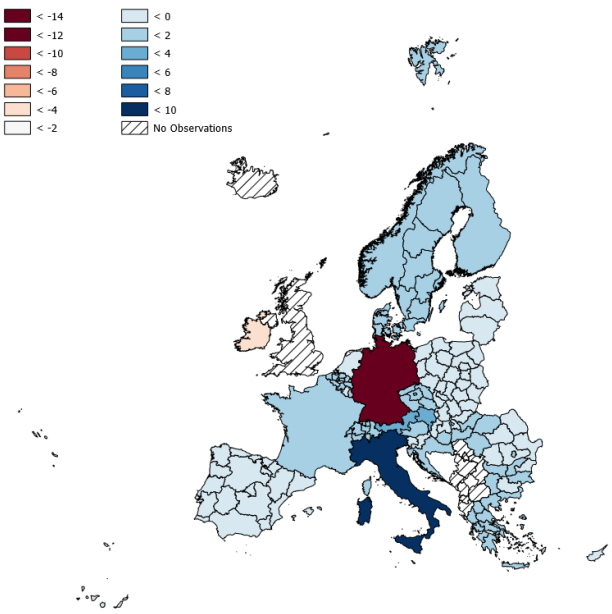


(**B**) Non-EU Migrants

(**iii**). Country

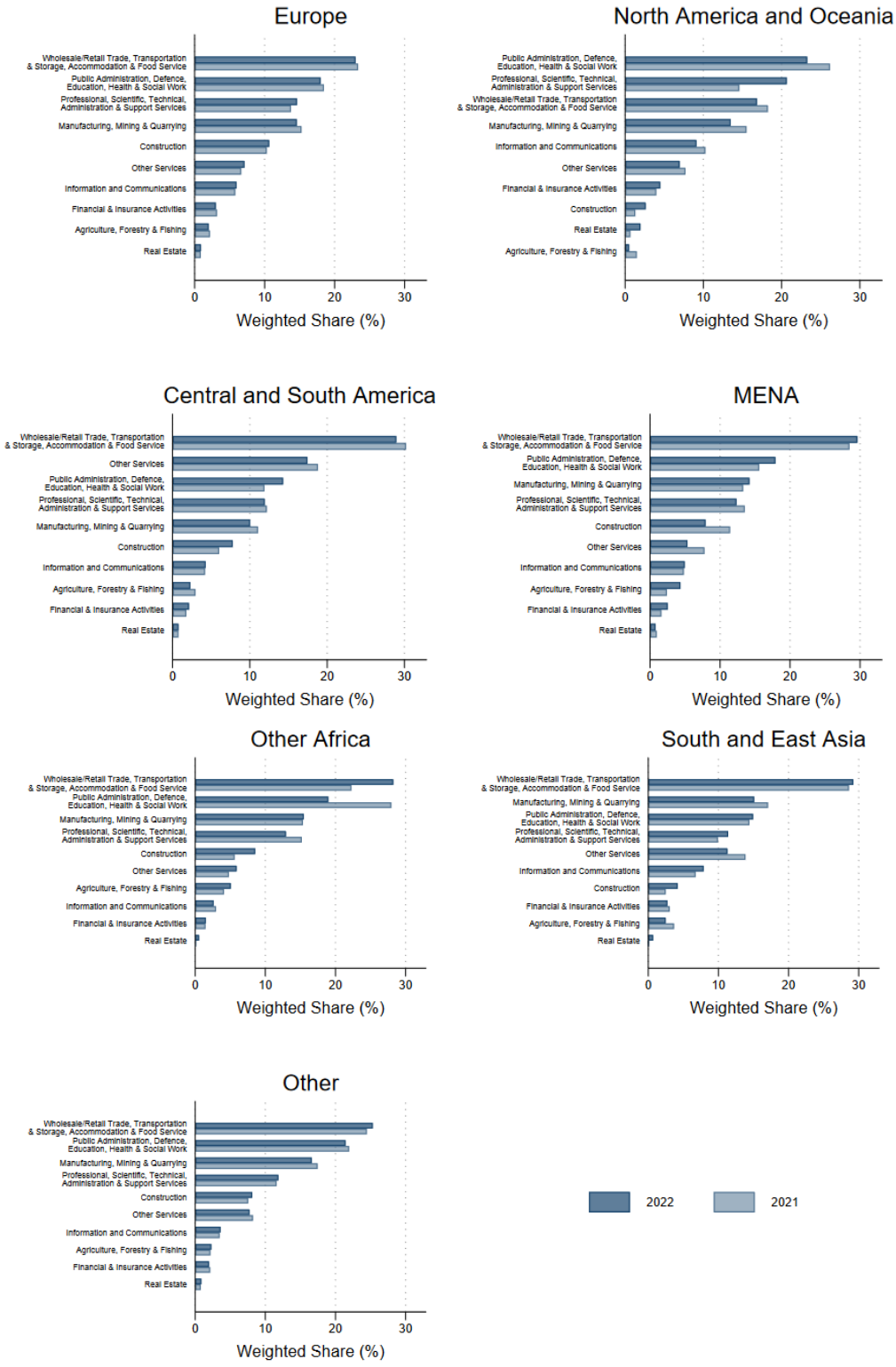


(**iv**). Sub-national Region



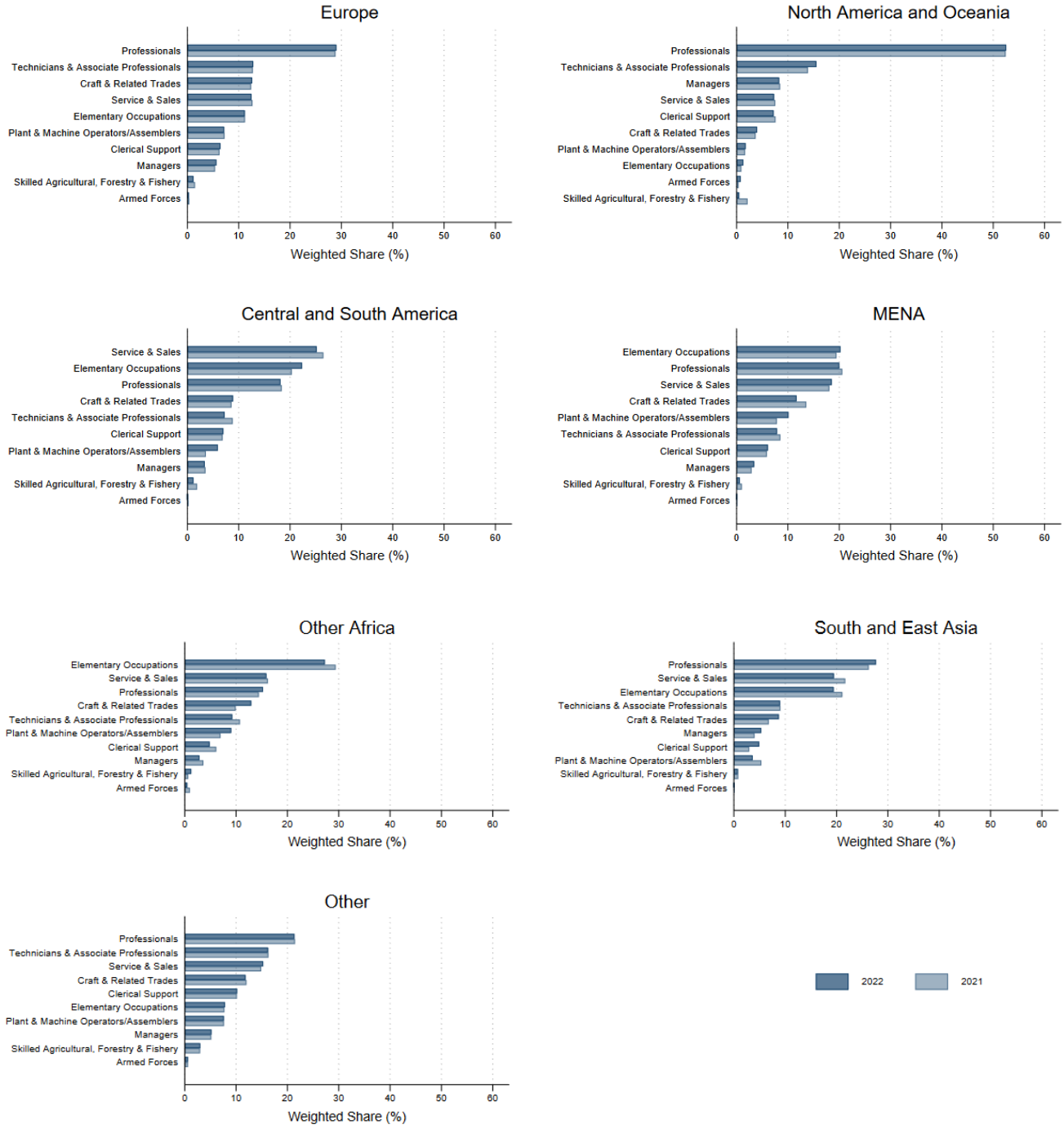
Source: EU-LFS 2010-2022, own calculations.

Figure B5. Distribution of (Self-) Employed Migrants by Industry (NACE Rev 2, 1 digit) Disaggregated by Region of Origin (%) for 2021 and 2022



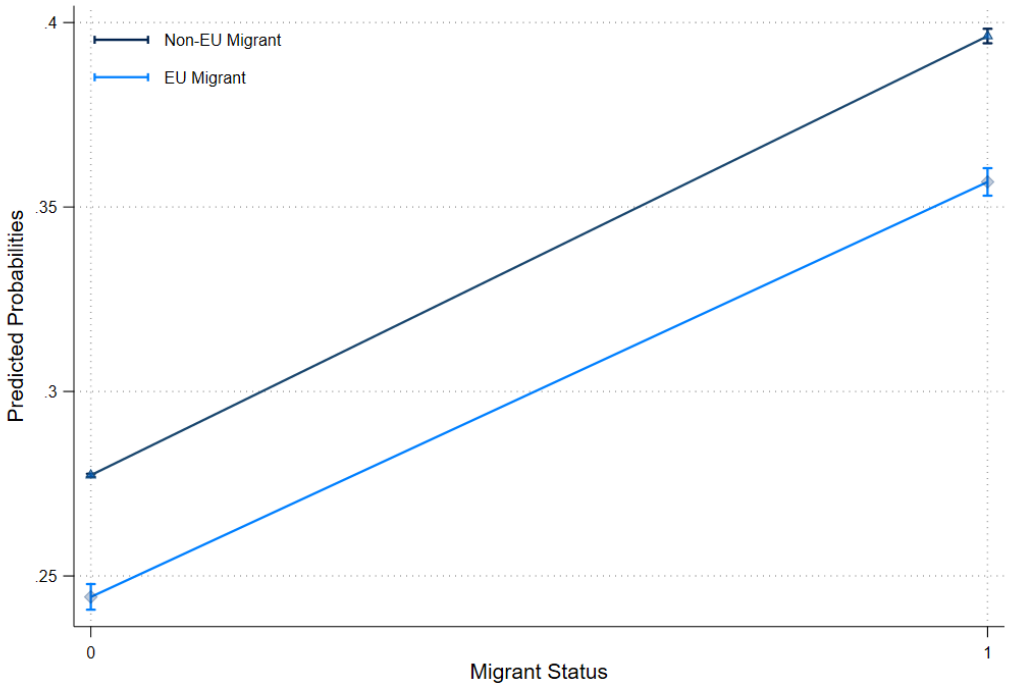
Source: EU-LFS 2021-2022, own calculations.

Figure B6. Distribution of (Self-) Employed Migrants by Occupation (ISCO-08, 1 digit) Disaggregated by Region of Origin (%) for 2021 and 2022



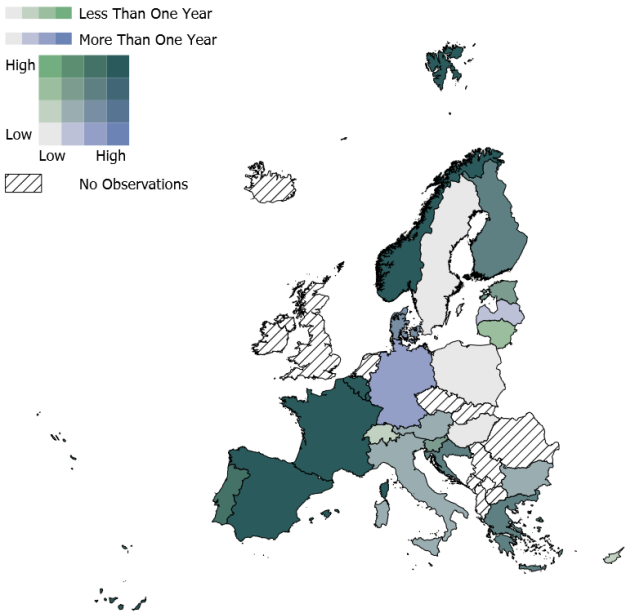
Source: EU-LFS 2021-2022, own calculations.

Figure B7. Predictive Margins of Migrant Employment in Shortage Occupations



Source: EU-LFS 2018-2022, own calculations. *Notes*: Margins plot used to construct EU non-EU differences following logistic regression of migrant status on employment in a shortage occupation conditional on being of working age. In addition to controlling for migrant status, and EU-non-EU migrant type, controls were included for age and its square, gender, the highest level of education achieved, time since arrival (zero in the case of non-migrants), and year and country fixed effects.

Figure B8. The Joint Distribution of Migrant Job Search Duration Lasting Less than (More Than) One Year for 2021

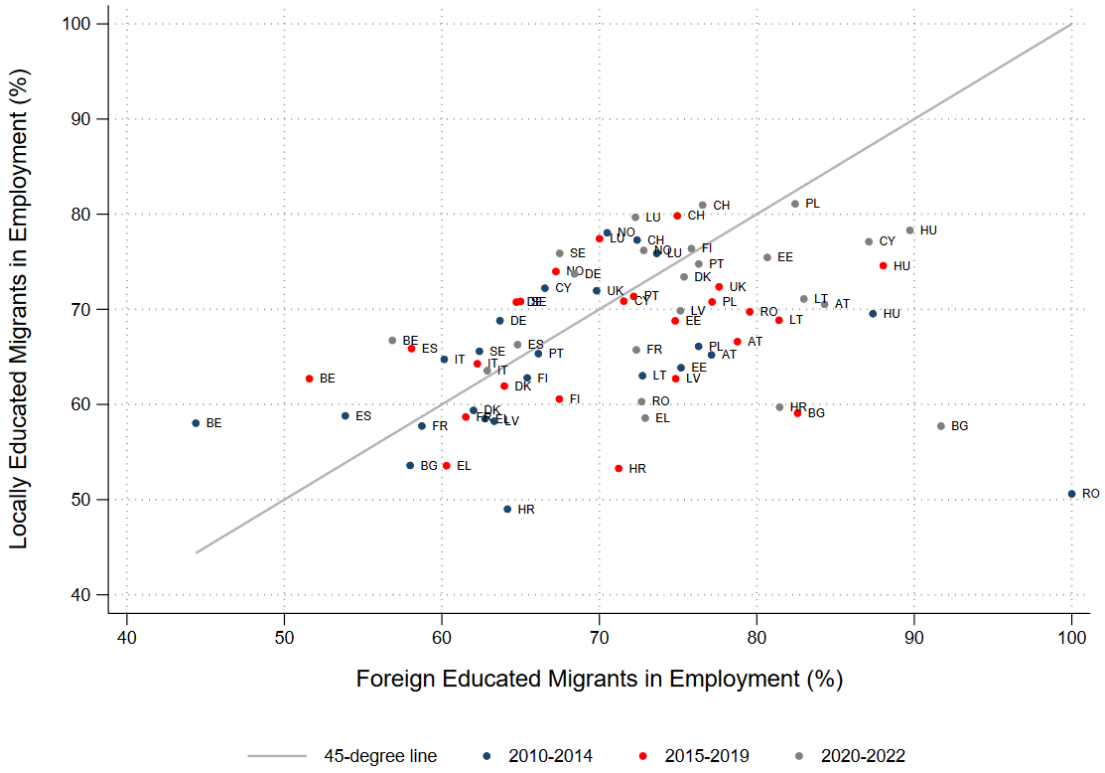


Source: EU-LFS 2021, own calculations.

Figure B9. Weighted Shares of Employed Migrants and Natives Working in an Occupation Different to the Field of Highest Qualification (Intensive Margin) by Country of Residence

Source: EU-LFS 2016-2022, own calculations.

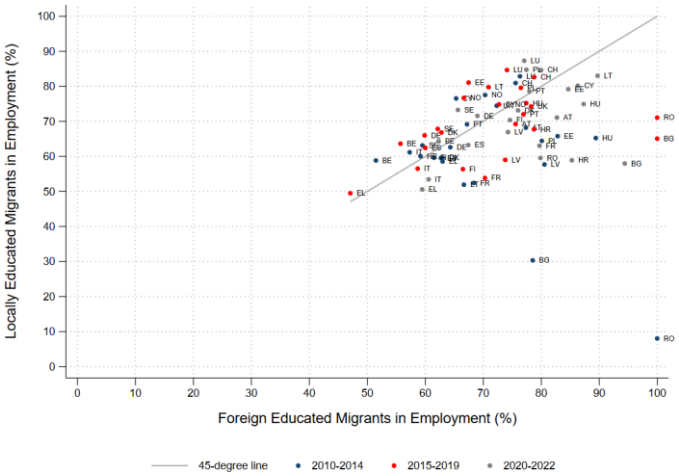
Figure B10. The Joint Distribution of Migrant Employment by Foreign/Domestic Education Status for 2010-2022



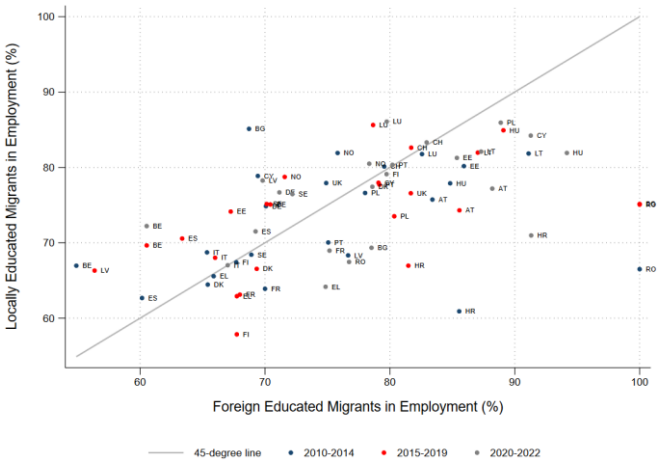
Source: EU-LFS 2010-2022, own calculations.

Figure B11. The Joint Distribution of Migrant Employment by Foreign/Domestic Education Status and Age Cohort for 2010-2022

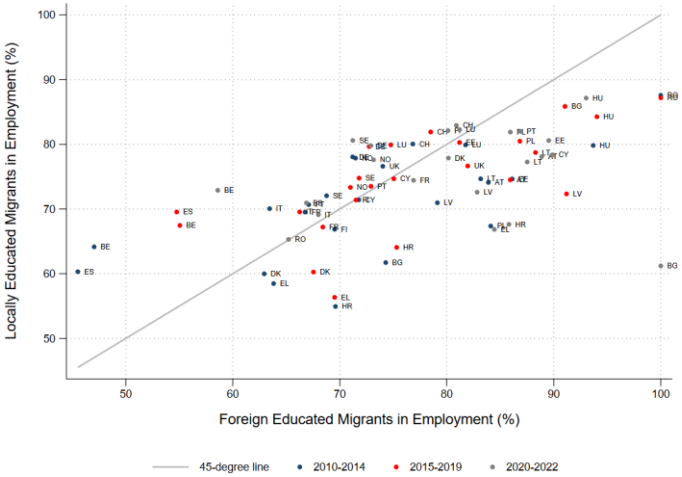
(A) 25-34



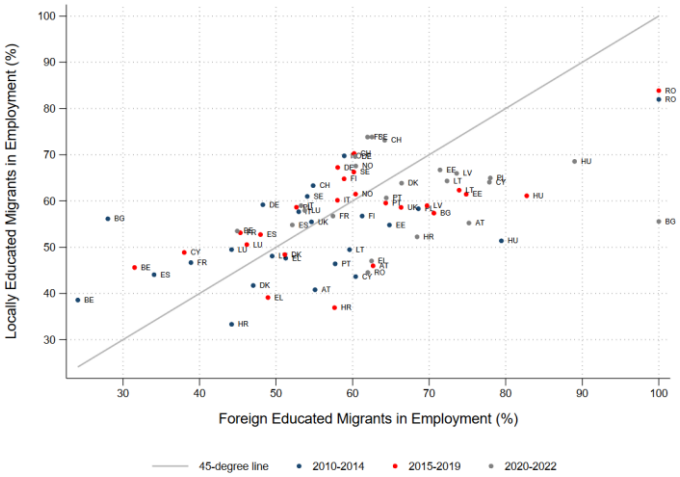
(B) 35-44



(C) 45-54



(D) 55-64



Source: EU-LFS 2010-2022, own calculations.

Appendix C

Table C1. Employment and Education/Training Statistics for Migrants and Natives by EU-15 Country of Residence for 2022

Country	Migrant Total	Native Total	Migrants Employed	Natives Employed	Migrants in Education or Training	Natives in Education or Training
AT	76.36	78.01	66.61	67.59	9.75	10.43
BE	77.63	79.99	63.85	65.11	13.78	14.88
DE	78.46	81.68	68.60	70.95	9.87	10.73
DK	83.77	84.27	68.81	68.20	14.96	16.07
EL	72.24	72.94	59.85	59.43	12.39	13.50
ES	75.46	76.78	63.56	63.60	11.90	13.18
FI	80.47	80.81	66.25	65.67	14.22	15.14
FR	77.84	79.44	65.44	65.66	12.40	13.78
IT	71.61	72.33	59.77	59.35	11.84	12.97
LU	66.04	66.10	54.87	50.79	11.16	15.31
PT	81.99	82.43	71.27	70.23	10.72	12.20
SE	86.75	89.31	71.03	73.65	15.72	15.65

Source: EU-LFS 2022, own calculations.

Table C2. Employment and Education/Training Statistics for Migrants and Natives by Non-EU-15 Country of Residence for 2022

Country	Migrant Total	Native Total	Migrants Employed	Natives Employed	Migrants in Education or Training	Natives in Education or Training
BG	80.34	80.57	69.81	69.96	10.53	10.61
CH	78.85	81.58	69.23	69.70	9.62	11.88
CY	80.90	80.89	71.68	65.39	9.22	15.50
EE	83.08	84.11	73.68	73.26	9.40	10.85
HR	74.07	75.05	63.10	62.85	10.97	12.20
HU	82.46	82.42	72.02	71.75	10.44	10.66
LT	82.49	83.11	73.64	73.59	8.85	9.52
LV	79.07	80.42	69.73	70.09	9.35	10.33
NO	84.87	86.39	69.84	70.58	15.03	15.82
PL	79.77	79.74	69.89	69.65	9.88	10.09
RO	73.92	74.19	63.20	63.33	10.71	10.87
SI	82.78	83.80	70.10	70.34	12.68	13.46

Source: EU-LFS 2022, own calculations.

Table C3. Employment and Education/Training Statistics for Migrants and Natives by Non-EU-15 Country of Residence for 2022

	Industry Share Migrants	Industry Share Natives
Agriculture, Forestry & Fishing	3.67	3.95
Manufacturing, Mining & Quarrying	18.13	18.58
Construction	7.07	6.80
Wholesale/Retail Trade, Transportation & Storage, Accommodation & Food Service	23.01	22.55
Information and Communications	3.69	3.59
Financial & Insurance Activities	2.81	2.93
Real Estate	0.86	0.86
Professional, Scientific, Technical, Administration & Support Services	9.91	9.38
Public Administration, Defence, Education, Health & Social Work	25.65	26.74
Other Services	5.20	4.61

Source: EU-LFS 2022, own calculations.

Table C4. Employment for Migrants and Natives by Occupation (ISCO-08, 1 digit) for 2022

	Occupation Share Migrants	Occupation Share Natives
Armed Forces	0.64	0.71
Managers	5.24	5.22
Professionals	21.80	21.79
Technicians & Associate Professionals	16.13	17.01
Clerical Support	10.09	10.72
Service & Sales	15.38	15.12
Skilled Agricultural, Forestry & Fishery	2.96	3.31
Craft & Related Trades	11.90	11.85
Plant & Machine Operators/Assemblers	7.65	7.58
Elementary Occupations	8.21	6.70

Source: EU-LFS 2022, own calculations.

Table C5. Weighted Migrant-Native Differences in Job-Loss Characteristics for Working Age Individuals Not in Employment or Training by EU-15 Country of Residence for 2010-2022

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
2020-2022 Arrivals													
Dismissal or business closed	13.27	5.75	3.00	0.27	3.95	1.78	2.25	0.45	6.85	7.41	2.03	4.58	4.30
A fixed-term job has ended	2.89	11.59	2.21	0.22	16.45	1.60	1.45	4.02	5.51	7.01	-1.75	13.60	5.40
Care responsibilities	2.92	0.99	3.13	1.99	0.94	1.26	0.07	1.30	2.70	0.65	1.45	1.87	1.61
Other personal or family reasons	4.10	3.71	4.84	2.51	1.42	1.95	2.70	2.07	3.04	4.17	6.20	2.20	3.24
Education or training	0.09	0.24	-0.02	-0.31	-0.04	-0.12	0.33	0.29	-0.03	-0.43	0.07	-0.30	-0.02
Own illness & disability	1.69	-0.13	-6.88	2.04	1.51	-4.24	-2.19	1.29	0.68	5.81	-4.08	-6.72	-0.94
Retirement	-30.50	-24.58	-14.10	-9.97	-24.49	-7.44	-9.19	-14.48	-21.85	-32.10	-6.94	-14.69	-17.53
Other personal reasons	5.55	2.42	7.83	3.24	0.26	5.21	4.57	5.05	3.11	7.48	3.01	-0.55	3.93
Searching for employment	12.10	7.23	3.54	3.57	11.61	12.53	16.98	1.94	6.39	12.97	8.40	28.74	10.50
Found job, starts < 3 weeks	1.14	-0.05	-0.06	-0.11	2.08	0.21	-0.45	-0.54	0.20	0.92	0.08	-1.54	0.16
Found job, starts > 3 weeks	0.29	-0.05	0.03	0.26	3.51	0.09	-0.12	-0.12	0.03	0.68	-0.02	-0.21	0.36
Job found, started	0.08	-0.04	0.37	0.57	0.08	0.14	-0.16	0.11	0.08	0.15	0.21	0.04	0.14
Person not searching	-13.61	-7.09	-3.88	-4.28	-17.28	-12.98	-16.25	-1.39	-6.71	-14.72	-8.67	-27.03	-11.16
< 1 month	-1.21	-8.39	1.76	-8.30	5.21	1.61	2.42	-2.18	4.40	-6.83	2.76	-14.69	-1.95
1-2 months	-0.01	0.49	0.58	-1.82	2.26	1.60	3.26	-0.99	3.19	-0.03	-0.28	4.09	1.03
3-5 months	2.38	2.42	0.65	4.97	-0.96	0.21	-2.68	0.42	2.70	3.90	-1.77	7.58	1.65
6-11 months	-1.16	5.48	-2.99	5.15	-6.51	-3.42	-2.99	2.75	-10.29	2.97	-0.71	3.02	-0.73
Used active search method	0.14	0.98	-2.06	-0.41	0.23	0.82	0.00	-0.39	0.16	0.92	0.46	0.50	0.11
Not used active search method	-0.12	-1.11	1.77	0.46	-0.26	-0.82	0.00	0.30	-0.04	-1.57	-0.46	-0.50	-0.20
Other method	-	0.14	0.28	-0.04	0.04	-	-	0.09	-0.13	-	-	-	0.06
Registered, receives benefit/assistance	8.14	4.39	9.54	2.54	7.97	-1.67	10.91	-2.32	2.69	4.84	3.38	9.40	4.98
Registered, no benefit/assistance	4.18	2.93	0.09	1.61	7.10	5.78	4.98	3.96	1.50	5.04	2.59	21.63	5.12
Not registered, receives benefit/assistance	0.23	-0.69	-9.62	-	-	0.05	-	-	-0.38	-	-	-	-2.08
Not registered, no benefit/assistance	-12.55	-6.63	-	-4.14	-15.08	-4.16	-15.89	-1.64	-3.81	-9.88	-5.97	-31.03	-10.07
2015-2019 Arrivals													
Dismissal or business closed	9.30	3.86	4.02	4.48	11.47	-0.60	-0.18	0.63	7.03	9.00	-0.46	1.19	4.15
A fixed-term job has ended	2.35	10.81	-0.33	2.33	12.28	6.17	9.45	5.94	4.96	5.26	3.53	10.71	6.12
Care responsibilities	2.62	1.25	2.58	2.00	0.40	0.65	0.11	0.61	4.44	0.69	1.20	2.16	1.56
Other personal or family reasons	2.00	1.41	1.95	1.29	1.36	0.85	1.99		1.09	4.96	3.68	1.17	1.98
Education or training	0.10	0.23	-2.19	0.26	-0.07	0.06	1.09	0.08	0.00	0.29	0.07	-0.75	-0.07
Own illness & disability	-0.55	-2.24	-6.16	5.45	0.70	-3.15	-5.97	1.76	0.53	5.76	-7.01	-2.18	-1.09
Retirement	-25.05	-16.92	-12.06	-20.95	-27.14	-8.01	-13.34	-16.35	-19.48	-33.50	-5.06	-13.07	-17.58
Other personal reasons	9.23	1.61	12.19	5.14	1.00	4.02	6.83	7.33	1.42	7.54	4.04	0.77	5.09
Searching for employment	10.29	9.34	3.85	7.12	14.27	14.41	18.24	3.22	8.46	13.00	12.11	18.64	11.08
Found job, starts < 3 weeks	-0.14	-0.17	-0.13	0.05	0.78	0.96	0.58	-1.13	0.32	1.36	0.30	-2.08	0.06
Found job, starts > 3 weeks	-0.01	0.05	-0.05	0.20	1.57	0.09	0.30	-0.05	0.01	0.23	-	-0.09	0.20
Job found, started	-	-	-	-	-	-	-	-	-	-	-	-	
Person not searching	-10.13	-9.22	-3.66	-7.37	-16.61	-15.46	-19.12	-2.04	-8.79	-14.59	-12.37	-16.47	-11.32
< 1 month	-0.17	-8.01	-0.30	-13.13	3.61	0.55	-2.10	-5.53	4.72	-3.69	4.78	-14.57	-2.82
1-2 months	-0.35	-0.99	0.67	1.79	0.38	1.39	2.88	-1.40	2.84	1.66	0.89	7.14	1.41
3-5 months	1.64	1.18	1.60	6.10	-0.03	2.68	-0.66	-0.05	3.38	-0.08	0.60	5.25	1.80
6-11 months	-1.12	7.82	-1.97	5.23	-3.96	-4.62	-0.12	6.98	-10.94	2.11	-6.26	2.18	-0.39
Used active search method	-0.10	0.77	-3.14	-0.59	0.05	0.74	-0.34	-1.53	0.13	1.33	0.91	0.24	-0.13
Not used active search method	0.11	-0.66	2.70	0.16	-0.06	-0.74	0.24	1.34	-0.01	-1.37	-0.91	0.34	0.10
Other method	-0.01	-0.12	0.45	0.42	0.01		0.10	0.19	-0.13	0.04	-	-0.58	0.04
Registered, receives benefit/assistance	5.86	0.52	5.30	4.92	3.56	0.05	21.80	-4.00	1.56	5.69	2.37	3.09	4.23
Registered, no benefit/assistance	5.23	3.54	2.50	3.45	5.59	7.41	5.36	5.22	4.54	6.35	4.79	24.25	6.52
Not registered, receives benefit/assistance	0.57	-	4.51	-	-	0.00	-	-	-0.08	-	-	-	1.25
Not registered, no benefit/assistance	-11.66	-4.06	-12.32	-8.36	-9.15	-7.45	-27.16	-1.22	-6.02	-12.04	-7.16	-27.34	-11.16
2010-2014 Arrivals													
Dismissal or business closed	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
A fixed-term job has ended	11.31	4.60	5.53	8.16	18.17	1.09	-0.52	3.08	11.05	7.42	3.83	2.61	6.36
Care responsibilities	1.97	9.36	-0.11	2.24	8.84	6.47	17.08	5.29	8.12	5.80	5.46	2.17	6.06
Other personal or family reasons	1.33	0.88	1.82	1.53	1.22	0.73	3.41	0.95	4.05	1.83	0.45	1.61	1.65
Education or training	1.68	1.32	2.27	3.69	2.26	0.44	0.85	2.64	1.30	8.68	2.93	1.05	2.42
Own illness & disability	-0.03	0.12	-3.27	1.72	-0.03	-0.20	1.02	0.08	-0.11	0.16	-0.06	-0.31	-0.08
Retirement	1.18	-3.52	-4.16	5.90	0.36	-5.35	-8.99	2.00	-0.13	1.23	-7.09	1.58	-1.41
Other personal reasons	-21.94	-15.17	-8.23	-27.32	-30.67	-6.33	-13.79	-18.49	-26.62	-31.49	-7.51	-8.46	-18.00
Searching for employment	4.50	2.41	6.15	4.08	-0.14	3.16	0.95	4.46	2.33	6.36	1.99	-0.24	3.00
Found job, starts < 3 weeks	7.63	9.90	5.91	10.67	17.47	18.38	16.94	3.75	11.34	12.70	19.11	8.71	11.88
Found job, starts > 3 weeks	0.05	-0.14	-0.19	0.09	0.27	0.65	-0.10	-0.72	0.80	0.28	0.17	-1.82	-0.05
Job found, started	-0.03	0.00	-0.06	0.01	0.22	0.11	0.00	-0.08	0.06	0.02	-0.01	-0.12	0.01
Person not searching	-	-	-	-	-	-	-	-	-	-	-	-	
< 1 month	-7.65	-9.77	-5.66	-10.77	-17.95	-19.14	-16.85	-2.95	-12.20	-13.00	-19.28	-6.78	-11.83
1-2 months	-0.27	-6.48	-2.48	-8.65	5.60	0.71	-1.52	-5.06	5.67	-1.56	3.29	-12.71	-1.96
3-5 months	0.22	-1.44	0.79	1.54	1.85	1.05	-2.83	-0.84	3.57	0.55	1.63	4.32	0.87
6-11 months	0.91	1.24	0.59	3.47	-0.23	1.56	3.00	-0.09	1.83	2.46	1.26	5.27	1.77
Used active search method	-0.87	6.68	1.10	3.64	-7.22	-3.31	1.35	5.99	-11.08	-1.45	-6.18	3.12	-0.68
Not used active search method	-0.11	0.55	-1.71	-0.23	0.32	0.55	0.57	-0.69	0.26	0.53	0.48	-0.45	0.01
Other method	0.10	-0.49	1.66	-0.04	-0.36	-0.55	-0.75	0.51	-0.15	-0.38	-0.48	0.58	-0.03
Registered, receives benefit/assistance	0.01	-0.06	0.04	0.26	0.04	-	0.17	0.17	-0.11	-	-	-0.13	0.05
Registered, no benefit/assistance	5.38	-3.96	9.47	5.44	3.88	3.20	18.31	-1.01	1.50	5.43	6.40	0.38	4.53
Not registered, receives benefit/assistance	3.02	4.70	1.66	4.85	0.31	7.82	3.57	4.16	8.36	4.81	7.52	18.12	5.74
Not registered, no benefit/assistance	1.43	-	1.74	-	-	0.09	-	-	-0.20	-	-	-	0.76

Source: EU-LFS 2020-2022, own calculations.

Table C6. Weighted Migrant-Native Differences in Job-Loss Characteristics for Working Age Individuals Not in Employment or Training by Non-EU-15 Country of Residence for 2010-2022

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
2020-2022 Arrivals													
Dismissal or business closed	-4.99	7.41	-3.85	2.60	2.25	15.65	-3.39	-0.52	7.81	3.06	5.58	2.12	2.81
A fixed-term job has ended	16.22	2.26	-2.11	-2.24	2.14	-5.06	0.28	-3.13	6.65	5.09	15.04	3.63	3.23
Care responsibilities	-1.70	0.62	3.98	-10.43	0.48	-0.52	-0.98	0.15	1.27	4.78	1.66	0.74	0.00
Other personal or family reasons	11.42	1.93	4.64	1.31	1.27	3.09	0.35	-2.86	2.76	10.86	22.06	3.04	4.99
Education or training	-	-0.52	-0.14	-0.91	-0.26	0.01	-0.26	-	-0.67	0.04	0.22	-0.36	-0.28
Own illness & disability	-4.83	2.55	-6.27	3.56	3.18	-0.36	0.98	3.47	-14.82	-7.34	-2.62	2.27	-1.69
Retirement	-18.20	-17.29	-1.94	5.47	-9.04	-14.74	0.83	4.00	-8.56	-25.95	-47.32	-13.84	-12.21
Other personal reasons	2.18	3.03	5.68	0.64	-0.01	1.93	2.20	-0.74	5.56	9.46	5.38	2.40	3.14
Searching for employment	9.97	10.28	4.87	0.72	-3.35	5.77	-0.27	-1.97	14.87	13.89	10.70	1.12	5.55
Found job, starts < 3 weeks	6.17	-1.39	0.01	-0.14	0.08	0.10	-0.11	-1.34	-0.19	1.82	0.87	-0.07	0.48
Found job, starts > 3 weeks	1.63	-0.54	-0.18	-0.19	0.16	-0.03	0.07	-	-	0.36	0.13	-	0.16
Job found, started	-	0.01	-	0.09	0.01	0.03	0.05	-0.20	-0.25	0.07	-	-0.24	-0.05
Person not searching	-17.76	-8.36	-4.70	-0.47	3.09	-5.87	0.27	3.84	-14.31	-16.15	-11.69	-0.76	-6.07
< 1 month	7.77	-9.61	6.09	-4.16	-4.29	1.81	-0.13	-0.20	-4.14	2.84	6.79	0.73	0.29
1-2 months	7.66	-1.27	2.78	0.99	0.13	-1.38	-1.39	0.67	-1.25	2.46	1.68	-3.11	0.66
3-5 months	1.49	4.44	-3.31	-1.47	-0.52	-0.58	-0.23	1.30	5.64	-1.86	-2.47	-1.61	0.07
6-11 months	-16.92	6.44	-5.56	4.64	4.67	0.15	1.75	-1.77	-0.25	-3.43	-6.01	3.99	-1.03
Used active search method	2.03	0.43	-0.59	0.01	0.04	-0.88	0.67	0.63	-0.06	0.12	-0.18	-0.70	0.13
Not used active search method	-	-0.39	0.64	0.16	-	0.80	-0.26	-	0.75	-0.12	0.18	0.70	0.27
Other method	-	-0.03	-	-0.17	-	0.07	-	-	-0.69	-	-	-	-0.21
Registered, receives benefit/assistance	-0.35	5.61	0.05	1.02	0.61	-1.99	-0.56	-2.15	8.60	0.77	0.09	0.30	1.00
Registered, no benefit/assistance	1.58	1.79	-0.10	4.59	-2.51	0.08	2.28	-1.21	5.27	7.62	0.06	5.51	2.08
Not registered, receives benefit/assistance	-	0.04	-	-	-	-0.04	-	0.05	-1.99	-	-	-	-0.48
Not registered, no benefit/assistance	-1.23	-7.44	0.05	-5.60	1.91	1.95	-1.72	3.32	-11.89	-8.38	-0.15	-5.81	-2.92
2015-2019 Arrivals													
Dismissal or business closed	-12.47	9.57	-5.29	9.89	-1.61	4.57	-0.73	-1.84	10.87	-7.46	15.18	4.52	2.10
A fixed-term job has ended	-5.53	1.36	-1.59	-2.31	-1.80	-0.08	-4.08	-5.80	5.95	4.11	-10.19	-0.96	-1.74
Care responsibilities	7.75	0.52	3.35	-17.03	0.33	5.10	-1.21	-1.50	2.75	4.37	-	0.15	0.42
Other personal or family reasons	7.01	4.71	13.87	-2.85	0.65	4.05	-4.69	-7.04	0.41	13.73	4.41	0.83	2.92
Education or training	-	-0.67	-0.51	-	-0.10	-0.08	-0.68	-	0.08	-	-	-0.39	-0.34
Own illness & disability	0.63	2.08	-2.98	6.72	2.38	-2.38	4.11	2.35	-11.01	-7.44	14.26	2.79	0.96
Retirement	-4.13	-16.65	-6.95	9.42	-6.07	-14.07	10.23	15.97	-11.72	-18.53	-18.14	-7.79	-5.70
Other personal reasons	6.78	-0.91	0.09	-2.99	6.23	2.89	-2.95	-1.92	2.67	11.34	-	0.86	2.01
Searching for employment	-11.12	11.43	-1.04	-3.87	-5.21	5.11	-7.76	-10.09	14.78	9.08	11.25	-2.09	0.87
Found job, starts < 3 weeks	0.35	-0.54	0.41	-0.56	0.13	0.03	-0.42	-0.60	-0.24	1.59	-	-0.03	0.01
Found job, starts > 3 weeks	-	-0.11	0.49	0.02	0.12	0.13	-	-0.08	0.09	-0.17	-	-	0.06
Job found, started	-	-	-	-	-	-	-	-	-	-	-	-	
Person not searching	11.06	-10.78	0.15	4.41	4.97	-5.26	8.33	10.77	-14.62	-10.50	-11.10	2.16	-0.87
< 1 month	8.99	-12.80	7.48	-7.55	-0.01	-8.80	-8.38	-6.82	-10.27	13.85	17.02	-0.49	-0.65
1-2 months	30.00	0.05	0.66	3.45	-0.98	-2.48	0.02	0.67	1.96	-1.18	-1.95	-2.96	2.27
3-5 months	-10.60	3.93	0.58	-0.63	-3.35	0.38	0.81	-4.26	3.98	-5.93	7.18	-0.46	-0.70
6-11 months	-28.38	8.82	-8.73	4.72	4.34	10.91	7.56	10.41	4.34	-6.75	-	3.91	1.01
Used active search method	3.62	-0.24	-0.20	0.10	0.00	0.33	0.36	0.19	0.84	-1.17	0.34	-0.44	0.31
Not used active search method	-	0.12	0.21	-	-	-0.34	-	-	-0.64	1.20	-	0.38	0.16
Other method	-	0.12	-0.01	-0.10	0.03	0.01	-	-	-0.20		-	0.06	-0.01
Registered, receives benefit/assistance	-0.71	5.48	-0.14	-0.53	-0.65	-1.50	-1.53	-2.59	-	-0.72	-	1.15	-0.17
Registered, no benefit/assistance	-4.46	3.11	-4.48	-0.62	-2.27	0.71	-2.94	-2.63	-	-0.56	3.79	3.12	-0.66
Not registered, receives benefit/assistance	-	0.28	-0.01	-	-	0.02	-	-0.48	-	-	-	-	-0.05
Not registered, no benefit/assistance	5.17	-8.88	4.63	1.15	2.92	0.78	4.47	5.70	-	1.28	-2.68	-4.27	0.93
2010-2014 Arrivals													
Dismissal or business closed	-6.53	8.91	1.82	11.24	4.19	4.60	1.38	-0.91	7.17	-6.99	33.38	5.51	5.31
A fixed-term job has ended	-5.04	3.11	-3.08	-3.12	0.49	-3.97	-3.97	-5.75	8.17	-0.08	-2.54	-0.48	-1.36
Care responsibilities	6.75	-1.24	2.07	-14.40	0.19	8.03	-1.15	-0.84	3.03	0.57	-	0.13	0.29
Other personal or family reasons	7.30	4.02	10.60	-2.07	1.16	1.21	-2.92	-5.54	0.99	6.70	-	0.70	2.01
Education or training	-	-0.10	-0.42	-0.47	0.10		-0.19		-4.30	0.50	-	-0.60	-0.69
Own illness & disability	-0.31	2.89	-6.15	2.54	-0.02	-1.28	3.79	2.69	-10.26	-3.07	-	3.09	-0.55
Retirement	-7.80	-18.00	-8.79	9.16	-5.87	-10.00	7.23	11.88	-10.45	-0.40	-14.68	-8.31	-4.67
Other personal reasons	5.70	0.40	3.96	-2.88	-0.24	1.49	-4.18	-1.36	5.65	2.77	-	-0.04	1.02
Searching for employment	-2.49	10.75	5.98	-2.59	-3.65	1.15	-3.83	-9.55	12.71	-0.54	-2.35	-0.48	0.43
Found job, starts < 3 weeks	-	-0.08	0.35	-0.07	0.01	-0.16	-0.16	-0.25	-0.35	-0.01	-	-0.17	-0.09
Found job, starts > 3 weeks	-	-0.04	-0.35	-	0.00	0.02	0.05	-0.11	-0.08	0.12	-	-0.01	-0.04
Job found, started	-	-	-	-	-	-	-	-	-	-	-	-	
Person not searching	3.28	-10.63	-5.98	2.67	3.65	-1.01	3.93	9.91	-12.29	0.43	2.46	0.65	-0.24
< 1 month	1.77	-10.17	7.44	-7.69	0.26	-1.78	-7.99	-6.08	-10.43	0.28	8.75	-0.51	-2.18
1-2 months	2.36	0.89	0.30	-3.77	-1.23	-0.69	0.05	-0.71	1.94	-4.00	-7.77	-1.56	-1.18
3-5 months	-12.69	2.84	-2.73	2.42	-0.93	-2.68	-0.79	-0.72	6.25	1.79	8.36	0.67	0.15
6-11 months	8.56	6.44	-5.01	9.04	1.89	5.16	8.73	7.50	2.24	1.93	-9.34	1.39	3.21
Used active search method	3.53	0.46	-0.08	0.02	0.13	0.09	0.00	-0.01	1.65	0.18	0.14	0.05	0.51
Not used active search method	-	0.03	0.12	-	-	-0.05	0.08	0.02	-0.98	-	-	-0.03	-0.12
Other method	-	-0.49	-	-	-0.09	-0.03	-0.08	-	-0.66	-	-	-	-0.27
Registered, receives benefit/assistance	-0.42	4.76	0.24	-1.65	-1.61	-3.93	-1.08	-1.09	-	-1.82	0.29	1.93	-0.40
Registered, no benefit/assistance	-5.65	3.33	-2.78	3.12	-1.52	-0.12	-2.21	-4.49	-	-5.52	-	2.01	-1.38
Not registered, receives benefit/assistance	-	0.21	0.00	-	-	-0.65	-0.54	-	-	-	-	-	-0.25
Not registered, no benefit/assistance	6.07	-8.30	2.54	-1.48	3.12	4.70	3.83	5.58	-	7.33	1.74	-3.94	1.93

Source: EU-LFS 2010-2022, own calculations.

Table C7. Weighted Migrant-Native Differences in Job-Search Characteristics for Working Age Individuals in Employment by EU-15 Country of Residence for 2021-2022

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Job Advertisements	-0.83	-2.37	-3.95	-1.80	-4.58	1.90	0.96	1.05	-2.13	-2.93	0.03	0.16	-1.21
Friends, Relatives or Acquaintances	6.17	4.04	7.80	0.46	15.39	10.20	1.29	3.09	19.38	1.59	4.00	1.03	6.20
Public Employment Service	1.01	3.50	0.44	0.84	-1.64	-0.44	-0.31	-0.85	-0.23	-1.69	-0.12	3.08	0.30
Private Employment Agency	0.79	1.66	1.08	-0.82	0.09	1.67	1.53	0.67	1.73	2.05	0.78	0.17	0.95
Education/Training Institution, Internship, Previous Job	-1.39	-2.11	-1.34	-1.32	-0.60	-1.74	-0.17	-0.73	-2.67	-3.01	-2.23	1.24	-1.34
Contacted Employer Directly	-2.96	-3.24	-2.04	0.03	-4.37	-1.74	-0.79	-2.11	-2.57	0.89	0.30	0.18	-1.53
Employer Contacted Directly	-1.73	-0.74	-0.55	1.14	2.06	-2.10	-1.74	-0.22	-3.52	8.22	-0.97	-5.62	-0.48
Applying via Public Competition	-1.00	-0.79	-1.09	0.13	-5.71	-6.95	-	-1.09	-8.69	-4.41	-1.84	-0.05	-2.86
Other method	-0.06	0.06	-0.35	1.34	-0.64	-0.80	-0.78	0.19	-1.31	-0.73	0.05	-0.19	-0.27
Yes	4.14	2.80	2.30	3.20	-4.74	-1.25	2.25	1.22	-0.35	-0.43	-3.99	3.34	0.71
No	-4.14	-2.80	-2.30	-3.20	4.74	1.25	-2.25	-1.22	0.35	0.43	3.99	-3.34	-0.71

Source: EU-LFS 2021-2022, own calculations.

Table C8. Weighted Migrant-Native Differences in Job-Search Characteristics for Working Age Individuals in Employment by Non-EU-15 Country of Residence for 2021-2022

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Job Advertisements	-2.53	-7.22	0.90	0.04	-3.65	6.16	2.44	3.81	-3.48	3.82	-4.52	-4.81	-0.75
Friends, Relatives or Acquaintances	5.87	0.98	-8.97	3.62	8.54	-0.74	1.77	1.01	2.13	2.23	12.54	15.62	3.72
Public Employment Service	-0.99	0.43	-2.03	0.44	-0.86	-2.89	2.09	-0.10	1.99	0.09	0.26	-0.71	-0.19
Private Employment Agency	0.34	5.01	12.33	0.70	0.33	0.53	0.63	0.06	1.22	1.26	1.38	2.65	2.20
Education/Training Institution, Internship, Previous Job	-0.25	-1.85	-1.05	-2.05	-0.60	-0.11	-0.53	-1.84	-0.56	-0.31	0.05	-2.55	-0.97
Contacted Employer Directly	-1.60	1.91	-1.89	1.47	-0.91	-3.75	-2.47	-1.39	-0.21	-7.34	-6.84	-2.44	-2.12
Employer Contacted Directly	0.27	1.22	-0.58	-1.08	1.43	0.80	0.68	-0.87	-1.75	1.60	-1.14	-2.38	-0.15
Applying via Public Competition	-0.61	-	-0.92	-3.34	-5.05	0.07	-2.11	-0.84	-	-0.45	-1.83	-4.88	-2.00
Other method	-0.49	-0.48	2.21	0.20	0.77	-0.08	-2.50	0.16	0.65	-0.90	0.11	-0.51	-0.07
Yes	-0.25	1.83	-1.21	0.92	1.18	-5.93	4.37	1.33	5.22	-0.11	1.14	0.76	0.77
No	0.25	-1.83	1.21	-0.92	-1.18	5.93	-4.37	-1.33	-5.22	0.11	-1.14	-0.76	-0.77

Source: EU-LFS 2021-2022, own calculations.

Table C9. Weighted Unemployment Rates and Unemployment Gaps for Working Age Asylum Seekers by EU-15 Country of Residence for 2021

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Asylum Seekers Employed (%)	57.12	45.56	45.26	55.75	54.71	64.38	44.55	52.17	59.74	32.68	73.06	50.27	52.94
Migrant-Native Employment Gap (pp)	-3.60	-5.71	-5.64	0.78	1.99	-0.77	3.26	-1.72	1.13	6.29	4.95	-7.69	-0.56
Asylum Seeker-Native Employment Gap (pp)	-10.59	-18.64	-24.60	-12.58	-2.49	2.29	-21.00	-12.36	1.97	-24.01	4.26	-22.68	-11.70
Asylum Seeker-Migrant Employment Gap (pp)	-6.99	-12.93	-18.96	-13.36	-4.48	3.06	-24.26	-10.64	0.84	-30.29	-0.69	-14.99	-11.14

Source: EU-LFS 2021, own calculations.

Table C10. Weighted Unemployment Rates and Unemployment Gaps for Working Age Asylum Seekers by Non-EU-15 Country of Residence for 2021

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Asylum Seekers Employed (%)	100.00	55.38	37.83	0.00	65.37	76.22	100.00	100.00	49.21	67.27	25.00	83.56	63.32
Migrant-Native Employment Gap (pp)	-13.62	-1.18	11.96	-0.89	0.78	5.34	0.19	-1.04	0.90	8.56	-2.24	-2.44	0.53
Asylum Seeker-Native Employment Gap (pp)	32.54	-14.49	-26.00	-72.31	4.18	5.84	27.45	31.31	-23.02	-1.30	-37.49	14.26	-4.92
Asylum Seeker-Migrant Employment Gap (pp)	46.17	-13.30	-37.96	-71.42	3.40	0.50	27.26	32.34	-23.92	-9.86	-35.25	16.69	-5.45

Source: EU-LFS 2021, own calculations.

Table C11. Weighted Unemployment Rates and Unemployment Gaps for Working Age Asylum Seekers with Residency Period of At Least 4 Years by EU-15 Country of Residence for 2021

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Asylum Seekers Employed (%)	60.98	48.94	50.07	56.73	54.81	59.62	47.38	55.27	59.65	36.26	73.06	57.24	55.00
Migrant-Native Employment Gap (pp)	-1.78	-5.41	-2.92	2.35	3.58	1.41	5.30	-0.05	2.96	5.49	5.52	-5.30	0.93
Asylum Seeker-Native Employment Gap (pp)	-6.73	-15.26	-19.79	-11.61	-2.39	-2.48	-18.18	-9.26	1.89	-20.43	4.26	-15.71	-9.64
Asylum Seeker-Migrant Employment Gap (pp)	-4.95	-9.84	-16.87	-13.97	-5.98	-3.88	-23.48	-9.21	-1.07	-25.91	-1.25	-10.41	-10.57

Source: EU-LFS 2021, own calculations.

Table C12. Weighted Unemployment Rates and Unemployment Gaps for Working Age Asylum Seekers with Residency Period of At Least 4 Years by Non-EU-15 Country of Residence for 2021

	BG	CH	CY	EE	HR	HU	LT	LV	NO	PL	RO	SI	Non-EU-15 Average
Asylum Seekers Employed (%)	100.00	58.45	51.69	0.00	65.37	76.42	100.00	100.00	50.28	36.24		83.56	65.64
Migrant-Native Employment Gap (pp)	0.80	-0.23	13.05	-0.86	2.15	10.01	0.27	0.69	1.13	10.12	3.92	-2.18	3.24
Asylum Seeker-Native Employment Gap (pp)	32.54	-11.42	-12.15	-72.31	4.18	6.04	27.45	31.31	-21.94	-32.33		14.26	-3.12
Asylum Seeker-Migrant Employment Gap (pp)	31.74	-11.18	-25.19	-71.45	2.03	-3.96	27.19	30.61	-23.07	-42.45		16.44	-6.30

Source: EU-LFS 2021, own calculations.

Table C13. Weighted Asylum Seeker-Native Employment Gap for Working Age Asylum Seekers by Host Nation Language Ability and EU-15 Country of Residence for 2021

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Mother Tongue	-8.87	-5.96	-8.52	-2.26	-18.03	1.23	4.36	5.94	18.78	-9.01	4.18	7.24	-0.91
Advanced	1.96	-6.56	-7.11	-4.69	-6.40	9.29	-21.83	-4.17	-4.31	-11.76	-76.76	-0.97	-11.11
Intermediate	-6.16	-16.78	-17.56	-17.38	4.34	13.10	-22.89	-13.33	12.72	-19.61	-	-21.93	-9.59
Beginner	-29.44	-31.39	-44.01	-41.81	-50.96	-55.67	-34.07	-36.08	-39.65	-55.45	-	-45.81	-42.21
Hardly Any or None	-52.93	-43.85	-60.05	-46.91	23.71	-	-64.81	-66.24	35.98	-48.89	-	-64.92	-38.89

Source: EU-LFS 2021, own calculations.

Table C14. Weighted Asylum Seeker-Native Employment Gap for Working Age Asylum Seekers by Host Nation Language Ability and Non-EU-15 Country of Residence for 2021

	BG	CH	CY	HR	HU	LV	NO	PL	SI	Non-EU-15 Average
Mother Tongue	20.41	20.51	-12.09	-3.28	-	-	-11.78	-	9.32	3.85
Advanced	20.41	-11.50	1.96	-3.32	-78.00	-	-28.46	22.46	2.72	-9.22
Intermediate	-	-29.78	-35.97	-	22.00	26.08	-33.39	-	26.95	-4.02
Beginner	-	-69.11	-57.06	-	-	-	-26.72	-	-73.05	-56.48
Hardly Any or None	20.41	20.51	-12.09	-3.28	-	-	-11.78	-	9.32	3.85

Source: EU-LFS 2021, own calculations.

Table C15. Weighted Asylum Seeker-Native Employment Gap for Working Age Asylum Seekers by Host Nation Language Course Participation and EU-15 Country of Residence for 2021

	AT	BE	DE	DK	EL	ES	FI	FR	IT	LU	PT	SE	EU-15 Average
Yes: General Language Course	55.67	45.52	48.69	49.91	53.09	30.90	41.46	55.40	57.40	22.63	-	49.68	46.40
Yes: Work-specific Language Course	18.61	71.94	47.00	37.17	0.00	-	85.06	35.32	-	48.88	-	44.60	43.18
No: Language Courses Not Available/Affordable	74.33	44.28	35.47	-	65.11	-	-	23.85	53.82	17.79	-	0.00	39.33
No: Language Skills Sufficient	61.65	49.49	69.49	49.25	55.80	67.33	20.95	61.74	94.89	23.20	80.70	74.82	59.11
No: Other Reasons	44.88	37.54	47.91	41.67	68.01	103.57	56.81	49.66	90.18	37.72	0.00	49.87	52.32

Source: EU-LFS 2021, own calculations.

Table C16. Weighted Asylum Seeker-Native Employment Gap for Working Age Asylum Seekers by Host Nation Language Course Participation and Non-EU-15 Country of Residence for 2021

	BG	CH	CY	HR	HU	LV	NO	PL	SI	Non-EU-15 Average
Yes: General Language Course	-	66.35	33.22	-	-	100.00	49.17	-	94.59	68.67
Yes: Work-specific Language Course	-	100.00	-	-	50.00	-	51.67	-	-	67.22
No: Language Courses Not Available/Affordable	-	57.50	34.06	-	-	-	38.20	-	50.00	44.94
No: Language Skills Sufficient	100.00	121.17	-	67.56	112.68	-	52.94	94.64	63.56	87.51
No: Other Reasons	100.00	66.53	34.07	50.00	-	-	42.15	-	79.29	62.00

Source: EU-LFS 2021, own calculations.

Table C17. Correspondence Table Between Occupation (ISCO 2008 3-digit) and Field of Education)

Field of Education	Occupations (ISCO 2008 3-digit)
Education	200, 230, 231, 232, 233, 234, 235, 300, 330, 331, 332, 333, 334
Humanities/Arts	200, 230, 231, 232, 243, 245, 246, 300, 347, 348, 500, 520, 521, 522
Social Sciences/Business/Law	100, 110, 111, 121, 122, 123, 130, 131, 200, 230, 231, 232, 241, 242, 243, 244, 245, 247, 300, 341, 342, 343, 344, 346, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422
Sciences	200, 211, 212, 213, 221, 230, 231, 232, 300, 310, 311, 312, 313, 321
Engineering/Manufacturing/Construction	200, 213, 214, 300, 310, 311, 312, 313, 314, 315, 700, 710, 711, 712, 713, 714, 721, 722, 723, 724, 730, 731, 732, 733, 734, 740, 741, 742, 743, 744, 800, 810, 811, 812, 813, 814, 815, 816, 817, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 831, 832, 833, 834
Agriculture	200, 221, 222, 300, 321, 322, 600, 611, 612, 613, 614, 615, 800, 833, 900, 920, 921
Health/Welfare	200, 221, 222, 223, 244, 300, 321, 322, 323, 330, 332, 346, 500, 510, 513, 900, 910, 913
Services	300, 345, 400, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 421, 422, 500, 510, 511, 512, 513, 514, 516, 520, 522, 800, 831, 832, 833, 834, 900, 910, 913

Source: Table reproduced from Table A1 of Wolbers (2003).

Table C18. Correspondence Table Between Occupation (ISCO 2008 1-digit) and Level of Education (ISCED 2011 1-digit)

Major Occupational Group (ISCO)	ISCED Skill Level
1 Managers	3 and 4*
2 Professionals	4
3 Technicians and Associate Professionals	3
4 Clerical Support Workers	2
5 Service and Sales Workers	2
6 Skilled Agricultural, Forestry and Fishery Workers	2
7 Craft and Related Trades Workers	2
8 Plant and Machine Operators, and Assemblers	2
9 Elementary Occupations	2
0 Armed Forces Occupations	1, 2 and 4**

Notes: *In the implementation, we restrict overqualification to those with an education level higher than ISCED 4. **Given we are unable to distinguish between officers and enlisted members of the Armed Forces, who have different qualification requirements, we exclude Armed Forces Occupations from our implementation.

Table C19. Shares of Jobs by Occupational Task Content for Migrants and Natives

EU-15 Countries										
	Migrants					*Natives*				
Year	NRM	RM	RC	NRCP	NRCA	NRM	RM	RC	NRCP	NRCA
2011	41.70	13.90	14.84	15.13	13.33	28.57	8.67	23.49	21.00	16.71
2012	41.76	13.39	15.49	14.99	13.44	27.89	8.72	24.12	20.89	17.01
2013	41.79	13.36	15.55	14.88	13.61	28.23	8.46	24.30	20.30	17.48
2014	42.08	13.22	15.09	14.70	14.18	27.98	8.48	24.34	20.45	17.58
2015	41.95	13.35	15.37	14.55	14.10	27.77	8.28	24.28	20.60	17.90
2016	41.19	13.29	15.33	14.48	14.94	27.57	8.33	24.06	20.67	18.13
2017	41.05	13.31	15.30	14.58	14.75	27.40	8.19	23.82	20.81	18.43
2018	40.92	12.80	15.21	14.84	15.13	27.15	8.13	23.81	20.75	18.72
2019	41.27	12.86	14.87	14.69	15.19	26.80	7.90	23.41	21.35	19.08
2020	42.03	13.25	14.68	13.65	14.55	26.24	8.17	22.76	21.28	19.43
2021	36.09	11.26	15.01	16.09	18.92	26.63	8.27	23.50	20.40	18.90
2022	37.23	11.46	14.89	15.93	18.52	27.08	8.19	23.32	20.50	19.02
Non-EU-15 Countries										
	Migrants					*Natives*				
Year	NRM	RM	RC	NRCP	NRCA	NRM	RM	RC	NRCP	NRCA
2011	32.18	10.96	15.39	15.44	15.13	35.06	12.14	15.45	14.72	14.04
2012	31.80	10.08	15.57	16.21	16.24	35.01	12.08	15.54	14.87	14.46
2013	31.07	9.44	15.76	16.60	16.63	34.21	11.96	15.53	14.84	14.67
2014	30.53	9.39	14.93	17.14	17.04	33.29	12.08	15.51	15.03	14.99
2015	30.83	8.73	15.00	17.26	17.26	33.13	11.82	15.77	15.09	15.34
2016	30.49	8.70	14.53	17.04	17.90	32.27	12.01	15.63	15.26	15.43
2017	29.64	8.96	14.37	16.94	17.85	31.82	12.14	15.46	15.23	15.60
2018	28.72	8.54	14.29	17.65	18.09	31.36	12.03	15.17	15.40	15.74
2019	29.03	8.78	14.11	17.52	18.79	31.00	11.77	15.02	15.51	16.13
2020	28.75	7.92	13.92	17.71	19.88	30.84	11.34	15.26	15.70	16.51
2021	27.37	7.79	13.96	18.82	20.88	28.97	11.04	15.54	15.76	16.58
2022	27.30	8.03	13.53	18.20	21.18	29.01	10.77	15.82	16.05	16.79

Source: EU-LFS 2011-2022, own calculations.

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Chapter 2: The Effect of Migration on the Earnings Distribution

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Data Disclaimer

This paper is based on data from the weakly anonymous version of the Sample of Integrated Labour Market Biographies (SIAB - Version 7519 v1). The responsibility for all conclusions drawn from the data lies entirely with the authors.

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Abstract

A large literature investigates the effects of immigration on the wages of natives in an absolute sense. Yet, very little is known about how immigration affects the distribution of wages or earnings. For Germany—where the share of foreign workers almost doubled in less than a decade—we show how foreign workers have become increasingly overrepresented at the bottom of the earnings distribution. Using individual administrative data, we analyse increased (low-skill) migration to Germany in light of the EU eastern enlargement of 2004. Our results show that wages across the breadth of the wage distribution are not depressed by immigration. Rather, wages increase at the top of the income distribution—in line with the idea of complementarity between workers in different skill groups. However, foreign-born workers at the lower end of the wage distribution, the group that is the closest substitute to the new migrant arrivals, experience wage losses.

Keywords: immigration; wage distribution; EU enlargement.

JEL classification: J21, J61, D31

1. Introduction

The flow of goods and people has increased dramatically in the past few decades, resulting in an ever-more connected world. Free access to labour markets is a vital aspect of this process of global market integration. However, the impact of the free movement of workers has always been a controversial topic in destination countries. This is despite the record levels of international migration worldwide and outstanding economic gains associated with liberal migration policies (see Clemens, 2011, among others).

In this study, we analyse the impact of a major migration policy that granted freedom of movement between labour markets for millions of people. That is, the effects of Eastern European countries' accession into the common market of the European Union, during the process of EU enlargement, on host countries' labour markets. We focus on Germany which has seen substantial increases in employment rates of foreign workers within less than a decade. From 2010 to 2018, the share of foreign-born workers almost doubled from 6.5 percent to 11.3 percent. Among those foreign workers, other EU countries contributed the largest migrant share since 2013 and also exhibited the steepest increase in the share of employed workers within Germany by the end of the last decade, resulting in almost two million foreign workers of EU origin by 2018. This substantial increase was entirely driven by immigration from Eastern European countries, as those citizens obtained free labour market access in Germany from 2011 onwards.

We use the fact that Eastern European workers have now had up to thirteen years to integrate into host-country labour markets, and study the effects of immigration from EU accession countries on the German labour market. More specifically, we study the impact of regional migration shocks on individual level earnings and the income distribution. We measure immigration from the EU accession countries very precisely, based on the full sample of workers in Germany who are subject to social security contributions. In doing so, we identify the employment share of those migrants in the regional income distribution. This measure of migrant workers is then linked to administrative individual-level panel data for a two percent random sample of employees.

This approach allows us to answer the question of how migration in different segments of the wage distribution has affected wages along the distribution. Immigration from the EU accession countries was concentrated in the lowest wage quintile. Finding negative effects in this part of the wage distribution suggests substitution effects, whereas positive effects in the upper part of the wage distribution imply complementarities between this cohort of migrants and high-skill workers. Analysing different segments of the income distribution allows us to speak to the question of who benefits and who loses from (low-skilled) EU immigration.

We formally study the effect of immigration on the income distribution in a standard labour market model that is based on a constant elasticity of substitution (CES) production function. The model is augmented to allow for deriving testable predictions on the effect of immigration along the income distribution. To be able to causally interpret our estimates, we take into account the potentially endogenous location choice of migrants in the empirical analysis and employ a past settlement shift-share instrument.

Our results show that the impact of workers from the Eastern EU accession countries is neutral at the extremes of the income distribution and positive at the middle, in which workers with higher wages see larger increases in their pay due to increased immigration. When we only look at native workers, we find positive effects throughout all parts of the income distribution. However, we also find negative effects of increased migration on the wages of earlier migrants in the lowest quintile of the earnings distribution.

This study contributes to the literature on the effects of immigration on host labour markets in three ways. First, we supply credible estimates of the effects of immigration on domestic wages along the income distribution. Despite a long and ongoing debate about the effects of immigration on domestic wages (Borjas, 2013, 2014; Card, 2005; Card and Peri, 2016) little is known about the distributional effects. Migration can have bi-directional effects on the native wage distribution: On the one hand, theoretical considerations predict a direct negative effect on competing workers, while on the other hand, indirect effects are predicted to be positive due to cross-skill complementarities (Ottaviano and Peri, 2012; Peri, 2014). These effects can be derived from a classical CES production function with the assumption of perfect substitutability between immigrants and natives. Under imperfect substitutability (e.g. due to differing language/communication skills, or qualification recognition), natives can be "pushed" into better-paying occupations (Foged and Peri, 2016). This argument could be of particular importance under a shortage of particular types of (skilled) labour, as is partly the case in Germany. How these opposing effects balance along the entire distribution is an empirical question. This study finds that indeed natives all along the wage distribution improve their wages in response to immigration—even those at the lower end of the income distribution.

Previous studies have found similar results in different contexts. For the U.K. and the years 1997 to 2005, Dustmann et al. (2013) show that wage effects from immigration mirror the density of migrants in the native wage distribution, thus leading to wage depression below the 20^{th} percentile along with slight wage gains in the top of the distribution. Similar wage losses at the bottom and wage gains at the top of the wage distribution are found by Yasenov (2020), who studies the U.S. wage distribution since the 1980s by means of quantile regression.

Finally, we contribute to the understanding of EU policies and their evaluation. Until now, there exists little evidence on the impact of migration following EU eastern enlargement. Using earlier migration episodes, Dustmann et al. (2017) look at Czech immigrants at the German border after 1991 and find strong employment effects but only moderate wage effects. Beerli et al. (2021) study the removal of immigration restrictions to Switzerland from neighbouring countries in the early 2000s. They find significant positive effects of high skilled migration on high skilled native wages due to increasing size, number, productivity, and innovation performance of skill-intensive incumbent firms. The effects are mainly driven by firms that reported labour shortages prior to the reform. Directly related to the EU eastern enlargement, Becker and Fetzer (2018) study Eastern European migrants in the UK and find that migrants from the EU tend to settle in areas with little pre-existing migration. These areas experience smaller wage growth at the lower end of the wage distribution and increased pressure on the welfare state. Kuosmanen and Meriläinen (2020) use Finland as a case study, and find substantial wage effects but only small employment effects, which is in contrast to previous findings of border openings within the EU.

The remainder of this paper is structured as follows. Section 2 lays out the institutional framework of the EU eastern enlargement and its implications for the German labour market. Section 3 introduces our theoretical model, while Section 4 presents the empirical strategy. Section 5 shows our results and in Section 6 we conclude and discuss the implications of our findings.

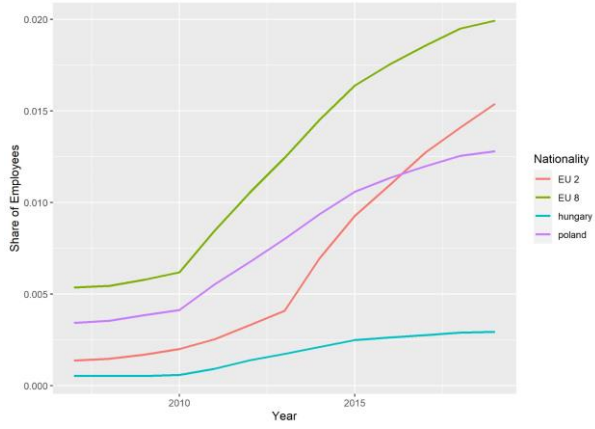
2. Institutional Framework

In the 2000s, the EU underwent the largest extension so far in terms of territory and population by including ten new member states from Eastern Europe as well as Malta and Cyprus. In 2004, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia joined the EU (EU8). In 2007, Bulgaria and Romania (EU2) followed. In principle, this allowed the free movement of individuals, goods and services for the new EU members, a key feature of the European common market. However, with the fear of mass migration from the new member countries, some incumbent EU member states pushed for transitional rules, restricting free labour market entry for up to seven years post-accession, or until 2011 and 2014 for the EU8 and EU2 countries, respectively. Germany took advantage of these regulations and restricted access to the German labour market for migrants from EU8 and EU2 countries until the end of the seven-year transition period. This led migration to Germany to only increase from 2011 onward, as depicted in the share of foreign workers from the EU8 and EU2 countries in Figure 1a. The graphic also displays the shares for Poland and Hungary, the two source countries from which most EU8 migrants came to Germany.

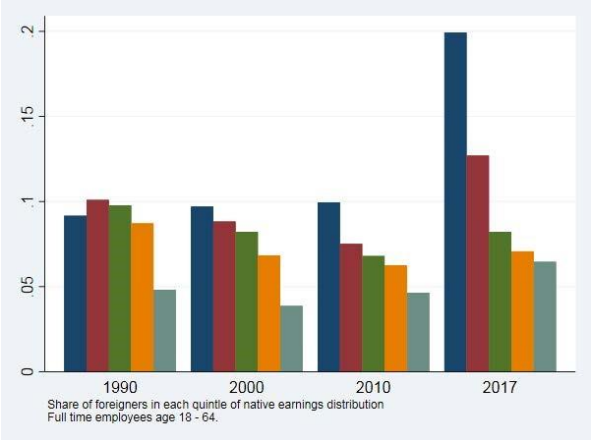
The political discussion about temporary restrictions to migration mirrored the scientific debate: On the one hand, industry and policy makers noted the increasing shortage of skilled workers. On the other hand, there existed a fear of mass migration into welfare systems and a depreciation of native wages. With respect to migration into the welfare state, the picture is quite clear. The unemployment rate for migrants from the EU eastern enlargement countries was about 3.2 percent in December 2019. With that, it was very close to that of native Germans (2.3 percent) and much lower compared to other foreigners (8.8 percent) and even to EU nationals in general (7.9 percent). Hence, the main focus of the debate should be on the impact of migration on the wages and employment of incumbent workers.

Figure 1. Foreign-born Employees in Germany

(a) Share of Foreign Employees



(b) Share of Foreigners in the Earnings Distribution, by Quintiles



Notes: Own depictions based on data from SIAB.

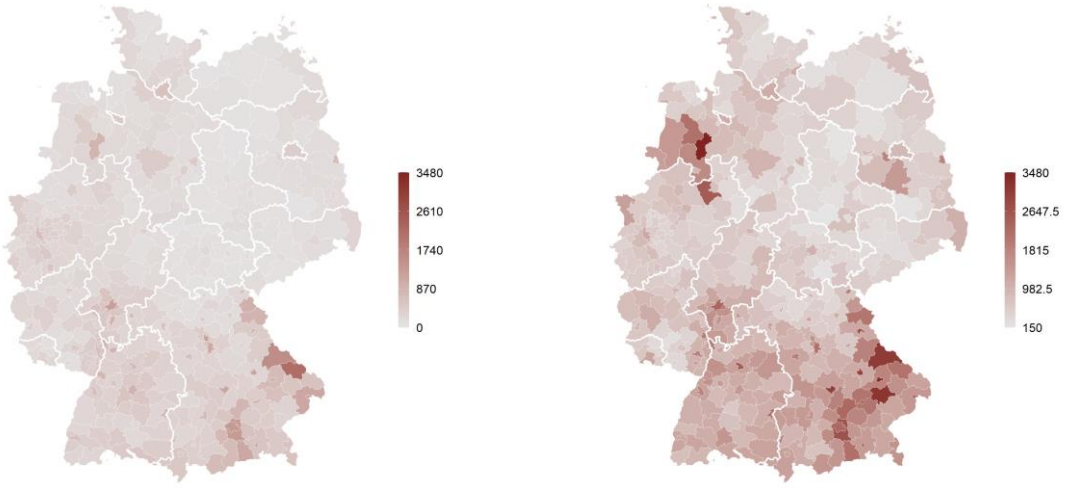
Foreign workers in Germany work predominantly in low-wage occupations. Consequently, foreign workers are noticeably overrepresented in the bottom quintiles of the native earnings distribution. This earnings inequality has become much more pronounced over the past decade (see Figure 1b), in part due to the EU enlargement. It is for this reason that this analysis focuses on effects along the entire wage distribution. Equally important, we use a framework that captures to what extent increased migration from the Eastern EU countries affected incumbent foreign-born workers in Germany. This population may be particularly at risk of job loss and wage depreciation with increased competition from EU8 and EU2 workers.

Migration to Germany since 2011 follows regional patterns that are potentially related to pre-existing settlement patterns. Immigration to Germany from Eastern European countries was very low between 1945 and 1989 due to the Cold War. Only in 1990 did Germany begin to allow seasonal workers from

Eastern Europe again, as well as a fixed quota of working migrants each year. These initial working migrants formed the settlement patterns visible in Figure 2a for the 2000s. One can see a clear trend for certain clusters at the Czech border and other areas in Central and West Germany. Comparing these structures to Figure 2b, we find a clear persistence in the geographical distribution of migrants from Eastern European countries that we exploit in an instrumental variables (IV) strategy (see Section 4.2).

Figure 2. Migration Patterns of EU Eastern Enlargement

(a) EU10 Workers in 2000 (b) EU10 Workers in 2015



Notes: Own depictions based on data from SIAB.

3. Theory and Model

In this section, we introduce the model that guides our empirical evaluation of the impact of the European enlargement on the income distribution in Germany. It is based on a standard nested CES production function, which models the trade-off between complementarity and substitution of workers across labour markets (see Ottaviano and Peri, 2012; Glitz, 2012, among other).

We start out by assuming constant returns to scale with a Cobb-Douglas production function in labour market r at time t given by:

$$Y_{rt} = A_{rt} L_{rt}^{1-\alpha} K_{rt}^{\alpha} \quad (1)$$

In each labour market, labour L_{rt} is given by the Armington CES aggregator:

$$L_{rt} = (\sum_j \theta_{jt} L_{jrt}^{\beta})^{1/\beta} \quad (2)$$

where θ_{jt} is the relative productivity of skill type *j*, standardised subject to $\sum_j \theta_{jt} = 1$, and $\sigma = 1/(1-\beta)$ is the elasticity of substitution across skill groups. Following Dustmann et al. (2013), we identify skill types based on the individual's position in the wage distribution, accounting for the potential occupational downgrading of immigrants. Moreover, we add a further nesting level and consider place of birth an additional characteristic differentiating workers in the same skill group. For this, we assume that natives and migrants in a given skill (wage) group are perfect substitutes and are equally productive. This assumption implies that after conditioning on the observed wage (skill), workers and migrants are perfect substitutes such that

$$L_{jrt} = L_{jrt}^{N} + L_{jrt}^{M}, \tag{3}$$

where L_{jrt}^{N} are natives and L_{jrt}^{M} are migrants of skill type *j* in labour market *r*. Assuming perfect competition on the labour market, the first-order-condition for native wages in cell (*r, j*) is given by:

$$w_{jrt}^{N} = A_{rt}(1-\alpha)\left(\frac{K_{rt}}{L_{rt}}\right)^{\alpha} L_{rt}^{1-\beta}\theta_{jt}L_{jrt}^{\beta-1}. \tag{4}$$

Define $\mu_{rt} = A_{rt}(1-\alpha)\left(\frac{K_{rt}}{L_{rt}}\right)^{\alpha} L_{rt}^{1-\beta}$ as an aggregate component of the marginal product across skill types in a given region.[15] Applying logs, totally differentiating, and rearranging (4) yields:

$$\ln\left(w_{jrt}^{N}\right) = \Delta\ln(\mu_{rt}) + \Delta - \frac{1}{\sigma}\Delta\ln\left(L_{jrt}\right), \tag{5}$$

where μ_{rt} is a region-specific component and θ_{jt} is a skill-specific productivity term. Equation (5) captures the key relationship of interest: the native wage in a given skill segment is a function of (i) region-specific aggregate marginal product, (ii) skill-specific productivity, and (iii) labour supply of natives and migrants in the cell. One advantage of conceptualising the labour market forces in this framework is that we can find empirical counterparts for the terms in Equation (5) and test how changes in the foreign workforce affects different segments of the income distribution.

4. Data and Empirical Strategy

4.1. Data

For our analysis, we use the Sample of Integrated Labour Market Biographies (SIAB), a two percent random sample drawn from the Integrated Labour Market biographies (IEB). It comprises all individuals

[15] This term captures aggregate total factor productivity, the capital-labour ratio, and the aggregate labour supply in the region.

in Germany who are in employment subject to social security contributions, marginally or part-time employed workers, benefit recipients, or those who are registered as job seekers. It allows for an analysis of the workforce in terms of employment and income (Frodermann et al., 2021). The data is based on the stock of workers as of June 30th each year. We make use of its panel dimension for our regional analysis.

Table 1. Summary Statistics

	Mean	SD	Median	Min	Max	N
Log daily wage	4.60	0.66	4.61	-4.58	8.07	3,619,862
Share of EU10 workers	0.03	0.04	0.01	0.00	0.31	3,552,699
Past-settlement IV	0.06	0.02	0.05	0.01	0.13	3,619,862
Female	0.33	0.47	0.00	0.00	1.00	3,619,862
Days in Job	2,915.76	3,030.21	1,782.00	1.00	16,252.00	3,619,862
Age	42.66	11.68	44.00	18.00	64.00	3,619,862
Education	2.13	0.51	2.00	1.00	3.00	3,529,052
Foreign-born	0.10	0.30	0.00	0.00	1.00	3,619,862

Notes: Table shows summary statistics of the main dependent, independent, and control variables for the years 2011 to 2019.

For our main analysis, we restrict the sample to individuals in full-time employment in the years 2011-2019 in order to make wages and working time comparable.[16] In the time frame of interest, there are 3,619,862 valid observations in the sample (see Table 1). Our main outcome is log daily wages at the individual level. In order to correct for top-coded wages in the SIAB, we apply the wage imputation procedure according to Dauth and Eppelsheimer (2020). Using this variable, we construct wage quintiles for the total, native, and foreign-born working populations.

To measure the inflow of economic migrants from EU8 and EU2 countries, we make use of the universe of employed EU8 and EU2 migrants from administrative IAB records. More specifically, we aggregate the number of working migrants from these countries to the labour market region. A labour market region is characterised by common commuting patterns and commuting time. Germany is currently divided into 223 labour market regions. The share of EU8 and EU2 migrants in our sample is, on average, three percent

[16] The SIAB does not feature hours worked such that we can only calculate wages for full-time employees.

of the working population in each labour market region. We also leverage complementary migrant data from the central registry of foreigners.

We calculate the distribution of EU8 and EU2 migrants across labour market regions in order to construct a valid shift-share instrumental variable to causally interpret the impact of EU8 and EU2 migrants on the wage distribution. The composition of our sample is as follows. About a third of all workers are female and the average worker is 42 years old. They have worked, on average, almost 3,000 days in their current job, i.e., a little more than eight years. Most workers have obtained at least a university entrance qualification (Education = 2) and about ten percent are foreign-born.

4.2. Empirical Strategy

To estimate the impact of the inflow of Eastern European workers on the income distribution of the workforce in Germany, we estimate an empirical version of model (5), given by:

$$\Delta ln(w_{ijrt}) = \alpha + \beta \Delta X_{ijrt} + \gamma_j \Delta m_{jrt} + \gamma_t + \gamma_r + \Delta u_{ijrt}\,, \qquad (6)$$

where the indices denote individual *i* in the *j* quintile of the wage distribution for region *r* in year *t*. The model is estimated separately by income quintile, thus, the estimation uses variation across regions and time. Equation (6) is stated in first-differences, which removes potential time-invariant unobserved heterogeneity at the individual level. w_{ijrt} is the log wage of individual *i* who belongs to the j[th] percentile of the wage distribution in region *r* at time *t*. $\Delta m_{jrt} = \frac{\Delta L^M_{rj}}{L_{jrt}}$ measures the change in the stock of migrants in the cell (*r, j*) relative to the pre-existing labour force in the cell and the coefficient of interest γ_j captures the partial effect of migration on the wage distribution at a given percentile. X_{ijrt} includes individual-level time-varying control variables (age, tenure in current job, and level of education). γ_r is a labour market region fixed effect that captures region-specific labour market trends and γ_t are annual time fixed effects that control for potential time-specific changes in skill-specific productivity affecting all labour markets.

For estimation, we make use of spatial correlation in migrant shares across income cells (a so-called mixed approach, see Dustmann et al., 2016). As the composition and size of the labour force varies locally, just like the magnitude of immigration (recall Figure 2), the benefits of taking a regional approach at the labour market regional level are apparent. Compared to administrative distinctions between regional units, such as counties (NUTS-3), this has the advantage of defining distinct local labour markets with less overlap.

A key challenge in approaches that try to identify the impact of immigration in employment (or in our case wages) cells is occupational downgrading by immigrants. It poses a challenge to the empirical

estimations as immigrants cannot be assigned reliably to skill-groups as is often done for natives. To solve this, Dustmann et al. (2013) develop a flexible empirical approach by which skills of the immigrants are measured as their position in the wage distribution. Our approach is similar in the sense that we use the quintiles of the wage distribution and allocate migrants accordingly.

Equation (6) estimates the conditional correlation of wage changes to changes in the migrant population. A crucial aspect of this study is that to identify the causal effect of immigration on the earnings distribution requires solving the issue of endogenous regional sorting, i.e. the tendency of (migrant) workers to move to places that fit their skills. We address this issue by employing the classical shift-share IV based on past settlement structures (see Altonji and Card, 1991; Card, 2001, for the seminal work on this approach). To do so, we instrument Δm_{jrt} by:

$$\Delta \hat{m}_{jrt} = \frac{\hat{b}_{jrt} - \hat{b}_{jrt-1}}{\hat{b}_{jrt-1} + L^{Rest}_{jrt-1}}. \tag{7}$$

This expression is constructed by quintiles *j*. The term $\hat{b}_{jrt}$ is the synthetic shift in migrant shares, defined as:

$$\hat{b}_{jrt} = \sum_{c=l}^{C} z_{cr,1998} \times m_{ct} \tag{8}$$

for each quintile *j* of the wage distribution. *c* is the country of origin, *z* is the distribution of immigrants (initial shares) in the year 1998, and m_{ct} is the change in migration from country *c* to Germany as a whole (shift).

This approach has been recently challenged on the grounds that past settlement may be just as endogenous as contemporaneous settlement which may be exemplified by a constant composition of origin countries (Jaeger et al., 2018). We argue that this critique is less of a concern in this setting given that the EU eastern enlargement constitutes an important abolition of previous administrative hurdles to migration that fundamentally changed the magnitude and composition of incoming migrants completely. From this, we argue that our approach allows the estimation of a causal effect from recent immigration on earnings in Germany.

5. Results

We estimate equation (6) for our sample of 223 labour market regions from 2011 to 2019 using both OLS and an IV approach. We begin by showing the overall effect of EU enlargement in terms of migration from the new Eastern European EU countries on wages in Germany. Table 2 presents the OLS and IV (2SLS) regression results in columns (1-2) and (3-4), respectively. In all regressions, we control for labour market region and year fixed effects. In addition, even columns include individual control variables such

as job tenure (in days), age, and education. Recall that the estimated equation is in first-differences, explicitly accounting for time-invariant individual characteristics. The main variable of interest is the local change in the EU8 and EU2 worker share.

Table 2. OLS and 2SLS Results

	OLS Results		2SLS Results	
	(1)	(2)	(3)	(4)
Δ Share of EU10 workers	-3.452***	-3.483***	1.922***	2.020***
	(0.017)	(0.018)	(0.360)	(0.357)
First Stage Estimate			0.135***	0.138***
First Stage SE			(0.006)	(0.006)
KP F-Statistic			515.12	543.57
Control Variables	NO	YES	NO	YES
N	2,805,461	2,756,046	2,805,461	2,756,046

Notes: The table shows OLS and IV estimates of the impact of changes in the EU8 and EU2 share on log daily wages. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

While the OLS results in columns (1) and (2) suggest a negative impact of increased EU8 and EU2 workers on wages, the IV estimates in columns (3) and (4) are positive. Instrumenting seems vital: by taking into account regional self-selection of migrants, we remove the downward bias of the OLS estimations, i.e. the tendency for lower-skilled migrants to move to areas with a relative abundance of low-skilled jobs (and correspondingly, lower wages). In addition, the Kleibergen-Paap F-statistics are very large and suggest a strong relevance of the instrument. The point estimates of the IV regressions are very similar and lie around two. This translates on average to a 7.4 Euros higher daily wage for a one percentage point increase of EU8 and EU2 workers. For a full-time worker with a 40 hour work week, this means an increase of almost one Euro on the workers hourly wage.

Next, we analyse the impact of EU8 and EU2 workers on the income distribution. To do so, we dissect the income distribution into quintiles and estimate the influence of EU8 and EU2 workers on daily wages in these specific parts of the income distribution. We focus here on the IV results including control variables and report the likely biased OLS results in the appendix. Table 3 shows the results of the IV regressions for each quintile. Again, the Kleibergen-Paap F-statistics are well above 10 and suggest a strong relevance of our past-settlement instrument. Notably, the relevance of the instrument is strongest in the lowest

quintile and decreases along the income distribution. This is well in line with the fact that EU8 and EU2 immigrants work predominantly in low-wage jobs.

Table 3. 2SLS Results for Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	0.512	2.114***	4.575***	10.260***	7.524
	(0.317)	(0.472)	(1.020)	(3.935)	(9.235)
First Stage Estimate	0.307***	0.175***	0.122***	0.038***	0.014***
First Stage SE	(0.017)	(0.013)	(0.012)	(0.008)	(0.003)
KP F-Statistic	318.07	176.78	105.74	22.57	23.32
Control Variables	YES	YES	YES	YES	YES
N	436,286	541,695	576,586	593,423	608,056

Notes: The table shows IV estimates of the impact of changes in the EU8 and EU2 share on log daily wages by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The estimation results reveal that the positive impact of migrants is strongest in the fourth income quintile and larger than the overall average impact of 2 (see column (4) of Table 2) for all quintiles except for quintile 1. This suggests that higher-skilled (and better paid) jobs are profiting the most from low-skill immigration. Interestingly, the estimate for quintile 1 is not negative. It seems that this group is not hurt in terms of wage growth by immigration. Nonetheless, they do not profit from increased migration either. The benefits of an enlarged workforce are reaped by workers in the upper income distribution, confirming the complementarity between skill groups.

5.1. Gender Differences

As the shares of working women and men are imbalanced for some occupations, and correspondingly their respective positions in the income distribution, it is reasonable to investigate gender differences in the effects of the migrant inflow. In Table 4, we show the IV results by income quintile only for men. These estimates follow the same pattern evident in Table 3. This is due to the fact that men are heavily overrepresented in the full-time working population. A notable difference, however, is the smaller point estimates for almost all quintiles. The results suggest that men in the upper-income quintiles are largely profiting from the immigrant inflow.

Table 4. 2SLS Results for Men Only, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	0.353	1.693***	3.625***	8.734***	7.703
	(0.338)	(0.437)	(0.869)	(3.192)	(8.879)
First Stage Estimate	0.333***	0.207***	0.163***	0.051***	0.017***
First Stage SE	(0.021)	(0.015)	(0.015)	(0.009)	(0.003)
KP F-Statistic	263.31	188.29	121.75	30.60	26.79
Control Variables	YES	YES	YES	YES	YES
N	226,294	368,931	397,406	423,273	490,302

Notes: The table shows IV estimates of the impact of changes in the EU8 and EU2 share on log daily wages of male workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5 shows the IV estimates for the female full-time working workforce. For this group, which is on average 44 percent of the size of the male full-time workforce, we can only credibly identify the impact of the increase of EU8 and EU2 migration on the lowest quintile (KP F-Statistic above ten). Our instrument does not work well for female workers as visualised by the low correlation in the first stage estimates. This is presumably due to the fact that the inflow of EU8 and EU2 workers was male dominated and that occupations (and pay) is largely segmented in the German labour market. For the lowest quintile, the impact is again positive but statistically insignificant. The results for women seem to suggest a non-tangible positive impact of EU8 and EU2 migration on the wage structure.

Table 5. 2SLS Results for Women Only, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	0.826	5.148*	21.489	67.117	11.696
	(0.772)	(2.801)	(22.015)	(273.188)	(78.778)
First Stage Estimate	0.249***	0.080***	0.023	0.004	0.003
First Stage SE	(0.031)	(0.027)	(0.019)	(0.016)	(0.006)
KP F-Statistic	64.41	9.11	1.41	0.07	0.28
Control Variables	YES	YES	YES	YES	YES
N	209,992	172,764	179,180	170,150	117,754

Notes: The table shows IV estimates of the impact of changes in the EU8 and EU2 share on log daily wages of female workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.2. Migrant Differences

We document that EU8 and EU2 migrants are predominantly working in lower-paid jobs. This increase in low-skill immigration may depress the wage (growth) of low-skill workers as they are faced with increased competition on the labour market and therefore hold a weaker wage bargaining position. Table 3 does not corroborate this mechanism for the overall population. However, there may be subgroups that are particularly vulnerable to increased competition. In this subsection, we focus on differences between native and foreign-born workers. The latter group may be very close substitutes to newly arriving migrants in terms of human capital and institutional knowledge of the host country. If any group were to be negatively affected by increased migration, the most likely group are those previous migrant arrivals that came to Germany in previous years.

In Table 6 we present our IV results for the native population. We again see a pattern of positive wage effects in all quintiles of the income distribution, as in Table 3. Interestingly, however, the lowest quintile is also now statistically significant and positively affected by the inflow of EU8 and EU2 migrants. With the exception of quintile 5, we see a statistically significant positive effect of immigration along the income distribution for natives. Immigration of EU8 and EU2 workers seems to improve the remuneration of all workers (on average) in all parts of the income distribution, with a larger effect on workers at the higher end of the distribution.

Table 6. 2SLS Results for Only Natives, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	1.004***	2.878***	5.072***	9.770***	10.110
	(0.381)	(0.542)	(1.090)	(3.297)	(8.895)
First Stage Estimate	0.291***	0.166***	0.117***	0.044***	0.015***
First Stage SE	(0.018)	(0.013)	(0.012)	(0.008)	(0.003)
KP F-Statistic	267.94	159.21	103.88	31.21	26.71
Control Variables	YES	YES	YES	YES	YES
N	377,902	494,526	539,243	562,061	579,916

Notes: The table shows IV estimates of the impact of changes in the EU8 and EU2 share on log daily wages of native workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7 presents the IV results for the foreign-born workers. Note that this population is much smaller in our sample. For the first and the second quintile, we are able to credibly estimate IV coefficients based on the good relevance of the instruments. For both of these groups, we estimate a statistically significant negative effect of EU8 and EU2 workers on the wages of foreign-born workers. Indeed, it seems that this group is negatively affected by the inflow of new migrant workers. Foreign-born workers who work 40 hours per week in the lowest quintile of the income distribution, see their hourly wages decrease by an average of 42 cents. Foreign-born workers in quintile 2, with the same working hours, experience an average decrease in their hourly wages of 1.04 EUR.

In sum, we find that increased migration from EU eastern enlargement countries did not adversely affect wages of German workers across the income distribution. It did, however, negatively affect the wages of pre-existing migrants in the lower part of the income distribution. From that, we conclude that incumbent migrant workers are closer substitutes to new migrants than natives.

Table 7. 2SLS Results for Only Foreigners, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	-1.212**	-2.118*	1.407	1.019	160.183
	(0.574)	(1.101)	(3.269)	(8.791)	(747.592)
First Stage Estimate	0.377***	0.228***	0.155**	-0.059	-0.003
First Stage SE	(0.050)	(0.055)	(0.072)	(0.045)	(0.013)
KP F-Statistic	55.75	17.02	4.61	1.74	0.05
Control Variables	YES	YES	YES	YES	YES
N	58,384	47,169	37,343	31,362	28,140

Notes: The table shows IV estimates of the impact of changes in the EU8 and EU2 share on log daily wages of foreign-born workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

6. Conclusion

This paper evaluates the effect of migration on the wage distribution in Germany in light of the EU eastern enlargement. We focus on the substitutability and complementarity of native and foreign workers and shed light on an important policy reform, the free movement of workers across the EU after the end of the transition period in 2011. Our findings indicate that immigration has different effects on different segments of the wage distribution, in particular for specific subgroups of workers. Contrary to common concerns, we find that wages are not universally depressed by increased migration.

Instead, our analysis reveals that wages in the upper part of the income distribution experience an increase, highlighting a complementarity between high-skill native workers and incoming migrants. Specifically, native workers across the entire wage distribution benefit from immigration, with notable wage increases even at the lower end of the income distribution. This suggests that the labour market in Germany is flexible enough to absorb and integrate migrant workers without adversely affecting native wages significantly. However, our study also identifies adverse effects of immigration: earlier migrants, particularly those in the lowest wage quintile, suffer wage losses due to the influx of new low-skilled migrants, indicating a substitution effect where new arrivals assert downward pressure on the wages of those who are most similar to them in terms of skill.

The implications of these findings are significant for policy makers. They underscore the importance of considering both the positive and negative impacts of migration policies on different segments of the labour market. While the overall effect on native workers is positive, targeted measures may be necessary to support earlier migrants who face wage pressures due to new arrivals. This study contributes to the broader understanding of migration's labour market impact, emphasising the need for a balanced approach that maximises the benefits of immigration while mitigating its adverse effects on vulnerable groups.

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Appendix

Table A1. OLS Results, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	-4.043***	-3.087***	-3.864***	-8.100***	-12.135***
	(0.044)	(0.017)	(0.024)	(0.089)	(0.286)
Control Variables	YES	YES	YES	YES	YES
N	436,286	541,695	576,586	593,423	608,056

Notes: The table shows OLS estimates of the impact of changes in the EU8 and EU2 share on log daily wages by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A2. OLS Results, Only Men, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(2)	(2)	(2)	(2)	(2)
Δ Share of EU10 workers	-3.854***	-3.039***	-3.838***	-8.149***	-12.306***
	(0.054)	(0.020)	(0.029)	(0.109)	(0.347)
Control Variables	YES	YES	YES	YES	YES
N	226,294	368,931	397,406	423,273	490,302

Notes: The table shows OLS estimates of the impact of changes in the EU8 and EU2 share on log daily wages of male workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A3. OLS Results, Only Women, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(2)	(2)	(2)	(2)	(2)
Δ Share of EU10 workers	-4.389***	-3.177***	-3.907***	-7.965***	-11.603***
	(0.077)	(0.030)	(0.043)	(0.154)	(0.490)
Control Variables	YES	YES	YES	YES	YES
N	209,992	172,764	179,180	170,150	117,754

Notes: The table shows OLS estimates of the impact of changes in the EU8 and EU2 share on log daily wages of female workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A4. OLS Results, Only Natives, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	-4.350***	-3.101***	-3.910***	-8.196***	-12.086***
	(0.049)	(0.018)	(0.026)	(0.096)	(0.310)
Control Variables	YES	YES	YES	YES	YES
N	377,902	494,526	539,243	562,061	579,916

Notes: The table shows OLS estimates of the impact of changes in the EU8 and EU2 share on log daily wages of native workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A5. OLS Results, Only Foreigners, Quintiles 1-5

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
	(1)	(2)	(3)	(4)	(5)
Δ Share of EU10 workers	-2.566***	-2.983***	-3.551***	-7.343***	-12.441***
	(0.090)	(0.044)	(0.063)	(0.241)	(0.697)
Control Variables	YES	YES	YES	YES	YES
N	58,384	47,169	37,343	31,362	28,140

Notes: The table shows OLS estimates of the impact of changes in the EU8 and EU2 share on log daily wages of foreign-born workers by quintile of the income distribution. Standard errors are clustered at the individual level and given in parentheses. Statistical significance is given by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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