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Special issue on immigration economics

Paths to integration: earnings, skill investments, and outmigration across immigrant admission categories

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Abstract

We document substantial heterogeneity in labor market integration, skill investments, and outmigration across immigrant admission categories. Using newly available data on residence permits in Finland, we establish four facts. First, there are large initial differences in employment and earnings across labor, family, refugee, student, and European Union migrants. Second, these differences diminish substantially over time. Third, the groups make distinct investments in country-specific and general skills. Fourth, both the prevalence of and selection into outmigration vary widely across admission categories. These findings align with models where investments in skills depend on the expected length of stay in the host country.

Keywords: Integration; earnings; human capital; outmigration

JEL classification: J22; J31; J61

1. Introduction

The labor market integration of immigrants is an important, and controversial, policy topic in most developed countries. Economists have long contributed to this debate by documenting how immigrants' earnings and employment evolve over time in the host country. However, while the policy discussion often revolves around changes in the rules for residence and work permits, data restrictions have largely prevented researchers from exploring how integration profiles differ across immigrants who arrive under different admission categories.

This paper examines immigrant integration in Finland using newly available data from the Finnish Immigration Service, which includes all

residence permits granted between 2011 and 2021. Statistics Finland has linked these records to comprehensive administrative data covering labor market outcomes, educational enrollment, and demographics, allowing us to track immigrants for up to ten years after arrival.

Using these data, we document four sets of facts. First, residence permit type is a strong predictor of initial labor market performance. As may be expected, refugees and family migrants begin with very low employment rates and earnings.¹ By the end of their first full calendar year in Finland, only about one in ten refugees is employed, a gap of 62 percentage points compared with natives of the same age and gender in the same local labor markets. Consequently, their initial annual earnings were 23,000 euros (95 percent) lower than those of comparable natives. In contrast, those admitted on work permits had employment rates that were 12 percentage points higher, and they earned 5,000 euros (17 percent) more than comparable natives. Other admission categories fell between these two extremes: family migrants earned 20,000 euros less, students 11,000 euros less, and European Union (EU) migrants 5,000 euros less than comparable natives.

Second, the labor market performance of different immigrant groups gradually converges toward that of natives, and with each other. During their first ten years in Finland, employment rates and annual earnings steadily increase for refugees, family migrants, and EU migrants, while labor migrants experience a decline from their initially strong position. As a result, after ten years, the employment rate of EU migrants has fully converged with that of labor migrants at 80 percent. Employment growth is even stronger for other groups, with 60 percent of refugees and 70 percent of students and family migrants employed by their tenth year in the country. However, earnings gaps remain substantial, both between immigrant groups and relative to comparable natives. After ten years, refugees still earn 18,000 euros less than comparable natives, though the relative gap has narrowed from 95 percent to 61 percent as natives' earnings have also increased. Labor migrants' initial advantage over natives disappears over time, and they earn 5,000 euros (16 percent) less than comparable natives. Again, other groups fall in between, with immigrant-native earnings gaps of 15,000 euros for family migrants, 7,000 euros for students, and 4,000 euros for EU migrants.

Our third set of facts concerns differences in investments in skills across admission categories. Immigrants arriving with student visas naturally begin their lives in Finland as students, primarily in higher education. By contrast, during their first five years, 84 percent of refugees and 79 percent of family migrants participate in training offered through public employment services,

¹For brevity, we refer to immigrants who are granted a residence permit for being UN quota refugees or asylum seekers – or on other humanitarian grounds – as “refugees”.

primarily in Finnish language and civic courses. After this initial integration training, 55 percent and 38 percent proceed to pursue a secondary degree as full-time students, while very few enroll in higher education. Finally, EU and labor migrants follow similar educational patterns: few are initially enrolled in education, but 21 percent and 29 percent enroll during their first years in Finland, respectively.

Finally, we find that immigrant groups exhibit distinct outmigration behaviors. Over ten years, 24 percent of student migrants and 19 percent of labor migrants leave Finland, while the corresponding shares are 12 percent for family migrants and 7 percent for refugees. Selection into outmigration also differs across admission categories. Among labor and EU migrants, those at both the lower and upper ends of the earnings distribution are more likely to leave than those in the middle. In contrast, among refugees, family migrants, and student migrants, lower earnings are associated with higher outmigration rates. However, these selection patterns are not sufficiently pronounced to have a large impact on overall integration profiles.

We interpret these findings through the lens of models that illustrate how expected migration duration shapes labor market trajectories, human capital investment, and outmigration (e.g., Dustmann, 1999; Adda et al., 2022).² A key insight from these models is that migrants expecting a longer stay have stronger incentives to invest in host-country-specific skills. By contrast, those expecting a shorter stay are more likely to invest in portable skills or forgo human capital accumulation altogether. These models rationalize the heterogeneity we observe across admission categories. Refugees and family migrants, who typically remain in Finland long term, invest in integration training. Student migrants, who pursue general education, are more likely to leave. Similarly, labor migrants enter with high employment rates but make fewer skill investments. Consequently, their initial earnings advantage erodes over time as other groups accumulate more skills.

Our results contribute to the extensive empirical literature on immigrant integration. Since Chiswick (1978) and Borjas (1985), a vast body of work has examined labor market integration, including studies focusing on specific groups such as refugees (e.g., Bevelander and Pendakur, 2014; Åslund et al., 2017; Sarvimäki, 2017; Schultz-Nielsen, 2017; Brell et al., 2020; Fasani et al., 2022; Abramitzky et al., 2023) and the role of selective outmigration (e.g., Lubotsky, 2007; Sarvimäki, 2011; Dustmann and Görlach, 2015; Rho and Sanders, 2021; Adda et al., 2022).³ However, research that systematically compares earnings and employment profiles across all admission categories

²Similar models also appear in the “brain drain” literature; see Docquier and Rapoport (2012) for a review.

³For reviews, see Kerr and Kerr (2011), Borjas (2014), and Duleep (2015).

or self-reported reasons for migration appears to be limited to Bratsberg et al. (2014, 2017) for Norway and Ruiz and Vargas-Silva (2018) for the UK.

We add to this earlier work in three ways. First, we introduce a new country to the literature on labor market integration by admission class. While our results are broadly similar to those for Norway and the UK, it is important to accumulate cross-country evidence, given the centrality of this issue in policy debates. Second, we appear to be the first to systematically document how skill investments differ across immigrant admission categories. Third, we add to the work on outmigration by providing evidence on both differences in outmigration rates and selection patterns into outmigration across admission categories.

The rest of this paper is organized as follows. In Sections 2 and 3, we describe the institutional setting and our data, respectively. In Section 4, we report the baseline results. In Section 5, we document the extent of outmigration across admission classes and discuss how outmigration affects the interpretation of the baseline results. We end with some concluding thoughts.

2. Institutional setting

2.1. Admission categories and access to the labor market

Foreign citizens staying in Finland for more than 90 days have to apply for a residence permit or – if they are citizens of the EU or the European Economic Area (EEA) – register their right of residence. A residence permit can be temporary, continuous, or permanent, and can be updated from temporary to continuous (or from continuous to permanent) after an adequate, uninterrupted stay in Finland. Most residence permits require sufficient financial resources, the amount of which depends on the type of residence permit.⁴

The right to work varies across admission categories. Citizens of EU and EEA countries and those who have residence permits based on family ties or humanitarian reasons have an unrestricted right to work. An occupation or employer-specific residence permit only allows employment in a certain occupation or with a certain employer. Foreign students can work without restrictions if the employment is an internship included in their degree, but otherwise they are restricted to an average of at most 30 hours per week. Asylum seekers are allowed to work for pay without a residence permit three

⁴Residence permits based on international protection, compassionate grounds, return migration, or for family members of current or former Finnish citizens are exempt from income requirements.

months after applying for asylum if they present a valid passport (and six months after if they do not).

2.2. Social security and integration policies

Eligibility for social security and publicly provided health care and other services requires EU or EEA citizenship, a continuous or permanent residence permit, or a temporary residence permit valid for at least a year. In addition, immigrants have to indicate a plausible intent to stay permanently in Finland. For example, an employment contract with a duration of at least two years can be used as an indication of an intention to settle permanently. Urgent social assistance can also be provided to people who are staying in Finland only temporarily.

Integration services are offered to all recently arrived unemployed immigrants who fulfill eligibility for social security. The publicly provided integration support starts with an initial assessment that seeks to determine the immigrant's education, work experience, language skills, and other characteristics that may influence the integration process and need for other services. The initial assessment is followed by a sequence of training that includes language training and other courses aimed at improving immigrants' ability to participate in the labor market and Finnish society. Subsequently, immigrants may also be encouraged to enroll in degree programs (typically vocational education) or to participate in other training and services that are expected to improve labor market integration.

3. Data

3.1. Data sources and restrictions

We use newly available data from the Finnish Immigration Service covering all residence permits granted between 2011 and 2021. These records are linked to population-wide administrative data from Statistics Finland for the same period.⁵ We restrict the immigrant population to those who are recorded as residents in the year they received their residence permit or the following year. As our focus is on labor market integration, we include only adult immigrants

⁵Statistics Finland data include all individuals formally registered as residents at the end of each calendar year. In addition, they capture non-resident individuals who either earn taxable income or enroll in secondary or tertiary education during the year. Improvements in data quality over time mean that individuals with shorter migration spells are under-represented in the earlier years of the data. In particular, those granted a residence permit before 2015 are less likely to be linked to other administrative registers unless they applied for a subsequent permit.

who were 18–59 years old at the time of arrival. The data also include the full native population; for our main analysis, we use a 20 percent random sample of natives aged 18–59. The final analysis sample consists of 138,910 migrants and 891,665 natives.

3.2. Residence permits

We classify immigrants into five groups based on the grounds of their first residence permit. Although individuals may later receive permits under different admission categories, our main analysis compares integration patterns by initial permit type.

Labor migrants. There are two main categories of immigrants who arrive for work and are thus expected to have employment at the time of entry. The first group consists of low-skilled workers, typically without a college or equivalent degree, who are admitted only if their employment is not expected to displace native workers. The second group includes professionals, usually with a college degree, who are not subject to labor market testing. In our main analysis, we group these two categories together as labor migrants, given their shared characteristic of arriving with a job.⁶ However, we also report some results by subcategory in the Appendix.

Family migrants. In our baseline analysis, we group all immigrants whose residence permit is based on family ties into a single category. This group is heterogeneous and includes, for example, family members of refugees, corporate executives, and Finnish citizens. To account for this heterogeneity, we also examine integration patterns by classifying family migrants according to the residence permit category of their “sponsor” (i.e., the family member already residing in Finland).

Refugee migrants. We categorize migrants as refugee migrants if they arrived in the country as asylum seekers, UN quota refugees or for other humanitarian reasons.

Student migrants. We classify individuals as student migrants if their residence permit was granted on the basis of admission to upper secondary or tertiary education.

⁶We exclude seasonal workers from the analysis due to the short-term nature of their migration spells.

EU migrants. We group all migrants from EU and EEA countries into a single category. Because these individuals have the right to move freely within the EU, their reason for migration is not consistently recorded.⁷ Nonetheless, we include them in our analysis as a natural comparison group, even though their point of entry into the integration process differs from that of non-EU migrants. EU and EEA migrants are required to register with the Finnish Immigration Service if they reside in the country for more than three months. In practice, this registration is necessary to access employment, social, and health-care services, or even to open a bank account. Nationals of Nordic countries are an exception: they register only with the police and are therefore excluded from our analysis.⁸

3.3. Integration outcomes

Statistics Finland has linked the residence permit data to administrative records covering earnings, employment, participation in active labor market programs, and educational enrollment. Using these data, we define our main outcome variables as follows.

Earnings. Our baseline measure of earnings is total annual labor income. These data come from the Finnish Tax Administration and cover all individuals with taxable earnings and a personal identity number during the calendar year.

Employment. We define employment as the presence of positive labor earnings. We construct this using the same data for annual labor income as in our baseline earnings measure.

Skill investments. We measure investments in skills using student registries and data from the Public Employment Service. These sources cover all individuals enrolled in programs leading to a secondary or higher degree. We distinguish between participation in secondary and tertiary education (combining lower and higher tertiary levels). In addition, we examine enrollment in training programs provided by the Public Employment Service, which constitute the main form of integration training for immigrants.

⁷Students are the only group for whom we can infer the reason for migration with high confidence: a tenth of EU migrants in our sample were enrolled in an educational institution during their year of arrival.

⁸Between 1,100 and 1,600 new residents from other Nordic countries (Denmark, Iceland, Norway, and Sweden) moved to Finland annually during our observation period.

Table 1. Immigrant background characteristics by admission category

	Admission category					
	Native (1)	Refugee (2)	Student (3)	Worker (4)	Family (5)	EU (6)
Demographics						
Age at arrival	39.0	30.7	24.4	31.9	32.0	32.8
Woman	0.49	0.36	0.43	0.28	0.69	0.46
Single	0.46	0.38	0.73	0.39	0.05	0.43
Married or cohabiting	0.42	0.52	0.21	0.50	0.89	0.31
Divorced	0.12	0.07	0.01	0.03	0.04	0.03
Widow	0.01	0.03	0.00	0.00	0.00	0.00
Residence permits						
Year of permit		2016.3	2016.2	2017.5	2015.9	2016.2
Length of first permit (days)		1,361	398	406	371	1,773
Number of individuals	891,665	19,208	21,610	27,222	38,974	31,896

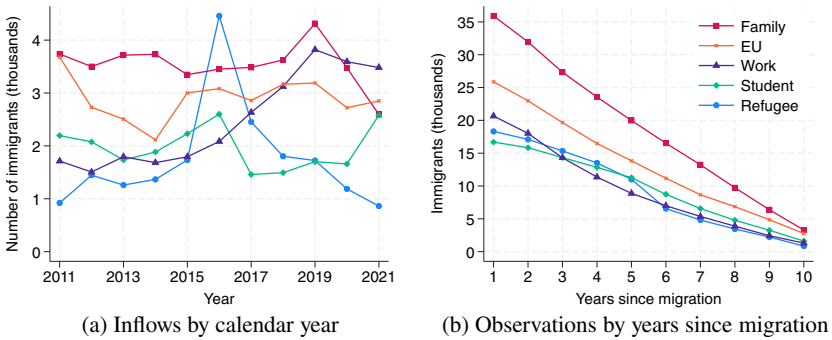
Notes: This table reports background characteristics at the time of first entry for immigrants and, for comparison, the same characteristics for a sample of natives in 2011–2021. For immigrants, we base age, gender, and marital status on information provided in their residence permit application to the Finnish Immigration Service. For natives, these data are drawn from Finnish population registries.

3.4. Descriptive statistics

Table 1 presents descriptive statistics for immigrants who received their first residence permit in Finland between 2011 and 2021, alongside our comparison sample of natives aged 18–59. In total, our data cover 138,910 immigrants. The largest admission category is family migrants (28 percent), followed by EU migrants (23 percent), labor migrants (20 percent), students (16 percent), and refugees (14 percent). As expected, there are notable differences across admission categories in terms of age, gender, and marital status. For instance, refugee and labor migrants are predominantly male (64 and 72 percent, respectively), whereas family migrants are more often female (69 percent) and more likely to have a partner (89 percent).

Figure 1(a) shows the number of immigrants in our sample by admission category and year of arrival. The most notable change over time is the sharp increase in refugee arrivals in 2016, consistent with patterns observed across many European countries. There has also been a gradual rise in the number of labor migrants: fewer than 2,000 arrived annually in the early 2010s, increasing to nearly 4,000 by 2019. The decline in family reunification cases in 2021 might partly reflect the effects of the COVID-19 pandemic. Figure 1(b) reports the number of immigrants in our sample by years since migration. The number of observations declines markedly

Figure 1. Estimation sample



Notes: Panel (a) shows the inflow into our sample by calendar year. Panel (b) reports the number of observations by years since migration.

with time since arrival. Most of this decline is mechanical: we can observe longer-term outcomes only for individuals who arrived earlier in the sample period.

Table 2 reports the distribution of residence permit categories five years after arrival. It shows that the residence permit status of immigrants often changes as they settle in the country. Some become eligible for permanent residency or citizenship, while others transition between different temporary permit types. Among refugees and family migrants, 82 percent and 78 percent, respectively, have obtained either permanent residency or citizenship. While 41 percent of labor migrants still hold a work permit, about half of those who remain have transitioned to permanent status or citizenship. Many immigrants who initially arrived as students have entered the labor market with work permits, and nearly one-fifth have acquired Finnish citizenship. Among EU migrants, 15 percent have obtained citizenship.⁹

4. Labor market integration

In this section, we present our results on labor market integration. We begin by documenting how average labor market outcomes evolve over time across admission categories. We then examine how immigrant–native gaps develop over time in Finland.

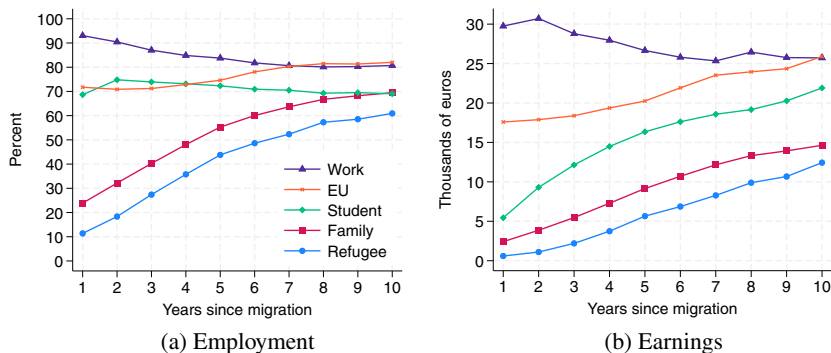
⁹Due to changes in the migration register, individuals who applied for a subsequent permit after their initial residence permit are over-represented in the early years of our data, which inflates the share with permanent residency or citizenship.

Table 2. Transitions between residence permits

First permit	Latest permit (share)							Obs.
	Refugee	Student	Work	Family	EU	Permanent	Citizen	
Refugee	0.17	< 0.01	< 0.01	< 0.01	< 0.01	0.47	0.35	11,007
Student	< 0.01	0.27	0.45	0.07	< 0.01	0.01	0.19	11,267
Work	< 0.01	< 0.01	0.41	0.06	0.01	0.36	0.15	8,876
Family	< 0.01	< 0.01	0.01	0.21	< 0.01	0.42	0.36	19,982
EU	< 0.01	< 0.01	< 0.01	< 0.01	0.85	< 0.01	0.15	13,838

Notes: This table reports the most recent residence permit status five years after arrival by initial permit type. The columns sum to 100 percent.

Figure 2. Employment rates and average annual earnings by years in Finland



Notes: This figure shows average labor market outcomes across admission classes by years in Finland.

4.1. Average labor market outcomes

Figure 2 illustrates the heterogeneity in labor market trajectories across admission categories by years since migration. Upon arrival, labor migrants have high employment rates and average annual earnings of roughly 30,000 euros. However, both outcomes decline modestly over the ten-year follow-up period.

The pattern is quite different for refugees, who perform poorly upon arrival but show substantial improvement over time, particularly in employment. Family migrants follow a similar trajectory, although their employment and earnings are consistently higher than those of refugees. EU migrants also show positive labor market development, but their starting point differs markedly: in their first full year in Finland, 72 percent are employed, compared to approximately 11 percent of refugees and 24 percent of family migrants.

Interestingly, 69 percent of immigrants who arrive as students are employed during their first full year in the country, and this share remains relatively

stable in subsequent years. However, their earnings increase steadily over time, implying rising average earnings among those employed. This pattern likely reflects transitions from part-time work during studies to full-time employment after graduation.

In the Appendix, we explore within-category heterogeneity in greater detail. Among labor migrants, high-skilled professionals earn, on average, three times more than other labor migrants (Figure A1). Within the family migrant group, those with a Finnish spouse fare best in the labor market, whereas family members of refugees have the lowest employment rates and average earnings (Figure A2).

4.2. Comparison with natives

Changes in immigrants' average labor market outcomes after arrival reflect both the integration process and broader factors such as business cycle variation and changes in the composition of the migrant population. These compositional changes result from immigrants aging over time, while some also emigrate. To account for business cycle effects and aging, we compare immigrants with natives of the same age and gender in the same calendar year and municipality. We examine outmigration separately in Section 6.

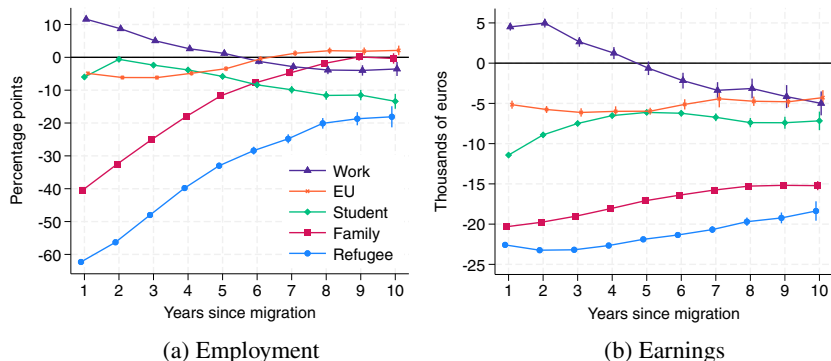
To estimate gaps in employment and earnings relative to comparable natives, we estimate models of the form:

$$y_{it} = \sum_{s=1}^{10} \gamma_s \mathbf{1}(\text{YSM} = s) \times \text{Migrant}_i + \rho_1 U_{r(i)t} + \rho_2 (U_{r(i)t} \times \text{Migrant}_i) + \rho_3 \text{Woman}_i + \rho_4 (\text{Woman}_i \times \text{Migrant}_i) + \rho_5 \text{Age} + \rho_6 \text{Age}^2 + \mu_{r(i)} + \lambda_t + \varepsilon_{it}. \quad (1)$$

Here, y_{it} is the outcome of individual i in year t , s indicates years since migration (set to zero for natives), YSM refers to years since migration, Migrant_i is an indicator for migrant status, $U_{r(i)t}$ is the local unemployment rate (deviation from the mean), Woman is an indicator for female gender, Age denotes age (centered around age 30), $\mu_{r(i)}$ is a vector of municipality fixed effects, and λ_t is a vector of calendar year fixed effects.¹⁰

Figure 3 reports point estimates and 95 percent confidence intervals for our main parameters of interest, γ_s . These estimates capture differences in labor market performance between immigrants and natives of the same age

¹⁰The interaction between immigrant status and the local unemployment rate allows for differential responses to business cycle variation across groups, following the approach used by Barth et al. (2004) and Dustmann et al. (2010).

Figure 3. Immigrant–native gaps by years in Finland

Notes: This figure shows the point estimates and 95 percent confidence intervals for parameters γ_s in equation (1). Panel (a) reports differences in employment rates, and panel (b) reports differences in annual earnings, including individuals with zero earnings. Some confidence intervals are not visible because they are smaller than the markers for the point estimates.

and gender, observed in the same calendar year and residing in the same local labor market. The reported gaps are evaluated at the sample mean of the local unemployment rate. We report the full results from these regressions in Tables A1 and A2 in the Appendix.

The patterns are broadly similar to those observed in the raw averages. Immigrants who arrive with a work permit are 12 percentage points more likely to be employed, and earn 4,500 euros (17 percent) more than natives of the same age and gender residing in the same local labor market during their first full year in Finland. However, this initial advantage fades over time. By their tenth year in the country, they are 4 percentage points less likely to be employed, and earn 5,000 euros (16 percent) less than comparable natives.

The initial gaps are substantially larger for refugees and family migrants than for other groups. In their first full year in Finland, the employment rate of refugees is 62 percentage points lower than that of comparable natives, and their annual earnings are 22,600 euros (95 percent) lower. For family migrants, the initial employment gap is 40 percentage points, and the earnings gap is 20,300 euros (79 percent). Over time, both groups show partial convergence. By their tenth year in Finland, the employment rate of refugees remains 18 percentage points below that of comparable natives, while the employment gap for family migrants has closed entirely. However, large earnings gaps persist. After a decade, refugees still earn 18,000 euros (61 percent) and family migrants 15,000 euros (49 percent) less than comparable natives. This divergence between the evolution of employment and earnings gaps is driven by changes within the native comparison group: while native

employment rates remain relatively stable over time, their earnings rise substantially with age and labor market experience (see the bottom panel of Table A2).

Perhaps the most surprising results concern immigrants who arrived in Finland as students. Initially, their employment rate is 6 percentage points lower, and their annual earnings are 11,000 euros below those of same-age, same-gender natives in similar local labor markets. This gap is expected, given that student migrants are enrolled in full-time education. Over time, their earnings increase steadily, and by their fifth year in Finland, the gap has narrowed to 6,100 euros. However, after this point, their relative earnings begin to decline. By their tenth year in Finland, their employment rate remains 13 percentage points lower, and their earnings 7,200 euros lower, than those of the native comparison group. Given that most immigrant students enroll in higher education – and that we do not condition on education in these comparisons – the persistently weaker long-term labor market outcomes suggest that this group faces difficulties in transitioning from higher education into the labor market.

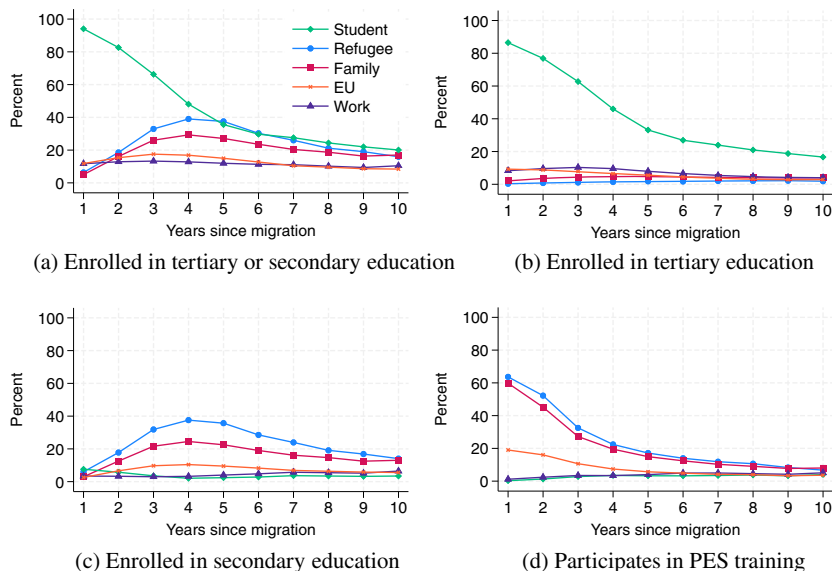
Finally, compared with the other groups, EU migrants exhibit fairly stable labor market profiles relative to the native comparison group. Their employment rate converges with that of natives after seven years and then exceeds it by 2 percentage points. However, an earnings gap remains, even though it narrows over time from 5,200 euros (20 percent) in the first year to 4,300 euros (14 percent) in the tenth.

5. Education and training

To analyze the extent and nature of human capital investments across admission categories, we next examine participation in education and training programs. Figure 4(a) shows enrollment in general secondary and tertiary education during the first ten years in Finland. As expected, nearly everyone entering the country with a student visa is initially enrolled in a degree-awarding educational institution. Figures 4(b) and 4(c) further show that they are enrolled almost exclusively in tertiary education.

Refugees and family migrants also make substantial human capital investments. However, rather than entering formal education immediately, they typically begin by participating in integration training offered through the Public Employment Services (PES). These programs are tailored to the Finnish context and include language instruction and courses on the functioning of Finnish society and the local labor market. Participation in such training is high among both groups during their early years in Finland (Figure 4(d)). By their fifth year in the country, 84 percent of refugees and 79 percent of family migrants have taken part in these programs. Integration

Figure 4. Participation in education and training



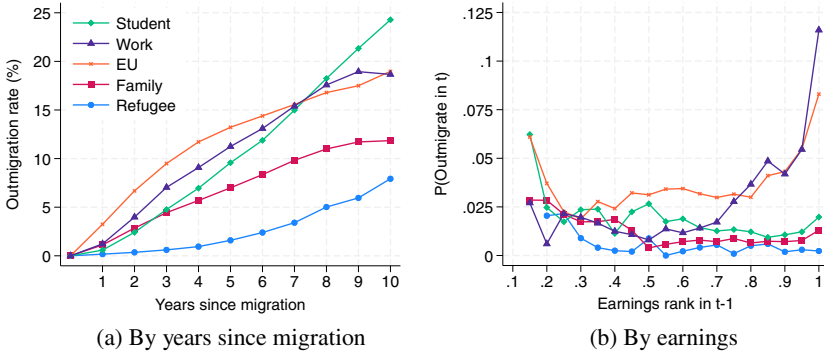
Notes: Panel (a) shows the share of migrants enrolled in either secondary or tertiary degree-awarding institutions. Panel (b) reports enrollment in tertiary education only, and panel (c) in secondary education only. Panel (d) displays participation in integration training provided by the Public Employment Service (PES).

training is also designed to facilitate transitions into vocational secondary education leading to a degree. While not universal, this transition is relatively common: within the first five years, 55 percent of refugees and 38 percent of family migrants enroll in secondary education.

EU migrants and work-related migrants also participate in education after their first few years in Finland, with nearly 29 percent enrolled by their fifth year in the country. Among EU migrants, participation is concentrated in general secondary education, whereas work-related migrants are more likely to pursue higher education (13 percent) than secondary education (9 percent).

To summarize, human capital investment patterns differ markedly across admission categories. Refugees and family migrants primarily invest in Finland-specific human capital, particularly through integration training and vocational secondary education tailored to the Finnish labor market. In contrast, student migrants and many labor migrants focus more on acquiring general and potentially more transferable human capital, such as tertiary education. EU migrants fall somewhere in between, with participation in both secondary and higher education.

Figure 5. Outmigration



Notes: This figure shows the share of immigrants aged 18–50 who have outmigrated (a) by years since migration and (b) across the earnings distribution.

6. Outmigration

Understanding which immigrants stay in or leave the host country has important implications for both policymakers and the interpretation of integration profile estimates. In this section, we provide new evidence on how outmigration patterns and selection differ across admission categories. We also re-estimate the integration profiles using only individuals who remain in Finland throughout the observation period, in order to assess how selective outmigration affects the original estimates.

6.1. Outmigration by admission category and earnings

Immigrants admitted under different categories likely differ in how long they intend to stay in the host country and in how responsive they are to changing economic conditions. To quantify the extent of this heterogeneity, Figure 5(a) shows the share of immigrants who leave Finland after their initial entry by years since migration and admission category.

Overall, about 17 percent of immigrants leave the country within ten years. While outmigration is generally gradual, there are substantial differences across groups. Student migrants are the most mobile, with 24 percent leaving within ten years. They are followed by labor migrants and EU migrants, whose outmigration rates reach 19 percent over the same period. In contrast, family migrants and refugees are significantly more likely to stay: only 12 percent of family migrants and 8 percent of refugees leave Finland within ten years of arrival.

To better understand the nature of outmigration and how it varies across admission categories, we examine which parts of the earnings distribution

Table 3. Outmigration by earnings rank and employment status

	Admission category					
	All (1)	Student (2)	Family (3)	Refugee (4)	EU (5)	Work (6)
Panel A. Earnings						
Earnings rank ($t - 1$)	-0.002*** (0.001)	-0.043*** (0.002)	-0.022*** (0.001)	-0.010*** (0.001)	0.015*** (0.002)	0.037*** (0.002)
<i>N</i>	668,017	109,511	187,945	91,889	164,650	114,022
Average outmigration	0.021	0.023	0.015	0.005	0.035	0.025
Panel B. Employment						
Employment ($t - 1$)	-0.005*** (0.000)	-0.016*** (0.001)	-0.011*** (0.001)	-0.003* (0.001)	0.003*** (0.001)	0.007*** (0.001)
<i>N</i>	668,017	109,511	187,945	91,889	164,650	114,022
Non-empl. outmigration	0.020	0.031	0.019	0.005	0.032	0.021

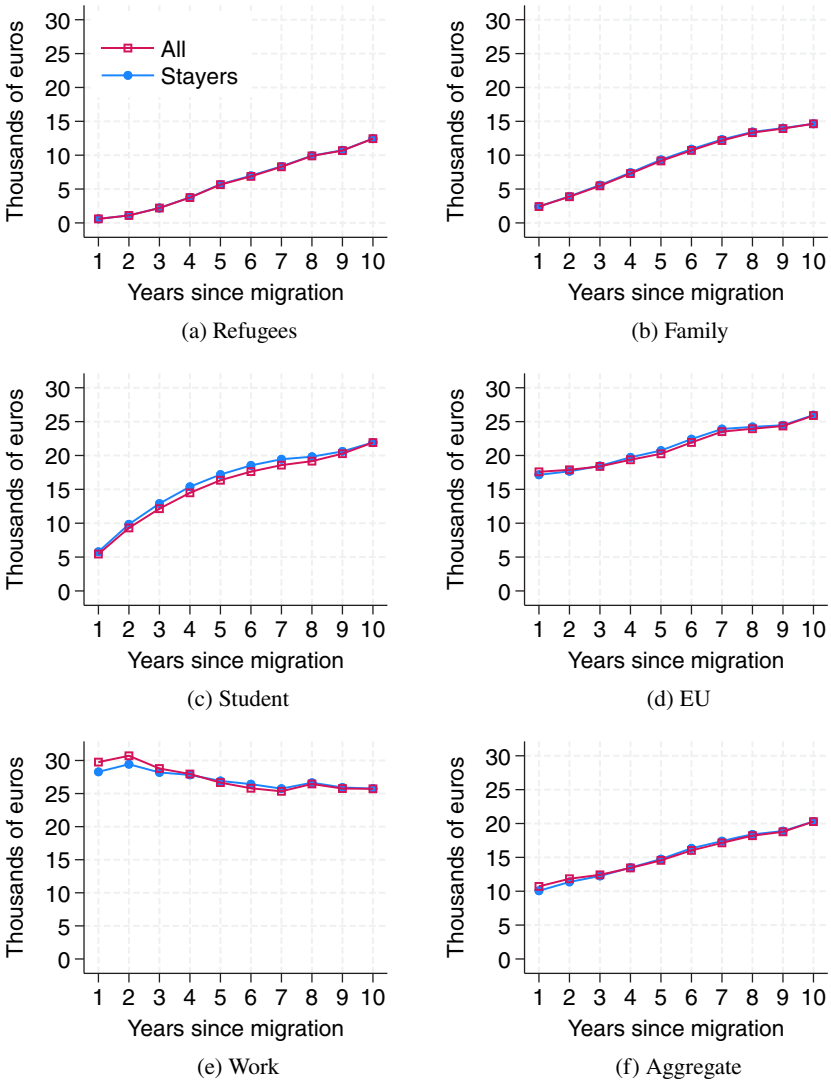
Notes: Panel A reports estimates from regressing an indicator for leaving Finland in year t outmigration on prior-year earnings rank (ranging from 0 to 1). Panel B reports results from analogous regressions using lagged employment status as the key independent variable. All specifications include calendar year fixed effects. Column 1 also includes admission category fixed effects. Robust standard errors in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

migrants leave from. Figure 5(b) shows the relationship between prior-year earnings rank (within admission cohort) and the probability of outmigration. Among labor migrants and EU migrants, the pattern is U-shaped: individuals at both the bottom and, especially, the top of the earnings distribution are more likely to leave than those in the middle. In contrast, among refugees, family migrants, and student migrants, outmigration is concentrated at the lower end of the earnings distribution.

Table 3 presents estimates from a linear specification that includes calendar year fixed effects. The results confirm that negative selection by earnings is strongest among student migrants, followed by family migrants and refugees. For EU and labor migrants, the linear specification is less appropriate due to the non-linear patterns discussed above. Nonetheless, the estimates are consistent with the visual evidence in Figure 5(b), suggesting that among these groups, positive selection at the top of the earnings distribution dominates negative selection at the bottom.

The bottom panel of Table 3 presents corresponding estimates based on employment status. Among student and family migrants, being employed is associated with a lower likelihood, 1.6 and 1.1 percentage points, respectively, of leaving the country in the following year. For labor and EU migrants, the relationship is reversed: employed individuals are 0.7 and 0.3 percentage points more likely to emigrate than those not working.

Figure 6. Earnings profiles of stayers



Notes: This figure shows the earnings of all immigrants in our analysis data and those immigrants who do not emigrate during our observation period (“stayers”).

6.2. Integration profiles for stayers

The outmigration patterns documented above suggest that both the reasons for leaving Finland and their implications for integration profiles vary across migrant groups. Among refugees and family migrants, those with weaker labor market outcomes are more likely to emigrate, perhaps due to discouragement or unmet expectations. This negative selection raises the average employment and earnings outcomes among those who remain. Labor and EU migrants, in contrast, tend to leave from the upper end of the earnings distribution, suggesting that highly skilled individuals often come to Finland for short-term work periods and subsequently move on. In these groups, selective outmigration may lead to an understatement of integration progress, as the initially most-successful individuals are also the most likely to leave.

To assess how much selective outmigration affects our results, Figure 6 compares earnings profiles for the full sample and for the subset of migrants who remain in Finland throughout the observation period. The largest deviations appear among labor migrants: in their first full year in Finland, stayers earn about 1,500 euros (5 percent) less than the full sample, resulting in a flatter earnings profile. Among student migrants, the pattern is reversed – stayers earn more than the full sample, with the largest gap in the fourth year, when their average earnings exceed those of the full population by 900 euros (6 percent). For EU migrants, the differences are smaller and more mixed: stayers earn 3 percent less in the first year but 2 percent more by year five. Among refugees and family migrants, earnings profiles for stayers and the full population are almost identical. Importantly, however, while the differences are non-trivial for some groups, selective outmigration does not appear to drive the patterns described above.

7. Conclusions

Immigration is one of the most contested policy topics in many countries. A large part of the debate revolves around the question of who is allowed to enter the country and on what grounds. Often, policy arguments are based on perceived differences in the potential for economic integration across immigrants admitted under different entry categories. However, evidence supporting or refuting these perceptions remains scarce.

In this paper, we have documented basic facts on labor market integration, skill investments, and outmigration for immigrants arriving in Finland in the 2010s. Many of our findings align with what we understand as conventional wisdom. Immigrants entering with work permits have high initial employment and earnings, while the opposite is true for refugees. Student migrants typically begin their stay enrolled in higher education, and although about a quarter

leave within ten years, the rest tend to catch up relatively quickly with labor and EU migrants.

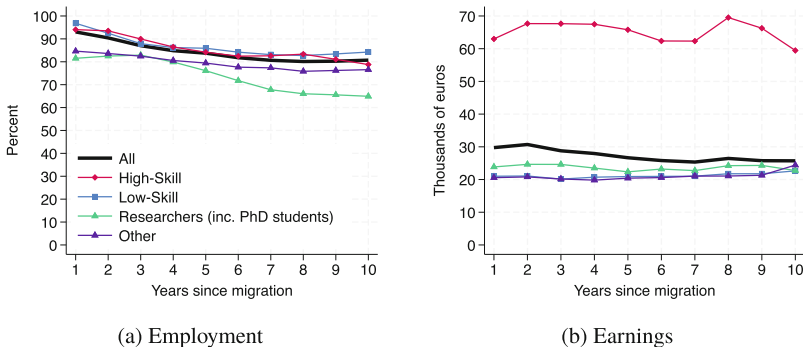
Our findings are also consistent with models that link labor market integration and skill investments to expected migration duration. Refugees and family migrants, who likely anticipate staying in Finland long term, tend to invest in host-country-specific skills, such as language and vocational training. Student migrants primarily invest in portable skills through higher education and are more likely to leave. Labor migrants make few formal skill investments and are also more likely to emigrate after a relatively short stay.

Some of our findings may also be unexpected to many readers. For example, the labor market outcomes of student migrants – who predominantly graduate from higher education in Finland’s most vibrant local labor markets – do not converge to the level of average natives. Similarly, many policymakers and researchers may be surprised by how much the employment gap between labor migrants and refugees narrows over the first ten years in Finland. However, we would be surprised if many people had strong priors on how selection into outmigration differs across admission categories.

These observations are just a few examples of the many facts we have documented above. Some of our findings may be surprising while others not, and different people may update their priors differently. However, a meaningful policy debate concerning possible changes in entry policies needs to be based on commonly shared facts. Thus, we believe documenting similar facts for more countries would be highly valuable.

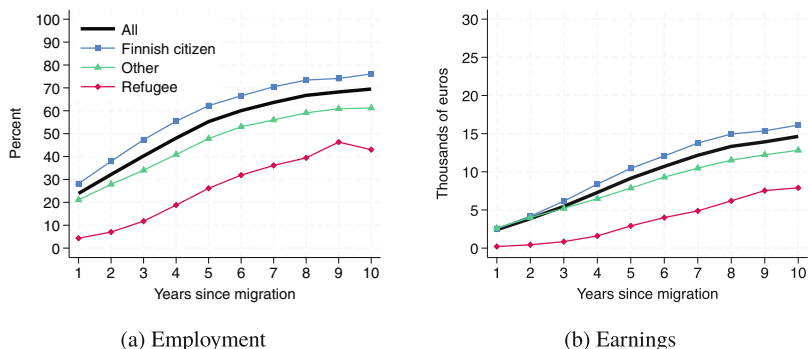
Appendix

Figure A1. Labor migrants by subcategory



Notes: This figure shows labor market outcomes for migrants with work-based residence permits, disaggregated by permit sub-category.

Figure A2. Family migrants by subcategory



Notes: The figure presents labor market outcomes for migrants admitted on family grounds, disaggregated by the residence permit category of their sponsor (the resident family member in Finland who formed the basis for the permit).

Table A1. Immigrant employment compared with natives

	Refugee	Student	Work	Family	EU
Panel A. Years since migration (YSM) × migrant					
1	-0.623*** (0.00263)	-0.0599*** (0.00368)	0.116*** (0.00187)	-0.404*** (0.00274)	-0.0489*** (0.00289)
2	-0.563*** (0.00317)	-0.00609* (0.00356)	0.0869*** (0.00228)	-0.325*** (0.00298)	-0.0615*** (0.00312)
3	-0.480*** (0.00372)	-0.0238*** (0.00377)	0.0503*** (0.00288)	-0.250*** (0.00320)	-0.0617*** (0.00338)
4	-0.398*** (0.00417)	-0.0384*** (0.00401)	0.0259*** (0.00343)	-0.180*** (0.00340)	-0.0486*** (0.00362)
5	-0.330*** (0.00468)	-0.0581*** (0.00430)	0.0120*** (0.00397)	-0.117*** (0.00363)	-0.0346*** (0.00384)
6	-0.284*** (0.00604)	-0.0838*** (0.00494)	-0.0123*** (0.00466)	-0.0775*** (0.00390)	-0.00461 (0.00407)
7	-0.248*** (0.00701)	-0.0988*** (0.00571)	-0.0286*** (0.00543)	-0.0476*** (0.00427)	0.0124*** (0.00444)
8	-0.201*** (0.00819)	-0.116*** (0.00672)	-0.0387*** (0.00641)	-0.0185*** (0.00485)	0.0202*** (0.00485)
9	-0.187*** (0.0102)	-0.115*** (0.00807)	-0.0399*** (0.00808)	0.00119 (0.00589)	0.0186*** (0.00576)
10	-0.181*** (0.0164)	-0.134*** (0.0115)	-0.0354*** (0.0109)	-0.00349 (0.00803)	0.0211*** (0.00742)

Table A1. (Continued)

	Refugee	Student	Work	Family	EU
Panel B. Other covariates					
Local unempl. rate	-0.0287 (0.0180)	-0.0327* (0.0180)	-0.0232 (0.0179)	-0.0257 (0.0179)	-0.0750*** (0.0180)
Unempl. rate × migrant	-0.649*** (0.0707)	-0.372*** (0.0752)	0.414*** (0.0598)	-0.650*** (0.0554)	0.121* (0.0685)
Female	0.00628*** (0.000275)	0.00627*** (0.000275)	0.00627*** (0.000275)	0.00629*** (0.000275)	0.00624*** (0.000275)
Female × migrant	-0.212*** (0.00239)	-0.102*** (0.00272)	-0.0486*** (0.00238)	-0.251*** (0.00207)	-0.115*** (0.00225)
Age	0.0182*** (0.0000885)	0.0184*** (0.0000888)	0.0182*** (0.0000887)	0.0185*** (0.0000884)	0.0181*** (0.0000886)
Age ²	-0.000217*** (0.00000112)	-0.000220*** (0.00000112)	-0.000218*** (0.00000112)	-0.000221*** (0.00000112)	-0.000216*** (0.00000112)
Constant	1.015*** (0.00108)	1.017*** (0.00108)	1.015*** (0.00108)	1.019*** (0.00108)	1.014*** (0.00108)
Native mean	0.820	0.820	0.820	0.820	0.820
Mean at YSM = 1	0.811	0.788	0.823	0.819	0.819
Mean at YSM = 5	0.825	0.812	0.831	0.830	0.829
Mean at YSM = 10	0.834	0.835	0.837	0.834	0.831
Observations	7,827,846	7,830,264	7,830,125	7,940,016	7,877,315

Notes: This table reports estimates from regression (1) using employment as the outcome variable. Employment is defined as having any labor or entrepreneurial income during the calendar year. All specifications include year and local labor market fixed effects. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table A2. Immigrant earnings compared with natives

	Refugee	Student	Work	Family	EU
Panel A. Years since migration (YSM) × migrant					
1	-22.580*** (0.0683)	-11.420*** (0.0745)	4.508*** (0.2330)	-20.320*** (0.0766)	-5.161*** (0.2550)
2	-23.240*** (0.0714)	-8.911*** (0.0905)	4.975*** (0.2790)	-19.770*** (0.0805)	-5.760*** (0.2200)
3	-23.190*** (0.0813)	-7.495*** (0.1100)	2.645*** (0.3060)	-19.010*** (0.0880)	-6.125*** (0.2640)
4	-22.660*** (0.1010)	-6.515*** (0.1720)	1.249*** (0.3810)	-18.080*** (0.1040)	-5.987*** (0.3170)
5	-21.890*** (0.1290)	-6.119*** (0.1580)	-0.634 (0.4310)	-17.100*** (0.1130)	-5.969*** (0.2190)
6	-21.350*** (0.1700)	-6.224*** (0.1970)	-2.174*** (0.4990)	-16.400*** (0.1250)	-5.123*** (0.3260)
7	-20.680*** (0.2090)	-6.726*** (0.2460)	-3.374*** (0.5160)	-15.770*** (0.1460)	-4.429*** (0.5420)
8	-19.700*** (0.2640)	-7.391*** (0.2940)	-3.150*** (0.6250)	-15.280*** (0.1750)	-4.735*** (0.2950)
9	-19.230*** (0.3420)	-7.404*** (0.3790)	-4.160*** (0.7300)	-15.180*** (0.2070)	-4.797*** (0.3430)
10	-18.370*** (0.6140)	-7.169*** (0.5890)	-4.997*** (0.7590)	-15.220*** (0.2880)	-4.285*** (0.4720)

Table A2. (Continued)

	Refugee	Student	Work	Family	EU
Panel B. Other covariates					
Local unempl. rate	-0.0194 (1.311)	1.107 (1.314)	4.584*** (1.321)	-0.527 (1.290)	0.722 (1.317)
Unempl. rate × migrant	4.151** (1.933)	-0.420 (2.432)	-1.394 (6.036)	4.446*** (1.611)	-2.966 (5.265)
Female	-6.641*** (0.0188)	-6.642*** (0.0188)	-6.642*** (0.0188)	-6.640*** (0.0188)	-6.641*** (0.0188)
Female × migrant	3.596*** (0.0648)	3.168*** (0.0848)	-2.179*** (0.2040)	1.565*** (0.0656)	-2.322*** (0.1520)
Age	3.031*** (0.00506)	3.039*** (0.00508)	3.061*** (0.00510)	3.030*** (0.00502)	3.048*** (0.00513)
Age ²	-0.0320*** (0.0000689)	-0.0321*** (0.0000691)	-0.0324*** (0.0000694)	-0.0320*** (0.0000683)	-0.0322*** (0.0000699)
Constant	53.410*** (0.0725)	53.440*** (0.0728)	53.700*** (0.0730)	53.470*** (0.0720)	53.590*** (0.0736)
Native mean	24.168	24.168	24.168	24.168	24.168
Mean at YSM = 1	23.863	18.597	26.365	25.807	26.219
Mean at YSM = 5	27.219	23.349	28.698	28.623	29.119
Mean at YSM = 10	30.022	28.388	31.082	30.963	31.267
Observations	7,827,846	7,830,264	7,830,118	7,940,002	7,877,227

Notes: This table reports estimates from regression (1) using earnings as the outcome variable. Earnings include both labor income and entrepreneurial income. All specifications also include year and local labor market fixed effects. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

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Supporting information

Additional supporting information can be found online in the supporting information section at the end of the article.

Replication files

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