Back to Parents: Earnings of Sandwich Generation and Informal Care

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Abstract Earnings of internal migrants and return migrants to parents' residential area are analysed in the paper. It is hypothesised that an individual maximizes her utility by the choice of residence, working hours, amount of care giving to parents, and receiving support from parents, in particular, grandparenting. Care giving is associated with decrease in working hours, whereas grandparenting increases labour supply of young adults. Returns to skills in the compared groups can vary because of the residential choice, heterogeneity of the groups, and different involvement in informal care. The main results suggest that earnings of male return migrants are higher, whereas they are lower for female return migrants. However, returns to human capital are remarkably lower for return migrants. The gap in returns to human capital diminishes when taken into account potential time transfer within a family. Return migrants likely benefit from grandparenting. Earnings decrease is found in response to events that are associated with care to parents for both migrants and return migrants. The study is conducted on individual pooled data on young people born in 1974 for the period 1992-2006, Sweden.

1 Introduction

The paper considers earnings of young adults with respect to their residential choice. Young adults may live in parents' residential area or not. One of the main factors pushing young adults to leave parents is acquisition of secondary or university education. At this age, they easy

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adopt life style of new places, create new networks, and decide on permanent stay there. However, being attached to parents, relatives, and old friends they may return after completing educational program. Return migration may be related to life events such as marriage or separation, childbearing, unemployment etc. Young adults expecting support from parents would more likely return back. In turn, sickness or death of one of the parents, their retirement and need for assistance can also cause children's decision to return home.

Since educational migration of young adults is likely to be related to the lack of educational program in the place of parents' residence, it can be assumed that this lack is more attributable to small local labour markets with low diversified jobs. Therefore, return migration and employment in home area can be associated with potential imperfect match of skills and labour demand, and cause lower returns on investment in human capital.

Intergenerational family ties play a role in the choice of the place of residence of the younger generation. We hypothesize that young adults and their parents are involved in mutual informal care resulting in the choice of residence and earnings of younger generation. This can cause sacrificing better job opportunities and make lower returns to skill, when young adults benefit from emotional, practical and financial support and mutual care. Both effects, changes in returns to education and in working hours, affect earnings. However, it can be assumed that taken informal care into account returns to education will show which of the effects prevail.

The purpose of the paper is to study whether residential choice affects returns on investment in human capital, whether parents and young adult children rely on each other for support, and in what direction this support plays a role. Comparison of earnings of migrants and return migrants with dollar value of time transfer in informal care between generations is the contribution of the paper. Though, there is a bunch of papers investigating the impact of informal care on employment, the link between earnings and a sandwich role in assisting to both ageing parents and children is not well studied. Return migration is often associated with needs in informal care. However, return migration has not been studied in relation to labour market outcomes and informal care. Therefore, the paper contributes in a study of earnings of migrants and return migrants with respect to their involvement in both care giving and care receiving from their parents.

Return migrants are considered as those who reside within the same local labour market as parents and have an experience of internal migration. We control for five family events that

might affect young adults' labour supply: retired parents, parents' death, unemployment, childbearing, and childrearing. If difference in returns to skills between the groups is not significant, difference in earnings is likely caused by adjustment of working hours to informal care supply. Therefore, return migrants would not experience mismatch between skills and jobs available.

The study is conducted on an open source of aggregate data (Statistics Sweden, SCB, scb.se) and individual register data collected by Statistics Sweden and compiled into the Swedish Longitudinal Integration Database for Health Insurance and Labour Market Studies (Longitudinell Integrationsdatabas för Sjukförsäkrings- och Arbetsmarknads-studier, LISA)[2]. The data enable consideration of location choice and earnings of young people born in 1974, who have graduated primary school in Sweden and had earnings from employment or self-employment during the specified year within a period 1993-2006[3]. The data incorporate individual characteristics of parents, as well.

The main results suggest that returns to human capital are lower for return migrants. However, this gap diminishes when taken into account potential time transfer within a family. Young adults likely benefit from grandparenting. Earnings decrease is associated with care to their parents for both migrants and return migrants. Life events in three-generational family are found important determinants of earnings for both groups.

The paper is structured as follows. Next chapter presents theoretical and empirical findings related to internal migration and returns to migration; return migration, informal care, and labour market outcomes of sandwich generation. Hypothesis, model, and research strategy are discussed in chapter 3. Data and their limitations are described in chapter 4. Empirical results are presented in chapter 5. Conclusion completes the paper.

2 Literature review

The literature review is based on combination of theoretical and empirical findings on internal migration and selection problem, returns to migration, family ties, and impact of informal care on employment and earnings.

[2] The data were obtained through the Demographic Data Base, Umeå University.
[3] We use 1992 data to observe the state of migration only.

2.1 Internal migration

Internal migration in Sweden, intensified in 1960s, accompanied a rapid urbanization process. This caused depopulation of the northern regions and concentration of population in metropolitan areas in the southern part of the country (Borgegard et al. 1995, Lundholm 2007). Later, policy of creating jobs in public sector and expansion of higher education to peripheral regions decelerated concentration of population in the southern part and depopulation of the northern part (Lundholm 2007). At present, intensive internal migration is directed both back and towards metropolitan areas on one side, and regional centres and rural areas on the other side (ibid, Hjort and Malmberg 2006). Though core-periphery direction of migration dominates (Eliasson et al.), there are reasons that encourage people to move in the opposite direction. One of the reasons of return migration is family ties.

Returns to migration. Since pioneer work of Sjaastad (1962), migration, and internal migration in particular, has been considered as investment in human capital. Nakosteen and Zimmer (1980, 1982) suggested a self-selection in migration decision caused by observable and unobservable individual and regional determinants, adopted in a row of studies (Borjas et al., 1992, Nakosteen et al. 2008, Sasser 2010). In particular, Borjas et al. (1992) finds that those whose skills are mismatched with structure of rewards are most likely to leave the region (US data for young workers involved in internal migration). They argue two-sided selection of low skilled workers migrating to the regions with low returns to skills and high skilled workers moving to the regions with greater returns to skills. Considering employment as the main reason, one may suggest that those who are disadvantaged in the labour market tend not to move. Lack of individual traits and low expectations of benefit from migration is found to avert towards migration (e.g. Becker 1981, Huber and Nowotny 2009, Lindgren 2003, Nakosteen and Zimmer 1980, Nakosteen et al. 2008). Higher education and career ambition are related to higher risks of migration (Fischer and Malmberg 2001, Niedomysl and Amcoff 2011, Niedomysl 2011, Mulder 1993). However, there are no systematic differences found by Lindgren (Sweden: 2003).

A row of papers refers regional and individual unemployment as a determinant of migration (Greenwood, 1975). Unemployment status is found to be linked to higher risk of migration, and unemployment status doubles likelihood of labour migration as for manual, so for non-manual workers and different occupations (US: Herzog et al. 1984). However, association between

unemployment rate and migration is not attributed to Sweden of the last decades (Lundholm 2007).

Greenwood (1975, 1985) expands the idea of greater returns to skills to migration, that can result not only in better employment opportunities and higher wages, but in a preferred bundle of amenities, reconciliation of work and family life, handling with life-course events such as marriage, divorce, acquisition of education, entry into the labor force, childbearing, ageing, and retirement etc. For young people educational migration can preface movement by employment or family reasons. Educational migration and assimilation in the place of study can affect place of employment (Sweden: Wikhall 2001). Empirical studies show that employment is not the major motif for moving for 20% of internal migrants in Sweden (Lundholm et al. 2004), and for 36% in US (Clark and Huang 2004). This is supported by age-gender and family determinants of migration. The most mobile group of people is in their twenties (Plane, 1993) and in some countries at the start of retirement (Sweden: Pettersson and Malmberg 2009). People with children are less likely to migrate, women migrate less often than men, and wives more often follow their husbands' destination (Bailey and Cooke 1998, Mincer 1978). Migration in consideration of family ties in multigenerational families is considered in a row of papers (EU: Aassve et al. 2011, Sweden: Malmberg and Pettersson 2007, Mulder and Malmberg 2011, Pettersson and Malmberg 2009, Lundholm et al. 2004, the Netherlands: Michielin et al. 2008, Switzerland: Rérat 2014, US: Mulder and Clark 2002).

Return migration. A considerable part of internal migrants consists of return migrants. Return migrant is each second or third migrant from ten in various countries (Australia: Newbold and Bell 2001, Canada: Newbold 2001, Finland: Kauhanen and Tervo 2002, Germany: Hunt 2004, US: Newbold 1997). They are found to be negatively selected in terms of skills and employment (Australia: Newbold and Bell 2001, Canada: Newbold 2001, Finland: Pekkala 2003, Sweden: Niedomysl and Amcoff 2011). Another opinion is that return migration resulting from a mixture of successes and failures is not related to skills selection (Hunt 2004).

Social reasons, among such reasons as education, employment, living environment, housing, often drive decisions on return migration (Sweden: Niedomysl and Amcoff 2011, Lundholm et al. 2004; US: Clark and Huang 2004). Intention of employment in home area might also reflect expectations to improve chances of securing employment due to social network (Niedomysl and Amcoff 2011). In Sweden, people are found more likely to be return migrants in

order to get close to family and friends (Niedomysl and Amcoff 2011). Family ties are found important reasons for young adults not to move (Mulder and Malmberg 2011, Pettersson and Malmberg 2009). Frequency to return is lower for those who migrated for educational reason from other than metropolitan areas (Mulder and Clark 2002, Niedomysl and Amcoff 2011).

2.2 Migration and family ties

Motif of money and time transfer between generations may explain importance of social reasons in return migration. There are two directions of care, emotional and practical support between generations. Generation of children in their working age provides care to their parents on regular or periodic bases. Parents, in turn, assist their children by taking care of grandchildren. Therefore, children, being a sandwich generation, are recipients from and providers of care to their parents.

Being a recipient. Being close to family and friends is found most important for 26-37-year-old age group as this is a period of family formation (Pezzin and Steinberg Schone 1999). Grandparents can help out with childrearing which is found important by Aassve et al. (2011), Dimova and Wolff (Europe: 2011), Michielin et al. (2008), Petterson and Malmberg (2009), and Rérat (2014). In particular, this is supported by greater propensities of return migration for graduates with children (Rérat 2014). Importance of social reasons in return migration is emphasized by women more often than by men (Mulder and Clark 2002, Niedomysl 2011). Older generation provides emotional support, and also financial and practical help (Aassve et al. 2011, Mulder and Clark 2002, Pezzin and Steinberg Schone 1999). This is found to be related to a greater likelihood of return migration in high-income parental homes (Mulder and Clark 2002).

Informal care towards parents. Young adults are likely to become return migrants or not move away in favour to assist needs of their parents (Malmberg and Pettersson 2007, Michielin et al. 2008, Pettersson and Malmberg 2009). Though, influence of parents' needs on children's migration decision is weaker than of children's needs in support from paretns (Michielin et al. 2008, Italy: Pagani and Marenzi 2008). Widowed and single parents are more likely to affect adult children decision to stay with them (Mulder and Clark 2002). Living close does not necessary affect frequency of assistance. However, positive association is found by Cox and Rank (1992) and Fors and Lennartsson (2008).

Younger and older generations tend to live close in countries with weak public institutions for care. Studies across European countries reveal lower rates of regular participation of grandparents in care for children in Sweden as a country of strong formal care system (Dimova and Wolff 2011, Hank 2007, Kohli et al.). However, empirical studies do not support a decline in intergenerational relations in response to the development of public institutions (Gray 2005; Hank 2007). Enrichment of public institutions for care is not found to be linked to increasing intergenerational distance over time (Malmberg and Pettersson 2007). Hank and Buber (2009) and Albertini et al. (2007) show that probability of providing informal care between generations not on regular bases is higher in the Scandinavian countries and France compared to other European countries.

2.3 Employment and earnings of sandwich generation

Informal care can be interpreted as a time transfer between generations and be associated with change in labour supply of working generation. This can appear either in reduction of working hours and switching from full-time to part-time employment (Bolin et al. 2008, Carmichael and Charles 2003a,b, Ettner 1996, Heitmueller 2004, Heitmueller and Inglis 2007, Johnson and Lo Sasso 2000, Kolodinsky and Shirey 2000, Pavalko and Artis 1997, Pavalko and Henderson 2006, Waldfogel 1997) or leaving the labour market (Bolin et al. 2008, Engers and Stern, 2002, Fevang et al. 2008, Pavalko and Hendersen 2006). On the opposite, earnings, reduced during care for a lone parent, tend to rise after the parent's demise (Norway: Fevang et al. 2008). Therefore, people involved in care giving typically experience a significant reduction in lifetime earnings. Bolin et al. (2008) distinguish direct and indirect opportunity costs of informal care. Direct costs are measured in working hours reduction and indirect costs are associated with specific capital accumulation and career achievements that could be gained by on-the-job-training and be implemented in productivity and wages instead of time spent in informal care.

There are evidences that informal care towards elder generation does not reduce labour supply (US: Wolf and Soldo 1994). One of the explanations is that caregivers differ in the value of time transfer. Heitmueller and Inglis (2007 UK) find that those who care longer than 20 hours per week experience earnings reduction. However, for carers involved fewer than 20 hours per week the link between care giving and employment is not significant.

Participation of grandparents in childrearing, on the contrary, is positively associated with mothers' employment. Though, the effect depends on public national institutions development (Aassve et al. 2011). A positive link between female labour supply and intergenerational co-residence is found by Arrondel and Masson (2006), Dimova and Wolff (2011), and Pagani and Marenzi (2008). Grandparents with lower level of human capital are more likely to provide time transfers, whereas money transfers are anticipated from grandparents with better endowments (Dimova and Wolff 2011, Mulder and Clark 2002). Aassve et al. (2011) find that effect of grandparents participation in child care is greater for the decision on labour force participation compared to the decision to work full- or part-time. However, causality between mothers' employment and grandparenting is not obvious, which is stressed by Dimova and Wolff (2011) and Aassve et al. (2011).

Female labour force participation linked to their "sandwich" position, as assisting to both ageing parents and children, is not well studied. An exception is a paper of Pagani and Marenzi (2008) that find help received from parents being positively linked to female employment, whereas care provided negatively linked to labour force participation. However, the first effect is stronger. They find that receiving help is more important for mothers of children of 0-5 years old.

As women are involved in informal care to a greater extent, their labour force participation and earnings are affected more than those of men (Badgett and Folbre 1999, Carmichael and Charles 2003 UK, Engers and Stern, 2002, Ettner 1996, Heitmueller and Inglis 2007 UK, Kotsadam 2011, Pavalko and Hendersen 2006). However, there is evidence in reduction of working hours and probability of employment among men providing elder care as well (Bolin et al. 2008, Norway: Fevang et al. 2008).

Estimation strategies. The most popular approach is to consider employment with informal care as exogenous variable (e.g. Bolin et al. 2008, Carmichael and Charles 2003b, Dimova and Wolff 2011, Kotsadam 2011, Pavalko and Hendersson 2006). Informal care and employment as dichotomous outcomes are studied by Aasve et al. (2011), Borsch-Supan et al. (1992), and Pezzin and Steinberg Schone (1999). Trivariate choice model for employment of sandwich generation, their involvement in elder care and grandparenting for their children is employed by Pagani and Marenzi (2008). However, causal relation between the states of employment and care is not straightforward and grounds endogeneity problem (Aassve et al. 2011, Dimova and Wolff 2011).

Study of migration decision and earnings as its outcomes is based on the Roy model (1951). He suggested switching regression to imply self-selection in migration and its influence on further outcomes. This approach is employed in Nakosteen and Zimmer (1980) and Nakosteen et al. (2008).

Despite a growing interest to the issue of reconciliation of work and informal care, the link between migration decision and labour outcomes in its relation to providing informal care has not been studied.

3 Hypotheses, model, and research strategy

3.1 Hypothesis

The main hypothesis is that family ties affect young adults' residential choice and allocation between working hours and hours of informal care to members of three-generation family. Though, the family is not necessarily consists of one household. If parents and adult children are involved in informal care, this can be seen in the effect of life events in the family on earnings of young adults and their residential choice. Those individuals who reside close to parents reduce or increase their labour supply with taking into account parents' needs in care giving and parents' possibilities to take care of their grandchildren. Young adults might lose in earnings but benefit in well-being that in addition to consumption of goods consists of mutual care and emotional support. Choice to live with parents might also penalise for returns to education if there is an insufficient match between jobs and skills available in the labour market. Therefore, we hypothesise that earnings in two groups can vary due to different returns to skills and due to different amount of labour supply.

If returns to skills of young adults residing with parents are significantly less than of migrants, this would suggest the first group sacrifices their labour market positions in favour of care giving to parents. If there are no differences in returns to skills between the groups, we can conclude that allocations made by return migrants between working hours and care giving do not cause a choice of lower paid job. There is an opportunity of greater returns to education among individuals residing close to parents, which can be associated with opportunity of better allocation including labour market position and mutual care between generations.

Young adults who do not reside with parents are also expected to make allocation between working hours and household production. In particular, this allocation can be affected by

reduction of labour supply in need of childrearing. This might also be affected by parents' needs for care, which can be implemented by leave of absence of an individual and reduction in his or her earnings.

3.2 Model

An individual with characteristics *X* maximizes her utility in the form of

$$u = U(consume, childcare, eldercare, X),$$

where *consume, childcare, eldercare* are the individual amount of consumption and care towards children and parents. Let assume that care can be provided either on formal or informal base. Here formal care means purchasing of care service in the market, and informal care means household production. Therefore, budget constraint can be interpreted in two ways:

Formal care:

$$hw = consume + childcare + eldercare$$

where *h* respects to working hours, *w* is the hourly wage, and earnings are spent on individual consumption and market purchase of care.

Informal care:

$$hw - childcare - eldercare = consume$$

Here the observed earnings on the left side are reduced by time transfer within a family. If there is a time transfer related to grandparenting, it can be interpreted as unearned income Y_0 spent for purchasing child care within a three-generational family by market price:

$$h^* w^* = hw + (Y_0 - childcare) - eldercare = consume$$

Y_0 - *childcare* is expected to be no greater than 0. $Y_0 - childcare = 0$ means that grandparenting covers individual needs in child care, and the negative value respects to sharing informal child care between young adults and their parents. Therefore, $h^* w^*$ respects to the observed individual earnings with taken into account informal care. Obviously, they are less than *hw*, $h^* w^* < hw$. In general, reduction in earnings can be caused by both decrease in wage rate and working hours. Decrease in hourly wage is possible if decision where to work is taken under family circumstances.

By introducing residential choice, we assume that young adults are well informed about their expected well-being if they move or stay. We model the choice of being among "migrants" or "return migrants" for an individual of certain age, family status and education. The level of

well-being results from allocation between consumption of market goods and time spend in mutual informal care, which affects working hours. *Choice*=1 respects to return migrants, who reside close to parents, and *Choice*=0 respects to migrants. The migration choice is related to the latent utility of each choice:

$$Choice_i = 1, \text{if } u_{is} - u_{im} > 0,$$
$$Choice_i = 0, \text{otherwise}$$

here u_{is} respects to individual utility when residing close to parents, and u_{im} otherwise.

The residential choice can negatively affect hourly wage if there is a mismatch between jobs and individual skills in the local labour market. We assume this situation is attributable to return migrants if their migration choice is conditional on family circumstances. Reduction in working hours in response to family needs can be attributable to both return migrants and migrants. However, migrants are anticipated to lose less in relation to care for parents and more in relation to child care, as they do not live close to parents.

It is hypothesized that during unemployment young adults can receive emotional and financial support from parents as well. Therefore, the duration of unemployment can be longer for return migrants, if the individual has possibility to wait for a better job offer. Thus, losses in earnings related to unemployment can be greater in this group. However, the relation between earnings reduction and unemployment is also linked to labour market demand and opportunities to find job, which can depend on residential area of parents. This is to be controlled by unemployment rates.

3.3 Research strategy

The process is modelled as the generalized Roy model (Roy 1951), where potential outcome (earnings in our case) is a function of a treatment (residential choice) made on the base of comparing the levels of utility as a latent variable. The model is presented by switching regression: choice of residence (as a probability distribution function *F*) and log earnings' equations for return migrants and migrants with dollar valued reduction or increase in labour supply in response to family events.

We cannot control for working time in the model, as this information is unavailable in data base. Both effects, changes in returns to education and in working time, affect earnings. However, it can be assumed that with introduction of "care" variables into the model and

consideration of the condition between two choices – to stay with parents or to move, – returns to education will show which of the effects prevail.

The estimated model is:

$$\begin{cases} P(Choice_i = 1) = F(X_i^{/}\beta_0 + Fam_i^{/}\lambda_0 + R_i^{/}\gamma_0) \\ E(\log(Earnings_{is} \,|Choice_i = 1) = X_{is}^{/}\beta_s + Fam_i^{/}\lambda_s + \sigma_s\rho_s \dfrac{f(Z_i^{/}\gamma)}{F(Z_i^{/}\gamma)} \\ E(\log(Earnings_{im} \,|Choice_i = 0) = X_{im}^{/}\beta_m + Fam_{im}^{/}\lambda_m - \sigma_m\rho_m \dfrac{f(Z_i^{/}\gamma)}{1-F(Z_i^{/}\gamma)} \end{cases}$$

where $Z_i^{/}\gamma = X_i^{/}\beta_0 + Fam_i^{/}\lambda_0 + R_i^{/}\gamma_0$ denotes variables influencing migration choice, σ_s^2 and σ_m^2 are variances of the error terms in the earnings equations, ρ_s and ρ_m are the correlation coefficients between disturbances in the choice equation and earnings equations for the two groups (see Lokshin and Sajaia (2004) for details). *X* is a set of individual characteristics, *Fam* corresponds to characteristics of the family, and *R* reflects differences in amenities between parents' and individual's residential areas.

3.4 Specification checks

Specific period effects are included in the model to avoid impact of macroeconomic changes on the estimated parameters. Local labour market fixed effects are included to count for regional differences in returns to skills.

As people attended university program start working in their mid-20s, it is assumed that subsample of people aged 25-32 years old includes individuals of three levels of education, who are able to work full time. We consider a subsample of people not attended university of 19-32 years old as they can potentially work full time.

Model is estimated separately for men and women, as gender roles in household production and care giving as well gender differences in labour market outcomes cannot be ignored.

4 Data and their limitations

Panel data analysis encompasses a period 1992-2006 for a cohort born in 1974 having parents alive (LISA). By pooling data we assume that people make their choice of residence every year. We consider young adults ever migrated as people who are able to compare both

options: to stay with parents or to move. We define young adults living close to parents as return migrants, though the fact of return migration could happen long ago. Residence at parents' place is considered by residing in the same local labour market[4]. Migrants are defined as people who do not reside within the parents' local labour market. Pettersson and Malmberg (2009) found that parents move to adult children more often. Therefore, we control for parents, who did not change their residence during the considered period. Explanatory variables consist of three domains.

Individual (*X*): age, age squared, education, unemployment status and recent unemployment (if the status has been changed in the considered year). Three levels of education are included in the model: primary (no longer than 9 years of schooling), secondary (10-12 years) and university (greater than 12 years). Data provide information on unemployment payments, which serve as a signal of unemployment. We introduce transition from employment into unemployment as an event that happened during the considered period. The sum of the estimates at transition into unemployment and at state of being unemployed respects to the effect of the first year of unemployment.

Family characteristics (*Fam*) include number of children under 7 years old, a dummy for a new child born (the age under one year old). Dummy for parent's death is changed to one at the year of event and keeps this value in the following years. Father's or mother's "having no earnings" is considered as status when a parent does not have neither earnings nor unemployment allowance during the period. As observable variables related to care giving death of a parent or having no earnings by one of the parents is considered. The sum of the estimates at the number of children and a new born child is to count the total effect of a newborn child on earnings.

Region (*R*) characteristics include differences between parents' and individual's municipalities (local labour markets) in the size of local labour market, municipality unemployment rates, elderly dependency ratio, presence of river, sea, and university. Differences take a non-zero value for migrants and equal zero for return migrants. Elderly dependency ratio, as the proportion of over-working age population in the size of population in municipality, respects to the long-run trend in ageing. Potentially this respects to structure of jobs in the labour market and might affect attractiveness of the municipality as residential choice for young adults. We do not make any specific assumptions for metropolitan areas. Labour markets are considered

[4] The definition of local labour markets is based on whether a group of municipalities can be defined as self-sufficient in terms of labour force. Statistics Sweden constructs the regions yearly, based on the amount of commuting between municipalities.

as the log size of working age population in municipality. Larger labour markets are considered more attractive as providing better opportunities for a job and skills match. Presence of university is considered as a technological characteristic of labour market affecting returns to skills. Elderly dependency ratio and unemployment rates are measured as proportions. Environmental amenities (river, lake, and sea coast), and presence of university are included as dummies.

Annual earnings from employment and self-employment are logged and corrected with consumer price index.

There are limitations that data set on confidence of the investigated hypothesis. 1) Joint decisions on parents' retirement and young adults' parenthood might occur[5]. 2) The presence of siblings living close to parents affects the residential choice of young adults, as taking responsibility for parents is siblings' mutual choice (Konrad et al. 2002). However, model does not account for their presence. 3) A mutual choice of young spouses on their residence can respect to only one of the spouses' family ties. However, we model individual utility function for men and women, separately[6]. 4) Intergenerational care giving is only one reason of return migration. Another reason is possibility to spend less for housing due to homeownership (e.g. Fischer and Malmberg 2001). This can also be a strong incentive to reside with parents. However, this is not taken into account. 5) Unemployment status might affect residential choice. Young adults may prefer to spend period of unemployment with parents and go back to work in another municipality when receiving a job offer. 6) Data allow stating whether relatives live in one municipality. However, it is impossible to recognize whether multigenerational families reside in one household or not. 7) We also cannot recognize whether children and parents, residing in one area, rely on each other for support. However, we base on assumption that average parents and children residing close to each other benefit from mutual care. Significant reduction or improvement in earnings linked to family events serves as a signal of care between generations. 8) The location choice is registered at a certain date of a year. Therefore, a causal relation between the events and the residential choice within a year cannot be observed. For example, we cannot say whether a job loss precedes return migration or otherwise.

[5] Our data do not support this hypothesis as only 3.7% of female childbearing occur at the year of retirement of a grandmother to the newborn child.
[6] Childless couples are not observed as a family in the data.

5 Empirical results

5.1 Descriptive statistics

Appendix 1 presents descriptive statistics for young adults elder 19 years old not attended university (App. 1 Table A) and for young adults elder 25 years old (App. 1 Table B). Statistics reveal that earnings do not significantly differ with respect to residential choice for young adults elder 19 years old not attended university. Young adults elder 25 years old and residing with parents earn slightly less than those who moved. Those who live close to parents are slightly less educated, have larger number of children under 7 years old. In the group of young adults elder 19 years old frequency to be unemployed is greater for migrants. In the group elder 25 years old the difference in frequency to be unemployed is insignificant. The proportion of parents having no earnings is higher for those who reside with parents and elder than 25 years old. In another group difference is insignificant.

The difference between labour market size at parents and individual residences reveals that young adults tend to move to larger labour markets. It is also seen that a new residence place is more likely to be located close to lake, river or sea coast, and university. Parents' residence has slightly greater dependency ratio.

Earnings dynamics over time (App. 2) exhibit that to the age of 32 return migrants earn less than migrants. However, the results suggest that young adults move for their study and this is a constraint for their labour supply in the earlier period. Those, who stay, more likely start working full-time. In addition to acquisition of education, men serve in army. This explains that at age less than 25-26 for men and 24-25 for women return migrants earn greater than migrants. Then earnings of presumably better educated migrants outstrip those of return migrants.

The proportion of migrants in population grows with age, but tends to stabilize after 25, when reaches 45-50% (App. 3). This is consistent with finding that people are less likely to migrate with ages (Fischer and Malmberg 2001) and that educational migration prevails nowadays (Lundholm 2010).

5.2 Regression analysis

Regression results in detail are presented in app. 5-8, where columns 5 and 6 exhibit residential choice parameter estimates and their standard errors, columns 1 and 2 respect to

parameter estimates and their standard errors for return migrants, and columns 3 and 4 – for migrants.

Determinants of residential choice. By the results, it can be stated that better educated young adults are more likely to migrate and leave parents, which is consistent with other studies on migration. Communities with higher unemployment rates are certainly not attractive to young adults as a residential area. Young adults tend to stay with parents if the labour market size is large. University graduates are less likely to choose residence in ageing communities. The probability of migration decreases with age. Return female migrants are more often unemployed and their choice of residence is affected by family characteristics. In particular, larger number of children under 7 years old is associated with residing close to parents. However, an event of childbearing is not linked to the choice of residence. A parent's death is associated with the choice to stay in the parents' residential place. However, mother or father having no earnings affects the decision in the opposite directions.

Residential choice and earnings. We estimate the crude effect of residential choice on earnings including only educational attainment, age, and location in the regression models (Table 1). The results suggest that men living in the parents' area gain slightly greater earnings than migrants. This is 7.8% difference in the group 19-32 and 2.1% difference in the group 25-32 years old. There is no difference in earnings' size for women in the group 19-32 years old. However, women elder than 25 years old living close to parents have penalties in earnings and gain 5.2% less than female migrants.

Table 1 Estimates of log-earnings of young adults

Variable	men not attended university, 19-32	men, 25-32	women not attended university, 19-32	women, 25-32
Secondary school	0.330***	0.257***	0.508***	0.375***
	(0.007)	(0.009)	(0.010)	(0.013)
University		0.376***		0.712***
		(0.009)		(0.013)
Reside at parents labour market	**0.075*** **	**0.021*** **	**0.003**	**-0.051*** **
	(0.005)	(0.005)	(0.007)	(0.005)
_cons	5.427***	6.879***	5.535***	6.387***
	(0.021)	(0.011)	(0.023)	(0.014)
N	78408	115193	76194	127103
ll	-230000	-290000	-240000	-330000

Notes: *** p < 0.001. Controls: Age, age squared. Time FE: Yes. Local labour market FE: Yes.

The results on switching regressions are consistent with the crude effect. In particular, empirical estimates for men (appendices 5, 7) show that both parameters ρ_1 and ρ_2 are positive and significant. These parameters allow comparing earnings resulting from a residential choice with those of a random individual in the labour market. The ρ_1 value means that young men residing close to parents earn greater than a random individual. On the contrary, positive ρ_2 demonstrates that migrants earn less than a random individual. For women elder than 19 year old and graduated secondary or primary school (Appendix 6) ρ_1 is insignificant. This means that young women residing close to parents earn similar to a random individual, whereas positive ρ_2 advocates that female migrants with no more than secondary education earn less than a random individual. On the contrary to the negative crude effect for women of 25-32 years old, they earn greater than a random individual residing close to parents, when taken into account self selection, family, and regional characteristics (Appendix 8).

Returns to skills. Mincer earnings regressions for the separate groups of return migrants and migrants (Type 1) and earnings equations estimated with controls on residential choice and potential involvement in informal care (Type 2) exhibit that returns to human capital are greater for migrants in all groups except the group of women of 19-32 years old not attended university (Table 2). However, the difference is smaller when controls on informal care are included in specification. This suggests that jobs in parents' area are less likely to respect individual skills compared to jobs taken by migrants. However, the mismatch between skills and jobs is not that remarkable when informal care is taken into account as a potential influence on allocation of working hours and time transfer within a family.

For the group of women 19-32 not attended university being employed in the home area is more beneficial. Men in the group of 25-32 years old graduated secondary school living close to parents have greater returns to skills when taking into account returns to skills and family characteristics. Earnings increase with age to a greater extent in the group of young adults of 19-32 years old not attended university and residing close to parents.

Summarizing the effect of location choice on earnings and returns to skills, we can conclude that residence close to parents is more likely to be related to slightly lower returns to skills. However, return migrants are expected to increase their labour supply compared to migrants and to benefit in earnings size.

Table 2 Returns to human capital

		Men				Women			
		19-32, not attended university		25-32		19-32, not attended university		25-32	
	Variable	Return migrants	Migrants	Return migrants	Migrants	Return migrants	Migrants	Return migrants	Migrants
Type 1	Secondary school	1.464***	1.528***	1.299***	1.330***	1.888***	1.776***	1.654***	1.691***
	University			1.411***	1.726***			2.283***	2.499***
Type 2	Secondary school	1.346***	1.377***	1.248***	1.185***	1.678***	1.528***	1.568***	1.591***
	University			1.313***	1.374***			1.993***	2.089***

Notes: *** p < 0.001. Controls: Yes. Time FE: Yes. Local labour market FE: Yes. Specification of type 1 includes age and age squared (the complete specification is in Appendix 4). Specification of type 2 is based on self selection and includes age and age squared, family characteristics and whether an individual had a period of unemployment within a year (the complete specifications are in Appendices 5-8).

Informal care and earnings. Appendices 5-8 present the estimates of the model including informal care dummies. In brief, the effect of informal care and within a family support on earnings is presented in Table 3. The results suggest that most of the three-generational family events are significant for reconciliation of work and family life for an adult from the sandwich generation. He or she is supposed to decrease his (of her) working hours in response to mother's or father's retirement or sickness. There is a decrease in female earnings associated with a cut of working hours in response to childbearing and childrearing, whereas male earnings enlarge. However, return migrants and migrants experience increase or decrease of their earnings to a different extent.

Care giving. There is a negative effect of death of a parent on earnings of young adults not residing in parents' area. This may be associated with taking an unpaid leave for a periodic care to the parent in the terminal phase or the widowed parent. The reduction in earnings, when parents are in state of not having earnings (retired or sick), is greater for return migrants. This may be associated with the increased time for care giving to the retired or sick parent and, consequently, reduction in the labour supply of a working individual from the sandwich generation.

Child care. Childbearing is associated with decrease of female earnings and an increase of male earnings. Return female migrants experience less decline of earnings: -1.087 vs. -1.179 in the group 19-32 year old, and -0.702 vs. -0.740 in the group of 25-32 years old. Earnings of male

return migrants rise at a year of childbearing to a greater extent: 0.339 vs. 0.208 in the group 19-32 year old, and 0.393 vs. 0.278 in the group of 25-32 years old. Care for children under 7 years old is associated with a greater drop in female and less increase in earnings of male migrants. This can be associated with greater reduction in working hours in favour of child care, whereas return migrants can rely on grandparenting.

Unemployment is associated with slightly larger reduction of annual earnings of return migrants not attended university. However, migrants of 25-32 years old experience greater losses in annual earnings.

Table 3 Changes in earnings of young adults associated with life events

	WOMEN				MEN			
	Return migrants 19-32 years old, no university education	**Migrants 19-32 years old, no university education**	**Return migrants 25-32 years old**	**Migrants 25-32 years old**	**Return migrants 19-32 years old, no university education**	**Migrants 19-32 years old, no university education**	**Return migrants 25-32 years old**	**Migrants 25-32 years old**
Childbearing	-0.544***	-0.482***	-0.316***	-0.156***	0.008	-0.062	0.070**	0.105**
Childrearing	-0.543***	-0.697***	-0.386***	-0.584***	0.331***	0.270***	0.323***	0.173***
Unemployment	-0.600**	-0.578***	-0.696***	-0.945***	-1.310***	-1.215***	-1.530***	-1.589***
Death of a parent	0.022	-0.806***	0.106	-0.503***	-0.113	-0.372*	-0.076	-0.039
Mother having no earnings	-0.638***	-0.521***	-0.374***	-0.253***	-0.682***	-0.267***	-0.377***	-0.170***
Father having no earnings	-0.345***	-0.198***	-0.199***	-0.136***	-0.399***	-0.161***	-0.215***	-0.067**

Note: *** p < 0.001, ** p < 0.01, * p < 0.05. Controls: Yes. Time FE: Yes. Local labour market FE: Yes. Individual characteristics included: age, age squared, education (primary, secondary school, university), parents-children location differences in dependency ratio, log of labour market size, presence of river or lake, sea coastal area, presence of university. Detailed estimates are presented in Appendices 5-8.

6 Conclusion

Labour mobility as investment in human capital is assumed to improve job and skills' match and increase returns on investment. This is supported by higher frequencies of better educated individuals to migrate. However, residential choice may be linked to family events or to strong family ties. Effects of the choice of residence on earnings are investigated in assumption of underlying link between labour supply and amount of care within three-generational family.

Earnings of two groups of young adults are compared. They are internal migrants and return migrants across local labour market borders. Significant change in earnings of young adults at the time of life event suggests that they affect individuals' allocation between labour supply and household production. We link household production to informal care, such as childbearing, childrearing, and care giving to parents. Mechanisms of interaction between life events and earnings are potentially implemented through a decrease in working hours or a flexible working time with a decrease in hourly wage. Results justify that returns to skills in the considered groups do not differ significantly. Therefore, the hypothesis that those who reside close to parents are disadvantaged in the labour market is not supported.

Gender differences in responses to family events are found significant but consonant with other studies. In particular, greater number of children is associated with reduction in female earnings. However return migrants' reduction in earnings is lower than that of migrants. This suggests that parents may take care of grandchildren. Men with children residing close to parents earn greater than male migrants. This advocates their better opportunity to allocate work in the formal labour market and household production, potentially, due to parents' assistance. Both male and female earnings are lower at the periods when parents do not have earnings, which is associated with parents' retirement or sickness. This suggests reduction in labour supply in response to care giving to parents. The reduction in earnings is greater for return migrants. Death of a parent is associated with decrease in earning of migrants. This can be caused by necessity to take time off work and devote time to the widowed parent or a parent in the terminal phase. Therefore, both groups of young adults seem to be involved in mutual care with parents. However, earnings' changes in response to family events indicate that young adults residing with parents are involved in informal care in three-generational family to a greater extent.

Acknowledgments

My sincere gratitude to the participants of seminar at the Centre for Demographic and Ageing Research, Umeå University for their valuable comments, which helped me to develop the paper. I would like to thank Sofia Tano, Prof. Olle Westerlund and Gunnar Malmberg, as well as the staff of Demographic Data Base at Umeå University, for their assistance in providing the data used in this paper.

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Appendix

Appendix 1 Descriptive statistics

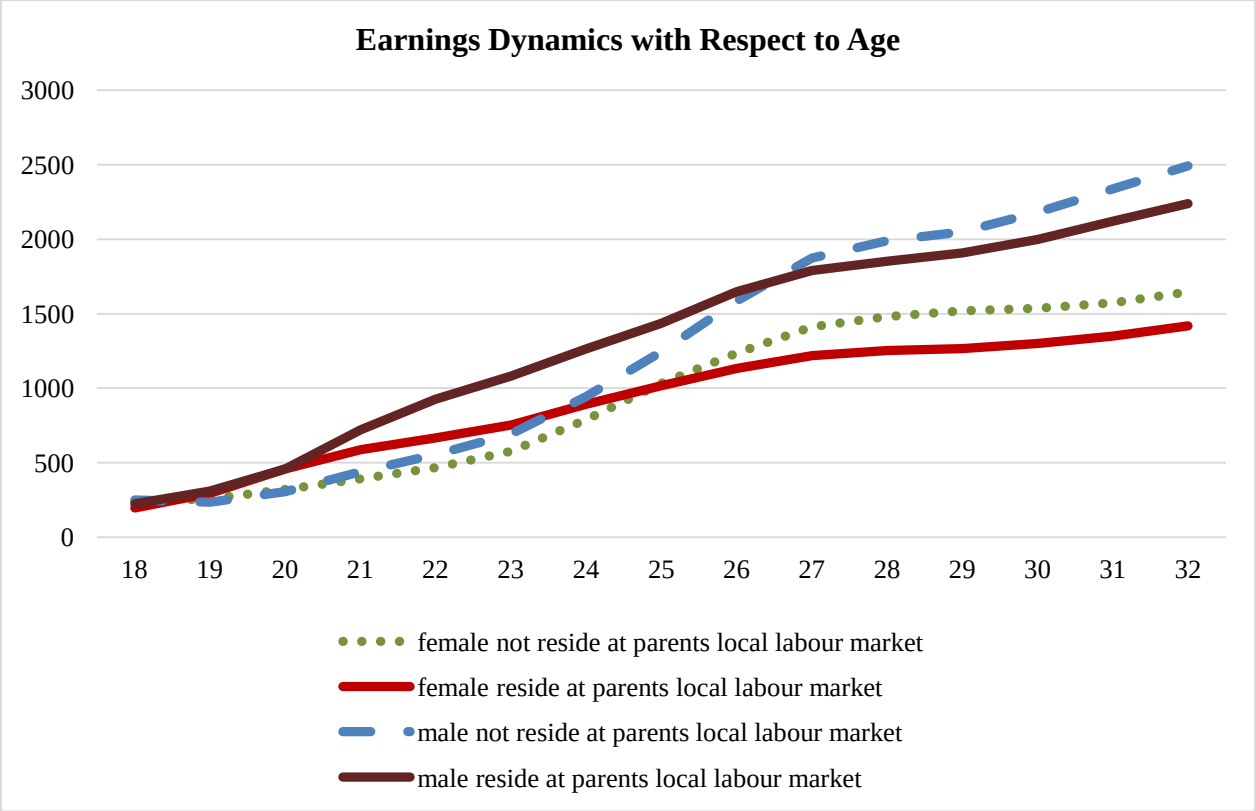
Table A. Young adults elder than 19 years old, not attended university

	men				women			
	return migrants		migrants		return migrants		migrants	
	coef.	std.dev.	coef.	std.dev.	coef.	std.dev.	coef.	std.dev.
logEarnings	7.163	1.039	7.101	1.127	6.562	1.244	6.554	1.263
Age	27.107	3.360	27.064	3.345	26.654	3.513	26.536	3.507
Secondary school	87.9%	32.6%	90.9%	28.8%	89.6%	30.5%	91.3%	28.1%
Number of children	0.355	0.676	0.286	0.611	0.533	0.753	0.428	0.705
New born child	9.1%	28.7%	7.9%	27.0%	10.3%	30.5%	9.5%	29.3%
Lost a parent	0.8%	9.1%	0.9%	9.2%	0.8%	8.8%	0.8%	8.8%
Father having no earnings	15.3%	36.0%	15.3%	36.0%	14.8%	35.5%	15.3%	36.0%
Mother having no earnings	14.8%	35.5%	15.0%	35.7%	14.6%	35.3%	14.4%	35.1%
Unemployed	20.9%	40.7%	24.2%	42.8%	32.7%	46.9%	38.0%	48.5%
Transition into unemployment	5.9%	23.5%	6.2%	24.2%	7.9%	26.9%	9.1%	28.7%
Diff in Dependency ratio			0.021	0.043			0.018	0.043
Diff in Log Labour market size			-1.195	2.061			-1.090	2.091
Diff in Unemployment rate			0.040	0.097			0.034	0.096
Diff in River or lake			-0.194	0.651			-0.172	0.649
Diff in Sea cost			-0.051	0.571			-0.031	0.562
Diff in University			-0.279	0.570			-0.231	0.575
Observations	52145		26263		49911		26283	

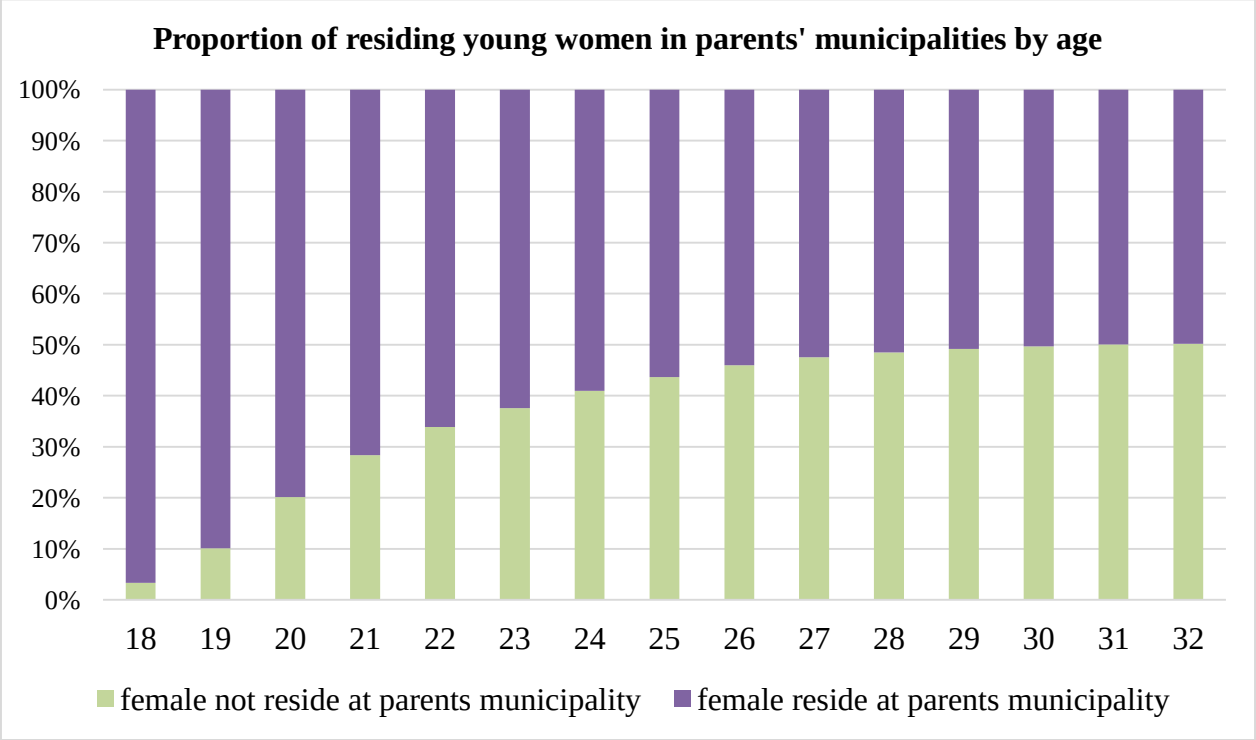
Table B. Young adults elder than 25 years old

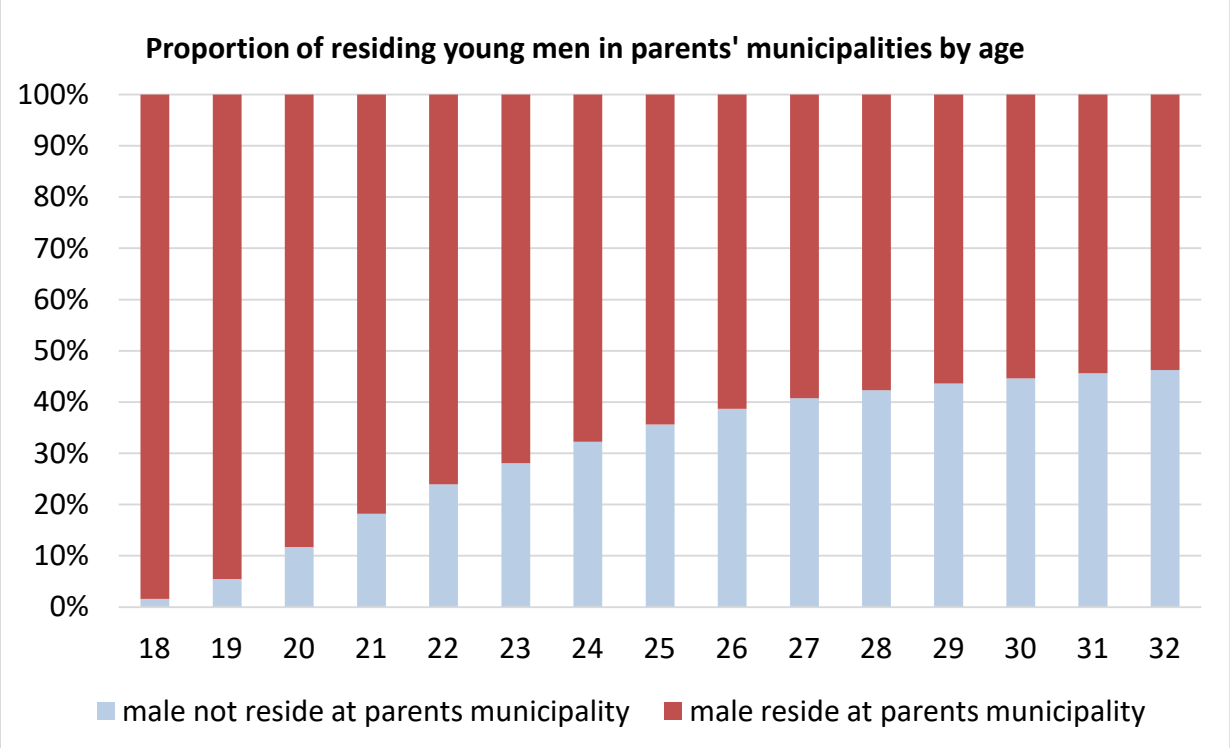
	men				women			
	return migrants		migrants		return migrants		migrants	
	coef.	std.er.	coef.	std.er.	coef.	std.er.	coef.	std.er.
logEarnings	6.831	2.128	7.000	1.896	6.172	2.292	6.485	2.058
Age	29.062	1.990	28.962	1.990	29.013	1.991	28.919	1.991
Secondary school	55.7%	49.7%	39.8%	48.9%	50.0%	50.0%	35.7%	47.9%
University	37.0%	48.3%	56.8%	49.5%	44.6%	49.7%	61.3%	48.7%
Number of children	0.375	0.688	0.281	0.604	0.612	0.792	0.452	0.720
New born child	9.9%	29.8%	8.6%	28.0%	12.7%	33.4%	11.6%	32.0%
Lost a parent	0.8%	8.9%	0.8%	9.1%	0.7%	8.5%	0.7%	8.4%
Father having no earnings	17.6%	38.1%	15.5%	36.2%	17.0%	37.6%	15.9%	36.5%
Mother having no earnings	16.2%	36.8%	14.2%	34.9%	15.7%	36.4%	13.7%	34.4%
Unemployed	14.5%	35.2%	14.1%	34.8%	19.6%	39.7%	19.1%	39.3%
Transition into unemployment	4.5%	20.8%	4.5%	20.8%	5.9%	23.6%	6.0%	23.7%
Diff in Dependency ratio			0.025	0.039			0.024	0.040
Diff in Log Labour market size			-1.365	1.894			-1.360	1.939
Diff in Unemployment rate			0.040	0.088			0.041	0.089
Diff in River or lake			-0.208	0.670			-0.207	0.673
Diff in Sea cost			-0.050	0.593			-0.025	0.585
Diff in University			-0.348	0.584			-0.307	0.595
Observations	64033		51160		69730		57373	

Appendix 2 Earnings in 100 SEK. Dynamics with Respect to Age (years) (unconditional)



Appendix 3 Proportion of residing in parents' municipalities





Appendix 4 Log-earnings of ever migrated young adults

	Men				Women			
	19-32, not attended university		25-32		19-32, not attended university		25-32	
Variable	Return migrants	migrants	Return migrants	migrants	Return migrants	migrants	Return migrants	migrants
Secondary school	1.464***	1.528***	1.299***	1.330***	1.888***	1.776***	1.654***	1.691***
University			1.411***	1.726***			2.283***	2.499***
Age	0.727***	1.001***	-0.307	0.257	0.238	0.105	-0.809*	-0.579
Age squared	-0.010**	-0.0150**	0.007	-0.002	-0.003	-0.0002	0.014*	0.011
Intercept	-7.338**	-11.521***	9.010*	-0.467	-0.102	0.678	15.858***	11.721*

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Controls: Yes. Time FE: Yes. Local labour market FE: Yes.

Appendix 5 Men elder than 19 years old, not attended university

Log-earnings	Reside at parents' local labour market				Residential choice	
	Yes (Return migrants)		**No** (Migrants)		(Return migrants=1)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Individual						
Secondary school	1.346***	0.025	1.377***	0.040	-0.103***	0.014
Age	2.615***	0.192	2.163***	0.271	omitted	
Age squared	-0.050***	0.004	-0.040***	0.006	0.005*	0.002
Transition into unemployment	0.434***	0.042	0.367***	0.056	0.041***	0.021
Unemployed	-1.310***	0.025	-1.215***	0.032	-0.156	0.013
Family						
Number of children	0.331***	0.017	0.270***	0.025	0.027***	0.009
New born child	0.008	0.037	-0.062	0.054	-0.012	0.020
Lost a parent	-0.113	0.096	-0.372*	0.185	0.491***	0.062
Father having no earnings	-0.399***	0.025	-0.161***	0.034	0.048***	0.013
Mother having no earnings	-0.682***	0.025	-0.267***	0.034	-0.043***	0.013
Regional						
Diff in Dependency ratio					1.186***	0.304
Log Labour market size					0.078***	0.007
Diff in Log Labour market size					0.296***	0.005
Diff in Unemployment rate					-2.633***	0.130
Diff in River or lake					-0.109***	0.013
Diff in Sea cost					-0.046***	0.013
Diff in University					0.031	0.016
Intercept	-28.521***	2.233	-23.067***	3.148	3.383***	1.185
ρ_1	0.066**	(0.021)				
ρ_2	0.193***	(0.012)				
Number of obs. = 78408						
Wald chi2(15) = 13913.83						

Notes: *** p < 0.001, ** p < 0.01, * p < 0.05. Controls: Yes. Time FE: Yes. Local labour market FE: Yes.

Appendix 6 Women elder than 19 years old, not attended university

Log-earnings	Resides at parents' local labour market				Residential choice	
	Yes		No		(Return migrants=1)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Individual						
Secondary school	1.678***	0.029	1.528***	0.043	-0.087***	0.014
Age	0.345*	0.195	-0.150	0.263	-0.055	0.091
Age squared	-0.003	0.004	0.008	0.006	0.000	0.002
Transition into unemployment	0.113**	0.040	0.152**	0.031	-0.000	0.018
Unemployed	-0.600**	0.025	-0.578***	0.053	-0.205***	0.011
Family						
Number of children	-0.543***	0.015	-0.697***	0.022	0.055***	0.007
New born child	-0.544***	0.035	-0.482***	0.048	-0.074***	0.016
Lost a parent	0.022	0.111	-0.806***	0.203	0.295***	0.060
Father having no earnings	-0.345***	0.028	-0.198***	0.037	-0.040**	0.013
Mother having no earnings	-0.638***	0.027	-0.521***	0.037	-0.006	0.013
Regional						
Diff in Dependency ratio					-0.191	0.289
Log Labour market size					0.036***	0.007
Diff in Log Labour market size					0.277***	0.004
Diff in Unemployment rate					-1.569***	0.123
Diff in River or lake					-0.056***	0.012
Diff in Sea cost					-0.061***	0.013
Diff in University					0.064	0.015
Intercept	-1.903***	2.149	4.284	3.038	1.442***	1.051
ρ_1	0.032		(0.037)			
ρ_2	0.184***		(0.013)			
Number of obs = 76194						
Wald chi2(15) = 10124.4						

Note: *** p < 0.001, ** p < 0.01, * p < 0.05. Controls: Yes. Time FE: Yes. Local labour market FE: Yes.

Appendix 7 Men elder than 25 years old

	Log-earnings					
	Reside within parents' local labour market				Residential choice	
	Yes		No		(Return migrants=1)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
	(1)	(2)	(3)	(4)	(5)	(6)
Individual						
Secondary school	1.248***	0.032	1.185***	0.046	-0.135***	0.019
University	1.313***	0.035	1.374***	0.046	-0.520***	0.019
Age squared	0.001***	0.000	0.002***	0.000	0.000	0.000
Transition into unemployment	0.786***	0.045	0.772***	0.045	0.026	0.023
Unemployed	-1.530***	0.027	-1.589***	0.027	-0.101***	0.014
Family						
Number of children	0.323***	0.014	0.173***	0.017	0.016**	0.008
New born child	0.070**	0.032	0.105**	0.034	-0.009	0.017
Lost a parent	-0.076	0.091	-0.039	0.115	0.371	0.053
Father having no earnings	-0.215***	0.022	-0.067**	0.023	0.058***	0.011
Mother having no earnings	-0.377***	0.023	-0.170***	0.023	-0.039***	0.012
Regional						
Diff in Dependency ratio					-1.037***	0.265
Log Labour market size					0.035***	0.006
Diff in Log Labour market size					0.369***	0.004
Diff in Unemployment rate					-2.029***	0.111
Diff in River or lake					-0.032***	0.010
Diff in Sea cost					0.035***	0.011
Diff in University					0.044***	0.013
_cons	4.875***	0.085	4.600***	0.088	0.386***	0.042
ρ_1	0.072***	(0.019)				
ρ_2	0.183***	(0.011)				
Number of obs = 115193						
Wald chi2(15) = 7405.81						

Note: *** p < 0.001, ** p < 0.01, * p < 0.05. Controls: Yes. Time FE: Yes. Local labour market FE: Yes.

Appendix 8 Earnings of women elder than 25 years old

	Log-earnings					
	Reside at parents' local labour market				Residential choice	
	Yes		No		(Return migrants=1)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
	(1)	(2)	(3)	(4)	(5)	(6)
Individual						
Secondary school	1.568***	0.038	1.591***	0.050	-0.056**	0.020
University	1.993***	0.040	2.089***	0.050	-0.362***	0.020
Age squared	0.001***	0.000	0.002***	0.000	0.000	0.000
Transition into unemployment	0.267***	0.041	0.435***	0.040	0.022	0.019
Unemployed	-0.696***	0.025	-0.945***	0.024	-0.139***	0.011
Family						
Number of children	-0.386***	0.012	-0.584***	0.014	0.076***	0.006
New born child	-0.316***	0.028	-0.156***	0.029	-0.064***	0.013
Lost a parent	0.106	0.098	-0.503***	0.128	0.255***	0.052
Father having no earnings	-0.199***	0.023	-0.136***	0.023	0.004	0.011
Mother having no earnings	-0.374***	0.024	-0.253***	0.024	0.007	0.011
Regional						
Diff in Dependency ratio					-1.323***	0.255
Log Labour market size					0.031***	0.006
Diff in Log Labour market size					0.359***	0.004
Diff in Unemployment rate					-1.465***	0.107
Diff in River or lake					-0.015	0.010
Diff in Sea cost					-0.042***	0.011
Diff in University					0.053***	0.012
_cons	3.876***	0.089	3.853***	0.090	0.403***	0.041
ρ_1	0.080***	(0.021)				
ρ_2	0.107***	(0.008)				
Number of obs =	127103					
Wald chi2(15) =	6674.85					

Note: *** p < 0.001, ** p < 0.01, * p < 0.05. Controls: Yes. Time FE: Yes. Local labour market FE: Yes. Age is omitted because of strongly correlation with time specific effects.