

Assimilation to a Welfare State: Labor Market Performance and Use of Social Benefits by Immigrants to Finland*

Matti Sarvimäki

Aalto University, FI-00076 Aalto, Helsinki, Finland
matti.sarvimaki@aalto.fi

Abstract

This paper documents the economic performance of immigrants in a country characterized by an extensive welfare state and a short immigration history. Upon arrival, immigrants to Finland have substantially lower employment rates than comparable natives. While they experience rapid employment growth, only men from OECD countries catch up with natives. Despite the persisting employment and earnings differences between non-OECD immigrants and natives, the differences in income transfers disappear in roughly 20 years. The immigrant–native employment gaps are larger in Finland than in Australia, Canada, or the US.

Keywords: Integration; minorities; employment; earnings; benefits

JEL classification: J61; J31; F22

I. Introduction

Immigration is a controversial policy issue in many countries. A key theme in the debate concerns the performance of immigrants in the labor market, and the consequent impact on public finances. Often, the discussion is driven by the fact that, at least initially, immigrants tend to have lower earnings and to receive more public assistance than natives.

A central, and to some extent unresolved, question is whether immigrants recover from their initial disadvantage. In an influential paper, Chiswick (1978) argued that while immigrants to the US earned significantly less than comparable natives upon arrival, they overtook natives in 10–15 years. Later studies have shown that while the earnings of immigrants grow faster than those of natives, Chiswick's conclusion was overly optimistic because of changes in the composition of immigrant cohorts (Borjas, 1985, 1995)

*I thank David Card, Kristiina Huttunen, Kari Hämäläinen, Tuomas Pekkarinen, Roope Uusitalo, Jouko Verho, Olof Åslund, three anonymous referees, and colleagues at HECER, SERC, and VATT for helpful comments. Financial support from the NORFACE project "Migration: Integration, Impact and Interaction", the Jenny and Antti Wihuri Foundation, and the Yrjö Jahnsson Foundation is gratefully acknowledged.

and non-random return migration (Hu, 2000; Lubotsky, 2007). Other studies suggest that assimilation profiles differ vastly across countries.¹

The design of immigration policies would benefit from a better understanding of why this variation occurs. In particular, it would be important to have more insight into the interplay between labor market institutions and assimilation. High minimum wages and generous welfare benefits could limit immigrants' ability and willingness to accept low-paid jobs. This could lead assimilation to occur more through employment than through improving wages (Antecol *et al.*, 2006). Institutions could also matter through their impact on returns to skill and thus on who is willing to immigrate to a country (Borjas, 1987) and who is willing to stay permanently (Borjas and Bratsberg, 1996). Of course, entry policies also affect the composition of the immigrant population. Furthermore, past policies and labor market opportunities have an impact on current migration flows as immigrants tend to move to areas where people from the same origin have already settled (Altonji and Card, 1991). Similarly, established ethnic networks are likely to play a role in finding employment (Edin *et al.*, 2003; Munshi, 2003) and in the use of social benefits (Borjas and Hilton, 1996). All these possibilities make sense, but our understanding of their relative importance remains limited. Thus, it is useful to accumulate knowledge of the assimilation patterns of immigrants facing different circumstances.

This paper is the first to document assimilation to the Finnish labor markets and welfare system. Finland provides an interesting case study as it is characterized by high union density, compressed wage distribution, an extensive welfare state, and a short immigration history. I use longitudinal data following a 15 percent sample of the immigrant population and a 2 percent sample of natives for the period between 1993 and 2003. The results reveal that, upon arrival, immigrants to Finland have substantially lower annual earnings than comparable natives. The immigrant–native differences are particularly large among those from non-OECD countries and among women. Most of the gap is attributable to differences in employment. Improved employment outcomes also drive the subsequent earnings growth among long-term immigrants. Yet, only men from OECD countries catch up with the natives in terms of earnings. Non-OECD households have

¹ Studies of assimilation patterns outside the US include, but are not limited to, Baker and Benjamin (1994) and Grant (1999) for Canada, McDonald and Worswick (1999) for Australia, Chiswick (1980) and Bell (1997) for the UK, Amuedo-Dorantes and De la Rica (2007) and Fernández and Ortega (2008) for Spain, Friedberg (2000) and Eckstein and Weiss (2004) for Israel, Aguiar and Gusafsson (1991), Edin *et al.* (2000), Le Grand and Szulkin (2002), and Hammarstedt and Shukur (2006) for Sweden, Hayfron (1998), Longva and Raam (2003), and Barth *et al.* (2004) for Norway, and Husted *et al.* (2001) and Nielsen *et al.* (2004) for Denmark. Antecol *et al.* (2006) is a comparative study for Australia, Canada, and the US. Borjas (1994) and Boeri *et al.* (2002) provide surveys.

persistently lower earnings, but their use of social benefits converges to the native levels after 20 years in the country. Immigrant households from OECD countries receive similar transfers as comparable native households throughout their stay in Finland.

Selective outmigration complicates the interpretation of these results. On average, immigrants who leave the country in less than five years experience no earnings growth during their time in Finland. This finding suggests that selection into outmigration is not random. Hence, the estimated earnings profiles cannot be interpreted as an expected earnings path of individual immigrants on arrival. Nevertheless, documenting the earnings of the immigrants who end up staying, or leaving, provides policy relevant information.

The rest of the paper is organized as follows. In Section II, I discuss immigration to Finland. In Sections III and IV, I describe the data and I present the empirical framework, respectively. In Section V, I report on the results for long-term immigrants. In Section VI, I compare the assimilation profiles of long-term immigrants to the assimilation profiles of short-term immigrants. In Section VII, I compare assimilation patterns in Finland, Australia, Canada, and the US. I conclude in Section VIII.

II. Immigration to Finland

For most of its history, Finland has been characterized by emigration. Thus, immigration has primarily consisted of return migrants or their family members. The number and the composition of immigrants changed in the early 1990s as emigration from the Soviet Union became possible. Around the same time, Finland also started to admit more refugees, in particular from the former Yugoslavia, Somalia, Iran, and Iraq.

While the reasons for immigration are poorly documented, it seems fair to argue that the share of economic migrants was low during the period under study. Roughly a fifth of the immigrant population in 2003 consisted of refugees or their family members. Another group of similar size is ethnic Finns from the former Soviet Union.² Furthermore, a quarter of immigrants in the microdata discussed in the next section had a native spouse at the time of arrival.

² According to Statistics Finland, Finland admitted 23,452 refugees (including later family reunification) between 1973 and 2003. The Ministry of the Interior estimates that between 1990 and 2003, 26,000 return migrants arrived from the former Soviet Union. These numbers can be related to the 124,817 residents who did not speak Finnish or Swedish as their mother tongue at the end of 2003. Ethnic Finns living in the Soviet Union were granted return migrant status in 1990. The small Finnish-speaking minority in the Soviet Union was subject to brutal “Russification” measures from the 1930s onwards, which is likely to explain their poor Finnish language skills (Ministry of Labour, 1998).

III. The Data

The analysis is based on individual-level panel data created by Statistics Finland by linking information from several administrative registers. The main sources are the population register, the tax register, and the register on social assistance maintained by the National Institute for Health and Welfare. The base sample contains annual observations of a 15 percent (2 percent) random sample of working-age immigrants (natives) living in Finland in 1989 and a similar sample of new immigrants arriving in Finland (natives turning 15 years of age) between 1990 and 2004. Each person is followed until the end of the year 2004, emigration, or death. Furthermore, the data include information on the characteristics of a possible spouse and information on the month of immigration and emigration. Immigrants are defined as individuals born abroad, who do not speak Finnish as their native tongue, and who enter the sample as non-citizens.

The estimation sample is constructed as follows. As complete information on income transfers is available only for 1993–2003, the analysis is restricted to these years. In order to focus on the working-age population, the estimation sample includes only those born between 1944 and 1968. Everyone in this cohort had turned 25 years of age by 1993 and was under 60 in 2003. Finally, everyone arriving in Finland after 1998, those who have multiple arrival dates, those who were younger than 16 years old at the time of arrival, and those in the top 0.1 percent of the earnings or benefits distributions are excluded. The final estimation sample consists of 48,905 observations for 5,715 immigrants and 403,741 observations for 37,264 natives.

The resulting sample is divided along three dimensions. First, it seems reasonable to assume that the assimilation process differs between immigrants from poor and rich countries. I study this possibility by splitting the immigrant sample into those born in the OECD countries and those born elsewhere. Second, men and women are studied separately. Third, the sample is split into “short-term” and “long-term” immigrants, defined as those who stay in Finland for a maximum of five years and those who stay longer, respectively.³ The motivation for this division is discussed in detail in the next section.

³ There are 162 (239) short-term immigrants from OECD (non-OECD) countries in the sample, which corresponds to a 15 percent (5 percent) return migration rate during the first five years in Finland. The length of stay is defined in two ways. The first criterion is the number of years between registered immigration and emigration dates. This information is derived from immigrants’ own notifications as well as notifications by their landlords, the Social Insurance Institution of Finland, the Finnish Centre for Pensions and other Nordic countries. However, the data suggest that many emigrations are registered after a substantial delay or not at all. Thus, I have also considered a person to have emigrated by the end of year t , if during year $t+1$ and $t+2$ she (a) has no income (neither from work nor

Table 1 reports sample means and standard deviations for long-term immigrants in 2003. The descriptive statistics suggest that in most respects long-term immigrants from OECD countries resemble natives. In contrast, non-OECD immigrants differ substantially from the rest of the population. In particular, they have relatively low earnings and receive more income transfers than the other groups.

IV. Empirical Approach

The aim of this paper is to measure how the labor market performance of immigrants evolves over time and how their performance compares with that of comparable natives. To do this, I follow Chiswick (1978), Borjas (1985), and Barth *et al.* (2004), and I regress outcomes of interest on years-since-migration and other characteristics. More precisely, I define the estimation equation for immigrants as

$$y_{jrt} = \mathbf{YSM}_{jt}\alpha + \mathbf{C}_{jm}\beta_m + \mathbf{A}_{jt}\delta^I + \mathbf{X}_{jt}\phi^I + \kappa^I u_{rt} + \gamma_t + \nu_r + \epsilon_{jt}, \quad (1)$$

where y_{jrt} is the outcome of interest for person j living in region r at time t , \mathbf{YSM}_{jt} is a vector of polynomials on the number of years the person has resided in Finland, \mathbf{C}_{jm} is a vector of indicator variables for the year of arrival m , \mathbf{A}_{jt} is a vector of polynomials of age, \mathbf{X}_{jt} is a vector of other demographic characteristics, u_{rt} is the unemployment rate of the travel-to-work area, and γ_t and ν_r are time and region fixed effects.

Similarly, the estimation equation for natives is

$$y_{jrt} = \mathbf{A}_{jt}\delta^N + \mathbf{X}_{jt}\phi^N + \kappa^N u_{rt} + \gamma_t + \nu_r + \epsilon_{jt}. \quad (2)$$

Note that this specification allows the coefficients for individual characteristics and the local unemployment rate to vary between natives and immigrants. Importantly, it thus allows the aggregate economic conditions to have a different impact on natives and immigrants (for a discussion, see Barth *et al.*, 2004; Bratsberg *et al.*, 2006).

from transfers), (b) pays no taxes, (c) does not appear in the causes of death register, (d) is not enrolled in a school or university, and (e) either is single or has a spouse who fulfills conditions (a) and (b). A person is classified as a long-term immigrant if she stays in Finland for more than five full calendar years according to both definitions. Furthermore, the observations from the year of immigration and emigration are dropped as the key outcome variables are measured on an annual basis. Circular migrants (those with multiple entry dates) are excluded from the analysis. The key results are virtually unchanged when long-term immigrants are defined as those who are still residing in Finland at the end of 2005.

Table 1. *Descriptive statistics, 2003*

	Natives		Long-term immigrants			
			OECD		Non-OECD	
	Men	Women	Men	Women	Men	Women
Age	47.3 (7.1)	47.2 (7.1)	44.9 (7.0)	44.5 (6.5)	43.1 (6.1)	43.9 (6.3)
Age at arrival	–	–	31.5 (6.3)	30.4 (6.8)	32.4 (6.8)	33.7 (7.0)
Years in Finland	–	–	13.4 (6.2)	14.1 (5.9)	10.6 (3.4)	10.2 (3.5)
Single	0.31	0.29	0.23	0.24	0.29	0.34
Has an immigrant spouse	0.01	0.01	0.09	0.10	0.54	0.36
Has a native spouse	0.68	0.71	0.68	0.66	0.17	0.30
Single parent	0.01	0.07	0.01	0.09	0.01	0.17
Number of children	0.72 (1.11)	0.79 (1.13)	0.99 (1.14)	1.19 (1.18)	1.14 (1.46)	1.06 (1.26)
Owner-occupier	0.73	0.74	0.58	0.64	0.23	0.32
Months employed	10.9 (3.0)	10.4 (3.6)	10.8 (3.0)	9.9 (3.9)	9.4 (4.1)	8.5 (4.7)
Zero earnings	0.15	0.14	0.17	0.23	0.29	0.38
Annual earnings	25,240 (20,881)	19,063 (14,330)	25,167 (22,129)	15,492 (15,715)	14,497 (17,062)	9,410 (12,300)
Annual benefits (household level)	4,475 (6,063)	5,188 (6,798)	3,682 (5,052)	4,669 (5,852)	7,343 (7,896)	7,388 (6,886)
Household receives benefits						
Social assistance	0.07	0.06	0.06	0.05	0.31	0.29
Housing allowance	0.05	0.06	0.04	0.08	0.34	0.30
Unemp. benefits	0.18	0.20	0.14	0.20	0.41	0.48
Other	0.20	0.24	0.12	0.23	0.12	0.21
Residence municipality						
Urban	0.59	0.62	0.77	0.72	0.91	0.87
Semi-urban	0.19	0.18	0.10	0.08	0.05	0.07
Rural	0.22	0.20	0.13	0.20	0.04	0.06
Unemp. rate	12.3 (3.8)	12.1 (3.8)	9.9 (3.4)	9.9 (4.4)	9.9 (2.6)	10.6 (3.3)
Region of birth						
Europe (excl. SU)	–	–	0.84	0.82	0.17	0.07
Former Soviet Union	–	–	0.00	0.00	0.34	0.67
Asia	–	–	0.03	0.05	0.25	0.19
Africa	–	–	0.00	0.00	0.21	0.05
Other	–	–	0.13	0.13	0.03	0.02
Individuals	18,077	17,994	498	291	1,899	2,219

Notes: Sample means and standard deviations (in parentheses).

The interpretation of the resulting estimates is challenging because of two types of self-selection. First, some immigrants leave Finland and these re-migrations may be related to labor market performance. For instance, Hu (2000) and Lubotsky (2007) show that the least successful immigrants are

the most likely to leave the US, and thus the observed immigrant population becomes increasingly favorably self-selected over time.⁴ Furthermore, if some immigrants plan to stay in Finland only for a short period, they have fewer incentives to invest in Finland-specific human capital. Thus, their earnings profiles are likely to be flatter than the profiles for other immigrants (Dustmann, 1993, 1999, 2000).

There is no clear solution for how to address the complications created by the emigration of immigrants. My approach is to assess the importance of the issue by studying separately those who leave Finland in less than five years. A drawback to this categorization is that it is based on an endogenous outcome. In particular, the long-term sample is likely to over-present “lucky” immigrants, as those who left as a result of negative shocks end up in the subsample of the short-term immigrants. Thus, the assimilation profiles of long-term immigrants may be upward sloping at least partly because those who stayed are favorably self-selected. Nevertheless, the estimates are informative about the immigrants who ended up staying in Finland for less than and more than five years. Furthermore, a comparison of the assimilation profiles is informative on whether the labor market performances of the two groups systematically differ from each other.

The second issue is selection into employment. To see why this matters, suppose that immigrants accept (or are allowed to accept) wage offers only if they exceed some threshold. If wage offers are an increasing function of time in the host country, those with the most favorable unobserved characteristics are the most likely to be employed upon arrival, while others become employed later. Thus, unobserved characteristics and time in the host country would be negatively correlated in equation (1). If this is the case, the profiles of wage assimilation cannot be interpreted as measuring the expected wage growth of individual immigrants, even if emigration was random.

V. Main Results

Table 2 reports parameter estimates from regressing annual earnings on years-since-migration, entry cohort, demographic characteristics, local

⁴ I note that the compressed Finnish wage distribution could also lead to a positively selected emigration pattern (see Borjas and Bratsberg, 1996, for a discussion). For empirical work on the outmigration patterns from other countries, see Warren and Peck (1980) and Van Hook *et al.* (2006) for the US, Dustmann and Weiss (2007) for the UK, Dustmann (1993, 1999, 2003), Constant and Massey (2003), and Bellemare (2004) for Germany, Arai (2000), Edin *et al.* (2000), Nekby (2006), and Rooth and Saarela (2007) for Sweden, Jensen and Pedersen (2007) for Denmark, and Bratsberg *et al.* (2007) for Norway.

Table 2. *Annual earnings of natives and long-term immigrants*

	Men			Women		
	Native	OECD	Non-OECD	Native	OECD	Non-OECD
YSM	–	0.76 (0.33)	1.10 (0.16)	–	0.57 (0.35)	0.99 (0.10)
YSM sq.	–	–0.02 (0.02)	–0.03 (0.01)	–	–0.02 (0.02)	–0.02 (0.01)
Age	0.73 (0.04)	0.56 (0.32)	0.47 (0.10)	0.97 (0.03)	1.01 (0.27)	0.40 (0.07)
Age sq.	–0.02 (0.00)	–0.02 (0.01)	–0.02 (0.00)	–0.03 (0.00)	–0.03 (0.01)	–0.01 (0.00)
Log local unemp. rate	–2.80 (0.17)	–2.57 (0.57)	–1.06 (0.33)	–2.55 (0.12)	–2.57 (0.43)	–1.16 (0.21)
Single	–8.13 (0.23)	–1.08 (1.81)	–3.75 (0.55)	–1.84 (0.17)	–2.25 (1.56)	–1.78 (0.30)
Number of children (comparison group: no children)						
1–2	3.11 (0.23)	0.66 (1.59)	–0.34 (0.53)	–0.40 (0.15)	–1.57 (1.60)	–0.94 (0.33)
3–5	3.46 (0.37)	1.61 (2.35)	–4.95 (0.74)	–3.69 (0.24)	–5.92 (1.96)	–4.70 (0.45)
>5	1.78 (1.29)	1.27 (3.11)	–10.60 (0.72)	–12.35 (0.68)	–16.67 (3.02)	–7.40 (0.86)
Initial gaps (by arrival cohort)						
1970–1979	–	–10.1 (4.8)	–17.0 (4.7)	–	–3.5 (4.4)	–13.1 (3.0)
1980–1989	–	–8.8 (2.8)	–14.6 (1.3)	–	–6.3 (2.4)	–10.9 (0.8)
1990–1994	–	–11.7 (2.2)	–16.5 (0.8)	–	–9.3 (1.9)	–10.9 (0.6)
1995–1998	–	–9.0 (2.5)	–17.8 (1.0)	–	–8.9 (2.5)	–11.3 (0.6)
Observations		227,107			224,227	
Individuals		21,496			21,082	
R ²		0.17			0.14	

Notes: Parameter estimates and standard errors (in parentheses). Outcome: Annual earnings (including zeros) in thousands of 2004 euros. Sample: Long-term immigrants and natives born between 1944 and 1968 measured annually between 1993 and 2003. Estimates for immigrants are a linear combination of the main effect and appropriate interaction terms. Age is measured as $Age - 25$ (in years) and the log local unemployment rate as a standardized deviation from mean. Standard errors are robust to intra-individual autocorrelation. The regressions also control for the type of municipality (semi-urban, rural; comparison group: urban), year of observation (comparison group: year 2000), and five region (NUTS2) fixed effects (comparison group: Southern Finland).

unemployment rate, and year and region fixed effects separately for men and women.⁵ Earnings are measured in thousands of euros and observations

⁵ I estimate equations (1) and (2) using a pooled sample of immigrants and natives. I add interaction terms with origin status (OECD, non-OECD) to allow for differential association in background characteristics. Furthermore, I include indicators for origin status to capture the main effects and I set all cohort dummies and years-since-migration variables to zero for natives. The estimates reported in Table 2 are appropriate linear combinations of the main effects and the interaction terms (see table note for details).

with zero earnings are included. This contrasts with most previous studies of assimilation, which have typically measured labor market performance using log earnings or log wages. The motivation for using levels is that an important part of assimilation to the Finnish labor markets consists of moving from zero to positive earnings. As a consequence, estimates from log specifications are very sensitive to whether (and how) zero earnings are included in the estimation.

Consider first the cohort fixed effects presented in the bottom panel. These estimates can be interpreted as measuring the initial earnings gap between immigrants and comparable natives. The results suggest that non-OECD men arriving in the 1990s earned roughly 17,000 euros less than comparable native men. For women and OECD-born men, the initial gap was roughly 10,000 euros. Apart from the 1980s cohort of non-OECD men, there are no statistically significant differences between the arrival cohorts.

Turning to the upper panel, the first rows report the association between annual earnings and years since arrival. These estimates are typically interpreted as measuring the differential value of a year spent in the host country in comparison to a year spent in the source country (Borjas, 1999). The estimates suggest that among non-OECD immigrants the first years in Finland are associated with roughly a 1,000 euro increase in expected earnings per year. Over time, the association between an additional year in Finland and earnings decreases. In total, the estimates imply that non-OECD immigrants who have lived 15 years in Finland earn roughly 10,000 euros more than otherwise similar non-OECD immigrants upon arrival. The point estimates suggest that similar patterns are present also among OECD immigrants. However, these estimates are rather imprecise and not statistically significant for women.

The remaining estimates document the association between earnings and age, the local unemployment rate, and family situation. The estimates suggest a stronger association between age and income among natives than among immigrants, although this difference is statistically significant only for non-OECD immigrants. The next row shows that a standard deviation increase in the log travel-to-work area unemployment rate is associated with a roughly 3,000 euros decrease in expected annual earnings among natives and OECD immigrants. For non-OECD immigrants, the association is about 1,000 euros. However, in relative terms, the association between the local unemployment rate and annual earnings is considerably larger for non-OECD immigrants and OECD-born women than for natives and OECD-born men.⁶ Furthermore, the association between earnings and

⁶ One standard deviation increase in the log travel-to-work area unemployment rate is associated with a 13 percent (15 percent) decrease in annual earnings among native, 14 percent (24 percent) among OECD-born and 29 percent (49 percent) among non-OECD men

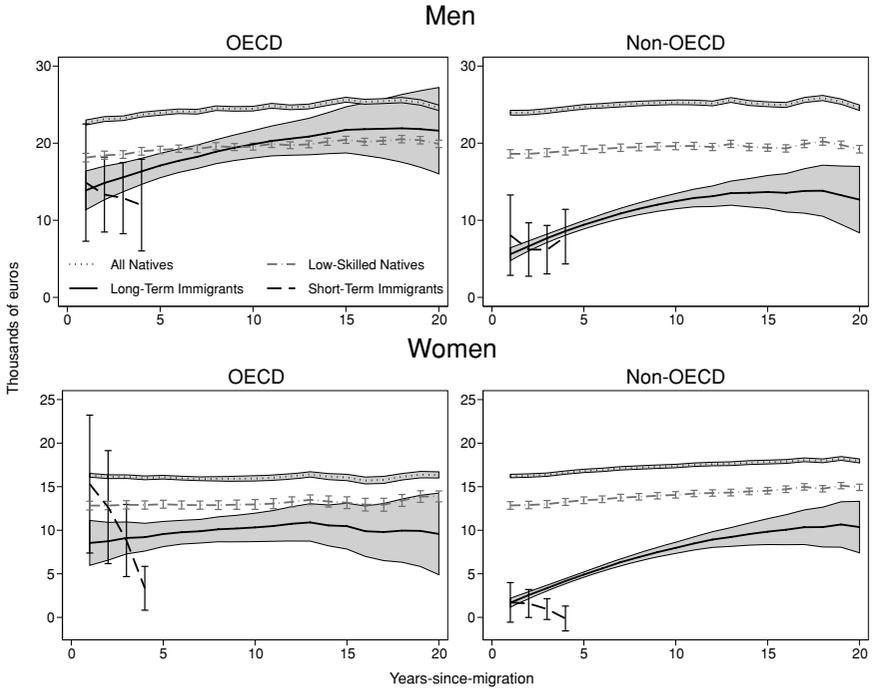


Fig. 1. Annual earnings

Notes: Expected annual earnings and 95 percent confidence intervals over time in Finland for long-term immigrants (solid line), temporary immigrants (dashed line), comparable natives (dotted line), and comparable low-skilled natives (dotted gray line). Local unemployment rate, cohort dummies, and year dummies fixed at sample means. Confidence intervals are robust to intra-individual autocorrelation.

family situation differs between non-OECD immigrants and natives. While native men who have children earn more than otherwise comparable native men, this association is zero or negative among men from non-OECD countries. For women, the estimates for family-situation indicators are similar among natives and immigrants.

While these results are informative, it is not immediately clear how they add up. One answer is provided by Figure 1, which presents average assimilation profiles. To construct these profiles, I have cleaned the impact of the business cycle by setting the local unemployment rate and year dummies to their means, but I have left the other variables as they are. I have then calculated two sets of expectations for each immigrant in

(women). Thus, the results are in line with previous work showing that the earnings of immigrants are more sensitive to business cycles than the earnings of natives (Barth *et al.*, 2004; Bratsberg *et al.*, 2006; Dustmann *et al.*, 2010).

the data using the estimates discussed above. The solid line corresponds to the average expectations of the outcomes for immigrants over time in Finland, had the general labor market conditions remained constant. The dotted line corresponds to the average expectations for natives with identical observable characteristics.

The main insight of Figure 1 is that the earnings gap between immigrants and comparable natives is large, but narrows over time. According to the point estimates, the average earnings of non-OECD men during their first full year in Finland were a fifth of the average earnings of comparable native men. The initial average earnings of women from non-OECD countries were only a tenth of the average earnings of comparable native women. After 10 years in Finland, however, the average earnings of both non-OECD men and women are about half of the average earnings of comparable natives, and the profiles stabilize at around 60 percent in 15 years. For OECD immigrants, the corresponding initial earnings are 60 percent (men) and 40 percent (women) and these stabilize at about 90 percent (men) and 70 percent (women) after 15 years in the country.

Note that, given the specification used, natives and immigrants are comparable in the sense that they are of similar age, live in similar labor markets, and have a similar family structure. However, they may not be comparable in other dimensions, such as education.⁷ In order to provide another meaningful comparison group, the figure also presents profiles for low-skilled natives (dotted gray line) defined as the 28 percent of the native sample with less than a secondary degree. While the gaps are now smaller, they do not disappear. In fact, only the expected earnings of men from OECD countries overtake the average earnings of low-skilled natives.

Do these differences follow from the immigrants working less or being paid less? To address this question, I now turn to employment and monthly earnings. As Figure 2 illustrates, the native comparison group spends an expected nine months in employment each year, while the expectation for non-OECD immigrants is only three months (men) and one and a half months (women) during their first full calendar year in the country. Over the next 10–15 years, these expectations increase to seven months (men) and six months (women). The difference is smaller among OECD immigrants, but nevertheless substantial among women. Furthermore, while men from OECD countries eventually seem to converge to the native employment levels, the gap closes only after more than 15 years in the country.

⁷ Finnish administrative registers do not include comprehensive information on education obtained abroad. Johansson (2008) discusses the issue in detail and argues that immigrants to Finland are likely to be better educated than immigrants to Sweden or Denmark, owing to the disproportionately large share of Estonian and Russian immigrants.

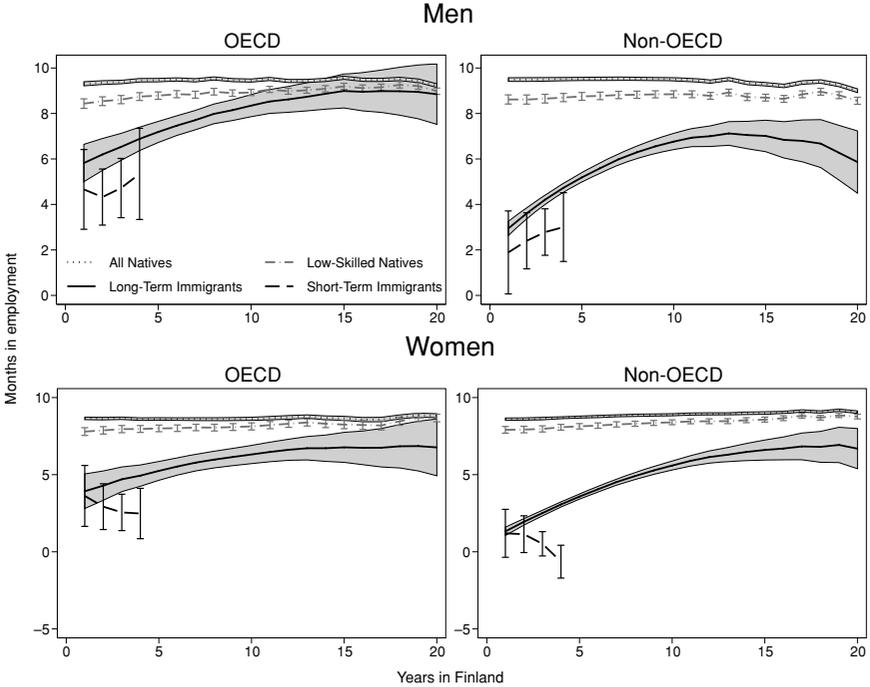


Fig. 2. Months employed

Notes: Expected months in employment per year and 95 percent confidence intervals over time in Finland for long-term immigrants (solid line), temporary immigrants (dashed line), comparable natives (dotted line), and comparable low-skilled natives (dotted gray line). Local unemployment rate, cohort dummies, and year dummies fixed at sample means. Confidence intervals are robust to intra-individual autocorrelation.

Figure 3 reports the expected monthly earnings profiles.⁸ This suggests that, on average, employed immigrants earn less than employed natives. During the first full year in Finland, the point estimates for the monthly earnings of men (women) from non-OECD countries is roughly two-thirds (three-quarters) of the expected monthly earnings of comparable natives. Similarly, the expected monthly earnings of OECD immigrants are roughly four-fifths of natives' monthly earnings. Over time, the gaps narrow. However, men from OECD countries are, again, the only group that catches up with the natives.

⁸ Note that the monthly earnings consist of both the hourly wage and hours worked during a month, and thus may not be a good measure of hourly wages. If part-time work was more prevalent among immigrants, differences in monthly earnings would still partly reflect differences in employment.

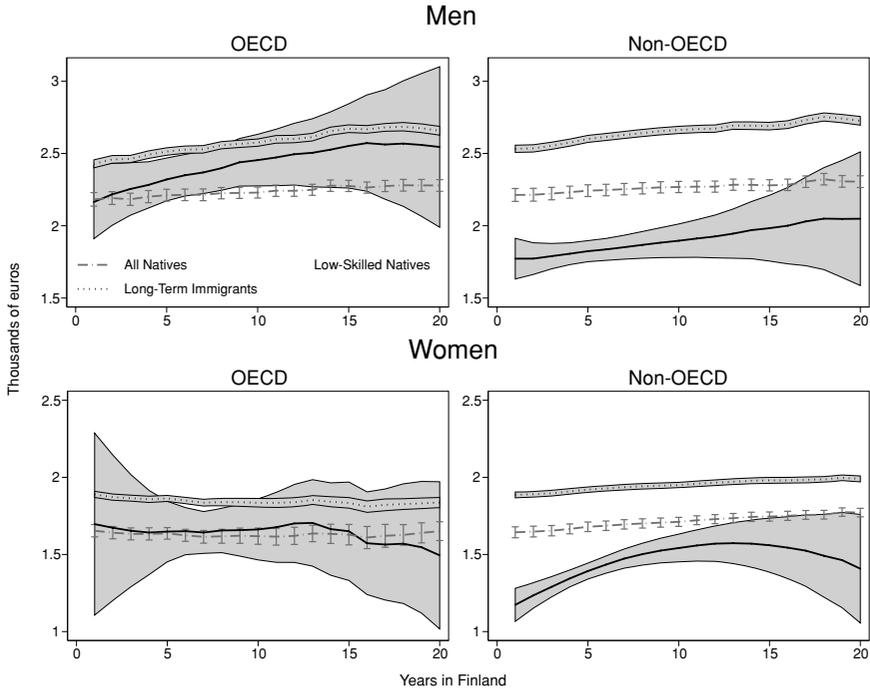


Fig. 3. Monthly earnings

Notes: Expected monthly earnings and 95 percent confidence intervals over time in Finland for long-term immigrants (solid line), temporary immigrants (dashed line), comparable natives (dotted line), and comparable low-skilled natives (dotted gray line). Local unemployment rate, cohort dummies, and year dummies fixed at sample means. Confidence intervals are robust to intra-individual autocorrelation. The profiles for short-term immigrants are omitted because of their very wide confidence intervals.

In short, it seems fair to argue that differences in employment are driving the annual earnings gap. To study the issue more directly, I ask how large the gap in annual earnings would be if immigrants and natives had equal monthly earnings and only the months in employment would differ. I then relate this number to the overall gap. Formally, I calculate the share of the annual earnings gap attributable to differences in employment as

$$EG_n = \frac{w_n(m_n - m_i)}{w_n m_n - w_i m_i}, \quad (3)$$

where m_n and m_i are the expected months natives and immigrants work during a year, and w_n and w_i are their expected monthly earnings.⁹ Table 3

⁹ Note that one could also ask how large the gaps would be if natives earned the same as immigrants and one could calculate the importance of the employment gap as $[w_i(m_n - m_i)]/$

Table 3. *Annual months employed and monthly earnings*

YSM	Months employed			Monthly earnings			Share of gap due to emp.	
	Nat. (1)	OECD (2)	Non-OECD (3)	Nat. (4)	OECD (5)	Non-OECD (6)	OECD (7)	Non-OECD (8)
Panel A: Men								
1	9.30 (0.05)	5.82 (0.27)	2.94 (0.16)	2,535 (32)	2,260 (159)	1,811 (82)	0.85 (0.25)	0.88 (0.03)
5	9.47 (0.03)	7.19 (0.14)	5.19 (0.09)	2,620 (23)	2,416 (91)	1,863 (39)	0.80 (0.15)	0.73 (0.02)
10	9.45 (0.03)	8.34 (0.15)	6.76 (0.12)	2,682 (24)	2,550 (86)	1,935 (42)	0.73 (34.35)	0.58 (0.02)
15	9.57 (0.04)	8.99 (0.20)	7.01 (0.23)	2,778 (33)	2,648 (142)	2,022 (102)	0.58 (4.46)	0.54 (0.05)
20	9.22 (0.05)	8.85 (0.32)	5.86 (0.50)	2,764 (42)	2,640 (273)	2,088 (236)	0.49 (113.98)	0.67 (0.11)
Panel B: Women								
1	8.65 (0.09)	3.93 (0.50)	1.33 (0.19)	1,986 (31)	1,790 (311)	1,202 (61)	0.92 (6.20)	0.93 (0.03)
5	8.62 (0.06)	5.25 (0.24)	3.58 (0.09)	1,960 (24)	1,742 (124)	1,422 (28)	0.85 (1.57)	0.83 (0.02)
10	8.62 (0.06)	6.31 (0.23)	5.59 (0.12)	1,931 (24)	1,756 (94)	1,571 (34)	0.80 (0.42)	0.73 (0.03)
15	8.65 (0.06)	6.77 (0.31)	6.60 (0.23)	1,931 (31)	1,744 (139)	1,589 (79)	0.74 (7.40)	0.62 (0.06)
20	8.83 (0.09)	6.77 (0.58)	6.69 (0.50)	1,933 (44)	1,588 (219)	1,437 (172)	0.63 (6.02)	0.54 (0.11)

Notes: Expected months in employment per year and monthly earnings. The expectations are calculated for each immigrant observation setting the local unemployment rate and values for the year dummies to the immigrant sample means. Means of these expectations are reported (see text for discussion). Columns (7) and (8) report the ratio $EG = [w_n(m_n - m_i)] / [w_n m_n - w_i m_i]$, where m_{jt} is the number of months worked during a year for group j at years-since-migration y , and w_{jt} is monthly earnings during the months in employment. Block bootstrapped standard errors (in parentheses) are calculated with 1,000 repetitions and are robust to intra-individual autocorrelation.

presents the results. As indicated by the large standard errors for some of the estimates for OECD immigrants in column (7), the ratios are not informative when the overall gap is small or imprecisely estimated. However, for non-OECD immigrants, the estimates are precise and suggest that up to 90 percent of the initial earnings gap can be attributed to differences in employment. The ratio decreases as the immigrant–native differences in employment decrease, but it remains over 50 percent.¹⁰

$[w_n m_n - w_i m_i]$. As $w_i < w_n$, this measure would attribute a smaller fraction of the annual earnings gap to the employment differences than the approach adopted here.

¹⁰ For evidence suggesting that employment differences also dominate wage differences in Sweden, see Edin and Åslund (2001) and Le Grand and Szulkin (2002).

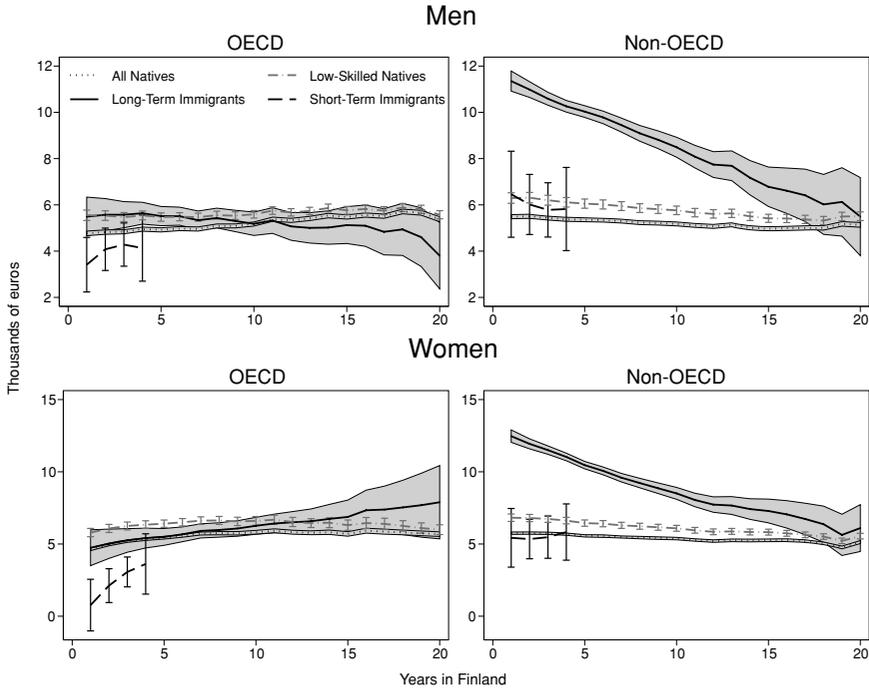


Fig. 4. Annual income transfers

Notes: Expected annual income transfers and 95 percent confidence intervals over time in Finland for long-term immigrants (solid line), temporary immigrants (dashed line), comparable natives (dotted line), and comparable low-skilled natives (dotted gray line). Local unemployment rate, cohort dummies, and year dummies fixed at sample means. Confidence intervals are robust to intra-individual autocorrelation.

I now turn to the use of social benefits. Figure 4 presents the profiles for the total annual amount of income transfers received by immigrants and natives. Because many benefits depend on total household income, the profiles are calculated at the household level. Immigrant households are defined as those where the adult male (top row) or female (bottom row) is an immigrant, regardless of the immigrant status of the spouse. The estimates show that during their first full year in Finland, non-OECD households receive more than double the level of income transfers as a comparable native household. The gap narrows over time and becomes statistically insignificant in roughly 20 years. Households with an OECD-born member receive roughly the same amount of benefits as native households throughout their stay in Finland.

Figure 5 presents the participation profiles for the four most important categories of social benefits. Participation is defined as an adult member

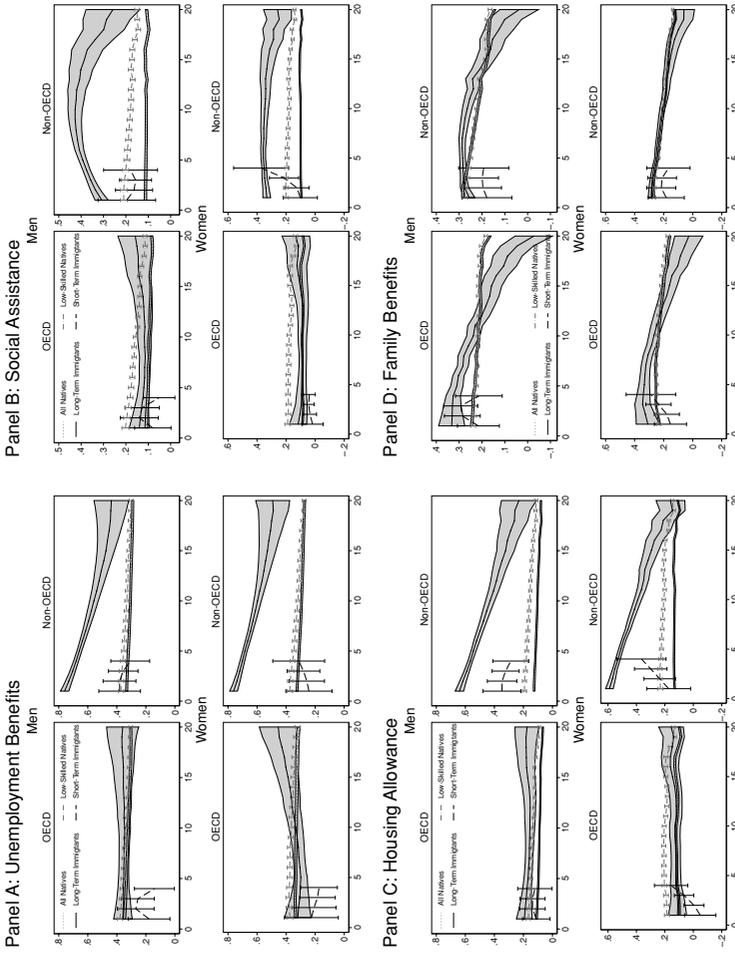


Fig. 5. Participation rates

Notes: Expected participation rates and 95 percent confidence intervals over time in Finland for long-term immigrants (solid line), short-term immigrants (dashed line), comparable natives (dotted line), and comparable low-skilled natives (dotted gray line). Confidence intervals are robust to intra-individual autocorrelation. Participation is defined as the household receiving a positive amount of unemployment benefit or labor market subsidy (Panel A), social assistance (Panel B), housing allowance (Panel C), maternity allowance, parental allowance, home-care allowance or private day-care allowance (Panel D) during a year.

of the household receiving a positive amount of the relevant benefit during a year. Panel A shows that four out of five non-OECD households receive unemployment benefits during their first full year in Finland. That is, most of the non-OECD immigrants enter the welfare system by receiving the means-tested labor market subsidy, which does not require work history. Over time, the participation rate declines, but even after 20 years in Finland, unemployment benefits are paid to almost half of the non-OECD households. In comparison, roughly a third of native and OECD households claim some unemployment benefit during a year.

Panel B reports participation rates for social assistance. Interestingly, households with non-OECD men seem to increase their use of social assistance over the first years in the country. Furthermore, the use of social assistance by households with non-OECD women and OECD-born members remains quite stable. These findings are surprising given the simultaneous increase in annual earnings. As social assistance is a residual benefit, one would expect participation to decline faster than the use of other income-related transfers. However, comparison to the most comparable transfer, the housing allowance (Panel C), suggests that the opposite occurs.¹¹

There are several possible explanations. First, the welfare system might mechanically push immigrants from one form of transfer to another. While the structure of the formal eligibility criteria would not produce these patterns, an administrative practise to pay essentially the same benefits under different names at different stages of the assimilation process could exist.¹² Alternatively, immigrants could move from unemployment benefits to social assistance in order to avoid obligatory labor market training. Yet another possibility is that immigrants would learn to use the welfare system as they spend more time in Finland. However, compelling evidence against or in favor of these explanations would require more data than are currently available. Thus, a more careful study of the issue is left for future research. In any case, these findings highlight the importance of studying all income transfers when assessing assimilation into the welfare system.¹³

The remaining panels of Figure 5 report the use of the housing allowance and child-related benefits. The pattern for housing allowance (Panel C) is similar to the pattern for unemployment benefits. Family benefits (Panel D)

¹¹ These patterns also differ from those documented in Sweden by Hansen and Lofstrom (2003).

¹² Since 1999, for example, labor market subsidy has been paid as “integration benefits” to some recently arrived immigrants (see Sarvimäki and Hämäläinen, 2010, for details). However, as this paper examines immigrants arriving before 1999, this reform affects only a small fraction of immigrants in the sample and it is thus unlikely to explain the patterns presented in Figure 5.

¹³ Borjas and Hilton (1996) and Bratsberg *et al.* (2010) make a similar argument in the context of the US and Norwegian welfare systems.

are defined as all child-related benefits except family allowance, which is automatically paid for every child under 17 years old. Thus, participation corresponds to the family looking after small children at home or using private day-care. Apart from households that include a non-OECD woman, immigrants are slightly less likely to participate than comparable native households.

VI. Comparison to Short-Term Immigrants

I next ask whether the labor market performances of short- and long-term immigrants differ systematically from each other. To study the question, I run similar regressions as above, but I now exclude immigrants who stay in Finland for more than five years.

The comparison of the profiles presented in Figure 1 reveals that short-term and long-term immigrants have similar earnings during their first full year in Finland. However, short-term immigrants do not seem to experience any earnings growth. For OECD women, the profiles suggest declining earnings. Figure 2 presents corresponding patterns for employment. The estimates for expected monthly earnings are too imprecise to be informative and are thus not reported. Figure 4 suggests that short-term immigrants receive fewer benefits than long-term immigrants. Indeed, they seem to collect fewer benefits than even natives, despite their substantially lower earnings. As illustrated by Figure 5, differences are present in all types of benefits.

These results suggest that short-term immigrants are not a random subsample of the immigrant population. Thus, the profiles for long-term immigrants should not be interpreted as the expected labor market performance on arrival. Rather, the profiles for long-term immigrants document the outcomes for those who, for whatever reason, stayed in Finland for more than five years during the period under study.

Interpreting the estimates for short-term immigrants is harder. Flat profiles could suggest that immigrants who are planning to stay for a short period do not invest in Finland-specific human capital. However, the fact that some profiles slope downwards could be explained by those who face a negative shock leaving the country. An alternative explanation is that changes in the composition of the short-term immigrant sample could drive the results.¹⁴ Furthermore, the shape of the profiles could reflect unregistered emigrations or some immigrants spending only part of the year

¹⁴ The composition of the short-term sample changes considerably. Only 40 percent of the short-term immigrants are still present at the fourth year after arrival. It seems reasonable to think that those leaving after a year would differ from those leaving after five years. However, I cannot assess this possibility due to the small sample size.

in Finland.¹⁵ In short, apart from illustrating that short-term immigrants differ from long-term immigrants, these results are rather uninformative about the economic performance of short-term immigrants.

VII. Comparison to Other Countries

In this section, I compare the assimilation patterns of immigrants to Finland and the patterns observed in Australia, Canada, and the US. To do this, I use Finnish data to estimate similar regressions as Antecol *et al.* (2006). They study employment and wage assimilation among men 25–59 years old in Australia, Canada, and the US, using repeated cross-section data from the 1980/81 and 1990/91 censuses. Employment is measured with a binary variable taking a value of 1 if the person is working in the survey week, and zero otherwise. Wages are measured as log weekly earnings or weekly personal income. The specification includes indicators for arrival cohort, years-since-migration, the year of observation, age, and the region of residence. The wage regressions also control for the hours worked during the census week. I run similar regressions with Finnish data using employment status at the end of the year as the binary employment outcome, and monthly earnings as the wage measure.

Table 4 presents the results. The upper panel reports the association between employment or wages and the number of years lived in the host country. The lower panel reports estimates for initial gaps (cohort fixed effects). The results reported in the first four columns suggest that the initial immigrant–native employment gap is substantially larger in Finland than in Australia, Canada, or the US. However, employment growth over time is quite similar across these countries.

The results for wages are less clear. Note that, unlike Antecol *et al.* (2006), I am not able to control for hours worked. If immigrants are more likely to be in part-time work than natives, these estimates would exaggerate wage gaps in Finland. The estimates for Finland are also quite imprecise. Nevertheless, it seems fair to conclude that in comparison to Australia, Canada, and the US, immigrants to Finland differ more in terms of employment than in terms of wages. Furthermore, the estimates suggest that immigrants experience faster wage growth in Canada and the US than in Australia and Finland.

¹⁵ While I have used a sample selection rule that should mitigate this possibility (see footnote 3), it is hard to definitely rule it out.

Table 4. *Comparison to Australia, Canada, and the US*

	Employment				Wages			
	AU (1)	CA (2)	US (3)	FI (4)	AU (5)	CA (6)	US (7)	FI (8)
Panel A: Years in the destination country (comparison group 0–5)								
6–10	0.10 (0.03)	0.04 (0.02)	0.10 (0.01)	0.10 (0.01)	0.03 (0.05)	0.05 (0.04)	0.05 (0.02)	–0.01 (0.02)
11–15	0.11 (0.02)	0.06 (0.01)	0.11 (0.01)	0.13 (0.02)	–0.06 (0.04)	0.11 (0.03)	0.14 (0.01)	0.02 (0.03)
16–20	0.12 (0.03)	0.08 (0.02)	0.12 (0.01)	0.10 (0.03)	–0.06 (0.04)	0.09 (0.05)	0.16 (0.02)	0.09 (0.05)
>20	0.13 (0.03)	0.10 (0.02)	0.13 (0.01)	0.09 (0.04)	–0.09 (0.05)	0.12 (0.05)	0.24 (0.02)	0.01 (0.08)
Panel B: Initial gaps (by arrival cohort)								
Pre-1961		–0.07 (0.02)	–0.16 (0.01)			–0.08 (0.05)	–0.10 (0.02)	
1961–65		–0.06 (0.02)	–0.14 (0.01)			–0.11 (0.05)	–0.14 (0.02)	
1966–70		–0.04 (0.02)	–0.15 (0.01)			–0.10 (0.04)	–0.22 (0.02)	
Pre-1971	–0.15 (0.03)				–0.01 (0.05)			
1971–75	–0.15 (0.03)	–0.05 (0.02)	–0.14 (0.01)		–0.06 (0.05)	–0.17 (0.05)	–0.25 (0.02)	
1976–80	–0.15 (0.02)	–0.05 (0.01)	–0.14 (0.00)		–0.04 (0.03)	–0.22 (0.02)	–0.30 (0.01)	
Pre-1981				–0.32 (0.04)				–0.25 (0.07)
1981–85	–0.17 (0.03)	–0.07 (0.02)	–0.15 (0.01)	–0.39 (0.07)	–0.14 (0.05)	–0.24 (0.05)	–0.34 (0.02)	–0.22 (0.13)
1986–91	–0.13 (0.02)	–0.13 (0.01)	–0.12 (0.00)	–0.45 (0.07)	–0.08 (0.02)	–0.39 (0.02)	–0.37 (0.01)	–0.33 (0.13)
1992–97				–0.55 (0.07)				–0.49 (0.13)
1998–2003				–0.48 (0.09)				–0.32 (0.16)

Notes: Columns (1)–(3) and (5)–(7) are from (Tables 1 and 2, Antecol *et al.*, 2006). Dependent variables: employed during the census survey week (columns (1)–(3)), employed at the end of the year (column (4)), log weekly personal income (column (5)), log weekly earnings (columns (6) and (7)) and log monthly earnings (column (8)). All regressions also include indicators for age and geographic location. In addition, estimates reported in columns (5)–(7) control for hours worked during the census survey week. The coefficients of the controls for geographic location and weekly hours of work are restricted to be the same for immigrants and natives, but these coefficients can differ across years. The coefficients of the age and education variables are allowed to vary both by nativity and year. Standard errors (in parentheses) in columns (1)–(3) and (5)–(7) are robust to heteroskedasticity. Standard errors in columns (4) and (8) are robust to heteroskedasticity and intra-individual autocorrelation.

VIII. Conclusions

In this paper, I have documented the labor market performance and the use of social benefits among immigrants to Finland during the period between 1993 and 2003. Upon arrival, immigrants have substantially lower annual

earnings than natives who are of the same age, live in the same labor markets, and have a similar family structure. The immigrant–native gap is particularly large for those born outside the OECD area and for women. While there is a strong association between annual earnings and years-since-migration, only men from OECD countries converge to the annual earnings of comparable natives. After 20 years in the country, non-OECD immigrants have not reached even the level of low-skilled natives.

Studying employment and monthly earnings separately suggests that up to 90 percent of the initial immigrant–native difference in annual earnings is a result of differences in employment. While both monthly earnings and months in employment increase over time in Finland, improving employment drives the annual earnings growth. The initial employment gap is considerably larger than among immigrants to Australia, Canada, and the US. Furthermore, wage growth appears to be slower in Australia and Finland than in Canada and the US. These observations are in line with the hypothesis that Finland’s rigid labor markets and extensive welfare system lead assimilation to occur more through employment than wages. However, alternative explanations cannot be ruled out.

To some extent, the low earnings of immigrants are reflected in their use of social benefits. Upon arrival, the total amount of income transfers among non-OECD households are more than double the level of income transfers among comparable OECD households. However, after 20 years in the country, social benefits paid to non-OECD households are of the same magnitude as benefits paid to comparable native households. The use of social benefits among immigrant households from OECD countries is similar to that of native households throughout their stay in Finland.

Finally, the results suggest that a non-random subpopulation of immigrants leaves Finland after a few years in the country. The earnings profiles of those who stay in Finland for less than five years are flat or downward sloping. This finding suggests that the estimated earnings profiles cannot be interpreted as the expected earnings paths of individual immigrants at the time of arrival.

References

- Aguiar, R. and Gusafsson, B. (1991), The Earnings Assimilation of Immigrants, *Labour* 5, 37–58.
- Altonji, J. G. and Card, D. (1991), The Effects of Immigration on the Labor Market Outcomes of Less-Skilled Natives, in J. M. Abowd and R. B. Freeman (eds.), *Immigration, Trade, and the Labor Market*, University of Chicago Press, Chicago, 201–234.
- Amuedo-Dorantes, C. and De la Rica, S. (2007), Labour Market Assimilation of Recent Immigrants in Spain, *British Journal of Industrial Relations* 45, 257–284.
- Antecol, H., Kuhn, P., and Trejo, S. J. (2006), Assimilation via Prices or Quantities? Sources of Immigrant Earnings Growth in Australia, Canada, and the United States, *Journal of Human Resources* 41, 821–840.

- Arai, M. (2000), Comments on Edin, LaLonde and Åslund: Emigration of Immigrants and Measures of Immigrant Assimilation: Evidence from Sweden, *Swedish Economic Policy Review* 7, 205–211.
- Baker, M. and Benjamin, D. (1994), The Performance of Immigrants in the Canadian Labor Market, *Journal of Labor Economics* 12, 369–405.
- Barth, E., Bratsberg, B., and Raaum, O. (2004), Identifying Earnings Assimilation of Immigrants under Changing Macroeconomic Conditions, *Scandinavian Journal of Economics* 106, 1–22.
- Bell, B. D. (1997), The Performance of Immigrants in the United Kingdom: Evidence from the GHS, *Economic Journal* 107, 333–344.
- Bellemare, C. (2004), Identification and Estimation of the Economic Performance of Outmigrants using Panel Attrition, CIRPÉE Working Paper no. 04-29.
- Boeri, T., Hanson, G., and McCormick, B. (2002), *Immigration Policy and the Welfare System*, Oxford University Press, Oxford.
- Borjas, G. J. (1985), Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants, *Journal of Labor Economics* 3, 463–489.
- Borjas, G. J. (1987), Self-Selection and the Earnings of Immigrants, *American Economic Review* 77, 531–553.
- Borjas, G. J. (1994), The Economics of Immigration, *Journal of Economic Literature* 32, 1667–1717.
- Borjas, G. J. (1995), Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?, *Journal of Labor Economics* 13, 201–245.
- Borjas, G. J. (1999), The Economic Analysis of Immigration, *Handbook of Labor Economics* 3, 1697–1760.
- Borjas, G. J. and Bratsberg, B. (1996), Who Leaves? The Outmigration of the Foreign-Born, *Review of Economics and Statistics* 78, 165–176.
- Borjas, G. J. and Hilton, L. (1996), Immigration and the Welfare State: Immigrant Participation in Means-Tested Entitlement Programs, *Quarterly Journal of Economics* 111, 575–604.
- Bratsberg, B., Barth, E., and Raaum, O. (2006), Local Unemployment and the Relative Wages of Immigrants: Evidence from the Current Population Surveys, *Review of Economics and Statistics* 88, 243–263.
- Bratsberg, B., Raaum, O., and Roed, K. (2010), When Minority Labor Migrants Meet the Welfare State, *Journal of Labor Economics* 28, 633–676.
- Bratsberg, B., Raaum, O., and Sørlie, K. (2007), Foreign-Born Migration to and from Norway, in C. Özden and M. W. Schiff (eds.), *International Migration, Economic Development and Policy*, World Bank Publications, Washington, DC, 259–290.
- Chiswick, B. R. (1978), The Effect of Americanization on the Earnings of Foreign-Born Men, *Journal of Political Economy* 86, 897–921.
- Chiswick, B. R. (1980), The Earnings of White and Coloured Male Immigrants in Britain, *Economica* 47, 81–87.
- Constant, A. and Massey, D. S. (2003), Self-Selection, Earnings, and Out-Migration: A Longitudinal Study of Immigrants to Germany, *Journal of Population Economics* 16, 631–653.
- Dustmann, C. (1993), Earnings Adjustment of Temporary Migrants, *Journal of Population Economics* 6, 153–168.
- Dustmann, C. (1999), Temporary Migration, Human Capital, and Language Fluency of Migrants, *Scandinavian Journal of Economics* 101, 297–314.
- Dustmann, C. (2000), Temporary Migration and Economic Assimilation, *Swedish Economic Policy Review* 7, 213–247.

- Dustmann, C. (2003), Children and Return Migration, *Journal of Population Economics* 16, 815–830.
- Dustmann, C. and Weiss, Y. (2007), Return Migration: Theory and Empirical Evidence from the UK, *British Journal of Industrial Relations* 45, 236–256.
- Dustmann, C., Glitz, A., and Vogel, T. (2010), Employment, Wages, and the Economic Cycle: Differences between Immigrants and Natives, *European Economic Review* 54, 1–17.
- Eckstein, Z. and Weiss, Y. (2004), On the Wage Growth of Immigrants: Israel, 1990–2000, *Journal of the European Economic Association* 2, 665–695.
- Edin, P.-A. and Åslund, O. (2001), Invandrare på 1990—talets arbetsmarknad, IFAU Forskningsrapport 2001:7.
- Edin, P. A., LaLonde, R. J., and Åslund, O. (2000), Emigration of Immigrants and Measures of Immigrant Assimilation: Evidence from Sweden, *Swedish Economic Policy Review* 7, 163–204.
- Edin, P. A., Fredriksson, P., and Åslund, O. (2003), Ethnic Enclaves and the Economic Success of Immigrants: Evidence from a Natural Experiment, *Quarterly Journal of Economics* 118, 329–357.
- Fernández, C. and Ortega, C. (2008), Labor Market Assimilation of Immigrants in Spain: Employment at the Expense of Bad Job-Matches?, *Spanish Economic Review* 10, 83–107.
- Friedberg, R. M. (2000), You Can't Take It With You? Immigrant Assimilation and the Portability of Human Capital, *Journal of Labor Economics* 18, 221–251.
- Grant, M. L. (1999), Evidence of New Immigrant Assimilation in Canada, *Canadian Journal of Economics* 32, 930–955.
- Hammarsstedt, M. and Shukur, G. (2006), Immigrants' Relative Earnings in Sweden—A Cohort Analysis, *Labour* 20, 285–323.
- Hansen, J. and Lofstrom, M. (2003), Immigrant Assimilation and Welfare Participation: Do Immigrants Assimilate into or out of Welfare?, *Journal of Human Resources* 38, 74–98.
- Hayfron, J. E. (1998), The Performance of Immigrants in the Norwegian Labor Market, *Journal of Population Economics* 11, 293–303.
- Hu, W. Y. (2000), Immigrant Earnings Assimilation: Estimates from Longitudinal Data, *American Economic Review* 90, 368–372.
- Husted, L., Nielsen, H. S., Rosholm, M., and Smith, N. (2001), Employment and Wage Assimilation of Male First-Generation Immigrants in Denmark, *International Journal of Manpower* 22, 39–68.
- Jensen, P. and Pedersen, P. J. (2007), To Stay or not to Stay? Out-migration of Immigrants from Denmark, *International Migration* 45, 87–113.
- Johansson, E. (2008), Does Finland Suffer from Brain Drain?, Discussion Paper no. 1153, Research Institute of the Finnish Economy.
- Le Grand, C. and Szulkin, R. (2002), Permanent Disadvantage or Gradual Integration: Explaining the Immigrant–Native Earnings Gap in Sweden, *Labour* 16, 37–64.
- Longva, P. and Raaum, O. (2003), Earnings Assimilation of Immigrants in Norway—A Reappraisal, *Journal of Population Economics* 16, 177–193.
- Lubotsky, D. (2007), Chutes or Ladders? A Longitudinal Analysis of Immigrant Earnings, *Journal of Political Economy* 115, 820–867.
- McDonald, J. T. and Worswick, C. (1999), The Earnings of Immigrant Men in Australia: Assimilation, Cohort Effects, and Macroeconomic Conditions, *Economic Record* 75, 49–50.
- Ministry of Labour (1998), Inkerinsuomalaisten maahanmuutto Suomeen 1990-luvulla, Ministry of Labour, Helsinki.
- Munshi, K. (2003), Networks in the Modern Economy: Mexican Migrants in the US Labor Market, *Quarterly Journal of Economics* 118, 549–599.
- Nekby, L. (2006), The Emigration of Immigrants. Return vs Onward Migration: Evidence from Sweden, *Journal of Population Economics* 19, 197–226.

- Nielsen, H. S., Rosholm, M., Smith, N., and Husted, L. (2004), Qualifications, Discrimination, or Assimilation? An Extended Framework for Analysing Immigrant Wage Gaps, *Empirical Economics* 29, 855–883.
- Rooth, D. O. and Saarela, J. (2007), Selection in Migration and Return Migration: Evidence from Micro Data, *Economics Letters* 94, 90–95.
- Sarvimäki, M. and Hämmäläinen, K. (2010), Assimilating Immigrants: The Impact of an Integration Program, CReAM DP no. 19/10, University College London.
- Van Hook, J., Passel, J. S., Zhang, W., and Bean, F. D. (2006), Foreign-Born Emigration: A New Approach and Estimates Based on Matched CPS Files, *Demography* 43, 361–382.
- Warren, R. and Peck, J. M. (1980), Foreign-Born Emigration from the United States: 1960 to 1970, *Demography* 17, 71–84.

First version submitted October 2008;
final version received April 2010.