

Wealth in Two Ethnic Groups: The Role of Internal Migration Background¹

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Abstract

This paper studies wealth within an area of Finland that is settled by two ethnic groups: Finnish speakers and Swedish speakers. They are equal and similar in most observable respects, but differ greatly on internal migration background. Most of the Swedish speakers were born in the area, whereas many of the Finnish speakers have migrated into it from other parts of the country. The primary aim of the paper is to analyse whether this differential is interrelated with potential wealth variation. Data covering the years 1991 to 1999 reveal that the Swedish speakers have substantially higher wealth levels than the Finnish speakers, and that variation in economic well-being interrelates with whether or not the person was born in the present region of residence. The results suggest that failures in economic assimilation, as discussed in the international migration literature, may be found also when studying people who differ on internal migration background.

Keywords: Ethnic groups, wealth, internal migration background

Introduction

Assessments of how well an economic system is functioning should focus on the distribution of economic well-being, not only on the level of economic activity. While no one measure of economic well-being is all encompassing, wealth is one of the most commonly used, being a source of well-being that is independent of the direct financial outcome it provides (Jianakoplos and Menchik 1997; Schneider 2004). Wealth may be important, over and above income, for a number of reasons. It supplies services directly to its owners in the form of owner-occupied housing, it is a source of consumption, it provides liquidity, and it is related to the distribution of political and market power (Wolff 1998). A person or a household may save and thus accumulate wealth

¹ Comments from Fjalar Finnäs, Ismo Söderling, anonymous persons and seminar participants at IFAU, EEA 2004, ECINEQ 2005, and RSAI-BIS 2005, have been helpful. Financial support from Kansler Lars Erik Taxells forskningsfond is gratefully acknowledged.

by saving out of income earned and by receiving transfers from other people, but in many circumstances it is virtually not possible to distinguish life-cycle savings from bequest savings (Kessler and Masson 1989). In the literature on wealth differences and wealth inequality, ethnicity is one of the most central factors. The bleak picture of black-white inequality in wealth in the United States, for instance, has been documented in a number of studies (Blau and Graham, 1990; Oliver and Shapiro, 1995; Gittleman and Wolff 2004). A large part of that wealth gap can be attributed to between-group differences in demographic and socio-economic factors.

In Finland, there are two ethnic groups who constitute the native inhabitants of the country.² They have same educational opportunities and constitutional rights, and they are similar in most observable respects. At the national level, Swedish speakers amount to 5.6 per cent or 290,000 persons, and Finnish speakers to practically all others in the 5.2 million population. At the beginning of the twentieth century, the two groups amounted to 350,000 and 2.7 million persons, respectively.

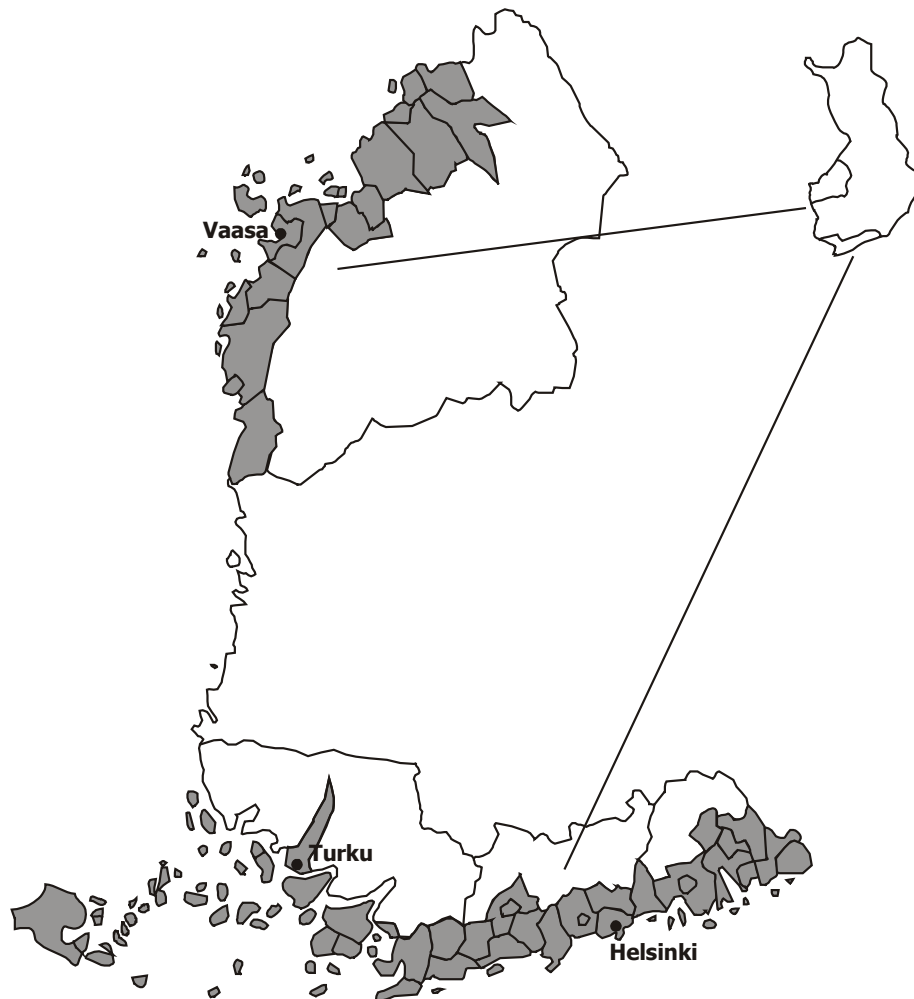
The Swedish-speaking community in Finland has a very long history. The first evidence of direct involvement of Sweden in Finland can be traced to the twelfth century, but also at even earlier dates Finland seems to have had permanent settlement of Swedish speakers. At the time Finland was industrialised, Swedish speakers played a major role on decision-making, economic life, professional and business interests. Swedish speakers were predominant in the tiny upper class, which seems to underlie the fairly widespread prejudice that the ethnic group is overrepresented among those well-to-do. However, both Swedish speakers and Finnish speakers consisted predominantly of rural populations of modest social status (McRae 1997).

In spite of a great number of studies undertaken that compare living conditions in these two ethnic groups, very little is known about potential differences in wealth. The overall purpose of this paper is therefore to study whether there is a wealth gap between the two groups, and what might contribute to such potential variation. Of specific interest is the role of internal migration background.

Swedish speakers in Finland have always lived geographically concentrated at the western and southern coastlines (see the map in Figure 1). This is an area that nowadays is populated by almost a quarter of all inhabitants of the country. In order to avoid results that are confounded by geographical area, a comparison of the two groups should naturally be restricted to these regions.

² There is also a native Sami population that amounts to about 6,500 persons.

Figure 1. Main settlement area of Swedish speakers in Finland (the shaded area)



Population shifts that have occurred in Finland have resulted in a both unique and somewhat paradoxical situation. The country has not experienced large immigration of people from other nations, but internal migration has been substantial. Within-country migration rates have also been much higher in the Finnish-speaking ethnic group than in the Swedish-speaking one (Saarela and Finnäs, 2006a). Since the process of modernisation started in the mid-nineteenth century there has been a gradual concentration of the population from the countryside to the towns and in specific towards the south and the southwest (Korkiasaari and Söderling, 1994). In the 1930s and after World War II, the pace of this population shift was remarkably high, as the nation experienced the fastest industrialisation process in the whole of Europe. Most people who moved into the coastal area were Finnish speakers.

According to official population statistics, Finnish speakers amounted to less than ten per cent of the population in this area in 1880, except for in the cities of Helsinki and Turku where they constituted about half of the population. From 1930 to 1950,

the population in the area doubled but the share of Swedish speakers decreased from 52 to 39 per cent. At the end of 1960, they constituted less than a third of the area's population, and at the turn of the millennium barely a fifth. They are although still in local majority in the rural, less-densely populated, municipalities.

A considerable part of the Finnish speakers who live here nowadays are consequently within-country migrants, or their offspring, whereas most of the Swedish speakers constitute the regional native population. These ethnic-group differences in internal migration background are reflected by Table 1. It shows that 95 per cent of all working-aged Swedish speakers living in the area in 1999 were also born here, whereas the corresponding proportion among the Finnish speakers is only 55 per cent.³

Table 1. Internal migration background by ethnic group, people aged 16–65 years living in the Swedish speakers' main settlement area in Finland at the end of 1999

% born in	Swedish speakers	Finnish speakers
Same region as now residing	82	49
Other region in the area	13	6
Region outside the area	5	45

Region refers to each of the four larger geographical districts displayed on the map in Figure 1.

Source: The data set used in the paper.

These circumstances allow for an opportunity to compare two ethnic groups who differ on internal migration background, but who have been subject to basically the same national-level prerequisites. As a consequence, analyses are likely to avoid many difficulties traditionally involved in comparisons of migrants (foreign-born) and natives. In countries such as Canada and the United States, for instance, there is great diversity in wealth holdings within the foreign-born population. As this variation manifests itself primarily in source-region rather than entry-cohort differences, it seems that latent factors such as political and economic conditions in the countries of origin at the time of migration are important (Borjas 1987). As people studied here have taken part in a similar education system, and, at least officially, have had equal opportunities to take part in economic, political and cultural life, similar problems are likely to be circumvented.

³ Swedish speakers have been heavily overrepresented among emigrants to Sweden, and underrepresented among return migrants (Finnäs, 1986; 2003a). Their share of all Finnish-born immigrants in Sweden is therefore large. About one fifth of all Finnish-born immigrants in Sweden who had come to the country after 1970, and were living there at end-2001 were Swedish speakers (Rooth and Saarela, 2006). It is plausible that such variation in emigration and return migration rates underlie differentials in wealth variation observed here, but since this issue cannot be studied explicitly it remains beyond the scope of the paper.

Specific attention will therefore be paid to the question of whether differences in internal migration background might underlie potential wealth variation between the two ethnic groups. This is an issue of which there is very little known from before. According to the international migration literature (Borjas 1999) and analyses of internal migrants' earnings in the United States (Borjas et al. 1992), one may expect that internal migrants have lower wealth levels than non-migrants. That would be an indication of failures in economic assimilation. Of similar reasons, children of migrants may fail to reach parity in the economic situation with natives, but their situation could still be better than that of first-generation migrants (cf. Maani 1994; Rooth and Ekberg 2003).

Empirical and theoretical underpinnings

As international migration has become an important public issue, there has been a growing research interest in the relative outcomes of migrants. In relation to the numerous studies on earnings and employment rates (e.g. Borjas 1994; Hammarstedt 2003), analyses concerned with wealth differentials between foreign-born and natives are relatively few, however. The existing evidence suggests that foreign-born in Canada accumulate less wealth than observably similar natives (Carroll et al. 1994; Shamsuddin and DeVoretz 1998; Zhang 2003). Still, there tends to be wealth assimilation, leading them to reach parity with natives in 15–30 years. Studies from the U.S. arrive at fairly similar conclusions (Carroll et al. 1998; Amuedo-Dorantes and Pozo 2002; Cobb-Clark and Hildebrand 2004; 2006; Hao 2004). According to Cobb-Clark and Hildebrand (2006), the median wealth level of U.S.-born households is more than twice that of foreign-born.

The reasons to why ethnic groups may differ on wealth are several. Some principal explanations are that they may save at different rates, owing to variation in risk preference, taste, income, health, family support networks, or welfare dependency. Wealth levels can also be a result of disparities perpetuated across generations, as better-off parents give larger financial inheritances to their children, and the desire and ability to leave bequests can further differentiate asset accumulation (Smith 1995). A number of things might therefore, similarly, combine to explain why migrant wealth differs from native wealth. There may be an earnings gap at arrival, but also diversity within the migrant population with regard to social norms, expectations about intergenerational transfers, access to welfare programmes, return-migration prospects, entrepreneurial spirits, and potentially also barriers to the accumulation of wealth (Blau and Graham 1990; Gale and Scholz 1994; Smith 1995; Wolff 1998).

All these issues might in turn be interrelated with a number of socio-economic and structural factors that in the literature have been found correlated with wealth

levels (Hao 1996; Land and Russell 1996; Keister and Moller 2000). People at different points in the life cycle have different tastes for accumulating human capital, working, earning wages, and saving. As people save and accumulate assets until retirement, wealth is generally increasing in age. Higher education and longer work experience also correlate positively with wealth, as they increase savings possibilities. Family factors can be important in the sense that single motherhood often lead to low asset levels, marriage is a wealth-enhancing institution, and parents with more children have greater motives to save for their children's future than those with fewer children. Self-employed and farmers who own land have traditionally had higher wealth levels than others, owing to their specific economic circumstances and personal characteristics (Di Matteo 1997; Wolff 1998; Steckel and Krishnan 2006).

Residential location in terms of local economic opportunities may additionally affect a person's ability to elevate asset values. Industrial structure, urbanisation, levels of joblessness and social networks are thus potentially of importance (Bonacich and Modell 1980; Granovetter 1995; Di Matteo 1997). The economic achievement of an ethnic group may also benefit from that group being in local majority, in case such a situation promotes the extent of beneficial social networks (Becker, 1971; Lazear 1999).

In the agricultural economy, the single most fundamental production factor was land and the amount of land was a measure of wealth (Di Matteo 1997). In rural areas of the modern economy, a large part of any bequests are still in the form of land and real estates related to land-owning. This implies that the offspring who chose not to migrate may have better opportunities than others to enjoy such bequests.

As migration decisions tend to be interrelated with economic circumstances in the source region (Borjas 1994), people with higher levels of wealth may be less prone to migrate than those with lower levels of wealth. Migrants do not therefore necessarily make up a random sample of the population from the area of origin.

In the present case, it cannot be ruled out that people who have migrated into the area under study constitute a non-random group, but unfortunately there is in the data to be used no information about when people have migrated. It should therefore be emphasised that the paper is concerned with wealth in two ethnic groups who live in the same area, but who differ greatly with regard to internal migration background. The role of selection in internal migration, or the role of emigration abroad, cannot be studied explicitly. On basis of official statistics available (Statistics Finland 2005), it does not seem likely that these issues play any larger role for the results, however.

Data and methodology

The data to be used are based on Statistics Finland's longitudinal employment statistics file (*Työssäkäyntitilasto*). They contain annual individual-level information from the years 1991 to 1999 about socio-economic, demographic and labour market related factors, and have been completed with data on taxable wealth. Since a variable for each person's unique mother tongue is available in population registers, official statistics of this kind can be used to compare Swedish speakers and Finnish speakers. The extract utilised here has been designed to facilitate such comparisons, being a random sample with 20 per cent of all Swedish speakers and 5 per cent of all Finnish speakers, born before 1984, who lived in the regions Uusimaa, Eastern Uusimaa, Varsinais-Suomi, Pohjanmaa and the Åland Islands at the end of one or more of the years (these regions are represented by the four larger districts on the map in Figure 1). The sample covers a fourth of the total population of Finland, including the densely populated metropolitan area. The total number of observations under analysis is 684,304, which represent 95,289 individuals.

The focus is on people aged 16 to 65 years, who live at the southern and western coastlines of Finland (the shaded area on the map in Figure 1). The geographical restriction is undertaken to compare like-with-like, as there are virtually no Swedish speakers outside this area.

Information on wealth refers to what is usually defined as "total net worth", which consists of total assets minus total liabilities (Wolff, 1998). Assets are conventional taxation values for (1) the principal residence, (2) vehicles, (3) businesses, (4) stocks and mutual funds, (5) real estates and (6) other assets. Liabilities are a sum of (1) mortgage on the principal residence, (2) business debts and (3) other debts. The consumer price index has been used to obtain levels of real wealth. Information on "financial net worth", usually defined as total net worth minus the principal residence equity, and considered to be a measure of wealth liquidity, is not available. It is known from the data whether a person is a house owner, but since the results remain very much the same no matter if this variable is accounted for, it has been excluded from the models to be presented.

If a person's liabilities exceeds his or her assets, or if the person has no liabilities and no assets, the wealth variable in the data takes the value zero. This is the case for 57 per cent of all observations. In addition, wealth levels in the top decile each year are not known, because Statistics Finland have top-coded the wealth data to guarantee anonymity of the persons. However, since older individuals are excluded from analysis the proportion of right-censored observations is only five per cent.

The dependent variable wealth is thus both left-censored at zero and right-censored at a point that changes between years in the data. Considering this and the longitudinal

nature of the data, advanced econometric techniques in the form of two-limit random-effects tobit models are used. A formal description of these is provided in Appendix 1.

When studying the role of internal migration background on wealth, account will be taken for the impact of a number of other factors that correlate with wealth. These include age, educational level, family situation, labour market situation, and residential location. A number of other control variables have throughout the analyses been tested, including the local area's industrial structure, unemployment rate and the share of Swedish speakers. It turned out that the single most important structural variable in this context was people's residential location, i.e., the variable that represents persons' municipality of residence. That summarised patterns observed in the data best, and improved the model fit most. In the results to be presented, this variable has been used.

Table 2 provides a brief and simplified description of the distribution of the control variables by ethnic group. As touched upon earlier, we can see that there is large variation with regard to residential location. Of all Finnish speakers in the area, 40 per cent live in Helsinki and 49 per cent in other densely populated municipalities. The corresponding proportions among the Swedish speakers are only 13 and 34 per cent, respectively. Finnish speakers are also on average younger and live in somewhat different family compositions than the Swedish speakers. Differences in educational levels and labour market situation are partly interrelated with residential location.

Results

At the aggregate level, there is a substantial wealth differential between Swedish speakers and Finnish speakers. This is illustrated for men in Figure 2, which gives the percentage of people with wealth over a given level in the years 1991 to 1999. The proportion of Swedish speakers with wealth over 25,000 € (150,000 FIM), for instance, is 0.25 as compared with only 0.15 for Finnish speakers. Figure 3 illustrates the situation in a similar manner for women, and shows that both absolute and relative differences between ethnic groups are smaller than for men.

As socioeconomic and structural factors generally are interrelated with wealth, it is essential to control for their impact and how distributional differences in them affect the ethnic-group wealth differential. Separate regressions are also estimated for Swedish-speaking men, Finnish-speaking men, Swedish-speaking women and Finnish-speaking women, in order to allow for behavioural differences. The results can be found in Appendix 2, together with wealth distributions for each of the four groups based on the estimates. The results reveal that the difference between Swedish speakers and Finnish speakers in mean wealth is 13,800 € (82,000 FIM) among men and 3,000 € (18,000 FIM) among women. The effects of control variables are as expected

Table 2. Some descriptive statistics of control variables by ethnic group (%)

	Swedish speakers	Finnish speakers
Residential location		
Helsinki	13	40
Other densely populated municipality	34	49
Rural municipality	53	11
Age in years		
16-40	49	54
41-65	51	46
Educational level		
Basic	33	30
Vocational	51	53
Undergraduate or higher	16	17
Family type		
Married	48	40
Consensual union	14	16
Single	17	26
Living with parents	15	10
Sole supporter or other	5	8
Labour market status		
Employee	60	65
Self-employed	10	4
Other	30	31
Employed whole year		
Yes	54	54
No	46	46
n individuals	41,588	53,701
n observations	313,362	370,942

Distributions are for pooled years in the data. The variable categorisations are simplified as compared with those used in statistical analysis.

and will not be discussed at length: wealth is increasing in age and educational level, and higher among married people with children, self-employed, and those with labour market experience, as compared with others.

The findings of specific interest are summarised in Table 3, which gives the difference in wealth between Swedish speakers and Finnish speakers when having accounted for the impact of control variables. The table shows that, also when the impact of control variables is accounted for, there is a substantial male wealth differential. The importance of internal migration background is evident, however. The first row compares the larg-

Figure 2. Male wealth profiles by ethnic group, 1991 to 1999

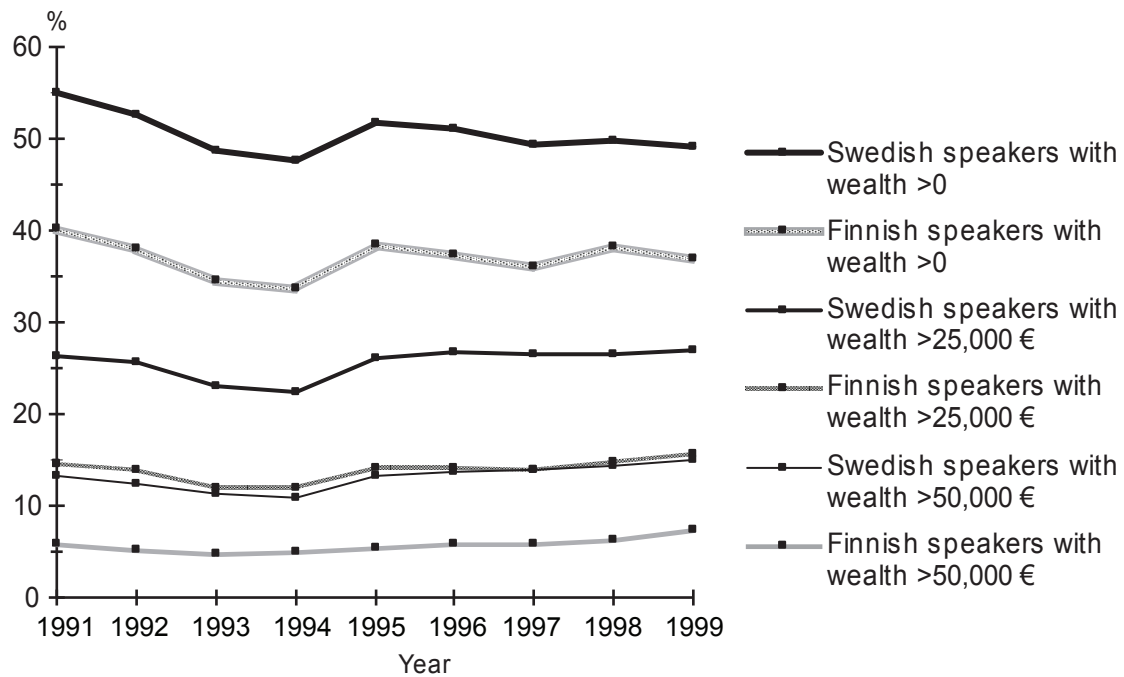
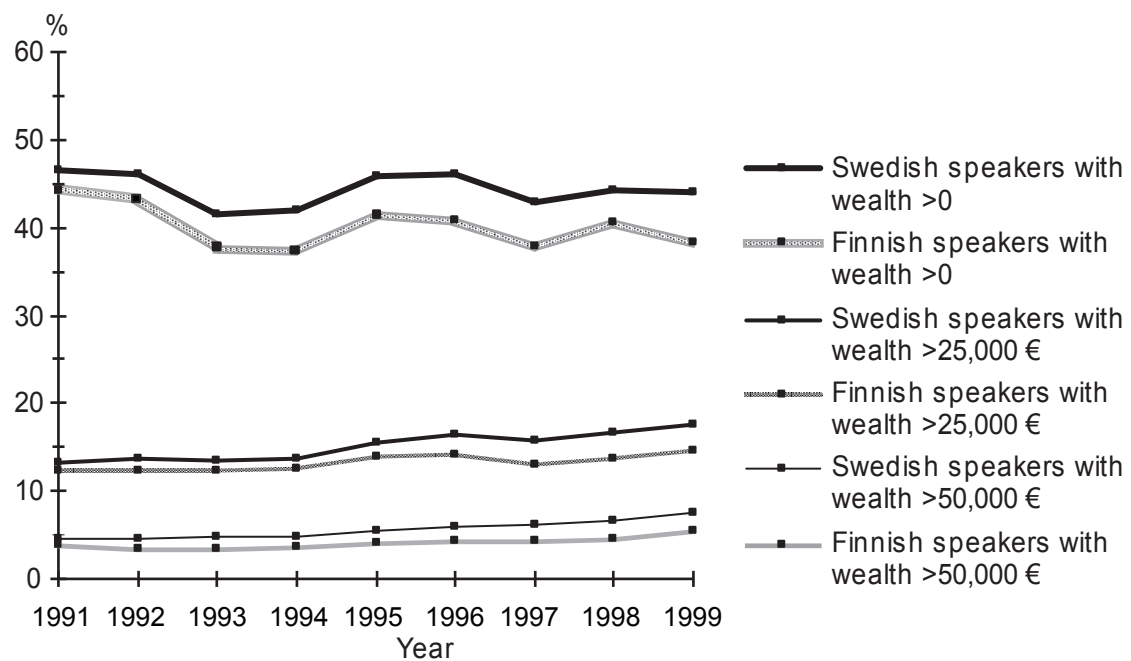


Figure 3. Female wealth profiles by ethnic group, 1991 to 1999



est group of Swedish speakers, i.e., those born in the same region as they presently are living, with (a) similar Finnish speakers, (b) Finnish speakers born in other regions in the Swedish speakers' main settlement area, and (c) Finnish speakers born in regions outside this area. The wealth penalty of Finnish speakers is larger for those born in any other region in the area (12,400 €), and for those born outside the area (12,800 €), than for those born in the present region of residence (9,800 €).

Table 3. Difference in adjusted wealth (in 1,000 €) between Swedish speakers and Finnish speakers by internal migration background, men (women)

Swedish speakers born in	Finnish speakers born in		
	Same region as now residing	Other region in the area	Region outside the area
Same region as now residing	9.8 (0.7)	12.4 (2.9)	12.8 (2.9)
Other region in the area		7.2 (0.3)	
Region outside the area			3.5 (1.5)

The numbers are based on the estimation results reported in Appendix 2 and refer to the wealth advantage of Swedish speakers as compared with Finnish speakers in different categories of the internal migration background variable.

The ethnic-group wealth differential is further reduced if one compares Swedish speakers and Finnish speakers who are more alike in terms of internal migration background. Swedish speakers born in any other region in the area are found to have a wealth level that is 7,200 € higher, and Swedish speakers born outside the area only 3,500 € higher, than that of corresponding Finnish speakers. It should, though, be borne in mind that there are relatively few Swedish speakers in these two categories (Table 1).

These findings correspond fairly well with arguments saying that migrants generally have a poorer economic situation than natives, and that second-generation migrants perform better than first-generation migrants, but still worse than natives. For women, the ethnic-group wealth differential is much smaller than for men, but the overall pattern is fairly similar, as given by numbers within parentheses.

A decomposition will tell us how much of the total wealth gap can be attributed to between-group differences in internal migration background and other variables. This implies that the wealth differential between Swedish speakers and Finnish speakers is divided into one part that is attributed to characteristics differences and another part that is attributed to differences in returns to the characteristics (i.e., to coefficients, or anything not associated with parameters of the model). The first part can further be decomposed into its individual components, such as the proportion explained by distributional differences in internal migration background. A formal description of the methodology is provided in Appendix 3.

The decomposition results are summarised in Table 4, which indicates that two thirds (68 per cent) of the wealth differential in men can be attributed to distributional differences in variables. The single most important ones in this context are internal migration background, residential location and age, which explain 16, 35 and 11 per cent, respectively, of the wealth gap.

Table 4. Decomposition results of wealth differential between Swedish speakers and Finnish speakers

	Men	Women
Difference in mean wealth (1,000 €)	13.8	3.0
% of difference attributed to		
(A) Characteristics	68	33
Internal migration background	16	38
Residential location	35	-63
Age	11	65
Educational level	-1	-28
Family type	4	24
Labour market status	5	10
Months employed	1	-1
Observation year	-2	-13
(B) Returns to characteristics	32	67

For women, only a third of the fairly small wealth gap is explained by characteristics differences, but internal migration background is important as for men. As much as 38 per cent of the ethnic-group wealth differential can be attributed to this factor. The contributions of many of the other variables are rather different from those of men, though. The distribution of residential location, for instance, is in favour of the Finnish speakers, but the age distribution strongly favours the Swedish speakers.

Discussion

Considering that the two ethnic groups differ greatly on internal migration background, and that this variable correlates with wealth, it is natural that wealth differences are reduced if one accounts for the distributional variation. Part of the results although call for a somewhat further discussion. Firstly, why is the ethnic-group wealth gap larger in men than in women and, secondly, why does there remain a substantial male wealth gap also in people born in the same region? These issues are best explored by considering some stylized facts, which point to the importance of entrepreneurship, family-owned businesses and industrial structure.

Present results reveal that wealth levels are higher of self-employed than of others. Still, they cannot together with other observables fully explain the observed wealth variation. It should, though, be pointed out that a person may take part in family-owned enterprises despite not being classified as self-employed in the data. As noted above, residential location favours the relative wealth of Swedish-speaking men, whereas the opposite tends to be the case for women. As Swedish speakers to a higher extent than Finnish speakers live in rural areas, this reflects that male wealth is concentrated to rural areas and female wealth to urban areas (cf. Saarela 2004). It is also in correspondence with earlier results, which say that the proportion of self-employed in the Swedish-speaking population is higher than in the Finnish-speaking one living in the same area, and that a substantial part of this variation is interrelated with distributional differences in residential location (Saarela 2003). Further, it has been found that self-employment as an outcome of socioeconomic background (i.e., of being born in an entrepreneurial family) is more prevalent in men than in women, and specifically marked in Swedish-speaking men. Part of the ethnic-group wealth gap, between and within sexes, is thus interrelated with family-owned businesses.

Likewise, a person may have close ties to primary industries in spite of not being classified as self-employed in the data, specifically if such work is undertaken by a family-owned company. From present data it is not possible to separate self-employed farmers from other self-employed, but from other available statistics it is clear that a much higher proportion of Swedish speakers than Finnish speakers in the area work in primary industries. This is not surprising when considering that they to a greater extent live in rural municipalities. However, also within the rural municipalities the proportion of people employed in primary industries is much higher in the Swedish-speaking population (Finnäs 2003b). This obviously has to do with the fact that Swedish speakers constituted the great part of the original settlers.

Local economic structure is consequently an important latent determinant of the wealth variation observed at the aggregate level, specifically in men. Inevitably, this raises the question of whether the municipality parameters incorporated in estimations display any pattern. A closer look at these (not shown here) revealed that there is a consistent wealth advantage for Swedish-speaking men, but that it tends to vary in magnitude between municipalities. Albeit this pattern is not unambiguous it supports the above arguments: the ethnic-group wealth gap tends to be widest in rural municipalities with strong agricultural traditions and a high proportion of Swedish speakers.

As far as wealth levels are associated with land owning in agricultural and forestry sectors, and with family-owned businesses, these circumstances thus help to explain why there is an ethnic-group wealth gap also in people born in the same area. As a higher proportion of men work in primary industries (Saarela and Finnäs 2006b),

Table 5. Wealth differential (in 1,000 €) between Swedish speakers and Finnish speakers in different categories of the control variables

	Men	Women
Age in years		
16-20	7.2	7.1
21-25	7.2	7.1
26-30	9.4	6.4
31-35	8.4	4.4
36-40	8.2	1.9
41-45	9.8	0.7
46-50	10.6	-0.8
51-55	10.8	-2.0
56-60	10.6	-2.9
61-65	9.1	-4.2
Educational level		
Basic	9.8	0.7
Lower vocational	11.9	1.7
Upper vocational	9.6	0.3
Undergraduate	9.4	4.0
Graduate	7.6	0.7
Postgraduate	3.2	-1.3
Family type		
Married, no children	9.8	0.7
Married, 1 child	9.9	-0.3
Married, 2 children	9.3	-1.2
Married, 2+ children	11.6	-0.5
Consensual union, no children	10.8	1.7
Consensual union, children	9.3	2.7
Sole supporter	6.9	3.7
Single	9.1	2.4
Living with parents	9.4	1.5
Other	6.1	-1.9
Labour market status		
Employee	9.8	0.7
Self-employed	12.1	-0.7
Unemployed	11.4	0.5
Outside labour force	10.4	-0.2
Months employed		
12	9.8	0.7
1-11	8.7	0.8
0	9.6	0.7

Calculations are based on the estimation results reported in Appendix 2. In each case, all other control variables have been set to their reference levels. Results for dummies representing residential location (45 municipalities) and observation year are not shown.

it is then also natural to expect that the wealth differential is wider in men than in women. It also seems reasonable that intergenerational bequests are directed towards sons in the form of land, when parents approach retirement, and in other forms towards daughters, at other stages of the life cycle (see e.g. Bernheim et al. 1985, for a discussion about strategic bequests). This implies that the wealth difference between ethnic groups should be relatively small in young men, whereas the opposite might be the case for women, and that there should be a relatively large male wealth gap also at lower educational levels, as people employed in primary industries generally are poorly educated. As shown by Table 5, which gives the adjusted ethnic-group wealth differential in various categories of the control variables, these arguments are fairly well reflected by present data.

Conclusions

This paper has been concerned with individuals' wealth within an area of Finland that has experienced great immigration of people from other parts of the country. Since the two ethnic groups under study, Swedish speakers and Finnish speakers, differ greatly on internal migration background, it has been possible to perform an analysis that is similar to studies on international migration, but which is undertaken at the regional level. This way of approaching the issue of migrants' economic assimilation seems not to have been attempted before, and has been facilitated by the unique circumstances created by population shifts that have occurred in Finland. People studied here are equal, have the same opportunities, and are similar in most observable respects. The analyses are therefore not likely to suffer from problems that traditionally are associated with native-migrant comparisons.

The results say that Swedish speakers have higher wealth levels than Finnish speakers living in the same area, and that a substantial part of this wealth gap can, directly or indirectly, be attributed to between-group differences in geographical roots. Having an internal migration background is found to be negatively associated with wealth. The group of people who, to a considerable extent, consist of the offspring of within-country migrants are further found to have higher wealth levels than people born outside the studied area. These findings correspond with arguments in the international migration literature, which suggest that migrants may have difficulties in economic assimilation, and that also second-generation migrants may fail to reach parity with natives.

In case one believes that internal migrants are poorer integrated in local society than non-migrants, wealth differentials as observed here might reflect overall better social networks in the Swedish-speaking population. Previous studies concerned with various indicators of living conditions in the two ethnic groups, such as unemployment incidence, early retirement and mortality risks, suggest that differences in social

integration might underlie the better position of Swedish speakers (see e.g. Saarela and Finnäs 2003; 2005). These issues, together with the potential importance of inter-generational effects, could be explored in further detail with complimentary register data. One possibility would be to construct households. Another would be to use retrospective information for the individuals' parents by linking present longitudinal data to the 1950 census.

In spite of the unique circumstances that have allowed for this study, the findings still have the potential for opening up new avenues for future research concerned with economic inequality and wealth distribution in migrant and native populations. The results also have important socioeconomic implications as they indicate that within-country migration, not only migration between countries, may have consequences for individuals' economic well-being. It therefore seems sufficient to provide assistance and guidance not only to foreign-born. As losing one's geographical roots may impact negatively on persons' economic situation, there is also a need for monitoring and surveying the situation of people who move within a country. Government policies that promote migration may thus have unintended consequences and cause economic inequality at the regional level.

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Appendix 1

The two-limit random-effects tobit model

The observed dependent variable wealth, denoted by y , is censored from both below (at zero) and from above (at a point that changes between years in the data). A two-limit tobit model (Rosett and Nelson, 1975) is therefore used, specified as

$$y_{it} = \begin{cases} \tau_L & \text{if } y_{it}^* \leq \tau_L \\ y_{it}^* = x_{it}\beta + \varepsilon_{it} & \text{if } \tau_L < y_{it}^* < \tau_U \\ \tau_U & \text{if } y_{it}^* \geq \tau_U \end{cases}, \quad (1)$$

where y^* is the latent (index) variable, τ_L the threshold of left-censoring and τ_U the threshold of right-censoring. Each individual is denoted by i , and each observation by t . A vector of explanatory variables is referred to as x , whereas β is its associated vector of coefficients. The error is denoted by ε_{it} . As the data are of longitudinal character, the model has a random-effects specification, which rests on the assumption that the distribution functions of errors is independent of explanatory variables, i.e., that unobservable factors are not correlated with explanatory variables (Arellano and Honoré, 1999). Fixed effects are not used, since population group is a characteristic that remains constant over time.

The error is specified as

$$\varepsilon_{it} = v_{it} + u_i, \quad (2)$$

implying that unmeasured characteristics are in part specific to each observation (v_{it}), and in part individual-specific and constant across time (u_i). Both these components are assumed normally distributed with zero means and independent of one another, so that

$$Var[\varepsilon_{it}] = \sigma_v^2 + \sigma_u^2, \quad (3)$$

where the parameter σ_u is the standard deviation of the error part related to unobserved individual heterogeneity. The standard deviation of v_{it} is also estimable, as is the case in all tobit models.

If y^* can be assumed normally distributed, the tobit model will provide consistent and efficient estimates of parameters. Maximum likelihood estimation for the model involves dividing the observations into three sets. One contains uncensored observations, which maximum likelihood treats in the same way as the linear regression model. The other two contain left-censored and right-censored observations, respectively, for

which the specific value of y^* is not known. The probability of being left-censored is computed as

$$\Pr(y^* \leq \tau_L | x) = \Phi\left(\frac{\tau_L - x\beta}{\sigma}\right), \quad (4)$$

and the probability of being right-censored as

$$\Pr(y^* \geq \tau_U | x) = 1 - \Phi\left(\frac{\tau_U - x\beta}{\sigma}\right) = \Phi\left(\frac{x\beta - \tau_U}{\sigma}\right). \quad (5)$$

The likelihood function for all three sets of observations is then

$$\ln L = \sum_{Lower} \ln \Phi\left(\frac{\tau_L - x\beta}{\sigma}\right) + \sum_{Uncens.} \ln \frac{1}{\sigma} \phi\left(\frac{y - x\beta}{\sigma}\right) + \sum_{Upper} \ln \Phi\left(\frac{x\beta - \tau_U}{\sigma}\right), \quad (6)$$

where ϕ and Φ are the probability density function and the cumulative density function, respectively, for the standard normal distribution, and σ is the standard deviation of ε . Expected values for the latent outcome, $E(y^* | x) = x\beta$, are the primary focus of interest.

Appendix 2

Statistical results: estimates and wealth distributions

Figure A1. Distribution of predicted wealth by sex and ethnic group

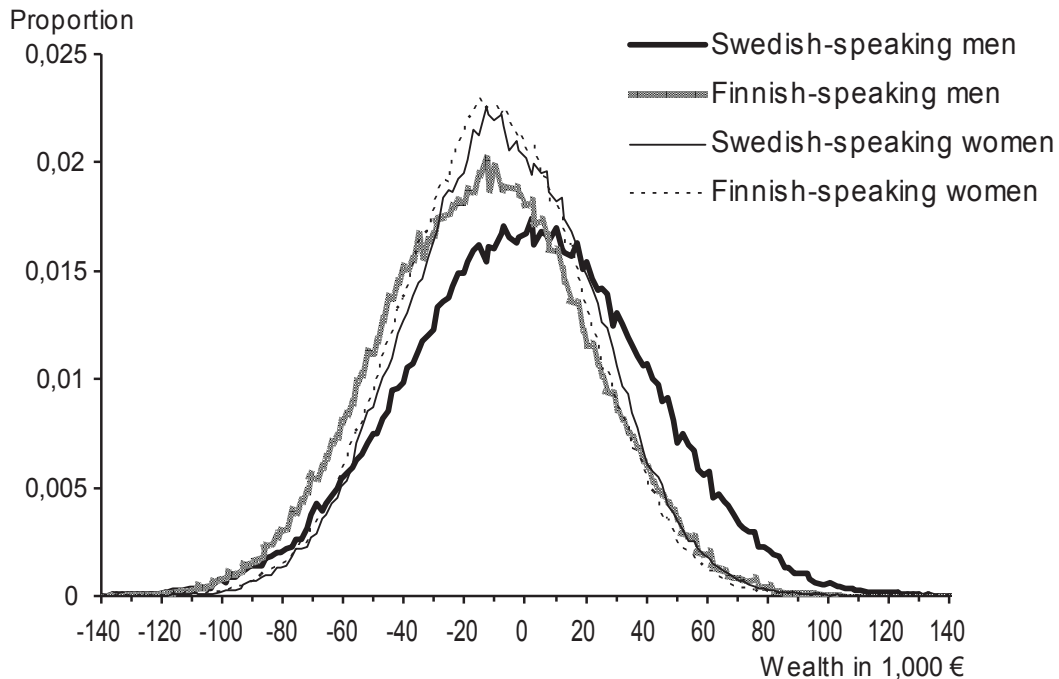


Table A1. Results of tobit models for wealth/1000, by sex and ethnic group

	MEN				WOMEN			
	Swedish speakers		Finnish speakers		Swedish speakers		Finnish speakers	
Constant	2.0	(-0.5)	-7.8	(-0.5)	-5.8	(-0.4)	-6.4	(-0.4)
Age, 16–20 years	-29.2	(-0.6)	-26.6	(-0.6)	-19.8	(-0.5)	-26.2	(-0.5)
21–25	-28.4	(-0.5)	-25.8	(-0.4)	-18.1	(-0.4)	-24.5	(-0.3)
26–30	-25.0	(-0.4)	-24.5	(-0.3)	-13.0	(-0.3)	-18.8	(-0.2)
31–35	-17.9	(-0.3)	-16.6	(-0.2)	-7.3	(-0.2)	-11.0	(-0.2)
36–40	-8.7	(-0.2)	-7.2	(-0.2)	-3.8	(-0.2)	-5.1	(-0.1)
41–45	–	–	–	–	–	–	–	–
46–50	7.1	(-0.2)	6.3	(-0.2)	3.2	(-0.2)	4.6	(-0.1)
51–55	12.6	(-0.3)	11.7	(-0.2)	7.1	(-0.2)	9.7	(-0.2)
56–60	17.4	(-0.3)	16.6	(-0.3)	10.8	(-0.3)	14.3	(-0.2)
61–65	18.8	(-0.4)	19.5	(-0.4)	12.9	(-0.4)	17.8	(-0.3)
Educational level,								
Basic	–	–	–	–	–	–	–	–
Lower vocational	8.0	(-0.4)	5.8	(-0.3)	5.6	(-0.3)	4.6	(-0.3)
Upper vocational	10.7	(-0.5)	11.0	(-0.5)	7.7	(-0.4)	7.9	(-0.3)
Undergraduate	13.9	(-0.6)	14.2	(-0.6)	14.5	(-0.5)	11.1	(-0.5)
Graduate	17.2	(-0.5)	19.4	(-0.5)	12.5	(-0.5)	12.5	(-0.4)
Postgraduate	24.2	(-1.1)	30.9	(-0.9)	14.7	(-1.2)	16.7	(-0.9)
Family type,								
Married, no children	–	–	–	–	–	–	–	–
Married, 1 child	-0.5	(-0.2)	-0.6	(-0.2)	0.3	(-0.2)	1.2	(-0.2)
Married, 2 children	-1.1	(-0.2)	-0.6	(-0.2)	0.5	(-0.2)	2.3	(-0.2)
Married, 2+ children	-0.6	(-0.3)	-2.3	(-0.3)	0.4	(-0.3)	1.6	(-0.2)
Consensual union, no children	-4.5	(-0.3)	-5.5	(-0.3)	-2.9	(-0.3)	-3.9	(-0.2)
Consensual union, children	-6.5	(-0.4)	-5.9	(-0.3)	-1.6	(-0.3)	-3.5	(-0.3)
Sole supporter	-4.5	(-0.6)	-1.5	(-0.4)	-0.6	(-0.2)	-3.6	(-0.2)
Single	-6.6	(-0.3)	-5.9	(-0.2)	-2.0	(-0.2)	-3.6	(-0.2)
Living with parents	-6.5	(-0.3)	-6.0	(-0.4)	-4.0	(-0.3)	-4.9	(-0.4)
Other	-13.9	(-0.7)	-10.2	(-0.4)	-9.1	(-0.6)	-6.6	(-0.4)
Current labour market status,								
Employee	–	–	–	–	–	–	–	–
Self-employed	8.7	(-0.2)	6.4	(-0.2)	3.6	(-0.2)	4.9	(-0.2)
Unemployed	1.7	(-0.3)	0.1	(-0.3)	-0.1	(-0.3)	0.0	(-0.2)
Outside labour force	1.6	(-0.3)	0.9	(-0.3)	0.3	(-0.2)	1.1	(-0.2)
Months employed current year,								
12	–	–	–	–	–	–	–	–
0	-2.6	(-0.3)	-1.6	(-0.3)	-0.4	(-0.2)	-0.6	(-0.2)
1–11	-1.2	(-0.2)	-1.0	(-0.2)	-0.3	(-0.2)	-0.3	(-0.2)
Origin,								
Born in same region as residing	–	–	–	–	–	–	–	–
Born in other region in the area	-5.2	(-0.4)	-2.7	(-0.6)	-2.6	(-0.4)	-2.2	(-0.5)
Born in region outside the area	-9.1	(-0.9)	-2.9	(-0.4)	-1.3	(-0.7)	-2.2	(-0.3)
Residential location, Helsinki	–	–	–	–	–	–	–	–
Observation year, 1991	–	–	–	–	–	–	–	–
σ_u	32.5	(-0.2)	28.4	(-0.1)	27.8	(-0.1)	25.4	(-0.1)
σ_v	16.2	(0.0)	14.6	(0.0)	13.1	(0.0)	12.2	(0.0)
Log likelihood	-454,173.40		-407,354.30		-410,455.10		-463,461.40	
n observations	159,917		180,425		153,445		190,517	
n individuals	21,180		26,118		20,408		27,583	

Standard errors are in parentheses. Parameters for residential location and observation year are included in estimations but the estimates are not shown here. Residential location consists of 45 municipality dummies.

Appendix 3

Decomposition methodology

Following Neumark (1988) and Oaxaca and Ransom (1994), the wealth differential is decomposed as

$$\overline{Y^S} - \overline{Y^F} = [\hat{\beta}^*(\bar{x}^S - \bar{x}^F)] + [\bar{x}^S(\hat{\beta}^S - \hat{\beta}^*) - \bar{x}^F(\hat{\beta}^F - \hat{\beta}^*)] \quad (7)$$

where Y is real wealth, S and F refer to Swedish speakers and Finnish speakers, respectively, x is a row vector of characteristics, and $\hat{\beta}$ is a vector of estimated coefficients. $\hat{\beta}^*$ is derived by using the cross product matrices as weights from the wealth equation such that

$$\hat{\beta}^* = \Omega \hat{\beta}^S + (1 - \Omega) \hat{\beta}^F, \quad (8)$$

where $\Omega = (x^{S'} x^S + x^{F'} x^F)^{-1} x^{S'} x^S$ is the Oaxaca-Ransom weighting matrix. The wealth structure given by (8) is equivalent to running a regression on the pooled data.

The first term on the right-hand side of (7) represents the difference in wealth that is attributed to wealth-related characteristics, and the second term the wealth differential that is due to differences in returns to the characteristics (anything that is not associated with parameters of the model).