Migration of early middle-aged population between core rural areas to fast economically growing areas in Finland in 2004-2007

Paper to be presented in European Population Conference in Stockholm June, 13-16 2012

Matti Saari
Statistics Finland, Population statistics, 00022 Statistics Finland,
Phone +358 9 1734 3401, e-mail: matti.saari@stat.fi

1. Introduction

Economy started to globalise towards the end of the 1980s when the movement of capital was deregulated (Mattelart 2006, 124-125). In the early 2000s, essential removals of restrictions to the movement of labour were made in the EU and Efta countries. This could be regarded as the onset of globalisation proper.

At the same time the net migration of the internal migration of large towns contracted and the net migration of the internal migration of their neighbouring municipalities and the peripheral municipalities of regions increased (Aro 2007, 235-236). According to Aro (2007, 224), the development of internal migration has started to show tendencies similar to the early 1980s. The out-migration tendency to rural municipalities has grown especially in the internal migration of the population in their 30s in urban municipalities. The in-migration tendency of the internal migration of the population under the age of 35 indicates a declining trend from rural to urban municipalities. Migration between rural municipalities has livened up in recent years among the 25-34 and 35-44 age groups, for the volume of migration has remained unchanged although the number of municipalities has diminished drastically (OSF 1999 and 2004, t. 97).

Table 1. Change of migration streams of persons aged 30-34 in actual rural areas in Finland in 2001-2006

Type of migration stream	Change 2001-2006, %	
	in-migration of actual rural areas	out-migration of actual rural areas
Actual rural areas-Great city regions	2	-12
Actual rural areas-Other city regions	-2	1
Actual rural areas-Peripheral rural areas	-15	-21
Actual rural areas-Actual rural areas	5	5

Source: Saari 2010b

The migration of the 30-39 age group from rural to urban areas has been largely replaced by internal migration between rural areas. The number of centres accumulating population and their migration gains have increased in the countryside (Aro 2007, 235-236). The development in the distribution of the population became clearly polarised in the middle of the decade (Aro 2005). Internal urbanisation of the countryside has had a decreasing impact on the urbanisation of urban areas. The enlivened internal migration within rural areas especially among the early middle-aged population in the first decade has not been studied.

The enlivening of the internal migration of the 30-39 age group within the countryside can be assumed to have been due to an increase in internal migration especially into rural areas of strong economic growth.

Thus, in this study we examine the 30 to 39-year-old population's internal migration flows between core rural areas when economic growth has been relatively brisk in recent years in the area of arrival. The core rural area from which the volume of internal migration is the highest to a chosen core rural area has been selected as the area of exit. Our aim is to ascertain the connections of the out-migration tendencies in the internal migration of the 30-39 age group with the structural factors in the chosen areas of arrival and exit which have generally been observed to be associated with out-migration tendency in urbanisation studies.

2. Theoretic points of departure

Pushing and pulling factors have been widely examined in the economic concentration models of new regional economics (see Krugman 1998). Thus, in this study, too, we examine the early middle-aged population's internal migration within the countryside in the out-migration areas of growth areas with the help of the push and pull theory. According to the balance theory of regional economics internal migration is born to eliminate regional economic imbalance. The balancing effect of internal migration is dependent on regional unemployment, economic growth and earned income (Hämäläinen and Böckerman 2004).

Besides the aforementioned independent variables we have also included in our model other factors by expanding these concepts in our examination of migration flows. Thus, we have widened economic growth into change in the production structure by including in the model changes in the shares of different economic activities. Economic growth can be regarded as being descriptive of the employment potential of an area (Hämäläinen & Böckerman 2004. Unemployment has been widened into labour market structure, the characteristics of which are described by aspects which have sometimes been observed to associate with internal migration.

Especially in cross-sectional analyses, the connection between regional unemployment and the out-migration tendency of internal migration has often been expected to be a positive one, viewed as arising from the likelihood of the unemployed to become employed and thus increase their earned income (Pissarides & McMaster 1992).

Regional unemployment has also been considered to affect internal migration so that the willingness of the unemployed to look for work in other areas and their success in it fluctuates according to economic trends (see Korkiasaari 1992; Hämäläinen and Böckerman 2004). During an economic boom the connection has usually been negative.

At a certain level of creation and closure of jobs there may sometimes be plenty and sometimes little leaving and entering of jobs. This is called churning (Davis, Haltiwanger & Schuh 1996). The share of the age cohort with the highest probability to retire in the population of working age is an indicative sub-process of churning.

3. The data and the methodology

The research data of this study describe migration flows between 168 migration areas by 5-year age cohort, and area of departure and entry during 1977-2007.

The areas covered by the data are called migration areas, which are urban areas formed of one or more municipalities, or other regions formed by one or more municipalities, which had similar in-migration in 1999-2004 and which were geographically located adjacent to each other. Thus, the migration areas correspond with sub-regional units but are slightly smaller than them in terms of area.

Each area of departure and arrival has been given a code indicating its degree of development. In urban areas, the degree of development has been assigned according to Antikainen's (2001) Urban Network Study. In the countryside, areas have been classified according to the trisection of rural areas made by the Ministry of Interior so that the municipality with the largest population forms the determinant of category. Each core

countryside area has been defined the area (primary area of departure) from where the volume of migration to a certain core countryside area is the highest. The dependent variables for the data have been formed by calculating for the areas in and out-migration probabilities by 5-year age cohort. Each core countryside area has also been calculated the out-migration probability prevalent in its primary area of departure in migration between core countryside areas among the 30 to 34-year-old population. The 35 to 39 age group has been treated in the same way. The dependent variable is the mean of these two variables. The core countryside areas where the value added of production has been above the top quartile in core countryside according to the relative growth factor have been chosen as the target areas. Respectively, the target areas for which the model has been estimated have been selected according to the growth of employment.

Figure 1. Type of economic development in core rural areas in Finland in 2004-2006

The research data of this study also describe the migration areas by their population by 5-year age cohort, regional unemployment and non-employed population of working age between 1977 and 2007. Data on gross domestic product (GDP) and numbers of employed persons by industry by migration area in 1977-2007 have also been made available to the study and these have been added to the research data. Likewise, data on the share of persons with tertiary level degree or qualification in the population aged over 25 have been added to the research data. The values of these variables have been entered for the primary area of departure of each core countryside area, thereby doubling the number of potential independent variables. This group of variables is called the group of descriptive variables of an area of departure.

Thus the type of the analysis is time series analysis of cross-sectional data. The used method is regression analysis. The statistical analyses were performed with version 9.1.3 of SAS software.

The variables for which short and long names are listed below were included in the analysis.

MUVILAQI34KA (dependent variable)

Average calculated from the numbers of moves per year between core countryside areas in the primary area of departure per 1,000 mean population among 30 to 34-year-olds and respectively among 35 to 39-year-olds.

KAUELBKT

Percentage change in the value added of urban industries (excl. primary production) in the area per year.

VTYMAAT7IND

Number of persons employed in agriculture and forestry in the area as an index.

PALBKT07PRO

Relative change in the value added of services in the area per year.

VA59INDL

Number of 55 to 59-year-olds in the area as an index after the basic series has been adjusted by calculating three-year moving averages.

KOKOULOS

Share of population aged over 25 with tertiary level education in the area.

TYTTOPROLA

Ratio of unemployed to employed in the primary area of departure.

KAUELBKTLAE1

Percentage change in the value added of urban industries in the primary area of departure.

KOKOUOSLA

Share of population aged over 25 with tertiary level education in the primary area of departure.

PALVEL7OSBLA

Share of the value added of services in the primary area of departure of the total value added of the area.

4. The results

In 2004-2007, the out-migration tendency of the 30-39 age group in the primary areas of departure of growth areas became better explained in the groups of areas selected on the basis of growth of employment (employment model) than in the group selected on the basis of growth of value added (value added model). The finding is consistent with the observations made in the past that highly capital-intensive production generates economic growth so that internal migration often shows a clearly negative net tendency (Myrskylä 1998). In the group of areas selected on the basis of growth of employment, the coefficient of determination for the migration tendency of the 30-39 age group in primary areas of departure was 68.0%. The model explained statistically very significantly the variation of the dependent variable.

Table 2a. Estimates of the parameters of the employment model 1)

Parameter Variable	DF	Estimate	
Intercept	1	19.03047	
KAUELBKT	1	-0.18971*	
TYTTOPROLA	1	-0.34413	
VTYMAAT7IND	1	0.13096**	
KAUEBKTLAE1	1	0.40346**	
PALBKT07PRO	1	0.56677*	
VA59INDL	1	-0.60411**	
KOKOUOSLA	1		0.77809*
PALVEL7OSBLA	1	0.26293**	
KOKOULOS	1	0.17580	

1) Number of observations in the analysis 60
*) Statistically significant at the 5 per cent level

**) Statistically significant at the 1 per cent level

Table 2b. T-values and statistical significance of the parameters of the employment model

Variable	Standard Error		t Value		Pr > |t|
Intercept	26.71937	0.71		0.4796	
KAUELBKT	0.07760		-2.44		0.0181
TYTTOPROLA	0.42148		-0.82		0.4181
VTYMAAT7IND	0.03618		3.62		0.0007
KAUEBKTLAE1	0.07567		5.33		<.0001
PALBKT07PRO	0.23184		2.44		0.0181
VA59INDL	0.17095		-3.53		0.0009
KOKOUOSLA		0.34687		2.24	0.0293
PALVEL7OSBLA	0.09458		2.78		0.0076
KOKOULOS	0.22404		0.78		0.4363

In the employment model the value added of urban industries in the area of arrival did not correlate on the expected way with the out-migration tendency of the 30-39 age group in the primary area of departure. The estimate of the parameter was statistically significant. In the value added model the value added of urban industries in the area of arrival did correlate on the expected way with the out-migration tendency of the 30-39 age group in the primary area of departure.

There was a strong connection between the value added of urban industries in the primary area of departure and the out-migration tendency of the 30-39 age group but it was reverse to expectations. In the value added model the out-migration rate of persons aged 30 to 39 in the area of departure correlated very significantly on the expected way with the value added of urban industries in the primary area of departure. The value added of urban industries in the departure area has been taken on each target year from yearly data a year earlier than the migration rate. The direction of correlation was expected, too.

The negative connection of unemployment in the primary area of departure with the out-migration tendency of the 30-39 age group did not conform to the hypothesis but the result was not statistically significant, either. This was the situation in the employment model but in the value added model the situation was totally opposite. In that model the unemployment rate of the primary area of departure correlated positively with the out-migration tendency of persons aged 30 to 39. The relation was statistically very significant. Thus the result does not at all support the research findings where high unemployment has been observed to create strong pressure for the unemployed in the area to seek jobs from elsewhere, thereby decreasing unemployment and increasing mobility. This may happen after a bad economic depression (see Korkiasaari 1991) but in the first years of the new century the situation was not that kind in core rural areas of Finland. Our results support the hypothesis that when unemployment is high in the area the out migration tendency of labour force not very young will be high, too.

The number of persons employed in agriculture and forestry in the target area as an index had a strong positive connection with the out-migration tendency of the 30-39 age group in the primary area of departure and the nature of the connection was as expected. This was true both to the employment and value added model.

The relative change in the value added of services in the target area had a strong positive connection with the out-migration tendency of the 30-39 age group in the primary area of departure. The nature of the connection was as expected in the employment model. Also in the value added model the direction of correlation was as expected but the parameter estimate was not statistically significant.

The number of persons aged 50 to 55 in the target area as an index had a strong negative connection with the out-migration tendency of the 30-39 age group in the primary area of departure but the nature of the connection was reverse to expectations in the employment model. On the contrary in the value added model the direction of correlation was as expected and the parameter estimate was statistically very significant, too.

The share of population with tertiary level education in the primary area of departure had a strong connection with the out-migration tendency of the 30-39 age group and the nature of the connection was as expected in both models. The parameter estimate was statistically very significant in the value added model and significant in the employment model.

The share of the value added of services in the primary area of departure of the area's total value added was strongly connected with the out-migration tendency in the 30-39 age group in both models. The connection was reverse to expectations in the employment model and as expected in the value added model.

The share of population with tertiary level education among the population aged over 25 in the target area was not connected with the out-migration tendency in the internal migration of the 30-39 age group in the primary area of departure in the employment model. The connection was positive as expected in both models but it was statistically significant only in the value added model. The statistical significance was even very high.

For the group of areas selected on the basis of value added, the coefficient of determination for the migration tendency of the 30-39 age group in the primary area of departure was 60.4%. The model explained statistically very significantly the variation of the dependent variable.

Table 3a. Estimates of the parameters of the value added model 2)

Variable	Estimate	
Intercept	-67.67470	
KAUELBKT	0.18431**	
TYTTOPROLA	1.31869**	
VTYMAAT7IND	0.14946**	
KAUEBKTLAE1	-0.23351**	
PALBKT07PRO	-0.07189	
VA59INDL	0.26241**	
KOKOUOSLA		1.19135**
PALVEL7OSBLA	-0.54596**	
KOKOULOS	1.80906**	

2) Number of observations in the analysis 64
*) Statistically significant at the 5 per cent level
**) Statistically significant at the 1 per cent level

Table 3b. Estimates of the parameters of the value added model

Variable	Standard Error		t Value		Pr > |t|
Intercept	16.56382	-4.09		0.0001	
KAUELBKT	0.04078		4.52		<.0001
TYTTOPROLA	0.24571		5.37		<.0001
VTYMAAT7IND	0.03266		4.58		<.0001
KAUEBKTLAE1	0.08740		-2.67		0.0100
PALBKT07PRO	0.09138		-0.79		0.4349
VA59INDL	0.09328		2.81		0.0068

KOKOUOSLA	0.30043	3.97	0.0002
PALVEL7OSBLA	0.09865	-5.53	<.0001
KOKOULOS	0.26079	6.94	<.0001

4. Conclusions

–