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Income and Employment for Immigrants and Immigrant-Dense Neighbourhoods in Sweden 1998–2022

Martin Nordin and Andreas Bergh

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Martin Nordin^{ab} and Andreas Bergh^{bc}

^a AgriFood Economics Centre, Lund University. PO Box 730, SE-22007, Lund, Sweden.

^b Department of Economics, Lund University. PO Box 730, SE-22007, Lund, Sweden.

^c Research Institute of Industrial Economics (IFN), Box 55665, 102 15 Stockholm, Sweden.

Abstract

This paper examines income and employment outcomes for immigrants in Sweden's most immigrant-dense neighbourhoods between 1998 and 2022. While relative employment among immigrants has improved, relative incomes in these neighbourhoods have stagnated or declined. The most plausible explanation for the persisting income gap and the shrinking employment gap between immigrant-dense and other neighbourhoods is that immigrants in immigrant-dense neighbourhoods are increasingly channelled into non-standard employment. If we look at all immigrants, regardless of where they live, gaps between immigrants and natives are shrinking, both in terms of income and employment. Reconciling these patterns, we show that individuals in immigrant-dense neighbourhoods who enter employment are more likely to relocate to other areas.

JEL classification: J61, R23

Key words: Immigrant integration, labour market outcomes, non-standard employment, immigrant-dense neighbourhoods

Correspondence to:

Martin Nordin

AgriFood Economics Centre and Department of Economics, Lund University

Box 730 – Scheelevägen 15 D

220 07 Lund, Sweden

Email: martin.nordin@agrifood.lu.se. Phone: +46 (0) 46 222 07 90

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1 Introduction

A large wave of migration has led to increased ethnic and socio-economic segregation in several European countries, raising questions about the factors driving this trend. But increasing spatial income inequality does not necessarily mean that immigrant integration at the individual level is worsening. To examine how the two are related, internal geographic mobility of immigrants must be accounted for, and that is the topic of this paper.

Studies have explored related developments in several countries. For Germany, Jähnen & Helbig (2024) showed that the proportion of foreigners has increased more strongly in the most socially disadvantaged neighbourhoods, especially in East Germany. Similar dynamics are evident elsewhere and are shaped not only by residential patterns but also by internal migration among immigrants. In the Netherlands, Schaake et al. (2014) show that ethnic minorities are less likely to relocate to socioeconomically advantaged areas. For Sweden, Vogiazides (2018) investigated the extent to which migrants leave distressed, immigrant-dense neighbourhoods in Stockholm and Malmö, and found that newly arrived migrants are more likely to move away from distressed areas compared with long-established ones.¹

In line with these findings, we show that the share of foreign-born residents in immigrant-dense neighbourhoods (as defined below in section 2)² in Sweden has increased from around 50 percent in 2000 to 78 percent by 2022. These neighbourhoods are often characterized by low income levels and low employment, highlighting broad socio-economic challenges (Brell et al., 2020; Dustmann et al., 2017). But the geographic inequality masks a substantial individual level mobility. Among individuals aged 20–40 in 1998, only 25 percent still lived in immigrant-dense neighbourhoods 24 years later, and 63 percent of those residing in these areas in 2022 had immigrated to Sweden after 1998. While this dynamic prevents immigrant-dense areas from recovering, it also means that integration of immigrants is improving over time in a way that is not visible in cross-sectional data.

The persistence of ethnic and socio-economic segregation can also trigger several undesirable neighbourhood effects that amplify the challenges of integration (Chetty et al., 2016; Galster, 2012). For instance, Laurence (2016) found that trust between neighbours in immigrant-dense areas in the UK is often impacted by these conditions, further eroding community cohesion and complicating integration efforts. Similarly, Dinesen & Sønderskov (2015) showed that ethnic

¹ See also the OECD-report “Divided Cities” (OECD, 2018).

² We follow Saiz & Wachter (2011) and use the terms immigrant-dense neighbourhoods (or areas).

diversity in close residential surroundings affects trust negatively. The risk of ‘white flight’ may further exacerbate segregation problems. In the worst-case scenario, a tipping point can develop such that (almost) all natives leave (Card et al., 2008; Saiz & Wachter, 2011; Schelling, 1971).

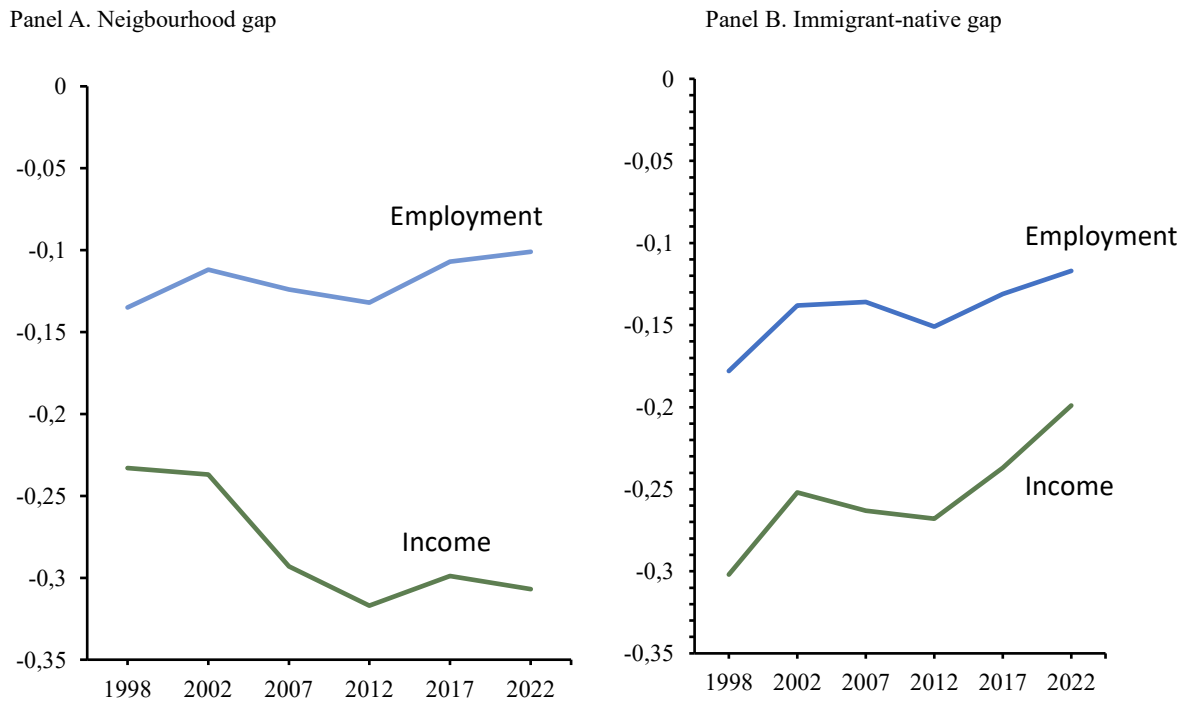
However, not all consequences of ethnic clustering into enclaves are undesirable. In Denmark, Damm (2009) showed that ethnic networks increase the hourly wage rate (across all skill-levels) and suggests that ethnic networks disseminate job information, which increases the job-worker match quality. In Sweden, Andersson et al. (2014) study labour income for the 1991 to 2006 period and showed that male immigrants (females less so) gain if they reside in neighbourhoods with higher shares of co-ethnics and (under most circumstances) other immigrants (though the impact depends on neighbourhood level of employment and trajectory of ethnic share). Also in Sweden, Edin et al., (2003) used a natural experiment to show that living in enclaves improves labour market outcomes for less skilled immigrants, and that members of high-income ethnic groups gain more. As noted by Andersson et al. (2014), results like those described above should not be seen as an argument for ethnic enclaves, but they suggest that the high degree of exclusion from the labour market experienced by many immigrants in Sweden is not directly caused by ethnic residential segregation.³

To illustrate the immigration-related labour market developments in Sweden, Panel A in figure 1 presents the neighbourhood gap measured as the difference in percentage units in income and employment between highly immigrant-dense areas and the rest of Sweden.⁴ Panel B presents the same gaps between immigrants and natives regardless of where they reside. In other words, panel A compares populations in different areas, panel B compares individuals regardless of where in Sweden they reside.

³ For a further survey and interpretation of the research on ethnic enclaves, see Chakraborty & Schüller (2022).

⁴ Income refers to both labour income and business income, and employment is defined as having a positive income.

FIGURE 1. INCOME AND EMPLOYMENT GAPS BETWEEN (A) HIGHLY IMMIGRANT-DENSE NEIGHBOURHOODS AND AREAS THAT ARE NOT IMMIGRANT DENSE, AND (B) IMMIGRANTS AND NATIVES, 1998-2022.



Notes: Neighbourhood gap for employment is the employment share in highly immigrant-dense neighbourhoods minus the employment share in areas that are not immigrant-dense. Neighbourhood gap for income is income in highly immigrant-dense neighbourhoods minus income areas that are not immigrant-dense. Incomes are labour- and business income for individuals with positive incomes and employment is measured as positive labour- and business incomes. The gaps are simultaneously estimated every five years for the working-age population (20–64).

From 1998 to 2022 the neighbourhood gap in income has increased by 8 percentage points, but the income gap between natives and immigrants has decreased by 10 percentage points over the same period. In 2022, neighbourhood income gap was substantially larger than the native-immigrant income gap. In contrast to the neighbourhood income gap, the neighbourhood employment gap is closing over time.

To explain why spatial income inequality has increased, even as immigrant integration in terms of both income and employment has improved, we present evidence that the Swedish labour market has generated more low-paid jobs in areas with high concentration of immigrants. This development has had dual effects: improving employment rates among immigrants while simultaneously lowering their relative incomes compared to natives. Notably, the development is largely confined to immigrant-dense areas; for immigrants more broadly, both employment and income levels have improved.

The pattern documented is consistent with research indicating that immigrants frequently sort into low-skilled and low-wage jobs/occupations (Albert 2021, Bygren & Mursell 2023, Christopher & Leslie 2015, Heath & Cheung 2007, Waldinger 1994). These jobs may also involve various forms of non-standard employment⁵, i.e. jobs that are not characterized by full-time, permanent contracts with social benefits and labour protection (Bosch 2004, ILO 2016), including the so-called gig-economy. While previous research shows that immigrants are overrepresented in non-standard employment (Kogan 2006, 2011; OECD 2015), this study contributes by studying the spatial dimension of immigrant integration. Doing so involves analyzing the flows into and out of immigrant-dense neighbourhoods in order to link changes in local population composition to shifts in labour market structures.

The paper proceeds as follows: Section 2 explains how immigrant-dense neighbourhoods are identified and presents descriptive evidence on labour market developments in these neighbourhoods over the period 1998–2022. Section 3 then investigates the role of non-standard employment in shaping the pattern of rising employment yet stagnant relative incomes. Drawing on newly available monthly income data, this section demonstrates how temporary and part-time employment explain most of the observed income gaps. Section 4 concludes by discussing the broader implications for integration policy and the functioning of Sweden’s labour market.

⁵ Non-standard employment is also known as ‘precarious’ or ‘atypical’ employment.

2. The labour market situation in immigrant-dense areas in Sweden

2.1 Measuring immigrant-density

Immigrant-dense areas in Sweden are identified by calculating immigrant density for all of Sweden using a grid sized 100×100 meters and aggregating it within a 500-meter circular area around each grid cell. This method assigns to each cell a specific immigrant density based partially also on adjacent cells. After sorting the areas based on immigrant shares, we classify the 5 percent of the population residing in the most immigrant-dense areas as living in *highly immigrant-dense neighbourhoods*, and those in the top 5 to 15 percent as residing in *moderately immigrant-dense neighbourhoods*.⁶ The population in moderately immigrant-dense neighbourhoods is only analysed occasionally, and then solely to demonstrate that the results for highly immigrant-dense neighbourhoods hold also for a broader segment of the population beyond the top five percent. For example, the results in Figure 1 are similar for moderately immigrant-dense neighbourhood and for highly immigrant-dense neighbourhoods.

Depending on the research question, the classification can be done annually or for any specific year. In this study, we want to keep the areas constant and study the population and its changes within these areas. Thus, we keep the immigrant-dense areas constant over time and define immigrant-dense neighbourhoods using data from our final study year, 2022.

Figure 2 illustrates the distribution of labour and business income in highly and moderately immigrant-dense neighbourhoods as well as other (non-immigrant-dense) neighbourhoods. In highly immigrant-dense neighbourhoods, the overrepresentation of people with low labour and business incomes is substantial. It is large also for moderately immigrant-dense neighbourhoods. In other neighbourhoods, there is a slight overrepresentation of people with high labour and business incomes.

⁶ The five percent share corresponds to the population share estimated by the police to live in vulnerable areas in Sweden.

FIGURE 2. COMPOSITION OF INDIVIDUALS IN INCOME DECENTILE GROUPS IN DIFFERENT AREAS. 2022.

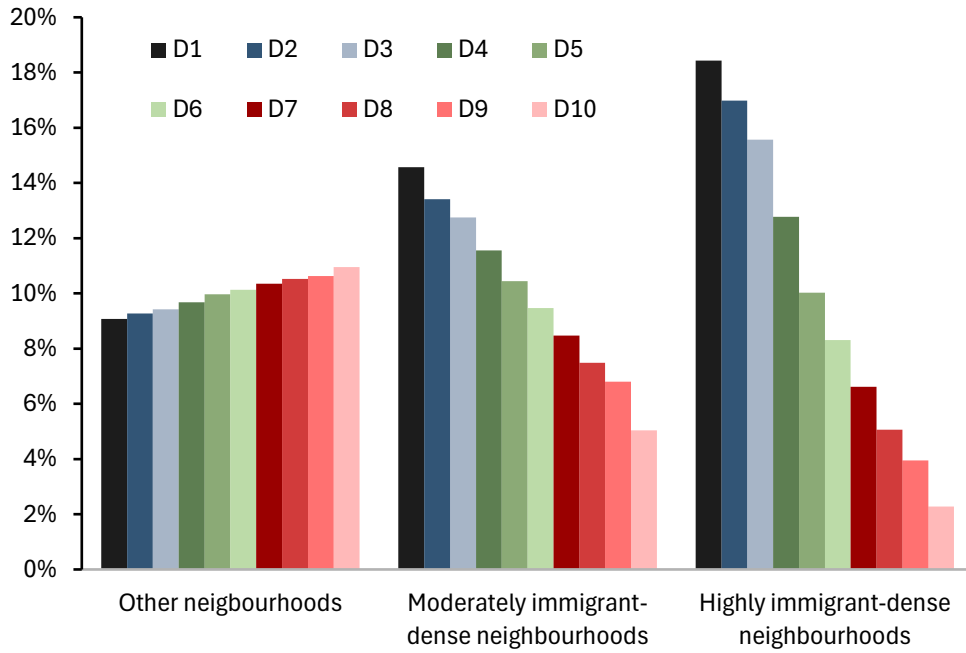


Table 1 contains descriptive statistics for the three neighbourhood types in 1998 and in 2022. In 1998 the foreign-born population in highly immigrant-dense neighbourhoods was $52.1 - 9.3 = 42.8$ percentage points higher than in other neighbourhoods. In 2022 the difference had increased to $77.9 - 18.7 = 59.2$ percentage points.

TABLE 1. DESCRIPTIVE STATISTICS FOR POPULATION (25-64) IN DIFFERENT AREAS

	1998			2022		
	Highly immigrant-dense neighbourhoods	Moderately immigrant-dense neighbourhoods	Other neighbourhoods	Highly immigrant-dense neighbourhoods	Moderately immigrant-dense neighbourhoods	Other neighbourhoods
Foreign born	52.1% (.001)	27.2% (.001)	9.3% (.000)	77.9% (.001)	54.3% (.001)	18.7% (.000)
Avg. annual disposable income (hundred SEK)	1183 (1.63)	1330 (2.12)	1504 (3.69)	2348 (4.68)	2793 (4.17)	3860 (6.52)
Employment share (Inc>0)	65.5% (.001)	77.2% (.001)	86.6% (.000)	73.5% (.001)	80.6% (.001)	89.9% (.001)
Avg. income (if positive)	1563 (3.39)	1778 (2.25)	1970 (.804)	3020 (3.96)	3517 (3.27)	4409 (16.18)
Avg. years of schooling	11.00 (.006)	11.34 (.004)	11.75 (.001)	11.70 (.005)	12.38 (.004)	12.99 (.001)

Note: Population aged 25-64. Areas defined by immigrant density in 2022.

2.2 The labour market development in Sweden's immigrant-dense neighbourhoods

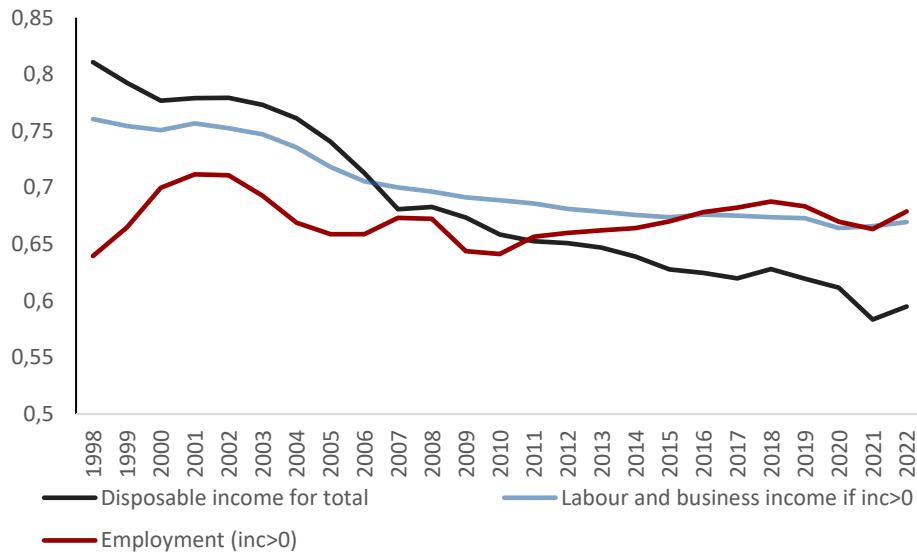
To illustrate the labour market development in the immigrant-dense neighbourhoods identified as above, we focus on the cohorts aged 20–40 in 1998, and follow these individuals until 2022, when they are aged 44–64 (and thus still in working age).⁷ Doing so allows us to divide the population in immigrant-dense neighbourhoods into stayers, out-migrants and in-migrants (both national and international), without conflating these flows with age-related transitions in-and-out of the labour force.

Incomes are studied by comparing cohort incomes in the immigrant-dense neighbourhoods to the entire Swedish cohort for each respective year. The relative perspective enables an analysis that emphasizes the specific developments within immigrant-dense areas rather than other societal trends and business cycles. The results are shown in Figure 2, where the black line illustrates the relative disposable income for individuals in highly immigrant-dense neighbourhoods, and the light blue line illustrates relative labour and business income. We see that these have decreased by 22 and 9 percentage points since the beginning of the period. The steeper decrease in the disposable income gap is largely a result both of benefits being mainly price indexed and thus not keeping up with real income growth, and of income tax cuts (particularly the earned income tax credit introduced 2006-2010, which increased the disposable income of employed as shown by e.g. Fritzell et al. 2014).

In contrast to the income measures, relative employment for immigrants is roughly constant over the period: a decrease from 2000 to 2010 is followed by an increase by approximately 4 percentage points after 2010.

⁷ Restricting the cohort to individuals aged 25–40, thereby excluding those in their primary educational years, does not significantly change the results, even though young adults in immigrant-dense areas tend to pursue education at lower rates than their peers in other areas.

FIGURE 2. INCOME AND EMPLOYMENT IN HIGHLY IMMIGRANT-DENSE NEIGHBOURHOODS
RELATIVE TO NATIONAL AVERAGE 1998-2022.



Notes: Incomes are measured as mean relative disposable income and labour- and business incomes for the highly immigrant-dense population to the total population and mean relative labour- and business incomes for the immigrant-dense population with positive (>0) incomes to the total population with positive (>0) incomes. Employment is defined as positive (>0) labour- and business incomes. The population consists of the cohorts aged 20–40 in 1998.

2.2 Compositional effects and geographic mobility

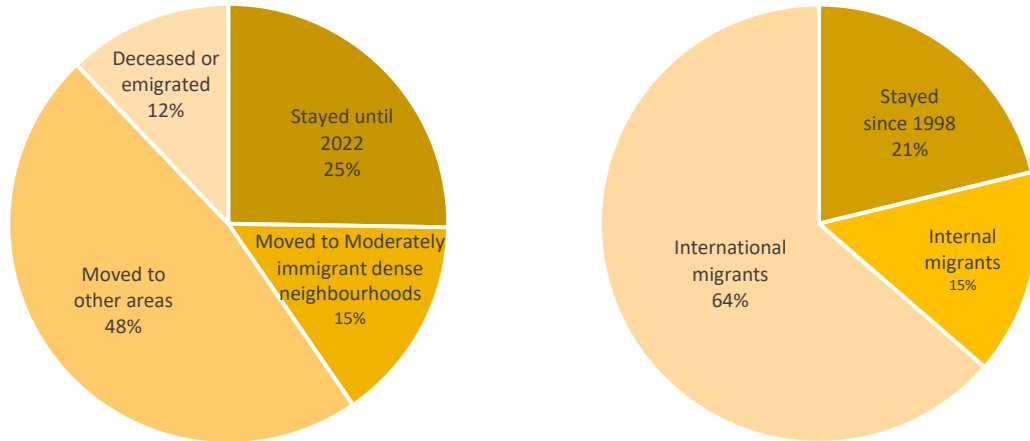
Why are relative incomes in immigrant-dense neighbourhoods decreasing while employment is increasing? To understand the development, we examine the role of individual level geographic mobility in and out of highly immigrant-dense neighbourhoods. As shown in Figure 3, mobility in immigrant-dense neighbourhoods is high. Among those aged 20–40 years in 1998, only 25 percent still lived in immigrant-dense neighbourhoods in 2022.⁸ While 12 percent were deceased or had emigrated, most had moved to other neighbourhoods, mainly to non-immigrant-dense neighbourhoods. And among people who were 20–40 years old and lived in highly immigrant-dense neighbourhoods in 2022, almost two thirds had immigrated after 1998.

⁸ In 1998, stayers were 25 percent and in 2022, they were 21 percent (see figure 3). The smaller share in 2022 is due to the larger population in this age group in 2022, compared to 1998.

FIGURE 3. THE POPULATION IN IMMIGRANT-DENSE NEIGHBOURHOODS IN 1998 AND 2022.

a. The trajectory until 2022 of people who lived in highly immigrant-dense neighbourhoods in 1998 and were 20-40 years old

b. The origin of people who were 20-40 years old in 1998 and lived in highly immigrant-dense neighbourhoods in 2022



Based on the trajectories described above figure 4 illustrates income (Panel A) and employment (Panel B) relative to natives for the following groups⁹:

- i) *stayers* in highly immigrant-dense neighbourhoods,
- ii) *out-migrants* from highly immigrant-dense neighbourhoods, further divided into *out-migrants to moderately immigrant-dense neighbourhoods* and *out-migrants to neighbourhoods that are not immigrant-dense*¹⁰, and
- iii) *migrants* to highly immigrant-dense neighbourhoods, further categorized as *internal migrants* from other parts of Sweden and *international migrants*.

For stayers, relative incomes decrease by 2.5 percentage points, which is about one quarter of the decrease for the entire population in these areas (9.1 percentage points as reported here, and in Figure 2). For out-migrants – i.e. those who migrate at some point during the period – incomes are initially 2.8 percentage points lower for migrants to moderately immigrant-dense areas, and 4.8 percentage points higher for migrants to non-immigrant-dense areas (both compared to stayers). Thus, people who migrate to neighbourhoods that are not immigrant-dense had higher income already before the move, as expected in a sorting process. More surprising is perhaps that movers to moderately immigrant dense neighbourhoods have lower

⁹ The classification is based on whether individuals have ever moved, individuals are categorized into specific mover groups even before they relocate (moving between different immigrant-dense areas is possible.). However, the international migrants consist solely of individuals currently residing in the most immigrant-dense areas; if they leave these areas, they are removed from the group.

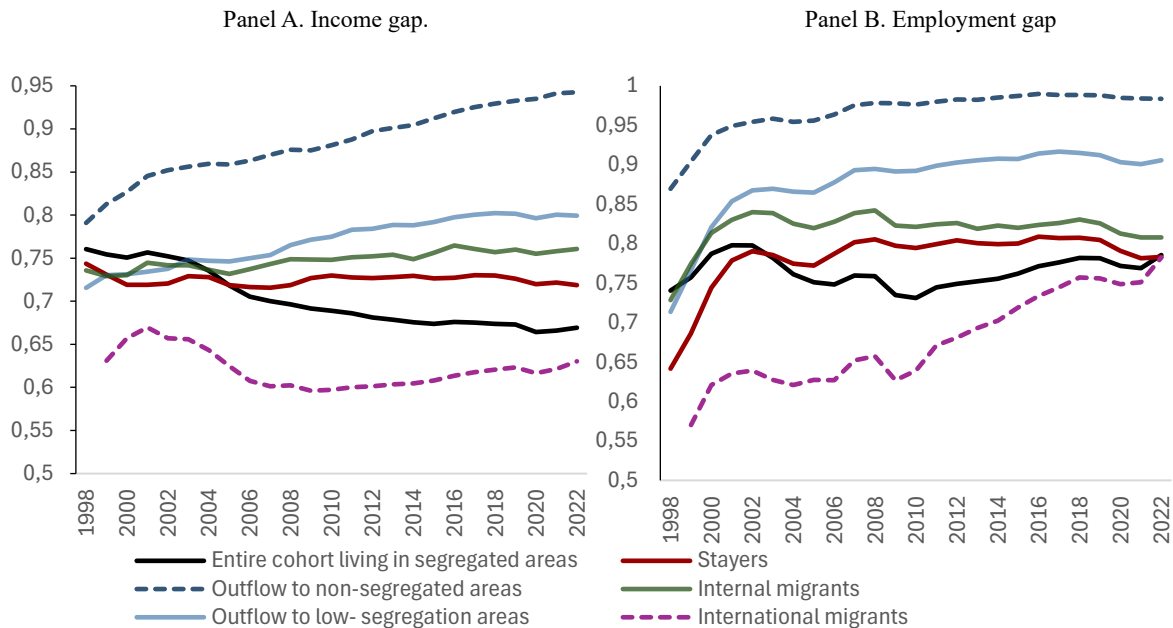
¹⁰ These three groups, along with the 12 percent who either pass away or emigrate, constitute the population residing in the most ethnically immigrant-dense areas in 1998.

income before they move. For both groups of movers, incomes develop favourably compared to stayers, with relative incomes increasing by 8.4 percentage points for migrants to moderately immigrant-dense neighbourhoods and 15.2 percentage points for migrants to neighbourhoods that are not immigrant-dense areas.

For internal migrants to highly immigrant-dense neighbourhoods, incomes are initially the same as for stayers but somewhat higher by the end of the period. For international migrants to highly immigrant-dense neighbourhoods (i.e. people that did not reside in Sweden in 1998), incomes fluctuate around 6 to 13 percentage points below those of stayers (and approximately 35-40 percentage points below the national average). After the financial crisis, a slight improvement of 2-3 percent is observed compared to the national average for this group. The low incomes are primarily explained by the fact that the inflow from abroad consists almost exclusively of immigrants (95 percent), as expected. The remaining 5 percent are Swedish-born individuals who did not live in Sweden in 1998.

There are significant differences between the groups also for employment. Those who move from highly immigrant-dense neighbourhoods are more likely to be employed already before they move, with a continuous improvement over time. Those who move to neighbourhoods that are not immigrant-dense, reach 95 percent of the national mean already in 2001. In contrast, the employment rate of stayers does not improve after 2000 and fluctuates around 22 percent below the national mean.

FIGURE 4. LABOUR AND BUSINESS INCOMES FOR INDIVIDUALS WITH POSITIVE INCOMES, AND EMPLOYMENT (INCOME>0), RELATIVE TO THE NATIONAL MEAN. 1998-2022.



Notes: The population consist of the cohorts aged 20-45 in 1998, who either resides in highly immigrant-dense areas in 1998, or moves to these neighbourhood in 1999-2022.

The lowest employment rate is found among *international migrants*, who start at 35 to 40 percentage points below the national mean. Importantly, the increase in employment highlighted earlier is driven exclusively by this group, for which employment rates have risen by approximately 18 percentage points relative to the national mean since the early 2000s, with a particularly strong development after 2010.¹¹ It is also worth noting that the positive trend in employment rates in immigrant-dense neighbourhoods (the entire cohort indicated by the black line), is partly offset by the fact that individuals with relatively high employment rates are leaving these areas.

In summary, the declining incomes in immigrant-dense areas are largely due to a compositional effect resulting from selective migration flows, with the population in these areas increasingly consisting of low-income immigrants who arrived in Sweden after 1998 (constituting nearly two-thirds of the population in the end of the period). For stayers in these areas, both incomes and employment are stable compared to the national average after 2000. For newly arrived immigrants, the employment rate is trending upwards.

¹¹ Plausible explanations are implemented reforms with the goal of facilitating and speeding up the integration of refugee migrants, see evaluations by Andersson Joona et al. (2015) and Joona & Nekby (2012).

2.3 Cohort analysis for international migrants

To investigate the integration of immigrants to Sweden further, we divide international migrants into three-year cohorts based on the year of arrival in Sweden. Each cohort includes all adults aged 25–64 who arrived in Sweden during a three-year period and resides, at some point, in highly immigrant-dense neighbourhoods. Income and employment are adjusted for age to isolate integration effects from the age-related gradient in labour market outcomes. In other words, comparisons are made against the age-adjusted national average. We also compare these outcomes with those of international migrants residing outside the immigrant-dense areas.

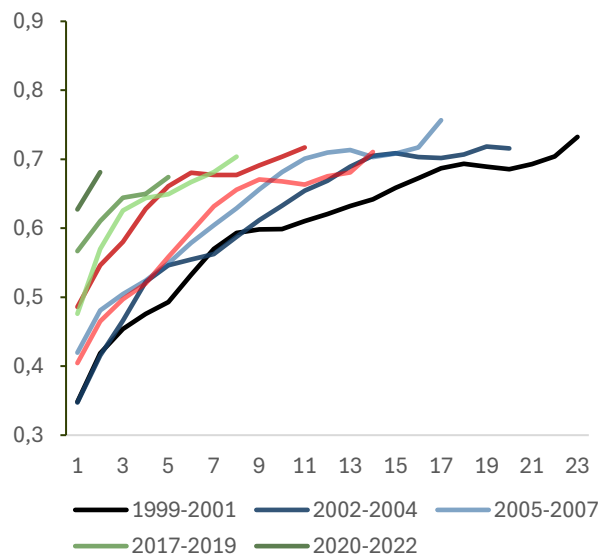
Figure 5 shows that immigrant cohorts arriving more recently also achieve higher employment rates immediately after arrival. During the first ten years after migration, employment rates increase steeply in both highly immigrant-dense neighbourhoods (panel A) and in other neighbourhoods (panel B). The improvement is actually more pronounced in immigrant-dense neighbourhoods. For example, in immigrant-dense neighbourhoods, the employment rate two years after migration is on average 16 percentage points higher for cohorts arriving after the financial crisis (2011–2022) compared to those arriving before or during the financial crisis (1999–2010). Outside immigrant-dense neighbourhoods, this difference is smaller, at 11 percentage points.¹²

Ten years after migration, the improvement in employment integration becomes weaker. Among cohorts outside immigrant-dense neighbourhoods who arrived before the financial crisis, employment eventually reaches approximately 85 percent of the age-adjusted national mean. In immigrant-dense neighbourhoods, however, employment rates rarely exceed 70 percent of the age-adjusted national mean, even 20 years after migration.

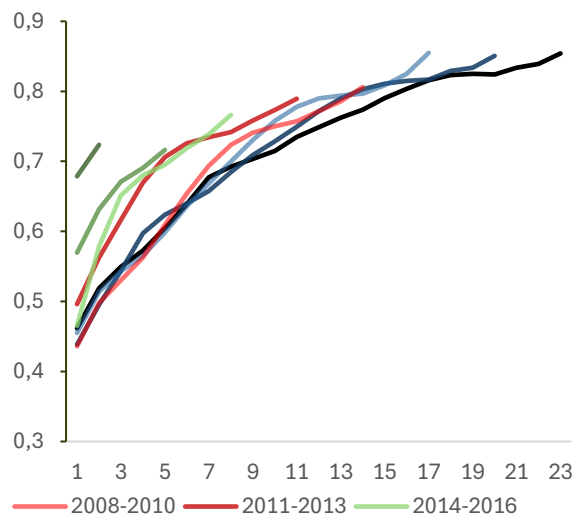
¹² As already noted, the improvement in employment for more recently arrived immigrants has been linked to specific integration reforms.

FIGURE 5. CHANGE IN EMPLOYMENT WITH YEARS SINCE MIGRATION FOR IMMIGRANTS IN HIGHLY IMMIGRANT-DENSE AND NON-IMMIGRANT-DENSE AREAS

Panel A. Age-adjusted employment gap between immigrants and national mean, in immigrant-dense areas



Panel B. Age-adjusted employment gap between immigrants and national mean, in non-immigrant-dense areas



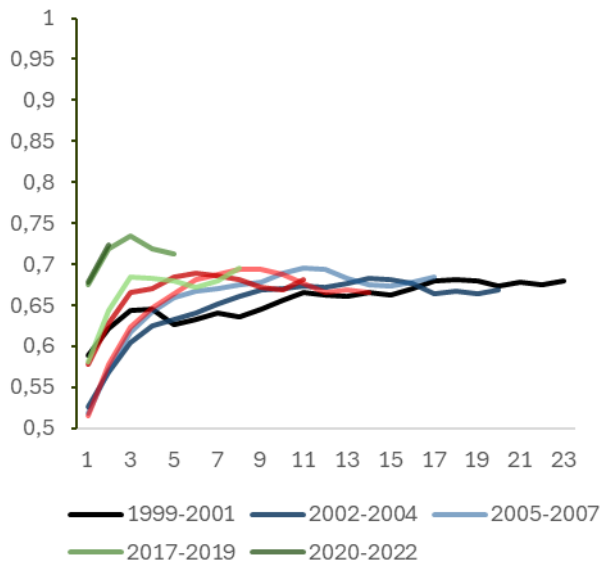
Notes: The trajectories begin from Year 1, which represents the first full year of residence in Sweden (with Year 0 marking the year of arrival). The y-axis shows the difference to the age-adjusted national mean.

Figure 6 illustrates immigrant/native income gaps using the same age-adjusted method. As with employment, more recent immigrant cohorts do better also in terms of income. Yet, the income gap trends develop differently than employment trends. First, the income difference between international migrants within and outside immigrant-dense areas is significantly larger than the employment difference: after ten years since migration the income difference is around 21 percent between immigrants in immigrant-dense and non-immigrant-dense areas whereas employment differ with around 12 percent.

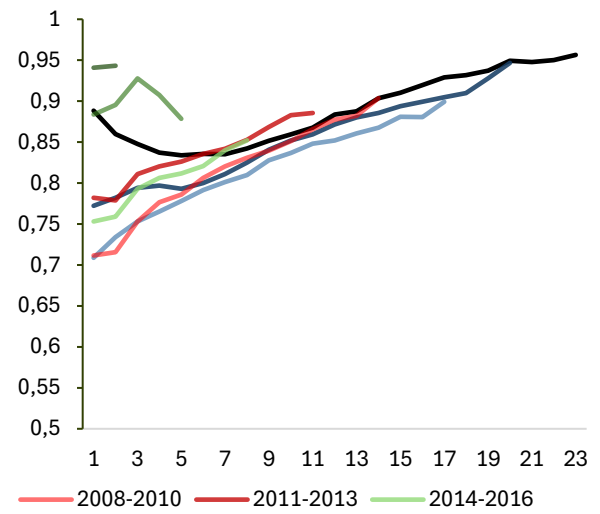
Second, in immigrant-dense neighbourhoods, the improving trend in integration is less pronounced and strikingly appears only during the first five years after migration, stabilizing at a level of 35 percent below the national average. Outside immigrant-dense areas, incomes continue to improve, and 15–20 years after migration, international migrants achieve income levels that are only 5–10 percent below the national average.

FIGURE 6. CHANGE IN INCOME WITH YEARS SINCE MIGRATION FOR IMMIGRANTS IN HIGHLY IMMIGRANT-DENSE AND NON-IMMIGRANT-DENSE AREAS

Panel A. Age-adjusted income gap between immigrants and national mean in immigrant-dense neighbourhoods



Panel B. Age-adjusted income gap between immigrants and national mean in non-immigrant-dense areas



Notes: The trajectories begin from Year 1, which represents the first full year of residence in Sweden (with Year 0 marking the year of arrival). The y-axis shows the difference to the age-adjusted national mean.

To sum up: with regards to employment, the integration of immigrants is generally improving, with more recently arrived cohorts doing better, and employment gaps to natives shrinking over time. For income gaps, the picture is more mixed: An income gap at 30-35 percent persists in immigrant-dense neighbourhoods both across cohorts and over time. What factors can explain these patterns?

The literature often assumes that initial changes in labour market outcomes reflect shifts in the selection of migrants, whereas subsequent developments in these outcomes indicate the degree of integration and the accumulation of host-country-specific skills among new migrants (Chiswick, 1978; Borjas, 1985; Albert et al., 2021). Notably, immigrants' educational attainment has not advanced over time; rather, it has deteriorated (see Figure A in the appendix). Hence, more favourably selected immigrants cannot explain the observed rise in relative employment among recent cohorts.¹³ Also, improved selection should lead to improvements in both employment and income, which is not what we observe.

¹³ Theoretically, favourable selection on unobservable characteristics is a possible explanation. Those unobservables must however be uncorrelated (or even negatively correlated) with education while also explaining why employment gaps are shrinking while income gaps are shrinking only outside immigrant-dense neighbourhoods.

Policy initiatives such as The Establishment Reform and Intensive Coaching for New Immigrants are likely partial explanations of the observed employment improvements, as both reforms have been shown to enhance integration (Andersson et al., 2016; Andersson & Nekby, 2012). Nonetheless, these reforms are unlikely to explain the simultaneous occurrence of employment growth and stagnating relative incomes in immigrant-dense neighbourhoods.

Given the high geographic internal mobility described in Figure 3, selective outflows of immigrants from immigrant-dense areas emerges as another plausible explanation. To investigate this possibility, Appendix A2 presents figures for immigrant-dense areas based on a constant sample of individuals who remain in immigrant-dense neighbourhoods throughout the period. The trends are nearly identical to those shown in Figures 4 and 5 for immigrant-dense areas, suggesting that selective out-migration is also not the explanation we are looking for.

In the next section, we show that an increasing prevalence of work arrangements that differ from the traditional full-time, permanent jobs with regular hours and benefits – so-called non-standard employment – can explain both the persisting income gap and the shrinking employment gap in immigrant-dense neighbourhoods.

3. Explaining low incomes in highly immigrant-dense neighbourhoods using NSE

Traditionally, Sweden has followed the Nordic model, characterized by a strong focus on socioeconomic equality, a comprehensive and universal welfare state, and policies aimed at ensuring security and stability for workers. In the 1990s and later, a number of reforms have increased labour market flexibility, in particular for temporary contracts (Arnholtz, 2023; Davidsson, 2018). In 1997, significant legal changes affected conditions for temporary employees. A new form of fixed-term employment was introduced. This form was not subject to restrictions limiting such contracts to temporary workload peaks or specific job types and it could last up to 12 months within a three-year period. The regulations were revised again in 2007, allowing contracts to last up to 24 months within a five-year period before either transitioning to permanent employment or concluding. This and other changes in the Swedish labour market model implied an increase in temporary contracts by 50 percent (SCB, 2017).¹⁴

Documenting the growth of non-standard employment and its impact on the labour market is difficult due to the lack of detailed information on non-standard employment in individual

¹⁴ Note that it is debated how large the changes to the Swedish labour market model have been – see e.g. (Bender, 2025)

register data. Previously, income data were only available on an annual basis, making it difficult to separate low incomes due to low wages from low incomes due to few hours worked.¹⁵ As a result, non-standard employment has primarily been reported at aggregate levels, with limited insights at the individual level.

As a (partial) remedy, we utilize new (monthly) income data for the three largest sources of income, offering the granularity needed to capture the prevalence of part-time and temporary employment. Since monthly income data are only available for 2019–2022, our analysis of non-standard employment is limited to this period. Our definition of non-standard employment (see Appendix for a detailed explanation of the measures) includes temporary employment (23 percent of all individuals with an income) and part-time employment (22 percent). It also includes so-called gig jobs within the food delivery sector, identified by combining job- and firm codes, an approach not used previously. Such jobs were nearly non-existent prior to 2019 and were marginal also in 2022.

As indicated by the descriptive statistics in table 2, non-standard employment actually decreased somewhat between 2019 and 2022, by 1.7 and 1.9 percentage points for part-time and temporary employment, respectively. However, the most relevant aspect for this study is the difference between immigrant-dense and non-immigrant-dense neighbourhoods. In the most immigrant-dense areas, the share of part-time and temporary employees is 13.4 and 16.6 percentage points higher, compared to non-immigrant-dense neighbourhoods.

¹⁵ Previously, Gauffin, Heggebø, and Elstad (2021) utilized levels and fluctuations in annual income from work to identify non-standard employment for Sweden. Their findings indicate a decrease in non-standard employment, particularly among immigrants, during the period 2008–2015, which contrasts with results derived from aggregate statistics. This discrepancy raises scepticism about whether non-standard employment can be accurately identified using annual income data.

TABLE 2. DESCRIPTIVE STATISTICS OF NON-STANDARD EMPLOYMENT.

	2019	2020	2021	2022	Mean: 2019-2022
<i>Part-time:</i>					
Non-immigrant-dense areas	21,4%	21,1%	20,7%	19,8%	20,8%
Moderately immigrant-dense areas	29,6%	29,3%	28,7%	27,8%	28,8%
Highly immigrant-dense areas	35,3%	34,8%	33,7%	32,7%	34,1%
Total	22,8%	22,4%	22,0%	21,1%	22,1%
<i>Temporary:</i>					
Non-immigrant-dense areas	22,8%	21,6%	22,2%	21,8%	22,1%
Moderately immigrant-dense areas	32,0%	31,8%	31,5%	31,1%	31,6%
Highly immigrant-dense areas	39,2%	39,2%	38,3%	38,0%	38,7%
Total	24,3%	23,2%	23,7%	22,4%	23,4%
<i>Gig jobs:</i>					
Non-immigrant-dense areas	385	574	744	1216	730
Moderately immigrant-dense areas	163	262	353	781	390
Highly immigrant-dense areas	83	167	304	790	336
Total	631	1003	1401	2787	1456

Note: *Gig jobs are actual number of jobs, not percent.*

Table 3 examines how much of the neighbourhood income gap that is explained by NSE. The first column of Table 3 corresponds to the income gaps in Figure 1 for 2022 (here showing gaps for both for highly and moderately immigrant-dense neighbourhoods), showing the relationship between income and immigrant-density while also controlling for immigrant background.¹⁶ The coefficients show that incomes are 18–30 percent lower in immigrant-dense neighbourhoods compared to areas that are not immigrant-dense areas. In column 2, controlling for non-standard employment explains 60 percent of the income gap between immigrant-dense and non-immigrant-dense areas.

The income gap may also be attributed to differences in occupational composition between immigrant-dense and non-immigrant-dense areas, with the population in immigrant-dense areas being more likely to work in low-income occupations. Our analysis shows that occupational composition (using approximately 800 occupational dummies) accounts for 55-60 percent of the gap, comparable to the explanatory power of NSE. Together non-standard employment and the occupational composition in immigrant-dense areas explain almost the entire income gap, 90 and 94 percent of the income gap in the moderately and the highly immigrant-dense

¹⁶ It should be noted that the results are largely consistent when estimating separate models for the neighbourhood gap and the immigrant gap. That said, the baseline gaps tend to be somewhat larger in the separate specifications.

neighbourhoods, respectively. Hence, while non-standard employment and occupational composition undoubtedly overlap, each factor appears to have its own significance on income.

TABLE 3. EXPLAINING THE RELATIONSHIP BETWEEN INCOME AND SEGREGATION WITH NON-STANDARD EMPLOYMENT AND OCCUPATION. 2022.

	(1)	(2)	(3)	(4)	(5)
	Base	Incl. non-stand. Employment	Incl. occupation	Incl. non-stand. empl. + occupation	Education, age and gender
Moderately immigrant-dense	-0.184*** (0.001)	-0.073*** (0.001)	-0.083*** (0.001)	-0.018*** (0.001)	-0.104*** (0.001)
% explained		60%	55%	90%	43%
Highly immigrant-dense	-0.304*** (0.002)	-0.120*** (0.001)	-0.116*** (0.002)	-0.019*** (0.001)	-0.179*** (0.002)
% explained		61%	62%	94%	41%
Immigrant	-0.197*** (0.001)	-0.031*** (0.001)	-0.049*** (0.001)	0.031*** (0.001)	-0.184*** (0.001)
% explained		84%	75%	116%	7%
Occupation			yes	yes	
Observations			4,646,967		4,575,439
R-squared	0.024	0.725	0.214	0.794	0.146

Notes: Dependent variable: Labour & Business Income.

Table 3 also reports the income gap between immigrants and natives and how it changes when adjusting for non-standard employment and occupational composition. Non-standard employment reduces the gap by 84 percent, and it disappears entirely when occupational composition is also controlled for.

In Column (5), we also estimate a standard Mincer equation commonly used to analyse immigrant gaps, including years of schooling, age, and gender. This model only explains 7 percent of the immigrant/native income gap and around 40 percent of the gap between immigrant-dense and non-immigrant-dense areas. Thus, labour market structure is a considerably better explanation of these gaps than individual characteristics.

Given the observed widening income gap over time between immigrant-dense and non-immigrant-dense areas, it is important to examine how the role of non-standard employment has evolved over this period. Our measures of non-standard employment allow us to replicate the analysis in Table 2 only as far back as 2019, where the results remain largely unchanged

(not reported). This is expected, as the overall share of non-standard employment has not shifted significantly between 2019 and 2022. Other data sources (SCB, 2020) show that the proportion of temporary employment¹⁷ increased among foreign-born individuals while slightly declining among native-born individuals in 2005-2019¹⁸. Specifically, temporary employment has risen by approximately 3 percentage points for foreign-born men and about 5 percentage points for foreign-born women. Thus, these positions are increasingly held by foreign-born workers which disproportionately impacts immigrant-dense neighbourhoods predominantly inhabited by immigrants.

FIGURE 7. EMPLOYMENT IN JOBS IN THE LOWEST WAGE-QUINTILE

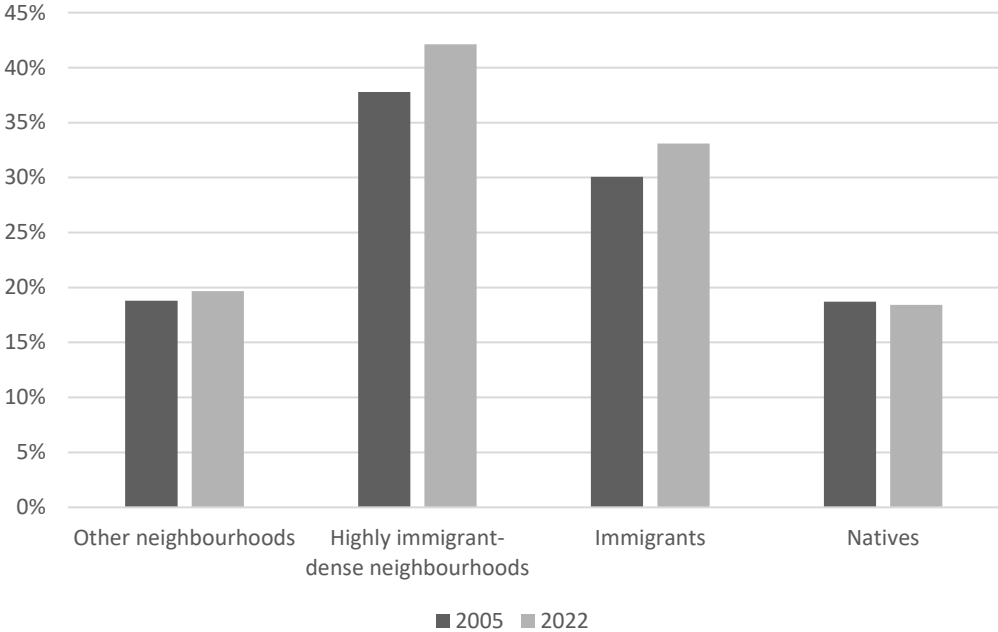


Figure 7 illustrates the changing labour market structure by showing employment in low-paying jobs defined as jobs in the lowest wage quintile. In 2005, these jobs were more prevalent in highly immigrant-dense neighbourhoods, but they have also increased the most there.

To sum up, the most plausible explanation for the persisting income gap and the shrinking employment gap between immigrant-dense and other neighbourhoods is that immigrants in those neighbourhoods are increasingly channelled into NSE. This, in turn, positively affects employment levels while negatively impacting income levels.

¹⁷ This also includes hourly employment, which we classify as part-time positions if they are of a lasting nature.
¹⁸ Previous research, also show that foreign-born individuals are overrepresented in non-standard employment (Giertz and Jönson, 2018). A report from Statistics Sweden (SCB) also shows that 79 percent of foreign-born individuals were employed full-time, compared with 88 percent among the native-born population (GP, 2010).

4. Concluding discussion

Our findings suggest that increased employment rates in immigrant-dense neighbourhoods have not translated into corresponding income gains, largely because new employment has occurred in the lower segments of the labour market, in particular non-standard employment. This finding suggests that the low-income levels in immigrant-dense areas are primarily linked to labour market conditions rather than individual characteristics. However, since the structure of the labour market is endogenous to individual characteristics, these results should not be given a causal interpretation. Nevertheless, from a policy perspective, the findings remain highly significant.

While immigrants in immigrant-dense areas are entering the labour market, they face increasing difficulty in securing regular full-time positions. However, for immigrants outside immigrant-dense areas, both employment and income integration appear to function well. Given that an increasing share of the population in immigrant-dense areas consists of recently arrived immigrants, the labour market integration of this group is critical to understanding the socioeconomic dynamics of these areas. The explanation above is hence further supported by the persistently weak income integration among immigrants in immigrant-dense areas, in contrast to the fact that the overall integration process in Sweden appears to have improved over time.

To improve conditions in immigrant-dense areas, a crucial aspect is how well the labour market allows non-standard employment to be a stepping stone toward better paying and perhaps more stable jobs. To evaluate labour markets and policy interventions individual incomes must be followed longitudinally, as cross-sectional measures are misleading when internal migration is high. Future studies should also examine more closely the transition probabilities from different types of non-standard employment to full-time and permanent positions, as well as to permanent unemployment. Finally, closer attention should be devoted to the level of benefits received by individuals in non-standard employment and to how these individuals transition to work and between different compensation schemes.

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Appendix.

Construction of non-standard employment

Temporary employment is measured as the number of months in a year during which an individual earns an income. To be considered employed in each month, the individual must have a monthly income at least equivalent to working one day per week at the lowest collectively agreed monthly wage for individuals over 24 years old, which corresponds to SEK 4,260 (SEK 4,144) in 2022 (in 2019) or around 365 €. For the calculation of temporary employment, the three largest income sources during the year are considered.

Part-time employment is measured for employees¹⁹ as earning less than 80²⁰ percent of the expected reference²¹ income for a specific occupation. The percentage deviation from the expected reference income is calculated using two regressions – one for each gender – that account for age and education level²², ensuring individuals are not systematically misclassified as part-time workers due to these characteristics. For part-time employment, only the largest income source is considered, but if additional income sources exceed SEK 10,000 (around 870 €) per month, the individual is not classified as a part-time worker.

Our classification of temporary and part-time employment includes not only individuals with formal temporary or part-time contracts but also a broader range of employment conditions. These include situations where individuals do not work every month of the year or work on an hourly basis. For instance, individuals are categorized as temporarily employed if they transition between two permanent jobs with a period of unemployment in between, or if they

¹⁹ Self-employed individuals and owners of limited firms with no wage income are not classified as part-time workers even if they have an income below the 80 percent threshold.

²⁰ For certain occupations with very high incomes and/or significant income variability – primarily executive positions and roles in the financial sector – a much lower threshold must be applied to avoid misclassifying individuals as part-time workers merely due to relatively low earnings. For these occupations, we classify individuals as part-time workers only if their monthly income is less than 50 percent of the expected reference income for the occupation. Although there remains a risk of misclassifying some individuals, this does not affect the results of this study, as these occupational groups are rarely found in immigrant-dense areas.

²¹ An individual's monthly income is defined as the median monthly income across the months in which they have positive earnings. The median is preferred over the average to minimize the influence of specific events that may temporarily affect monthly income. The reference income for the occupations is calculated based on individuals' median monthly income for months where earnings exceed the minimum collectively agreed wage of SEK 21 707 (SEK 20 719) in 2022 (2019) for individuals over 24 and above. This minimizes the impact of part-time work on the calculation of the reference income for the occupations.

²² We also adjust for the possibility that low monthly income may be due to sick- or parental leave.

take unpaid leave for one or more months²³. Similarly, our part-time employment measure includes hourly contracts, even though such arrangements are not formally recognized as a distinct employment category under the Swedish Employment Protection Act (LAS). Each hourly contract is instead regulated as a separate temporary-term agreement. Nevertheless, in aggregated statistics, it is common to report individuals on hourly contracts as part-time employees.

To identify non-standard employment jobs, we combine job- and firm codes, an approach not used previously. Since monthly income data are only available for 2019–2022, our analysis of precarious employment is limited to this period. Similarly, gig jobs are analyzed for the same period, as they were nearly nonexistent prior to 2019.

²³ We argue that this broader categorization is not problematic for the purposes of this study. If individuals in immigrant-dense areas are systematically more likely to take unpaid leave or transition between permanent positions, these factors are also critical contributors to the lower income levels observed in such areas.

FIGURE A1. EDUCATION FOR INDIVIDUALS WITH POSITIVE INCOMES IN HIGHLY IMMIGRANT-DENSE.
1998-2022.

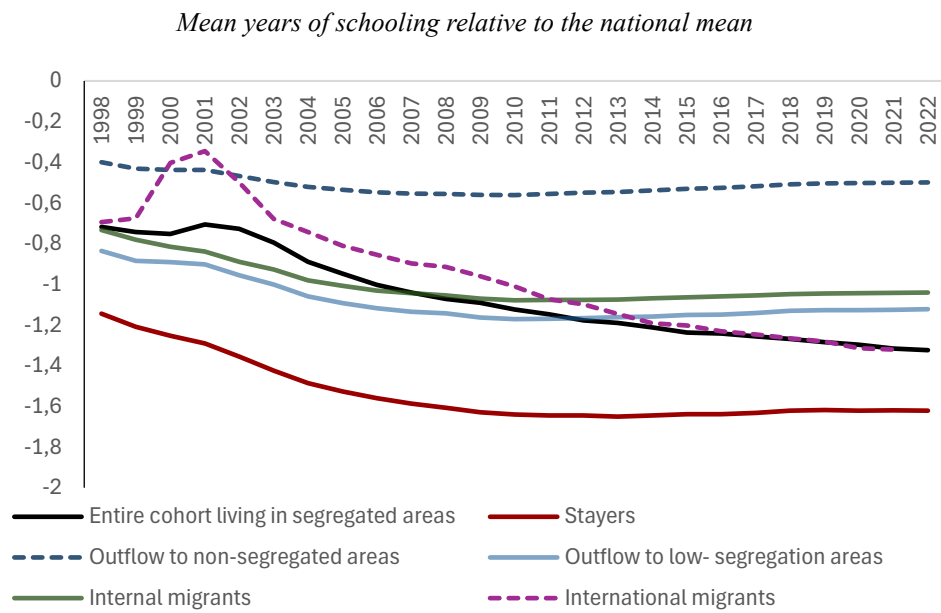
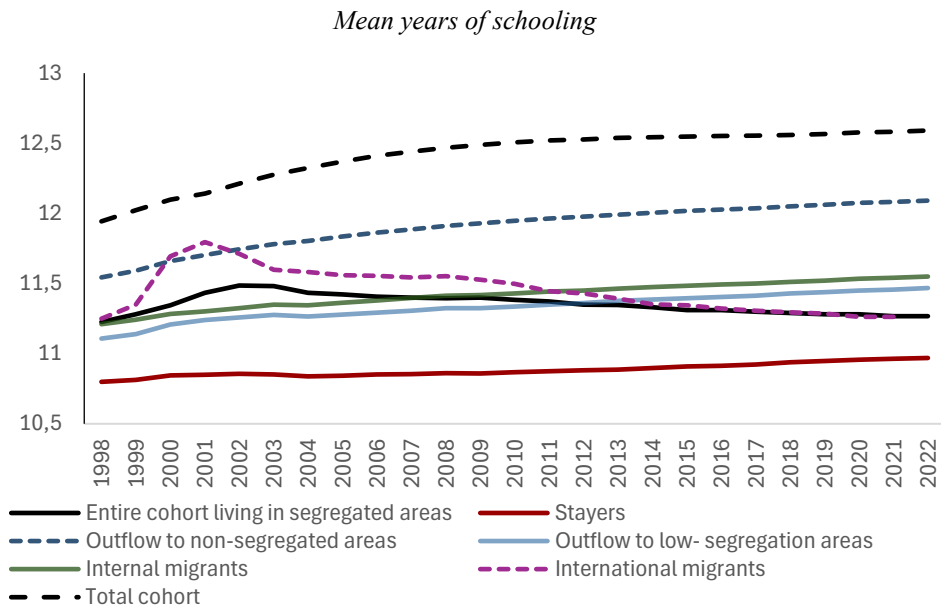
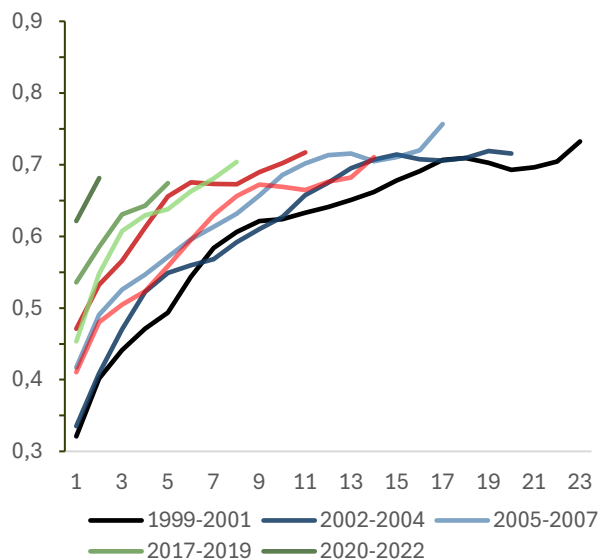
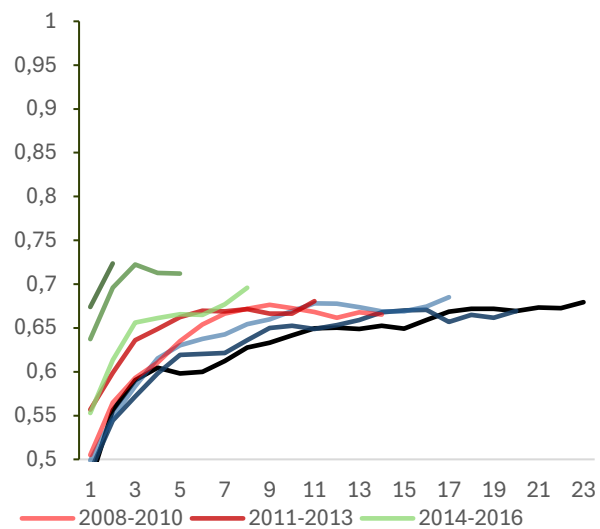


FIGURE A2. CHANGE IN INCOME AND EMPLOYMENT (INCOME>0) WITH YEARS SINCE MIGRATION FOR A CONSTANT COHORT OF IMMIGRANTS IN IMMIGRANT-DENSE AREAS.

Panel A. Age-adjusted employment gap between immigrants and national mean in immigrant-dense areas



Panel B. Age-adjusted income gap between immigrants and national mean in immigrant-dense areas



Notes: The trajectories begin from Year 1, which represents the first full year of residence in Sweden (with Year 0 marking the year of arrival). The y-axis shows the difference to the age-adjusted national mean.