IFN Working Paper No. 1497, 2024

Immigrant Self-employment in Turbulent Times: A Decade with Refugee Crisis and the COVID-19 Pandemic

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Immigrant Self-employment in Turbulent Times: A Decade with Refugee Crisis and the COVID-19 Pandemic*

June 25, 2024

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Abstract

We examine immigrant self-employment in Sweden during 2011–2021 – a turbulent decade with a large influx of refugees into the country and the outbreak of the global COVID-19 pandemic. Four outcome variables are investigated: the probability of self-employment, the probability of entry into and exit from this state and earnings of the self-employed. This is done for different cohorts of immigrants from Africa and Asia and for different types of businesses, unincorporated and incorporated firms. We find that immigrants have lower business earnings and higher exit rates from self-employment than natives, which is in line with previous research. It also turns out that the period in which the immigrants arrived to Sweden and the type of business they are engaged in have important implications for outcomes. In most cases, outcomes are more favorable for the earliest of the three cohorts we study, those who came to Sweden up to the turn of the millennium, and less so for the latest arrivals during the turbulent decade. Moreover, immigrants in incorporated self-employment who arrived during 2011–2021 fared less badly, relative to earlier cohorts, in terms of business earnings than their counterparts in unincorporated businesses, while results concerning exits from self-employment are mixed in this respect.

Keywords: Self-employment, Immigrants, COVID-19, Refugee crisis

JEL: J15, J24, J71

* Gabriel Nilsen provided excellent research assistance. The authors are grateful to *Jan Wallanders och Tom Hedelius Stiftelse* for financial support.

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1. Introduction

Much attention has been paid to immigrant self-employment in OECD countries during recent decades. Research has focused on differences in self-employment rates across immigrant groups as well as on the explanations behind such differentials. Ethnic differences in self-employment rates have been documented in the US, Europe and in other countries.[1] Factors such as discrimination in the wage-employment sector, traditions for self-employment in the home country, the existence of ethnic enclaves, barriers regarding access to financial capital and family traditions have all been put forward as explanations for differences in self-employment rates between immigrants and natives in various countries.[2]

It is well known that immigrants have problems entering the labor market as wage-employed in several OECD countries. Self-employment has been viewed by e.g. OECD (2023) as a route into the labor market and a way to escape unemployment and to avoid potential discrimination in hiring. Immigrant self-employment may play an important role also for job creation, since immigrants who successfully run their businesses may create employment not only for themselves but also for other immigrants.[3]

In this paper, we turn our attention to self-employment among immigrants in Sweden and its development during last decade, from 2011 to 2021. This decade is of particular interest because it has been turbulent in ways that may have affected immigrants' prospects of succeeding as self-employed. The refugee crisis during 2015 and 2016 affected several European countries and the COVID-19 pandemic struck the entire world in 2020.

Sweden should be a suitable study object in the context of immigrant self-employment in this decade. The country experienced one the highest numbers of asylum applications per capita in Europe during those years, with refugees coming primarily from Middle Eastern countries such as Syria, Iraq and Afghanistan. The massive influx of refugees undoubtedly strained Sweden's public resources and led to challenges in providing integration support and housing for the

[1] Regarding studies for the US, see e.g. Borjas (1986), Yuengert (1995), Fairle and Meyer (1996), Fairlie (1999), Hout and Rosen (2000), Fairlie and Robb (2007) and Robb and Fairlie (2009). Clark and Drinkwater (2000) and Clark et al. (2017) examine self-employment differentials for the UK, Constant and Zimmermann (2006) for Germany, Hammarstedt (2001, 2004, 2006) for Sweden and Le (2000) for Australia.

[2] See e.g. Borjas (1986), Yuengert (1995), Fairle and Meyer (1996), Clark and Drinkwater (2000, 2002), Hammarstedt and Shukur (2009), Andersson and Hammarstedt (2010, 2011, 2015) and Aldén and Hammarstedt (2016).

[3] See e.g. Hammarstedt and Miao (2020).

newly arrived immigrants. We will examine how self-employment among immigrants evolved before, during and after the refugee crisis.

Moreover, it is of interest to note that while governments around the world implemented various measures such as lockdowns, social distancing and travel restrictions to minimize the spread of the corona virus in 2020 and 2021, Sweden chose a fairly non-interventionist approach. Restrictions were used to a lesser extent than in most other countries, but nevertheless had differential impacts on sectors of the economy. Retail, hotels and restaurants faced extraordinary challenges due to decreased consumer spending and despite economic support from the government firms struggled to survive.[4] This made immigrants a particularly vulnerable group since many self-employed immigrants in Sweden work in the retail and other service sectors.[5]

While much research indicates that self-employed individuals and immigrants were hit relatively hard by the pandemic, there is scant evidence regarding the impact on immigrant self-employment.[6] However, Fairlie (2023) finds that the self-employed individuals from ethnic minorities in the US, such as African-Americans and Asians, experienced disproportionate business earnings losses during the pandemic. Nor is there much research available on immigrant self-employment in the wake of the refugee crisis. The large influx of mostly low-skilled immigrants constituted a labor supply shock, with potential repercussions on immigrant self-employment as well as wage-employment.

We contribute to the literature by investigating how self-employment rates and business earnings have evolved during a turbulent decade. High-quality longitudinal register data from Statistics Sweden enable us to follow different groups of immigrants over the period 2011 to 2021. We focus on four outcome variables related to self-employment: propensity of self-employment, entry into and exit from self-employment and business earnings. Furthermore, these outcomes are examined for immigrants by region of birth as well as by time of immigration – prior to 2001, 2001-2010 and after 2010. Since the most vulnerable refugees in Sweden mainly come from Africa and Asia, we restrict our analysis of self-employment to these groups and compare their outcomes to those for natives. We are also able to distinguish between incorporated and non-incorporated businesses.

[4] See e.g. Andersen et al. (2022).
[5] See e.g. Aldén and Hammarstedt (2017).
[6] See e.g. Mindes and Lewin (2021).

The rich longitudinal data combined with the fact that we study several outcome variables provide new useful insights regarding immigrant self-employment during the recent decade.

We find that immigrants originating from countries in Asia and Africa have lower propensity than natives to enter into self-employment as well as higher exit probabilities. They also have lower self-employment earnings than natives. Further, we find differences between cohorts of immigrants and immigrants who are self-employed in incorporated and unincorporated firms as regards self-employment outcomes.

The remainder of the paper is organized as follows: Section 2 describes the immigrant population in Sweden. The data are presented in Section 3, while Section 4 contains the econometric analysis. Section 5 concludes the paper.

2. The immigrant population in Sweden

Sweden is a country with a relatively long history of immigration. However, the size of the immigration flows as well as the characteristics of the immigration have changed over the years. The immigrant population in Sweden has increased markedly since the turn of the millennium. From the end of the Second World War and up to the late 1960s, immigration to Sweden consisted primarily of labor migrants from countries in Europe, but from the mid-1970s and ahead, the majority of the immigration has been made up of refugees from non-European countries. In the 1970s, refugee migration came mainly from Latin America (e.g., Chile), while during the 1980s, many refugees came from Africa (e.g. Ethiopia, Eritrea and Somalia) and from the Middle East (e.g., Iran, Iraq and Lebanon).

Migration from Europe increased temporarily again during the early 1990s, involving refugees fleeing the civil war in former Yugoslavia. During the late 1990s and early 2000s, most of the immigrants to Sweden were refugees from countries in and around the Middle East (e.g. Iraq) and Africa (e.g., Eritrea and Somalia).

In the year 2000, about one million individuals, or somewhat more than 10 per cent of Sweden's total population, were born abroad. The size of the immigrant population has increased considerably since then. In 2024, more than two million individuals, or more than 20 per cent of the total population, were foreign born.

Table 1 shows how the immigrant population in Sweden has changed with respect to region of birth since the turn of the millennium. Since then, immigration from certain countries in the

Middle East (e.g., Syria and Iraq) and Africa (e.g., Somalia) has accounted for most of the migration to Sweden. In 2000, about 22 per cent and roughly 5 per cent of the foreign-born population in Sweden came from Asian and African countries, respectively. In 2022, the corresponding shares increased to almost 39 and nearly 12 per cent.

The inflow of immigrants to Sweden reached historically high levels during the refugee crisis in 2015 and 2016, when refugee immigration mainly from countries in the Middle East (e.g., Syria and Iraq) increased as a result of the civil wars in the region. During the peak of the refugee crisis in 2016, more than 70,000 individuals were granted residence permit as refugees in Sweden and an additional 40,000 were granted such permit as 'tied movers'. Today Syria is the dominating immigrant country in Sweden and nearly 10 per cent of the foreign-born population in Sweden were born there. Furthermore, almost 7 per cent of the foreign-born population were born in Iraq, 4 per cent in Iran and between 3 and 4 per cent in Somalia. Table 2 reveals how the immigrant population from countries in Africa and Asia has changed with respect to country of origin since the turn of the millennium.

3. Data

We use the database LISA (Longitudinal Integrated Database for Health Insurance and Labour Market Studies), compiled by Statistics Sweden, from 2011 to 2021. This database contains longitudinal information on all adults permanently residing in Sweden, on, i.a., labor market status, earnings, occupation, industry, education, age, gender, marital status, region, region of birth, year of immigration and other demographic characteristics, measured in November each year. We restrict the sample to individuals aged 20–55 since we want to exclude those who exit self-employment due to early retirement.

The variables of primary interest concern region of birth and outcomes for self-employed individuals. Specific country of birth is not available, except for natives. Our focus will be on individuals born in Africa and Asia and their self-employment outcomes in relation to those of Swedish-born persons.

A self-employed individual in LISA is defined as such if self-employment is the largest source of annual income and exceeds 1,000 SEK (around 89 EUR or 93 USD in February 2024). Hybrid entrepreneurs with earnings from self-employment lower than those from wage-employment are defined as employees. Both incorporated and unincorporated firms are included and we are able to distinguish between the two types of business ownership. An

incorporated (unincorporated) firm is defined as such if the main source of income is the incorporated (unincorporated) business. We examine three probabilities related to self-employment: the probability of being self-employed and the probabilities of transitions into and from self-employment. In addition, we consider the performance of the self-employed in terms of earnings, which are defined somewhat differently for incorporated and unincorporated firms. For incorporated firms, these earnings may include not only business earnings but also earnings from wage-employment during the year (to the extent that the latter are lower than the former). For unincorporated firms, earnings refer solely to business earnings, which are reported net of deductions in the data. This means that earnings may be negative (or zero) for unincorporated firms. Consequently, earnings data are not directly comparable for the two types of firms. To allow transformation to logs of both earnings variables, we have set all values lower than 1,000 SEK to this amount for unincorporated firms.

Descriptive statistics are provided in Table A.1. The probability of being self-employed is relatively low for African-born individuals for both types of businesses: 1.4 per cent in unincorporated firms, compared to 3.7 and 3.0 per cent for Asian born and natives, respectively. For incorporated firms, the probability of self-employment is relatively lower for both African and Asian born (0.4 and 1.3 per cent, respectively), while it is somewhat higher for natives (3.3 per cent). The fact that unincorporated businesses are easier to start and operate may explain why they are relatively more common among foreign-born self-employed. The lower prevalence of self-employment for persons from Africa is explained both by a lower likelihood to enter self-employment and a higher propensity to leave this state. Asian born are slightly more prone to enter unincorporated self-employment than natives, but somewhat less likely to start an incorporated business. Exits are more common for Asian business owners of both types than for natives.[7] Self-employed persons from Africa and Asia have lower earnings than the Swedish-born business owners, but the differences across regions of birth are smaller for unincorporated than incorporated firms. It is also notable that African born earn somewhat more than those of Asian origin in both types of firms. (As discussed previously, earnings of incorporated and unincorporated firms are not directly comparable.)

On average, persons from Africa and Asia are younger, less educated, and more likely to have children under the age of 18 in the household and reside in metropolitan areas than natives. Among the self-employed, African- and Asian-born are engaged in the hotels and restaurants

[7] We do not define transitions between types of businesses, i.e., unincorporated and incorporated firms, as entries or exits. Only transitions in and out of self-employment are defined as entries and exits.

industry, transport and retail to a greater extent than natives. The table also reveals that a large share of the stock of immigrants from Africa and Asia in Sweden have arrived during the turbulent decade 2011-2021 we examine in this paper: 42.4 and 39.5 per cent, respectively.

Figure 1 shows how self-employment rates have evolved over time. For unincorporated firms, in the upper panel, there is a slight trend decline for both Asian born and natives over the whole period, while rates are more stable for persons from Africa. Asian born and natives experienced a modest reduction in the probability of being self-employed during the pandemic, 2020–21, but no reduction is visible for persons from Africa. The lower panel of Figure 1 reveals a quite different evolution for incorporated business owners. There is a slight upward trend for natives and Asian born, which has continued into the pandemic years. For African born, there is little change over time in the probability of self-employment.

The decline in the probability of unincorporated self-employment up to 2018 seems to be largely explained by a lower propensity of entry, as illustrated in Figure 2. All three groups experienced an increase in this type of self-employment in 2019, the year before the pandemic, and a reduction in subsequent years. For incorporated self-employment, there is a continuous increase in entry rates for Asian born, while the rates for African born are rather stable over time. Exit rates from unincorporated self-employment did not change much up to 2019, according to Figure 3, but increased during the pandemic. Incorporated business owners, in contrast, seem hardly affected by the pandemic in terms of exits. Figure 4 shows that log earnings increased for business owners with unincorporated firms up to 2018, took a downturn in 2019 for all three groups and has remained lower during the pandemic. For incorporated self-employment, there is an increase in log earnings over time, with no visible detrimental development during the pandemic.

To sum up, while entry rates declined, exit rates increased and log earnings were reduced for unincorporated self-employment for all three groups during the pandemic, not much changed in this regard for incorporated business owners, regardless of region of birth.

4. Econometric analysis

4.1 Econometric specification

In this section, we examine outcomes for persons of African and Asian origin and natives in a linear regression framework (OLS). We use the following main specifications:

$$y_{it} = \alpha + \gamma_1 Africa_i + \gamma_2 Asia_i + \varepsilon_{it}. \quad (1)$$

$$y_{it} = \alpha + \delta_1(Africa\ x\ Immigrated\ -2000)_i + \delta_2(Africa\ x\ Immigrated\ 2001\text{-}2010)_i + \delta_3(Africa\ x\ Immigrated\ 2011\text{-}2021)_i + \delta_4(Asia\ x\ Immigrated\ -2000)_i + \delta_5(Asia\ x\ Immigrated\ 2001\text{-}2010)_i + \delta_6(Asia\ x\ Immigrated\ 2011\text{-}2021)_i + X_{it}\beta + \lambda_t + \varepsilon_{it}. \quad (2)$$

The dependent variable, y_{it}, is different depending on the outcome investigated: for the probability of unincorporated (incorporated) self-employment, the variable equals 1 if the individual is in unincorporated (incorporated) self-employment in year *t*, and 0 otherwise; for the probability of entry into unincorporated (incorporated) self-employment, the variable takes the value of 1 if the individual enters unincorporated (incorporated) self-employment in year *t* and is not in self-employment in year *t-1*, and 0 otherwise; for the probability of exit from unincorporated (incorporated) self-employment, the variable equals 1 if the individual exits from unincorporated (incorporated) self-employment in year *t*, and is in self-employment in year *t-1*, and 0 otherwise; and for log earnings the dependent variable is continuous.

In Equation (1), $Africa_i$ and $Asia_i$ are dummy variables that equal 1 if the individuals were born in Africa and Asia, respectively, and 0 otherwise, with Swedish born as the reference category. ε_{it} is the error term, clustered at the individual level in Equations (1) and (2). The interactions $(Africa\ x\ Immigrated\ -2000)_i$, $(Africa\ x\ Immigrated\ 2001\text{-}2010)_i$ and $(Africa\ x\ Immigrated\ 2011\text{-}2021)_i$ in equation (2) capture different cohorts of African born, depending on the period of immigration, with corresponding variables for those of Asian origin. The reference category comprises persons born in Sweden. Equation (2) also includes X_{it}, a vector of control variables: age, age squared and dummies for gender, educational attainment, marital status, the presence of children (< 18 years old) in the household, county of residence and, depending on sample, industry. Year fixed effects, λ_t , account for variations in the business climate that affect all individuals in the same way. The parameters of prime interest are $\delta_1 - \delta_6$ in Equation (2), which show the percentage-point difference in outcomes between African (Asian) born of different immigration cohorts and individuals of Swedish origin.

While the full sample, used for estimating the probability of self-employment, contains all Swedish-, African- and Asian-born individuals aged 25–55 residing in Sweden, different subsamples are used for the other outcome variables: for entry into self-employment, the sample consists of those who were not self-employed in year *t-1*; for exit from self-employment, it is made up of individuals who were self-employed in year *t-1*; and for log earnings it contains persons who were self-employed in year *t*.

4.2 Results

Tables 4 and 5 show the results for the probability of unincorporated and incorporated self-employment, respectively. Column (1) in the tables includes dummies for African- and Asian-born persons, as in Equation (1). Columns (2) to (4) are variants of Equation (2), with interactions between region of origin and period of immigration as well as controls and year fixed effects successively added to the specification. The unconditional regression in Column (1) of Table 4 indicates that African born are 1.63 percentage points less prone than natives to be in unincorporated self-employment, while those of Asian origin are 0.71 percentage points more likely. In general, the probability to be self-employed, relative to that of natives, decreases the more recently the cohort immigrated to Sweden and this holds for both unincorporated and incorporated businesses. Persons from Africa have a lower probability than Asians to be in both unincorporated and incorporated self-employment for all cohorts. The coefficients reduce in magnitude as controls are included for the most recent cohorts (2011–2021), but this is not always the case for earlier cohorts (–2000 and 2010–2010).[8] This means that it is mainly the most recent arrivals from Africa and Asia that, on average, have observable characteristics that make them less likely than natives to become self-employed.

According to the final column in Table 4, in which all regressors are included, the estimates for $(Africa \times Immigrated\ -2000)_i$ and $(Africa \times Immigrated\ 2011\text{-}2021)_i$ are –0.0135 and –0.0189, respectively, indicating that the probability of an African born in the least (most) recently arrived cohort is in unincorporated self-employment is 1.35 (1.89) percentage points lower than that of natives. The corresponding coefficients for immigrants from Asia are 0.0177 and –0.0056, suggesting that the earliest arrivals in this group, but not the latest ones, are more likely

[8] Coefficients of control variables are not shown in the tables, but conform to expectations. Thus the probability of self-employment increases at a decreasing rate with age, is lower for females and higher for married persons and those with children.

than natives to be self-employed in an unincorporated business. For incorporated businesses, the final column in Table 5 shows, in contrast to the previous table, that the most recent cohort of African immigrants are not less likely than earliest one to become self-employed, with a coefficient of –0.0297 compared to –0.0337. The corresponding estimates for Asian born are –0.0275 and –0.0125.

Tables 6 and 7 repeat the format of the previous two tables, with entry into self-employment as the dependent variable. Without exception, the most recent arrivals of African and Asian born are less prone to start up a business than those who immigrated earlier and African born are less likely than Asians to enter self-employment, regardless of cohort. Table 6 reveals that persons from Asia are more likely than natives to enter into unincorporated self-employment and, interestingly, this also holds for the most recent cohort, who came to Sweden during "the turbulent decade". The relatively high propensity to be in unincorporated self-employment for Asians that we noted in Table 4 is thus partly explained by higher entry rates. However, the probability of setting up an incorporated firm is consistently lower for both African- and Asian-born persons, relative to that of natives, as indicated by Table 7.

What about exits from self-employment? In most cases, African born are more likely than Asians in the same cohort to exit from self-employment, as shown in Tables 8 and 9. The size of the coefficients typically become smaller with all regressors included. Adding controls and year fixed effects in Table 8 results in the probability of exit from unincorporated self-employment for persons of African and Asian origin changing sign and either becoming *smaller* than that of Swedish born or not significantly different. This is in large part driven by the inclusion of industry dummies (we saw in Table 3 that African- and Asian-born self-employed are distributed quite differently across industries than those of Swedish origin). It is also notable that it is mainly the most recent arrivals that have lower exit rates than Swedish born when all regressors are included. However, for incorporated businesses in Table 9 it is evident that individuals from Africa and Asia have a higher probability than natives to leave self-employment for all cohorts (except Africans who arrived up to 2000). Moreover, exits increase the more recently the immigrants have arrived in Sweden, which stands in contrast to the findings for unincorporated self-employed and suggests that experience as self-employed and length of stay in Sweden are more important in this respect for incorporated businesses. From Tables 8 and 9 we can conclude that African and Asian immigrants are more prone to be self-employed in industries with high exit rates, compared to natives, and for unincorporated self-employed this applies in particular to more recent arrivals.

Our final sets of regressions, in Tables 10 and 11, concern the business earnings of the self-employed. Earnings decrease the more recently Africans and Asians have immigrated to Sweden, and this tendency is stronger for unincorporated self-employed. For example, according to the final column in Table 10, coefficients for Africans who arrived up to 2000 and during 2011–2021 are –0.2653 and –1.0631, respectively. This translates to decreases of 23.3 and 65.5 percentage points in business earnings, compared to Swedish born. Corresponding figures for Asian born in unincorporated self-employment are 15.6 and 60.2 percentage points. In most cases, adding controls causes the coefficients to become more negative, implying that, on average, individuals from Africa and Asia have observable characteristics that are associated with financial success in unincorporated self-employment to a *greater* extent than do persons of Swedish origin. This could be due to unobserved characteristics, negatively related to business performance or, for example, discrimination in customer and capital markets.[9] For incorporated self-employed, in the final column of Table 11, Africans who immigrated up to 2000 and during 2011–2021 experienced a decrease in earnings of relative to natives of 13.9 and 39.1 percentage points, respectively, with corresponding figures of 12.1 and 38.4 percentage points for Asian born. It is evident that those who arrived during the turbulent decade 2011-2021 suffered less in terms of lower business earnings, compared to earlier cohorts, if they were in incorporated instead of unincorporated self-employment. While the addition of controls results in estimates becoming more negative for African born, as we noted in Table 10, they become less negative for persons from Asia.

5. Conclusions

We have examined the probability of self-employment, the probability of entry into and exit from this state and earnings of the self-employed, for different cohorts of immigrants from Africa and Asia and for different types of businesses, unincorporated and incorporated firms. Our finding that immigrants have lower self-employment earnings and higher exit rates from self-employment than natives is in line with previous research. Other studies have documented that immigrants encounter several obstacles in their self-employment activities, such as limited knowledge regarding markets, less access to financial capital than natives have and discrimination from customers, banks and suppliers.

[9] See e.g. Blanchard et al. (2008), Asiedu et al. (2012) and Aldén and Hammarstedt (2016).

It turns out that the period in which the immigrants arrived to Sweden and the type of business they are engaged in have important implications for outcomes in self-employment. In most cases, outcomes are more favorable for the earliest of the three cohorts we study, those who came to Sweden up to the turn of the millennium, and less so for the latest arrivals during the turbulent decade 2011–2021, which witnessed a large influx of refugees and a COVID-19 pandemic. This is especially true for business earnings. We cannot, however, distinguish between a pure cohort effect and the impact of the specific and rather extreme conditions that characterized the turbulent decade.

Another finding is that immigrants in incorporated self-employment who arrived during 2011–2021 period fared less badly, relative to earlier cohorts, in terms of business earnings than their counterparts in unincorporated businesses. The results concerning exits from self-employment in this respect are mixed; while exits were higher among the most recent African and Asian immigrants in incorporated self-employment, relative to those who arrived up to 2000, they were comparatively lower in the corresponding groups of unincorporated business owners. We are not able, though, to determine to what extent the observed resilience among the incorporated self-employed is explained by positive selection into this type of self-employment or by incorporation in itself. This is left for future research.

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Table 1. The foreign-born population in Sweden, by region of birth, per cent

Region of birth	2000	2010	2015	2020	2022
Nordics	27.9	19.0	14.7	11.1	10.1
Other Europe	36.9	36.2	34.8	32.7	33.0
Africa	5.4	8.3	10.7	11.6	0.117
Asia	21.9	29.2	33.2	38.5	38.8
Other World	7.9	7.3	6.7	6.2	6.3
Total	100	100	100	100	100

Source: Statistics Sweden.

Table 2. The countries of origin in Africa and Asia with the largest number of immigrants to Sweden

	Per cent of the total population from the region			Per cent of the total immigrant population		
Region of birth	2000	2010	2022	2000	2010	2022
Africa						
Somalia	24.0	32.8	27.6	1.3	2.7	3.2
Ethiopia	21.8	12.0	9.2	1.2	1.0	1.1
Morocco	8.2			0.4		
Eritrea		8.9	19.5		0.7	2.3
Asia						
Syria			23.7			9.2
Iraq	22.5	30.2	17.6	4.9	8.8	6.8
Iran	23.3	15.4	10.3	5.1	4.5	4.0
Lebanon	9,1			2.0		

Source: Statistics Sweden.

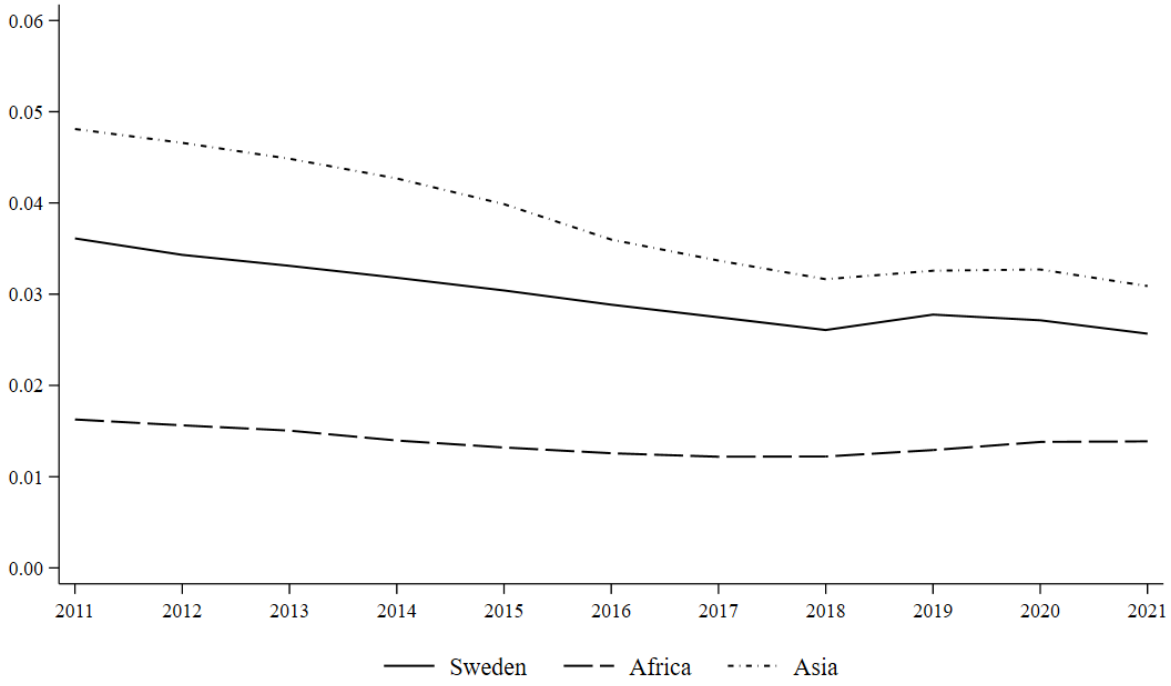
Table 3. Descriptive statistics, by region of birth

	Sweden		Africa		Asia	
Dependent variables:						
Unincorporated firm	0.030	(0.170)	0.014	(0.116)	0.037	(0.189)
Incorporated firm	0.033	(0.178)	0.004	(0.065)	0.013	(0.115)
Entry, uninc. firm	0.006	(0.077)	0.004	(0.065)	0.009	(0.095)
Entry, inc. firm	0.005	(0.069)	0.001	(0.033)	0.003	(0.058)
Exit, uninc. firm	0.144	(0.351)	0.182	(0.386)	0.159	(0.365)
Exit, inc. firm	0.095	(0.294)	0.146	(0.353)	0.134	(0.340)
Log business earnings (100 SEK), uninc. firm	6.386	(2.177)	6.103	(2.233)	6.056	(2.193)
Log business earnings (100 SEK), inc. firm	8.167	(0.614)	7.959	(0.777)	7.913	(0.769)
Independent variables:						
Age	37.5	(10.6)	36.0	(9.4)	36.5	(9.6)
Female	0.487	(0.500)	0.478	(0.500)	0.502	(0.500)
Primary education	0.082	(0.274)	0.313	(0.464)	0.234	(0.424)
Secondary education	0.488	(0.500)	0.354	(0.478)	0.299	(0.458)
Tertiary education	0.423	(0.494)	0.262	(0.440)	0.395	(0.489)
Missing education	0.006	(0.079)	0.071	(0.256)	0.072	(0.259)
Married or cohabiting	0.328	(0.470)	0.482	(0.500)	0.539	(0.498)
Children in household	0.431	(0.495)	0.493	(0.500)	0.500	(0.500)
Metropolitan area	0.184	(0.388)	0.323	(0.468)	0.276	(0.447)
Swedish born	1.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Immigrated -2000	0.000	(0.000)	0.207	(0.405)	0.284	(0.451)
Immigrated 2001-2010	0.000	(0.000)	0.370	(0.483)	0.320	(0.467)
Immigrated 2011-2021	0.000	(0.000)	0.424	(0.494)	0.395	(0.489)
Agriculture, forestry and fisheries	0.087	(0.283)	0.005	(0.071)	0.004	(0.059)
Manufacturing and extraction, energy and environment	0.062	(0.240)	0.018	(0.134)	0.020	(0.140)
Construction	0.163	(0.369)	0.039	(0.194)	0.033	(0.178)
Retail	0.121	(0.326)	0.163	(0.369)	0.212	(0.409)
Transport	0.035	(0.183)	0.248	(0.432)	0.086	(0.281)
Hotels and restaurants	0.025	(0.155)	0.082	(0.274)	0.245	(0.430)
Information and communication	0.079	(0.269)	0.040	(0.197)	0.032	(0.177)
Financial activities, business services	0.230	(0.421)	0.187	(0.390)	0.097	(0.296)
Personal and cultural services	0.123	(0.329)	0.100	(0.300)	0.181	(0.385)
Other/No data	0.075	(0.264)	0.117	(0.322)	0.089	(0.285)
No. of observations	39,250,410		1,442,289		4,801,147	

Note: Means of variables, standard deviations in parentheses. The number of observations differs from those given in the table for the dependent variables Entry, Exit and Log earnings. The industry dummies refer to self-employed only.

Figure 1. Probability of self-employment, by region of birth and type of business

a) Unincorporated



b) Incorporated

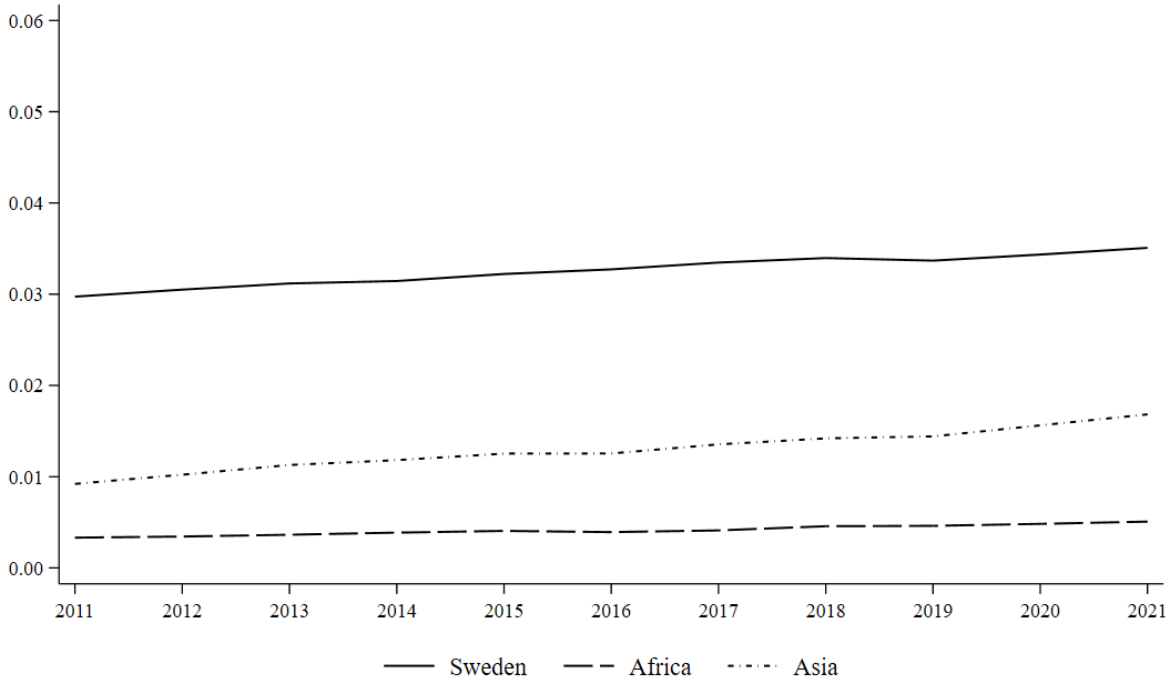
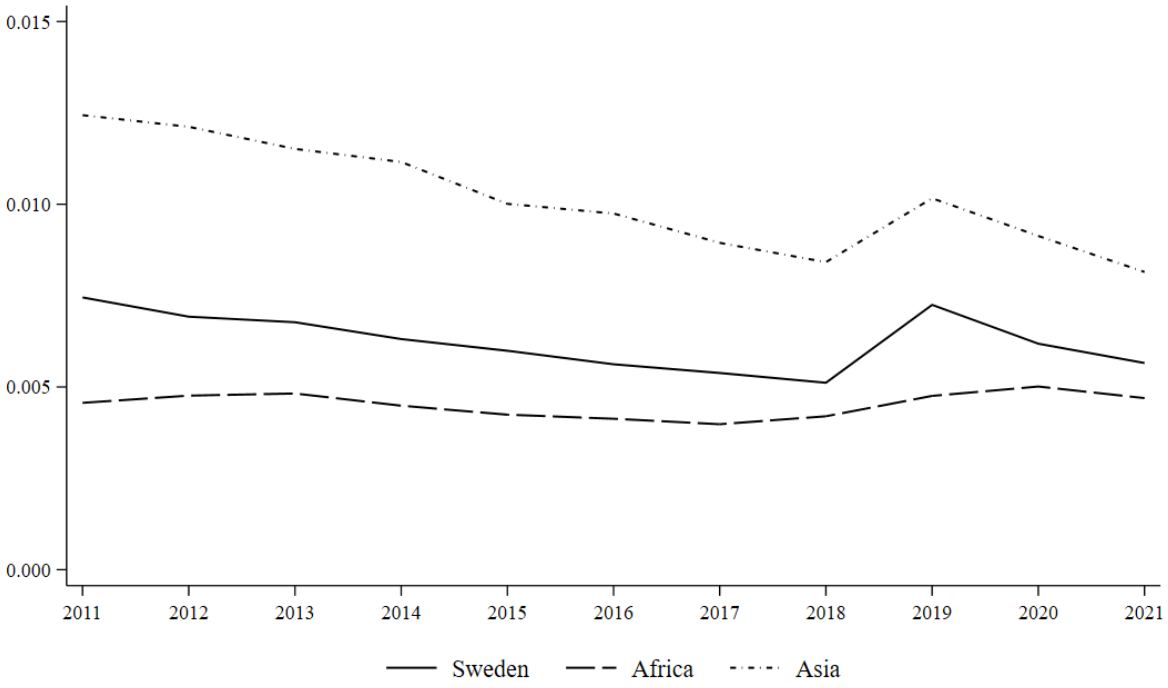


Figure 2. Probability of entry into self-employment, by region of birth and type of business

a) Unincorporated



b) Incorporated

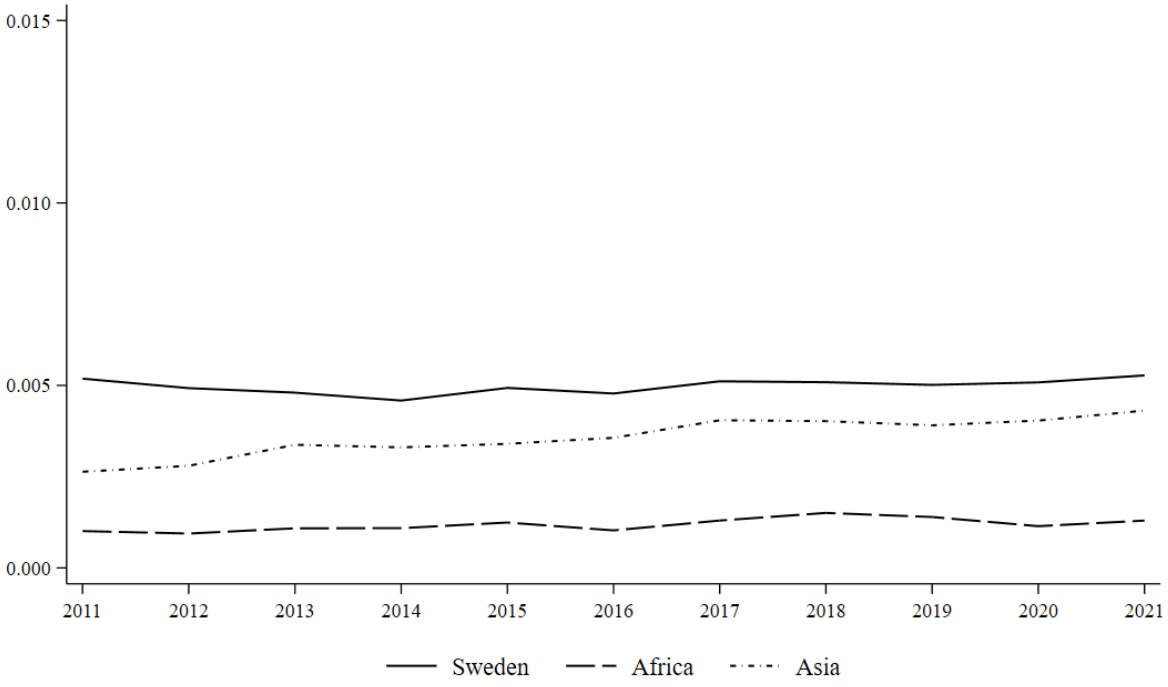
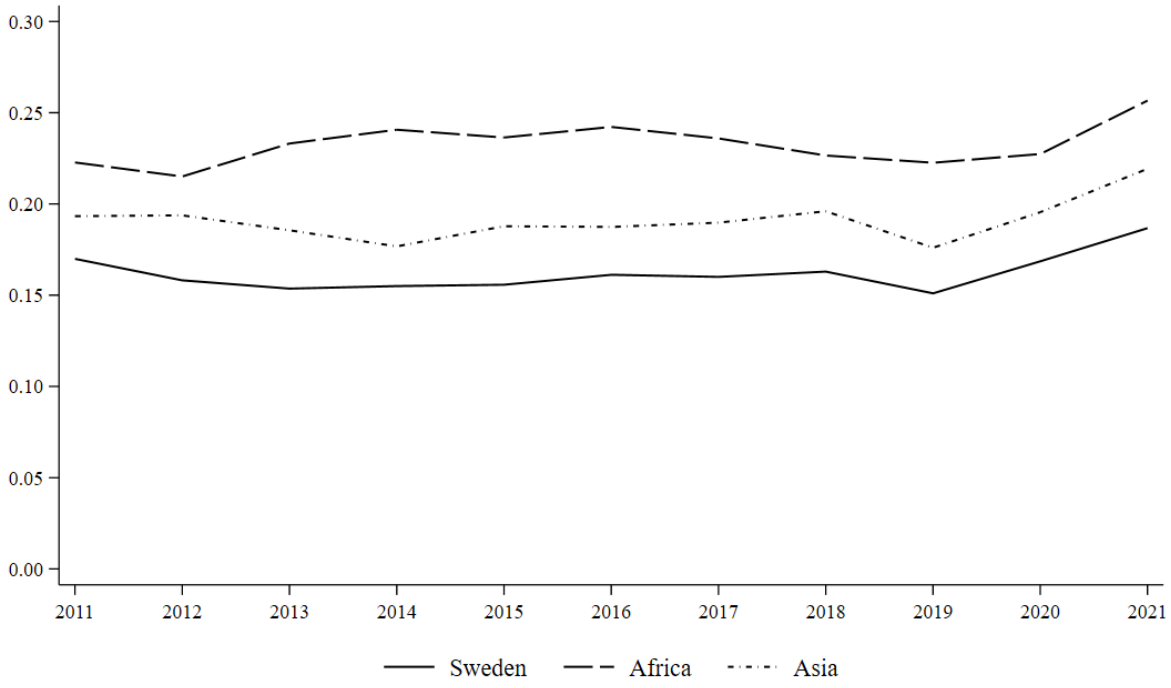


Figure 3. Probability of exit from self-employment, by region of birth and type of business

a) Unincorporated



b) Incorporated

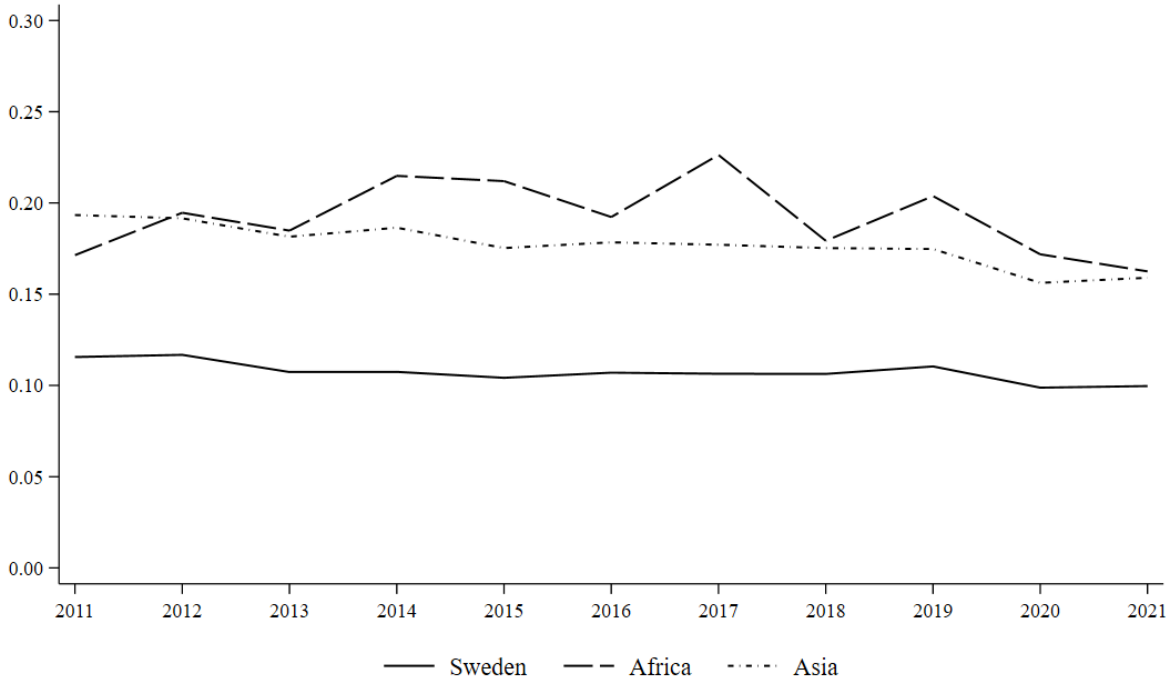
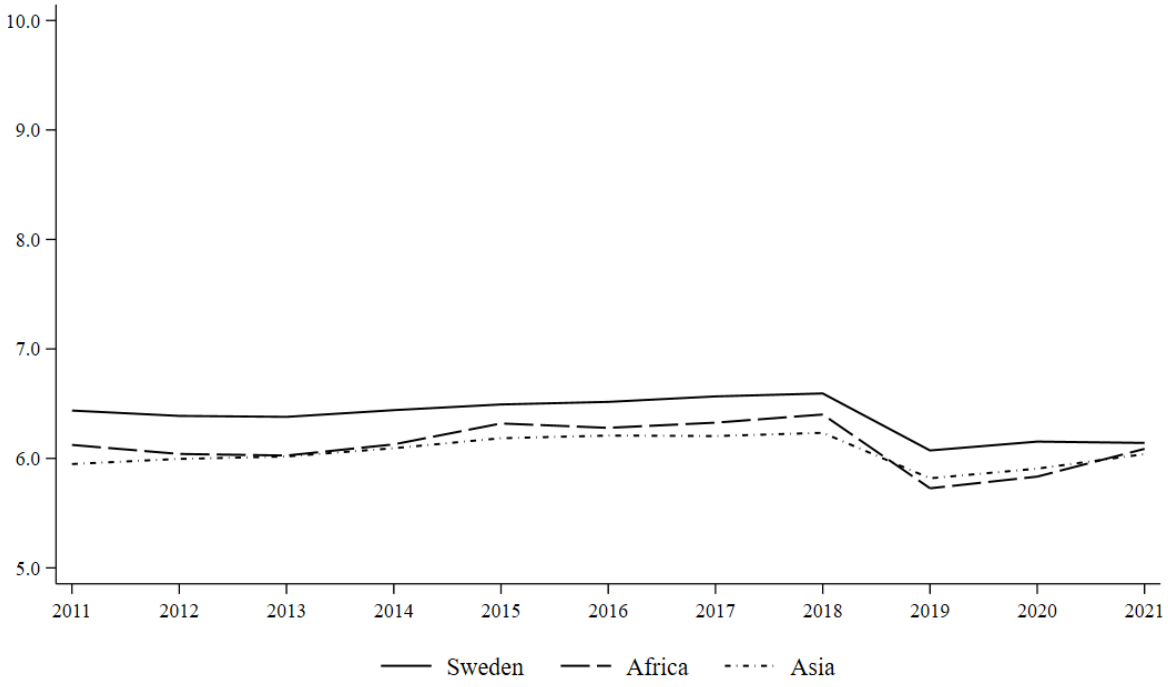


Figure 4. Business earnings of the self-employed (100 SEK, in logs), by region of birth and type of business

a) Unincorporated



b) Incorporated

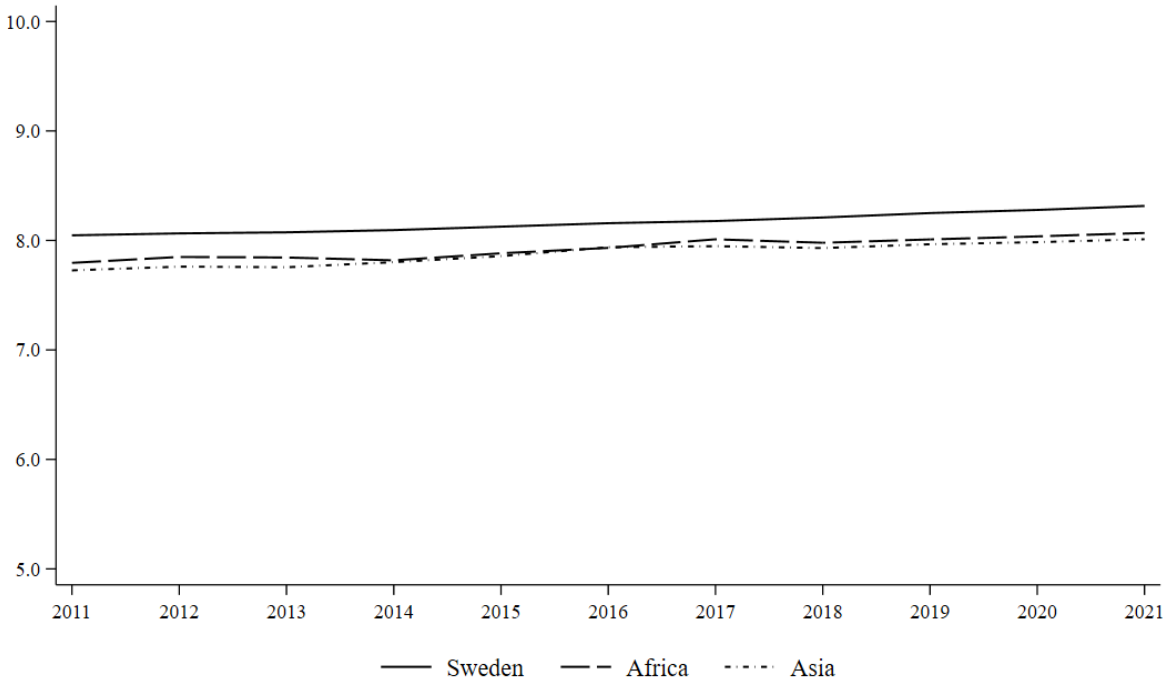


Table 4. Probability of self-employment, unincorporated firm

	(1)	(2)	(3)	(4)
Africa	-0.0163***			
	(0.0003)			
Asia	0.0071***			
	(0.0002)			
Africa x Immigrated -2000		-0.0039***	-0.0131***	-0.0135***
		(0.0007)	(0.0007)	(0.0007)
Africa x Immigrated 2001-2010		-0.0154***	-0.0166***	-0.0165***
		(0.0004)	(0.0004)	(0.0004)
Africa x Immigrated 2011-2021		-0.0231***	-0.0207***	-0.0189***
		(0.0002)	(0.0002)	(0.0002)
Asia x Immigrated -2000		0.0231***	0.0180***	0.0177***
		(0.0005)	(0.0005)	(0.0005)
Asia x Immigrated 2001-2010		0.0152***	0.0152***	0.0153***
		(0.0004)	(0.0004)	(0.0004)
Asia x Immigrated 2011-2021		-0.0111***	-0.0076***	-0.0056***
		(0.0002)	(0.0002)	(0.0002)
Constant	0.0299***	0.0299***	-0.0381***	-0.0383***
	(0.0001)	(0.0001)	(0.0007)	(0.0007)
R^2 (adj.)	0.0005	0.0013	0.0091	0.0094
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 45,493,846. The mean of dependent variable is 0.0301. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household and county of residence. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5. Probability of self-employment, incorporated firm

	(1)	(2)	(3)	(4)
Africa	-0.0283***			
	(0.0001)			
Asia	-0.0192***			
	(0.0001)			
Africa x Immigrated -2000		-0.0208***	-0.0340***	-0.0337***
		(0.0005)	(0.0005)	(0.0005)
Africa x Immigrated 2001-2010		-0.0290***	-0.0313***	-0.0313***
		(0.0002)	(0.0002)	(0.0002)
Africa x Immigrated 2011-2021		-0.0314***	-0.0285***	-0.0297***
		(0.0001)	(0.0002)	(0.0002)
Asia x Immigrated -2000		-0.0054***	-0.0127***	-0.0125***
		(0.0003)	(0.0004)	(0.0004)
Asia x Immigrated 2001-2010		-0.0206***	-0.0218***	-0.0218***
		(0.0002)	(0.0002)	(0.0002)
Asia x Immigrated 2011-2021		-0.0281***	-0.0263***	-0.0275***
		(0.0001)	(0.0001)	(0.0001)
Constant	0.0326***	0.0326***	-0.0312***	-0.0311***
	(0.0001)	(0.0001)	(0.0007)	(0.0007)
R^2 (adj.)	0.0019	0.0023	0.0246	0.0247
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 45,493,846. The mean of dependent variable is 0.0296. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household and county of residence. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 6. Probability of entry into self-employment, unincorporated firm

	(1)	(2)	(3)	(4)
Africa	-0.0018***			
	(0.0001)			
Asia	0.0031***			
	(0.0001)			
Africa x Immigrated -2000		-0.0007***	-0.0014***	-0.0015***
		(0.0002)	(0.0002)	(0.0002)
Africa x Immigrated 2001-2010		-0.0011***	-0.0013***	-0.0013***
		(0.0001)	(0.0001)	(0.0001)
Africa x Immigrated 2011-2021		-0.0029***	-0.0026***	-0.0024***
		(0.0001)	(0.0001)	(0.0001)
Asia x Immigrated -2000		0.0029***	0.0025***	0.0025***
		(0.0001)	(0.0001)	(0.0001)
Asia x Immigrated 2001-2010		0.0055***	0.0053***	0.0053***
		(0.0001)	(0.0001)	(0.0001)
Asia x Immigrated 2011-2021		0.0015***	0.0019***	0.0022***
		(0.0001)	(0.0001)	(0.0001)
Constant	0.0060***	0.0060***	-0.0070***	-0.0070***
	(0.0000)	(0.0000)	(0.0002)	(0.0002)
R^2 (adj.)	0.0002	0.0002	0.0007	0.0007
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 44,401,609. The mean of dependent variable is 0.0063. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household and county of residence. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 7. Probability of entry into self-employment, incorporated firm

	(1)	(2)	(3)	(4)
Africa	-0.0037***			
	(0.0003)			
Asia	-0.0015***			
	(0.0003)			
Africa x Immigrated -2000		-0.0021***	-0.0039***	-0.0038***
		(0.0001)	(0.0001)	(0.0001)
Africa x Immigrated 2001-2010		-0.0038***	-0.0044***	-0.0044***
		(0.0001)	(0.0001)	(0.0001)
Africa x Immigrated 2011-2021		-0.0043***	-0.0043***	-0.0044***
		(0.0000)	(0.0000)	(0.0000)
Asia x Immigrated -2000		0.0007***	-0.0002***	-0.0002**
		(0.0001)	(0.0001)	(0.0001)
Asia x Immigrated 2001-2010		-0.0015***	-0.0020***	-0.0020***
		(0.0001)	(0.0001)	(0.0001)
Asia x Immigrated 2011-2021		-0.0030***	-0.0031***	-0.0033***
		(0.0000)	(0.0000)	(0.0000)
Constant	0.0048***	0.0048***	-0.0090***	-0.0090***
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
R^2 (adj.)	0.0001	0.0002	0.0026	0.0026
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 44,346,188. The mean of dependent variable is 0.0045. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household and county of residence. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 8. Probability of exit from self-employment, unincorporated firm

	(1)	(2)	(3)	(4)
Africa	0.0379***			
	(0.0025)			
Asia	0.0147***			
	(0.0009)			
Africa x Immigrated -2000		0.0251***	-0.0012	-0.0011
		(0.0042)	(0.0042)	(0.0042)
Africa x Immigrated 2001-2010		0.0467***	-0.0010	-0.0011
		(0.0040)	(0.0038)	(0.0040)
Africa x Immigrated 2011-2021		0.0448***	-0.0111**	-0.0126***
		(0.0049)	(0.0049)	(0.0049)
Asia x Immigrated -2000		0.0067***	-0.0037**	-0.0036**
		(0.0013)	(0.0015)	(0.0015)
Asia x Immigrated 2001-2010		0.0218***	-0.0012	-0.0012
		(0.0013)	(0.0014)	(0.0014)
Asia x Immigrated 2011-2021		0.0169***	-0.0037**	-0.0048**
		(0.0017)	(0.0017)	(0.0017)
Constant	0.1440***	0.1440***	0.2872***	0.2874***
	(0.0003)	(0.0003)	(0.0051)	(0.0051)
R^2 (adj.)	0.0003	0.0004	0.1250	0.1255
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 1,606,033. The mean of dependent variable is 0.1465. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household, county of residence and industry. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 9. Probability of exit from self-employment, incorporated firm

	(1)	(2)	(3)	(4)
Africa	0.0507***			
	(0.0041)			
Asia	0.0385***			
	(0.0012)			
Africa x Immigrated -2000		0.0468***	0.0073	0.0075
		(0.0055)	(0.0059)	(0.0059)
Africa x Immigrated 2001-2010		0.0580***	0.0159*	0.0170**
		(0.0071)	(0.0082)	(0.0082)
Africa x Immigrated 2011-2021		0.0501***	0.0257**	0.0276***
		(0.0112)	(0.0111)	(0.0104)
Asia x Immigrated -2000		0.0362***	0.0081***	0.0084***
		(0.0016)	(0.0019)	(0.0019)
Asia x Immigrated 2001-2010		0.0413***	0.0119***	0.0130***
		(0.0022)	(0.0024)	(0.0024)
Asia x Immigrated 2011-2021		0.0428***	0.0190***	0.0212***
		(0.0031)	(0.0032)	(0.0032)
Constant	0.0952***	0.0952***	0.1453***	0.1472***
	(0.0003)	(0.0003)	(0.0063)	(0.0063)
R^2 (adj.)	0.0009	0.0009	0.0421	0.0422
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 1,494,045. The mean of dependent variable is 0.0974. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household, county of residence and industry. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 10. Log business earnings (100 SEK), unincorporated firms

	(1)	(2)	(3)	(4)
Africa	-0.2828***			
	(0.0295)			
Asia	-0.3301***			
	(0.0107)			
Africa x Immigrated -2000		0.1382**	-0.2613***	-0.2653***
		(0.0464)	(0.0444)	(0.0443)
Africa x Immigrated 2001-2010		-0.3209***	-0.6652***	-0.6553***
		(0.0450)	(0.0412)	(0.0411)
Africa x Immigrated 2011-2021		-0.9964***	-1.1079***	-1.0631***
		(0.0569)	(0.0514)	(0.0515)
Asia x Immigrated -2000		0.0674***	-0.1677***	-0.1700***
		(0.0155)	(0.0165)	(0.0164)
Asia x Immigrated 2001-2010		-0.3896***	-0.4736***	-0.4742***
		(0.0163)	(0.0168)	(0.0168)
Asia x Immigrated 2011-2021		-1.0195***	-0.9592***	-0.9207***
		(0.0197)	(0.0203)	(0.0206)
Constant	6.3861***	6.3861***	3.6773***	3.6966***
	(0.0043)	(0.0043)	(0.0577)	(0.0575)
R^2 (adj.)	0.0027	0.0077	0.0876	0.0912
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 1,370,723. The mean of dependent variable is 6.3393. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household, county of residence and industry. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 11. Log business earnings (100 SEK), incorporated firms

	(1)	(2)	(3)	(4)
Africa	-0.2080***			
	(0.0169)			
Asia	-0.2537***			
	(0.0053)			
Africa x Immigrated -2000		-0.0946***	-0.1405***	-0.1491***
		(0.0216)	(0.0208)	(0.0207)
Africa x Immigrated 2001-2010		-0.3413***	-0.3534***	-0.3950***
		(0.0295)	(0.0274)	(0.0272)
Africa x Immigrated 2011-2021		-0.4158***	-0.4169***	-0.4962***
		(0.0519)	(0.0506)	(0.0500)
Asia x Immigrated -2000		-0.1519***	-0.1175***	-0.1292***
		(0.0068)	(0.0067)	(0.0067)
Asia x Immigrated 2001-2010		-0.3479***	-0.2664***	-0.3129***
		(0.0097)	(0.0095)	(0.0094)
Asia x Immigrated 2011-2021		-0.4938***	-0.3996***	-0.4841***
		(0.0126)	(0.0124)	(0.0124)
Constant	8.1670***	8.1670***	6.6609***	6.5765***
	(0.0011)	(0.0011)	(0.0249)	(0.0247)
R^2 (adj.)	0.0079	0.0101	0.0925	0.1111
Controls	No	No	Yes	Yes
Year FE	No	No	No	Yes

Note: The number of observations is 1,348,564. The mean of dependent variable is 8.1540. Controls include age, age squared and dummies for gender, education, marital status, the presence of children in the household, county of residence and industry. Robust standard errors, clustered at the individual level, in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.