Child care and geographical mobility

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Abstract

This paper analyzes whether the organization of child care services accounts for the low geographical mobility of Southern European countries. I argue that Southern emancipated children live close to their family to take advantage of the low labour force participation rate of their mothers in order to reconcile work and family life once they have children. I present a model in which couples make fertility, female employment and mobility choices and test its predictions using ECHP data. I find that the deterring effect of the wife working is only significant if they have children and live in Southern Europe.

Keywords: Geographical mobility; Child care; Female participation; Fertility; Bivariate probit.
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1 Introduction

Internal geographic mobility is known to be lower in Europe than in the United States. Within Europe, Greece, Italy, Portugal and Spain stand out for the low mobility of their population and, in particular, for the low proportion of people that changes region of residence every year. According to OECD (2005), inter-regional mobility rates in 2003 measuring the ratio of gross outflows to population were about 0.2% in Greece and Spain and 0.5% in Italy and Portugal, while they were much higher in France (2.1%), Germany (1.4%) and the United Kingdom (2.3%). Interestingly, country differences almost vanish when looking at intra-regional mobility rates. Own calculations using European Community Household Panel (ECHP) data for 2001 indicate that intra-regional mobility rates were about 2.5% in Greece, Italy and Germany and about 4% in Spain, the United Kingdom and France.

This paper investigates on the determinants of low inter-regional mobility in Southern Europe. This is a fundamental issue for these countries given their pronounced regional disparities (OECD 2005) and the fact that other policy instruments like exchange rate realignments are not available to adjust to regional shocks in the context of a single currency area.

The research on low geographic mobility has focused on institutional factors like the unemployment insurance system. Hassler et al. (2005) argue that the difference in the generosity of unemployment benefits accounts for the difference in mobility rates between the United States and Europe, where Europe is characterized by more generous benefits and lower mobility. Nevertheless, Tatsiramos (2009) finds that receiving benefits is not necessarily associated with lower mobility in Europe since benefits might increase mobility by relaxing liquidity constraints in the presence of mobility and search costs.

Housing tenure is also stressed as a factor determining mobility. The common finding in the literature is that renters living in social housing and owners are more reluctant to move for job-related reasons.[1] However, ownership rates in the United Kingdom and the United States are close to those for Greece and Italy and the former two countries

[1] See Barcelo (2003) and references therein.

plus Sweden are at the top of the OECD ranking when ownership and social renting are jointly considered.

The empirical literature has also shown that family ties and local social capital deter mobility (Spilimbergo and Ubeda 2004; Munshi and Rosenzweig 2009; David et al., 2010). Alesina and Giuliano (2010) argue that culture, as measured by the strengh of family ties, affect mobility. They find that strong family ties imply more reliance on the family as an economic unit and lower spatial mobility using data for over 70 countries. However, this cultural hypothesis cannot explain lowest-low inter-regional mobility within developed countries since they rank Italy, Spain and the United States together as countries with strong family ties while Greece is ranked close to Norway and characterized as a country with weaker ties than France, Italy, Spain, the United Kingdom and the United States.

This paper analyzes the effect of child care opportunities on family migration. I argue that Southern European emancipated children live close to their family to take advantage of the low labour force participation rate of their own mothers in order to reconcile work and family life once they have children. That is likely to be their optimal residential choice since Southern European are the developed countries with the highest: intergenerational gap in female labour force participation rates, degree of rationing in the public provision of child care services and time transfers from the mother to her emancipated children in the form of grandparenting time.

I present a partial equilibrium job search model in which couples make fertility, female labour supply and inter-regional mobility choices taking as given the availability of different child care arrangements. Family caretakers, i.e. grandmothers, do not migrate with the couple, thus making couples with children and access to grandparenting more reluctant to migrate. I use the model to simulate the effects of changes in the availability family-provided child care.

The predictions of the model are tested using ECHP data for the 1994-2001 period. For couples living in Southern Europe, the presence of children in the household deters mobility if the wife works and mobility is of inter-regional type. Equivalently, couples in which the wife works are less likely to move if they have children, particularly so when

dealing with inter-regional mobility. I also find that not accounting for the endogeneity of the wife's employment status results in a substantial underestimation of the deterring effect of the wife working. Mothers living in Southern Europe are more likely to be employed and employed wives are more likely to have children if they live in regions with a greater access to family-provided child care. For couples living in other European countries, I find that the wife's employment status and the presence of children in the household are not related to family mobility nor the regional availability of family-provided child care.

The rest of the paper is organized as follows. Section 2 describes available evidence on country differences in internal mobility, child care opportunities and female labour force participation. Section 3 presents the behavioral model. The data and the econometric methodology are described in Section 4, where I also discuss the estimation results and, finally, Section 5 concludes.

2 Macroeconomic evidence

There is significant variation in internal mobility within developed countries. According to Table 1, inter-regional mobility rates are lower in Europe than in the United States. In Europe, however, the situation is not uniform across countries. While the United Kingdom stands out for its high rates, Southern European countries do so for the reduced proportion of their populations that change region of residence over the year.

Young adults and the highly educated are the most mobile groups in any country. However, inter-regional mobility rates for the young and the highly educated in Greece and Spain are lower than those for the old and the less educated, respectively, in France, Germany, the United Kingdom and the United States. On the contrary, intra-regional mobility rates in Southern Europe are close to those for other large European countries. That is, low mobility is not a distinctive feature of Southern European countries when mobility is defined over shorter distances.

2.1 Internal mobility and grandparenting time

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a cross-national survey representing the population of individuals aged over 50 years in some European countries. Respondents provide detailed information on their and their children's sociodemographic characteristics and labour status, on the residential location of their children and the frequency of contacts with them. I analyze data from the first wave of SHARE relative to the year 2004 for France, Germany, Greece, Italy, Spain and Sweden and I use the Health and Retirement Study to obtain comparable indicators for the United States.[2,3] Respondents aged over 70 years are excluded since they have increasing health difficulties and net time transfers may flow from the emancipated children to their parents.

According to Table 2, emancipated children live closer to their mothers in Southern Europe than in other developed countries.[4] Approximately three out of four emancipated children aged 20 to 35 years live less than 25 kilometers away from their mothers in Southern Europe. That number is more than 20 percentage points higher than those for France, Sweden and the United States and more than 10 points higher than that for Germany.

The singularity of Southern Europe also emerges regarding the frequency of grandparenting. Almost 50 percent of Southern European grandmothers that take care of their grandchildren do so almost every day. The corresponding numbers for their German, French and Swedish counterparts are 25, 12 and 4 percent, respectively. These differences translate into differences in the number of weekly hours of grandparenting enjoyed by children living closer to their mothers. At the top of the distribution, the median time that Greek grandmothers devote to take care of their closer grandchildren

[2] I use wave 1 release 3 data (2004) for large European countries instead of wave 2 data (2006) because it is closer in time to the years used in the estimation (ECHP, 1994-2001). The statistics in Table 2 remain almost unchanged when using SHARE Wave 2 data.

[3] The English Longitudinal Study on Ageing provides similar information for the United Kingdom. However, it does not inform on the residential location of the emancipated children and grandparenting time cannot be isolated from help flows to other family members, neighbours or friends.

[4] The picture remains largely unchanged if focusing on daughters. However, the sample size for some countries and population groups is too low in that case.

is 35 hours a week. Close to the Greek record are Spanish and Italian grandmothers with a median of 28 and 21 hours per week, respectively. Grandmothers from other countries are quite far from these numbers, particularly so those from Sweden and the United States.

The fact that country differences in grandparenting time substantially narrow when looking at children living further from their mothers suggests that the opportunity cost of living far from the mother is highest for Southern European children. The median grandparenting time enjoyed by children living closer to their mothers in Greece, Italy and Spain is 30, 9 and 17 hours higher than the corresponding median for those living further, respectively. On the contrary, that difference amounts to at most 2 hours per week in other countries.[5]

Table 2 also shows that, for children living closer to their mothers, grandparenting time is higher if the child is employed, particularly so in Greece, where the median grandparenting time enjoyed by working children is slightly higher than the 40-hour standard working week. In Italy and Spain working children living closer to their mothers receive almost 30 hours of grandparenting time per week. On the contrary, median grandparenting time is low in the remaining countries regardless of the employment status of the child. Grandparenting time remains at high values in Southern Europe even when the youngest grandchild is enrolled in formal education and aged over 6 years. Overall, the statistics in Table 2 indicate that Southern European grandmothers play a fundamental role in the work-life balance strategy of their children even when grandchildren are enrolled in formal education.

2.2 Internal mobility and labour force participation

Table 3 presents labour force participation rates by sex and age groups for selected developed countries. While male participation rates are quite similar across countries,

[5] The opportunity cost is zero if children receive monetary transfers from their parents to compensate them for the child care services that they lose when living far from them. Own calculations using SHARE data show that only 4 percent of emancipated children living far from their mothers receive monetary transfers from her, with almost no cross-country dispersion in this percentage. I exclude monetary transfers intented to help daughters to buy a house, to meet legal obligations or to finance further education and those that are unemployment-related.

female participation rates are far more disperse. Furthermore, while the participation rate of Southern European women aged 25 to 34 years is close to the OECD average for that collective, that for women aged over 45 years is, on average, 40 percent lower than the corresponding average. That is, Southern European countries show the most pronounced intergenerational gap in female participation rates. In fact, that differential is not relevant in any country but in Southern European ones.[6]

This empirical evidence suggests that Southern European countries are those with the highest stock of potential caretakers within the family network, i.e., women aged over 45 years not participating in the labour market, and also those with the highest proportion of working women with non-participating mothers. The cross-country correlation between inter-regional mobility rates and female labour force participation rates becomes highest and close to 0.75 when considering cross-country differences in the participation rate of women aged over 45 years old.

2.3 Internal mobility and child care services

Access to help flows within the family network dampens mobility when alternative services of similar cost and quality are scarce or unavailable. According to Table 4, Southern European countries are those with the lowest number of publicly provided child care slots for children under three years per hundred children and also those with the lowest proportion of preschool children using formal (public or private) child care services. As illustrated in Del Boca and Vuri (2007) for the Italian case, publicly provided care for young children in Southern Europe is severely rationed both in the number of places available and in the number of hours of care offered and, due to strict regulations, private provision is scarce.

Child care arrangements vary considerably across countries. While these services are mainly publicly provided in most Central and Northern European countries, private caretaking is the most frequent child care arrangement outside the family network in the United Kingdom and the United States. The cross-country correlation between inter-

[6] The same picture emerges when looking at differences in employment rates (see Mendez 2008, Table 5).

regional mobility rates and the proportion of preschool children using formal child care arrangements is 0.74.

Finally, the low fertility that now characterizes Southern Europe has not translated into a high level of childlessness relative to other developed areas, as indicated in Bettio and Villa (1998). On the contrary, the proportion of Southern European women who remain childless at the end of their fertile period is well below that for other developed countries with a higher total fertility rate like Finland, Sweden and the United States.[7] Thus, child care arrangements are an equally or even more relevant issue in Southern Europe than in other developed countries with a higher total fertility rate.

3 Female employment, fertility and mobility

The model is intended to show how the availability of different child care arrangements affects fertility, female employment and geographic mobility. I emphasize that the goal of the model is to make sense of the empirical results in the next section and not to provide a structural characterization of these decisions. The model is similar to Barcelo (2003) but I analyze the effect of child care on family mobility instead of that of homeownership on individual mobility.

The unit of analysis is a childless couple deciding about: their region of residence, whether to have a child or not, and the wife's employment status. To keep the model simple I assume that there are two regions in the economy, A and B, two time periods, 0 and 1, and that husbands are always employed. However, on-the-job search is allowed for. Let λ_U and λ_E be the probability of getting a job offer each period an individual is unemployed and employed, respectively. An individual can receive at most one offer in each region every period. Employed wives lose their job with probability δ. Let T denote the "standard" number of hours associated with a job and $w_{1,t}^j$ and $w_{2,t}^j$ represent the husband's and wife's wages if employed in region j in period t.[8]

[7] See Table 8 in Mendez (2008).

[8] Wages are randomly drawn from the distribution function of husbands' and wives' wage offers $F_1(w_1)$ and $F_2(w_2)$, respectively, which are assumed to be independent of each other. Wage offers are independent and identically distributed across individuals and across regions. The remaining parameters of the model are assumed to be the same in both regions and for both spouses.

Only women devote time to childcaring. Apart from maternal time, two additional inputs can be used in the production of child care services: time transfers from close relatives, represented by I and refered to as unpaid child care, and formal alternatives which include public and private caretakers.[9] The wife cares for the child herself if she remains unemployed. If she becomes employed the couple consumes I and, if it is lower than T, they pay the hourly price of formal child care services π over $T - I$ hours. Family-provided child care is only available if the couple and their relatives live in the same region and never exceeds the mother's working hours. The couple has to live in the region where they work and raising a child also requires a monetary cost, denoted by φ. Couples are assumed to have joint consumption and joint utility. The instantaneous utility function has a CRRA form and couples' utility per period is as follows

$$u\left(c_t\right) = u_0 \frac{c_t^{\alpha}}{\alpha} \tag{1}$$

where $\alpha > 0$ and u_0 indicates that, for a given level of consumption, couples derive higher utility if the have a child. That is, $u_0 > 1$ if they have a child and it equals one otherwise. In the first period couples and their relatives live in region A and do not move. They decide on the wife's employment status $L_2 = \{e_2, u_2\}$ and on their children status $CH = \{ch, nch\}$. The decision set in $t = 0$ is $D_0 = \left\{\left(CH, e_1, e_2, w_{1,0}^A, w_{2,0}^A\right), \left(CH, e_1, u_2, w_{1,0}^A, b\right)\right\}$, where b refers to non-wage income such as unemployment benefits. The decision problem is described by the following Bellman equation

$$\begin{aligned} V_0 = \max_{\{d_0, c_0\}} & u\left(d_0, c_0\right) + \beta E\left[V_1\left(s_1, d_1^*\right)/s_0, d_0\right] \\ \text{s.t.} \quad & c_0 + \left[h_0^A \pi\left(T - I\right) + \varphi\right] n_0 = y_0 \\ & I \leqslant T,\ d_0 \in D_0,\ s_0 = (nch, e_1, u_2) \end{aligned} \tag{2}$$

where h_t^j indicates that the couple live in region j in period t and the wife works, n_0 indicates that they have a child and y_0 is the couple's total income. Couples take into

[9] For simplicity, I will refer to family-provided child care as unpaid child care. I am aware that child care provided by close relatives requires, at least, a transportation cost. Additionally, child care provided by public institutions can also be for free, as it is the case in some European countries for low income families living in communities that have an income-dependent fee scheme to child care facilities.

account that the optimal decision at $t = 0$ will affect their utility at $t = 1$ and discount it by the factor β. The budget constraint indicates that if they have a child and the wife remains unemployed ($h_0^A = 0$), she cares for the child herself and the cost of raising the child resumes to the monetary cost φ. Otherwise, if she works, rearing costs include both the monetary cost and the cost of child care services.[10]

At the end of $t = 0$ employed wives lose their jobs with probability δ. In $t = 1$ both spouses may receive offers from regions A and B and they can continue living in region A or move to region B. In the former case, they can continue working at the same jobs or quit and accept other better-paid jobs. The couple takes the decision which maximizes their utility

$$\begin{aligned} V_1\left(s_1 = (ch, E_1, l_2)\right) &= \max_{\{d_1, c_1\}} u\left(d_1, c_1\right) \\ \text{s.t.} \quad c_1 + \left[h_1^A \pi\left(T - I\right) + h_1^B \pi T + \varphi\right] n_0 &= y_1 \\ I \leqslant T,\ L = \ \{e,\ u\},\ d_1 \in D_1\left(CH, e_1, L_2\right) & \end{aligned} \tag{3}$$

The new term in the budget constraint indicates that relatives do not migrate with the couple and, thus, unpaid child care is no longer available if thec couple move to region B. Following Eckstein and Wolpin (1989), I sequentially solve the Bellman equation backwards given the finite horizon structure of the model. In $t = 1$, childless couples choose the highest income option from their choice set, no matter what the region where that option comes from. Equivalently, couples with a child choose the option providing the highest net (of rearing costs) income. These couples may refuse the highest income option when it comes from region B and involves a job for the wife due to the presence of a trade-off between the higher income they would earn and the higher child care costs they would face in that region. Mobility costs for couples with children are increasing

[10] The assumption that couples only use formal child care services if family-provided child care is lower than T is not crucial to the results. The decision problem remains the same if I assume that couples prefer formal over informal child care but there is rationing in the provision of formal services. Let ρ be the couples' subjective probability of getting a full-time slot in a child care center. The budget constraint in the Bellman equation in $t = 0$ can now be written as $c_0 + \left[h_0^A \pi\left(T - (1 - \rho) I\right) + \varphi\right] n_0 = y_0$, $I = T$, $\rho \in [0, 1]$, $d_0 \in D_0$, $s_0 = (nch, e_1, u_2)$. This optimization problem is observationally equivalent to (2). Indeed, if the couple have a child, the wife works and they only use informal child care, it cannot be known whether this is due to the fact that they were granted access to both formal and informal child care services and they prefered family-provided child care, or whether it is attributable to their choice set being restricted.

in I and π. The higher I the lower are child care costs in region A and the higher π the higher the cost of replacing unpaid child care in region A by formal services in region B.

Unemployed childless wives would accept a job if they were paid more than b regardless of the region that the offer is coming from. The same holds for unemployed mothers regarding net income. Their reservation wage increases with π in both regions. The higher I the lower the mother's reservation wage for accepting a job in region A.

Moving backwards, the wife's reservation wage in $t = 0$ depends on their children status and on the offer arrival rates. If, for a given chidren status, employed workers can change jobs more easily than the unemployed find a job ($\lambda_1 > \lambda_0$), wives will prefer to accept a job in $t = 0$ despite the fact that they are going to be paid less than b. As in $t = 1$, the mothers' reservation wage increases with π and decreases with I.

Having a child permanently increases the couple's utility for a given level of consumption (u_0) but it also lowers consumption via rearing costs. The latter depend on φ and, if the wife works, on π and I. Higher values of both φ and π increase the cost of having a child and, thus, the probability that the couple remain childless. The effect of I is a priori ambiguous since it increases disposable income but, at the same time, it lowers the probability of moving to region B in response to better employment prospects.

I now provide some simulation evidence regarding the effect of I and π on female employment, fertility and family mobility. I use data from the ECHP for Spain for the years 1994-2001 to set the values of λ_U, λ_E, b, δ and to characterize the distribution of wages. Spain is a Southern European country for which I can calibrate all the parameters of the model. Wage offers are drawn from a lognormal distribution function with mean 1,5 and standard deviation 0.5. The hourly price of formal child care services is taken from Borra and Palma (2009) and the value of φ is set using data from the Institute for Family Policies (2007) on the cost of raising a child in Spain.

Parameter I is calibrated using the median of weekly hours of grandparenting time enjoyed by Spanish children living closer to their mothers (Table 2) and T is set to 2080 hours per year. Finally, u_0 is set to match the distribution of couples by children and wife's employment status at the end of $t = 0$ to that for ECHP Spanish couples in which the wife is aged 25 to 45 years old. I create a data set of 250.000 random couples and

I use 10.000 random observations for each pair of wage offers that might be received in $t = 1$ to evaluate the expected term in the value of each alternative in $t = 0$.

Tables 5 and 6 resume the benchmark economy and the simulation results, respectively. A reduction in I increases both the mother's reservation wage and the expected child care costs in region A and, thus, it lowers fertility and female employment rates. The elasticity of the wife's employment status with respect to I for couples with children is 0.26 and the elasticity of fertility with respect to I, conditioned on the wife working, is 0.38. These compositional effects increase inter-regional mobility since, for a given chidren status, couples in which the wife works move less than couples in which she is not employed and, for a given employment status, couples with children move less than childless couples. The reduction in I also lowers mobility costs for couples with children and, thus, it increases their group-specific mobility rate. The elasticity of inter-regional mobility with respect to I is -0.13.

Finally, the elasticities of female employment, fertility and mobility with respect to π are all negative. A reduction in π lowers both the mother's reservation wage and expected child care costs and, thus, it increases fertility and female employment rates. Additionally, it lowers mobility costs for couples with children, increasing their group-specific mobility rate. The latter effect totally offsets the compositional effect and the elasticity of the inter-regional mobility rate with respect to π is about -0.25.

4 Microeconomic evidence

I use data from the ECHP for the years 1994-2001. The ECHP is a representative panel of households and individuals in 12 European countries beginning in 1994 and finishing in 2001. It is particularly useful for the analysis of spatial mobility since persons who move are followed up at their new location. It distinghishes two types of residential moves within a country: moves within the same region and moves to a different region. Additionally, it also informs on whether the move was for job-related, house-related or just personal reasons. I restrict the analysis to job-related moves in large countries. This leaves me with the four Southern European countries (Greece, Italy, Portugal and

Spain) and other three countries (Finland, France and the United Kingdom).[11]

The estimation sample includes couples where she is aged 25 to 45 years old. Husbands are employed or looking for a job and wives can be either employed, unemployed or housewives. Couples in which at least one spouse is self-employed, do not live together or get divorced during the sample period are dropped out. To distinguish between the causes and the consequences of a move, the information for the covariates is obtained from the year preceding that of the move. Table 7 describes the estimation sample.

The estimation is separately performed for Southern and other European countries since these two groups of countries may differ from each other in many other aspects apart from the availability of family-provided child care. Each of these two samples is splitted into four samples according to whether the couple have children or not and to whether the wife works or not. More than 80 percent of the couples have at least one child independently of whether they live in Southern Europe or not. Southern countries stand out for their low female employment rates.

The goal of the estimation is to identify the effect that the presence of children in the household and the wife's employment status have on family mobility. The effect of the wife working is identified by comparing couples with the same children status that differ in their wife's employment status. Equivalently, the effect of children is identified by comparing couples with children to childless couples for a given wife's employment status. Thus, there are four effects of interest for each of the two groups of countries and for a given type of mobility, intra- and inter-regional.

For simplicity, the empirical model is presented for the effect of the wife working on the inter-regional mobility behaviour of couples with children. Let y_{1it} be an indicator variable that equals one if household i has moved to a different region within year t and zero otherwise. There exists an underlying response variable y^*_{1it} that measures the expected net gains from moving to a different region that is explained by the equation

$$y^*_{1it} = \gamma Z_{it-1} + \beta X_{it-1} + \varepsilon_{it} \tag{4}$$

where Z_{it-1} is a dummy variable that equals one if the wife works and zero otherwise,

[11] Germany is excluded from the analysis since information on migration records is not provided for individuals living there.

X_{it-1} includes the covariates, γ and β are unknown parameters to be estimated and ε_{it} is a time-varying normally distributed error term with variance normalized to one. A family move is observed whenever the expected net gain from moving is positive and, thus, the probability of moving conditional on the covariates is written as

$$prob\left(y_{1it}=1\right)=prob\left(\gamma Z_{it-1}+\beta X_{it-1}+\varepsilon_{it}>0\right)=F\left(\gamma Z_{it-1}+\beta X_{it-1}\right) \tag{5}$$

where F is the cumulative distribution function of $-\varepsilon_{it}$. The estimation sample includes couples with children living in the same group of countries. The other effects of interest are identified by using the appropiate samples and redefining variable Z_{it-1} to indicate the presence of children in the household, when necessary. The corresponding intra-regional effects are identified by replacing y_{1it} by y_{2it}, where y_{2it} equals one if the family move to a different location within the same region within year t and zero otherwise.

The econometric issue is the endogeneity of both the presence of children in the household and the wife's employment status. As the behavioral model illustrates, when deciding whether to have a child couples take into account that they will be less likely to move in response to better employment prospects. That is particularly the case if the wife works, they live in a country where child care is mainly family-provided, as is it the case in Southern Europe, and mobility is of inter-regional type. Following Heckman (1978), I control for endogeneity by estimating equation (6) jointly with the auxiliary equation (7) that accounts for how couples select themselves into the category indicated by the dummy variable Z_{it-1} for which the endogeneity is being treated

$$prob\left(Z_{it-1}=1\right)=prob\left(\delta W_{it-1}+u_{it-1}>0\right)=G\left(\delta W_{it-1}\right) \tag{6}$$

where W_{it-1} includes household and regional determinants of Z_{it-1}, δ is a vector of unknown parameters to be estimated, u_{it-1} is a normally distributed error term with variance normalized to one and G is the cumulative distribution of $-u_{it-1}$.

Equations (6) and (7) are jointly estimated using a bivariate probit model.[12] Wilde (2000) shows that identification in recursive multiple equation probit models with endogenous dummy regressors requires no exclusion restriction in the exogenous variables

[12] Sánchez-Mangas and Sánchez-Marcos (2008) and Manski et al. (1992) proceed in this way to evaluate the effect of a family policy on female labour force participation and to examine the probability of high school graduation as a function of family structure, respectively.

if each equation contains at least one varying exogenous regressor. As exogenous regressors, I include regional variables like the unemployment rate, the employment rate of women aged 25 to 45 years old and the share of households in which the wife is aged 25 to 45 years old that have at least one child. The latter two variables are included when analyzing the effect of the wife working and that of children, respectively. These variables capture regional-specific patterns of female employment and fertility that are exogenous to the couples but likely to affect their choices.

I also include three variables that inform on the availability of unpaid child care in the region where the couple live: the share of women aged 50 to 70 years old who look after children on a daily basis without pay, the share of women in that age interval who look after children more than 28 hours per week without pay and, finally, the share of households with children looked after on a regular basis by someone other than their parent or guardian that do not pay for those services. The latter variable controls for family-provided child care, but also for public child care for low income families in some European countries. I introduce the various regional variables separately or together because there could be some correlation across individuals in these variables. Table 7 describes the regional variables.

Finally, I present conditional fixed effects logit model (CFE) estimates as a robustness check. The conditional fixed effects logit estimator provides unbiased and consistent estimates of the coefficients of the outcome equation (5) no matter what is the form of the dependence between the error term in that equation and the covariates. In this model, the estimation sample is restricted to those couples that move during the sample period, the explanatory variables are the changes in Z and X and, thus, it only identifies the effect of time-varying covariates.[13]

4.1 Empirical results

Table 8 summarizes the estimates for the effect of the wife working for couples living in Southern Europe. The bivariate probit estimates indicate that couples with children take mobility and wife's employment decisions simultaneously. The estimated correlation

[13] See Chamberlain (1980) for further details on the conditional fixed effects estimator.

between the errors of the mobility and the selection equations is significant and positive for both inter- and intra-regional moves and it is strongly significant in the former case. According to these estimates, the probability of a couple with children moving to a diferent region almost vanishes if the wife works. That probability is 5.5 percent for a couple with average sample characteristics if the mother is not employed and 0.3 percent if she works.

The probability of a residential change within the same region also decreases if the mother works, but the effect is lower than the inter-regional one. In particular, the probability of an intra-regional move is 10.5 percent for a couple with average characteristics if the mother is not employed and 4.5 percent if she works. The univariate probit estimates that do not control for the endogeneity underestimate the negative effect of the mother working on family mobility.

The selection equation estimates show that wives living in Southern Europe are more likely to be employed if they live in regions with greater access to family-provided child care (*Abundant family care*), particularly so if they have children. Marginal effects calculated for a couple with average sample characteristics indicate that the elasticity of the mother's likelihood of being employed with respect to the variable *Abundant family care* is about 0.23. The variable *Family care*, that is, the regional share of women aged 50 to 70 years old who look after children on a daily basis without pay, is also positively related to the mothers' probability of being employed, but the estimated coefficient and its significance are lower than those for *Abundant family care*. Conversely, I find no statistical association between the probability of the mother being employed and the regional share of households with children looked after on a regular basis without pay (*Free care*).[14]

The conditional fixed effects estimates confirm that couples with children in Southern Europe are less likely to move to another region if the mother works. The estimated effect is close in magnitude to the bivariate probit one. The CFE estimates cannot be obtained for all the effects of interest because this estimator restricts the sample to couples that move and, given the low mobility rates, it requires a relatively large sample

[14]These estimates are available from the author upon request.

size to be implemented.

For childless couples living in Southern Europe, the estimates in Table 8 reject both the endogeneity of the wife's employment status and the hypothesis that couples move less if the wife works. The estimates in Table 9 suggest that couples with children living in Southern Europe move less than their childless counterparts only if the wife works and mobility is of inter-regional type. However, the estimated effect is only slightly significant. This effects comes from the univariate probit estimates since the bivariate estimates reject simultaneity. The selection equation estimates indicate that couples in which the wife works are more likely to have children if they live in a Southern region with access to abundant family-provided child care and a higher percentage of couples with children.

The estimates in Tables 10 and 11 show that couples living in other European countries do not take mobility considerations into account when making female employment and fertility choices. I also find that the variables that approximate family-provided child care (*Family care* and *Abundant family care*) are not statistically related neither to the probability of the wife working nor to that of the couple having children. Moreover, I find no evidence that neither the wife's employment status nor the presence of children deter family mobility in these countries. Finally, additional estimates show that the probability of a family move does not lower if the husband works and that the regional availability of family-provided child care does not affect the husband's employment status. These results are also obtained for couples living in Southern Europe.[15]

These findings are in line with the predictions of the behavioral model: couples living in countries where child care is mainly family-provided make female employment choices taking into account the mobility consequences of their decisions. Family-provided child care helps them to reconcile work and family life given the scarcity of formal alternatives of reasonable cost but it also lowers their likelihood of moving in response to employment shocks.

[15] These estimates are available from the author upon request.

5 Conclusions

This paper deals with the low inter-regional mobility that characterizes Southern European within developed countries. I argue that it is, at least partially, determined by the specificities of child care opportunities in these countries since they show the highest intergenerational gap in female labour force participation rates and also the highest degree of rationing in the public provision of child care services. This combination makes it optimal for emancipated children to live close to their family to take advantage of the low labour force participation rate of their own mothers in order to reconcile work and family life once they have children. Thus, it dampens the mobility of the most mobile population group in any country: emancipated young adults.

I develop a partial equilibrium job search model in which couples make fertility, female labour supply and inter-regional mobility choices taking as given the availability of child care arrangements. Family caretakers, i.e. grandmothers, do not migrate with the couple, thus making couples with children and access to grandparenting more reluctant to migrate. The model is calibrated using data for Spain and simulation results show that a reduction in the availability of family-provided child care increases inter-regional mobility and lowers fertility and female employment rates. A reduction in the price of child care services is found to increase fertility, female employment and inter-regional mobility rates.

The predictions of the behavioral model are confirmed using ECHP data for the years 1994-2001. For couples living in Southern Europe, the presence of children in the household deters inter-regional mobility only if the wife works. Equivalently, couples in which the wife works are less likely to move to another region only if they have children. I also find that mothers living in Southern Europe are more likely to be employed and employed wives more likely to have children if they live in regions with greater access to family-provided child care. I also find that not accounting for the endogeneity of the wife's employment status results in a substantial underestimation of the deterring effect of the wife working. None of these findings are obtained for couples living in other European countries.

These findings suggest that geographical mobility will increase in Southern Europe following the reduction in the intergenerational gap in female labour force participacion rates. That reduction is expected since the participation rate of young women in Southern European countries is yet at the OECD level. Additionally, the lower availability of family-provided child care services will lower fertility and female employment in these countries. However, our findings suggest that an increase in the provision of public childcare services will partially or totally compensate the expected consequences of the lower availability of informal childcare services in Southern Europe since it effectively increases fertility, female employment and geographical mobility rates. The increase in the number of foreign inmigrants living in Southern Europe in the last decades may further increase natives' internal mobility by lowering the relative price of services that are intensive in unskilled time such as child care services. This, in turn, may further contribute to increase fertility and female employment in Southern Europe.

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Table 1. Gross internal mobility flows as a percentage of the population aged 15-64.

	Inter-regional[a]						
				Educational attainment			
		Age groups		Less than			
	Total	15-24	25-64	upper second.	Upper second.	Tertiary	Intra-regional[b]
Greece	0.21	0.56	0.13	0.12	0.25	0.44	2.38
Italy	0.58	n.a.	n.a.	n.a.	n.a.	n.a.	2.48
Portugal	0.54	n.a.	n.a.	n.a.	n.a.	n.a.	3.33
Spain	0.20	0.23	0.19	0.13	0.23	0.33	3.90
France	2.11	3.79	1.70	1.16	1.98	4.13	4.21
Germany	1.36	2.27	1.18	0.97	1.35	1.97	2.58
Sweden	1.79	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	2.28	3.80	1.94	1.16	1.93	3.90	4.08
Australia	2.01	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Canada	0.95	1.55	0.8	n.a.	n.a.	n.a.	n.a.
Japan	2.21	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
United States	3.05	4.09	2.77	2.34	3.00	3.53	n.a.

Notes: [a] Gross outflows as a percentage of the population aged 15 to 64 years, 2003 (2001 for Greece, Japan and Sweden, 2002 for France and Italy). Source: OECD (2005). [b] Author's calculations using ECHP data for the year 2001.

Table 2. Grandparenting time and the residential location of children. 2004.

			Grandparenting time						
			Median (mean) weekly hours[d]						
			Children		Mother[e]		Grandchild[e,f]		
Country	Live close[a]	Daily[c]	Close	Far	Employed	Non-emp.	< 3	3-6	≥ 6
Greece	73.4	46.1	35.1	4.0	42.1	14.5	48.0	22.8	32.0
			(38.0)	(6.7)	(42.1)	(26.6)	(43.9)	(29.7)	(51.6)
Italy	74.4	54.4	21.1	12.0	28.1	14.0	21.1	24.6	42.1
			(25.3)	(11.9)	(27.7)	(22.5)	(21.1)	(26.0)	(40.8)
Spain	75.6	47.8	28.1	11.0	28.1	15.0	28.1	35.5	28.1
			(28.5)	(17.5)	(32.3)	(20.6)	(31.6)	(28.0)	(34.8)
France	52.0	12.0	7.5	5.4	7.0	5.5	7.5	8.0	5.0
			(16.8)	(12.0)	(17.9)	(9.0)	(11.9)	(22.9)	(21.9)
Germany	61.6	25.6	7.0	6.7	7.0	7.0	7.5	9.0	6.8
			(13.1)	(8.1)	(13.9)	(11.0)	(11.8)	(15.2)	(17.6)
Sweden	51.3	3.6	4.6	3.6	5.0	3.5	4.0	5.3	4.0
			(7.9)	(5.7)	(8.4)	(6.0)	(4.7)	(9.2)	(7.0)
United States	46.0[b]	n.a.	2.9	1.9	2.9	1.9	4.8	2.1	
			(9.7)	(7.3)	(10.5)	(3.7)	(13.9)	(8.3)	

Notes: [a] Emancipated children living less than 25 kilometers away from their mothers (%). [b] Emancipated children living less than 10 miles (16.1 kilometers) away from their mothers (%). [c] Grandmothers taking care of their grandchildren on a daily basis among those doing so at least one hour a week (%). [d] Over respondents taking care of their grandchildren at least one hour a week. [e] For emancipated children living close to their mother. [f] Age of youngest grandchild. The HRS only informs on whether the youngest grandchild is younger than two years or not. Source: Author's calculations using SHARE wave 1 release 3 and HRS data.

Table 3. Labour force participation rates by sex and age groups.

	Females					Males				
	25-34	35-44	45-54	55-64		25-34	35-44	45-54	55-64	
	(1)	(2)	(3)	(4)	(3) over (1)	(5)	(6)	(7)	(8)	(7) over (5)
Greece	66.1	61.7	45.3	24.5	68.6	95.0	97.0	91.4	59.3	96.3
Italy	60.7	58.9	44.2	15.2	72.8	87.9	96.0	87.4	44.9	99.4
Portugal	81.1	78.7	65.8	38.1	81.1	92.7	95.1	90.8	63.2	97.9
Spain	69.6	59.6	42.3	20.8	60.8	92.4	95.2	90.7	57.5	98.2
Finland	77.6	87.8	87.3	41.5	112.5	90.9	92.7	87.3	45.4	96.0
France	78.0	79.2	75.6	31.6	96.9	94.1	96.4	93.4	42.0	99.2
Germany	74.3	77.1	72.8	32.8	97.9	91.1	96.0	92.7	54.2	101.7
Norway	80.2	84.4	81.6	59.5	101.8	90.8	93.3	91.0	73.8	100.2
Sweden	82.0	88.4	88.5	64.5	107.9	89.2	92.4	91.6	71.8	102.7
United Kingdom	73.2	76.6	75.4	40.8	102.9	93.7	93.1	88.8	63.2	94.7
OCDE	66.2	69.7	66.2	37.4	100.1	93.5	94.7	90.5	63.1	96.8
Std. Dev.	6.4	9.7	14.4	14.2		2.1	1.8	2.6	12.3	
Australia	68.3	70.9	68.4	31.3	100.1	92.8	92.2	87.9	60.9	94.7
Canada	77.7	79.0	73.2	38.0	94.2	91.4	92.4	88.8	59.4	97.1
Japan	62.1	65.8	69.8	49.2	112.3	97.0	97.9	97.4	84.9	100.5
United States	75.6	77.3	75.7	50.4	100.2	93.1	92.6	89.0	67.1	95.6

Notes: The table reports average values for the period 1994-2000. Source: OECD Database on Labour Force Statistics (online).

Table 4. Sumary indicators of child care arrangements in selected OECD countries.

	Publicly provided slots per hundred pre-school children	Proportion of pre-school children using formal child care
Greece	3	3
Italy	6	6
Portugal	12	12
Spain	2	5
Finland	21	n.a.
France	23	29
Germany (Western)	3	10
Germany (Eastern)	36	36
Sweden	33	48
United Kingdom	2	34
Australia	2	15
Canada	5	45
Japan	n.a.	13
United States	1	54

Source: Statistics in columns 1 and 2 are taken from Wrohlich (2008) and from The Family Policy Database, version 2, Luxembourg Income Study (2003), respectively.

Table 5. Parameter values of the benchmark economy.

Parameter	Value	Parameter	Value
u_0	1.20	δ	0.05
β	0.98	π	0.60
α	0.50	φ	1144
λ_0	0.25	T	2080
λ_1	0.30	b	0.495

Table 6. Elasticities of mobility, female employment and fertility rates.

Increase by	Elasticities				
35 percent	Mobility	Female emp.	Fertility	Female emp.[a]	Fertility[b]
I	-0.129	-0.066	0.176	0.258	0.376
π	-0.251	-0.047	-0.200	-0.272	-0.435

Notes: [a] Conditioned on the couple having children. [b] Conditioned on the wife working.

Table 7. Descriptive statistics of the estimation sample.

	Finland	France	UK	Greece	Italy	Portugal	Spain
Inter-regional moves[a]	1.7	1.5	2.3	0.4	0.4	0.3	0.5
	(43)	(143)	(100)	(18)	(43)	(20)	(41)
Intra-regional moves[a]	5.1	6.5	3.5	5.3	4.2	6.6	6.7
	(133)	(623)	(149)	(257)	(406)	(393)	(584)
Husband employed	92.9	95.1	96.1	94.2	94.2	97.1	89.6
Wife employed	81.4	70.2	80.5	46.6	52.0	71.2	41.1
Children[b]	77.6	86.6	74.5	89.1	85.7	86.4	83.6
Homeowners	79.7	61.5	85.8	70.6	68.3	63.5	78.7
Husband's educational level							
Tertiary	39.1	21.0	49.1	29.7	10.2	7.8	26.8
Upper secondary	43.8	41.1	13.4	35.3	41.2	13.7	19.4
Wife's educational level							
Tertiary	49.6	25.6	42.0	26.2	8.7	10.1	23.2
Upper secondary	37.3	35.7	14.3	34.6	42.9	12.9	19.7
Live same region since birth							
Husband	28.4	59.8	84.6	61.0	81.2	85.6	69.7
Wife	25.9	61.6	82.4	62.5	80.5	88.0	72.7
Husband's age	38.3	38.3	37.9	40.4	39.6	38.4	38.1
	(6.7)	(6.9)	(6.9)	(6.9)	(6.5)	(6.9)	(6.6)
Husband in bad health[c]	1.4	2.9	5.9	0.8	2.8	3.7	2.0
Wife in bad health[c]	0.7	3.8	6.6	1.4	2.8	6.0	2.8
Regional variables							
- Family care[d]	12.3	13.4	1.2	21.9	39.3	11.1	13.5
- Abundant family care[e]	1.9	2.8	n.a.	10.0	18.6	5.4	7.1
- Free care[f]	12.2	29.6	48.0	42.1	37.9	28.4	39.8
Sample size	2,590	9,577	4,294	4,812	9,709	5,990	8,781

Notes: The table reports percentages for discrete variables and means and standard deviations (in brackets) for continuous variables, respectively. [a] Percent of movers and number of moves in brackets. [b] Percent of households with at least one child aged under 14 years of age. [c] Indicates whether the respondent declares that, in general, his health is bad or very bad. [d] Regional share of women aged 50 to 70 years old who look after children on a daily basis without pay. [e] Regional share of women aged 50 to 70 years old who look after children more than 28 hours per week without pay. Information not provided for individuals living in the UK. [f] Regional share of households with children looked after on a regular basis by someone other than their parent or guardian that do not pay for those services.

Table 8. Working wives and geographic mobility. Southern European countries.

	Children			Childless	
	Univariate	Bivariate	CFE	Univariate	Bivariate
	A. Inter-regional moves				
Wife works	-0.486**	-1.434**	-1.545~	0.069	-0.395
	(0.104)	(0.390)	(0.806)	(0.261)	(1.963)
Abundant family care[a]	-0.020	-0.008	-0.026	0.002	0.004
	(0.016)	(0.017)	(0.079)	(0.031)	(0.031)
Unemp. rate[b]	-0.013	-0.011	-0.065*	-0.010	-0.010
	(0.009)	(0.008)	(0.028)	(0.007)	(0.008)
Female emp. rate[c]	-0.034	-0.020	-0.093*	0.008	0.011
	(0.032)	(0.032)	(0.036)	(0.014)	(0.019)
Selection equation					
Abundant family care	-	0.035**	-	-	0.030*
		(0.006)			(0.015)
Unemp. rate	-	0.004	-	-	-0.003
		(0.003)			(0.002)
Female emp. rate	-	0.038**	-	-	0.023**
		(0.005)			(0.004)
Correlation coeff.	-	0.533**	-	-	0.258
		(0.147)			(0.910)
Log likelihood	-303.4	-12,120.9	-58.8	-28.5	-808.8
Sample size	20,757	20,757	205	1,526	1,526
	B. Intra-regional moves				
Wife works	0.056	-0.416~	-0.209	0.141	-0.364
	(0.036)	(0.237)	(0.197)	(0.133)	(0.381)
Abundant family care	0.008~	0.018*	0.032~	0.007	0.012
	(0.004)	(0.005)	(0.019)	(0.010)	(0.010)
Unemp. rate	0.002	0.003**	-0.002	-0.009	-0.010
	(0.002)	(0.001)	(0.007)	(0.008)	(0.007)
Female emp. rate	0.006	-0.008**	0.006	-0.013**	-0.006
	(0.008)	(0.004)	(0.059)	(0.005)	(0.004)
Selection equation					
Abundant family care	-	0.035**	-	-	0.030*
		(0.006)			(0.015)
Unemp. rate	-	0.004	-	-	-0.003
		(0.003)			(0.002)
Female emp. rate	-	0.038**	-	-	0.023**
		(0.005)			(0.004)
Correlation coeff.	-	0.280*	-	-	0.315
		(0.142)			(0.296)
Log likelihood	-2,889.7	-14,508.3	-944.0	-219.5	-999.1
Sample size	20,757	20,757	3,350	1,526	1,526

Notes: Standard errors adjusted for regional clustering in parentheses. The above regressions control for the husband's age and employment status, both spouses' levels of education, health status and migration records and for whether they own their dwelling or not. Regional and wide effects are captured by including region and year dummies, the regional share of women aged 50-70 years taking care of children at least 28 hours/week without pay[a], the regional unemployment rate[b] and the regional employment rate of women aged 25-55 years[c]. Significance levels are indicated with $p<0.1=$~, $p<0.05=$* and $p<0.01=$**.

Table 9. Children and geographic mobility. Southern European countries.

	Employed wives			Non-employed wives	
	Univariate	Bivariate	CFE	Univariate	Bivariate
		A. Inter-regional moves			
Children	-0.351~	-0.453	-	0.352	0.364
	(0.197)	(0.405)		(0.339)	(0.577)
Abundant family care[a]	0.022	0.022	-	-0.024	-0.011
	(0.016)	(0.016)		(0.022)	(0.016)
Unemp. rate[b]	-0.009	-0.009	-	-0.011	-0.008
	(0.009)	(0.009)		(0.008)	(0.004)
Children, regional[c]	-0.008	-0.008	-	0.037	-0.033
	(0.022)	(0.022)		(0.051)	(0.014)
Selection equation					
Abundant family care	-	0.011~	-	-	0.018~
		(0.006)			(0.010)
Unemp. rate	-	0.003	-	-	0.002
		(0.002)			(0.003)
Children, regional	-	0.011	-	-	0.017~
		(0.007)			(0.010)
Correlation coeff.	-	0.058	-	-	0.386
		(0.104)			(0.382)
Log likelihood	-110.3	-3,293.5	-	-221.9	-1,885.1
Sample size	11,440	11,440	-	10,843	10,843
		B. Intra-regional moves			
Children	0.136	-0.451	0.181	0.159	0.567
	(0.093)	(0.373)	(0.406)	(0.139)	(1.218)
Abundant family care	-0.003	-0.003	0.041~	0.004	-0.001
	(0.004)	(0.002)	(0.025)	(0.005)	(0.006)
Unemp. rate	0.001	0.001	-0.003	0.003	-0.001
	(0.002)	(0.002)	(0.009)	(0.003)	(0.002)
Children, regional	0.015*	0.015*	0.028	-0.014	-0.003
	(0.007)	(0.007)	(0.238)	(0.014)	(0.009)
Selection equation					
Abundant family care	-	0.011~	-	-	0.018~
		(0.006)			(0.010)
Unemp. rate	-	0.003	-	-	0.002
		(0.002)			(0.003)
Children, regional	-	0.011	-	-	0.017~
		(0.007)			(0.010)
Correlation coeff.	-	0.312~	-	-	-0.209
		0.176			(0.620)
Log likelihood	-1,694.6	-4,876.8	-514.2	-1,419.1	-3,806.1
Sample size	11,440	11,440	1,891	10,843	10,843

Notes: Standard errors adjusted for regional clustering in parentheses. The above regressions control for the husband's age and employment status, both spouses' levels of education, health status and migration records and for whether they own their dwelling or not. Regional and wide effects are captured by including region and year dummies, the regional share of women aged 50-70 years taking care of children at least 28 hours/week without pay[a], the regional unemployment rate[b] and the regional share of households with at least one child[c]. Significance levels are indicated with p<0.1=~, p<0.05=* and p<0.01=**.

Table 10. Working wives and geographic mobility. Other European countries.

	Children			Childless	
	Univariate	Bivariate	CFE	Univariate	Bivariate
			A. Inter-regional moves		
Wife works	0.037	-0.232	0.320	0.124	0.587
	(0.026)	(0.411)	(0.376)	(0.287)	(0.595)
Free care[a]	-0.005**	-0.005*	-0.040	-0.020**	-0.020
	(0.002)	(0.002)	(0.030)	(0.005)	(0.027)
Unemp. rate[b]	0.003	0.002	0.002	-0.009	-0.012
	(0.006)	(0.006)	(0.013)	(0.016)	(0.010)
Female emp. rate[c]	0.006**	0.008*	-0.043	-0.057**	0.003
	(0.002)	(0.004)	(0.051)	(0.008)	(0.035)
Selection equation					
Free care	-	-0.005**	-	-	0.005
		(0.001)			(0.010)
Unemp. rate	-	-0.002~	-	-	0.006
		(0.001)			(0.011)
Female emp. rate	-	0.045**	-	-	0.038~
		(0.001)			(0.020)
Correlation coeff.	-	0.157	-	-	-0.178
		(0.228)			(0.383)
Log likelihood	-700.2	-6,427.3	-203.2	-137.4	-622.6
Sample size	10,928	10,928	701	1,365	1,365
			B. Intra-regional moves		
Wife works	0.091*	0.449	0.293	0.349	1.009
	(0.045)	(0.336)	(0.190)	(0.281)	(1.394)
Free care	0.007**	0.007**	0.048	0.015**	0.014**
	(0.002)	(0.002)	(0.046)	(0.004)	(0.005)
Unemp. rate	-0.001	-0.001	0.010	-0.012	-0.012
	(0.006)	(0.005)	(0.010)	(0.009)	(0.010)
Female emp. rate	0.007~	0.002	-0.062	-0.012	-0.010
	(0.004)	(0.004)	(0.080)	(0.012)	(0.014)
Selection equation					
Free care	-	-0.005**	-	-	0.005
		(0.001)			(0.010)
Unemp. rate	-	-0.002~	-	-	0.006
		(0.001)			(0.011)
Female emp. rate	-	0.045**	-	-	0.038~
		(0.001)			(0.020)
Correlation coeff.	-	-0.219	-	-	-0.401
		(0.212)			(0.893)
Log likelihood	-1,877.6	-7,604.6	-671.0	-228.3	-622.6
Sample size	10,928	10,928	2,354	1,365	1,365

Notes: Standard errors adjusted for regional clustering in parentheses. The above regressions control for the husband's age and employment status, both spouses' levels of education, health status and migration records and for whether they own their dwelling or not. Regional and wide effects are captured by including region and year dummies, the regional share of women aged 25-45 years old that do not pay for children looked after on a regular basis[a], the regional unemployment rate[b] and the regional employment rate of women aged 25-55 years[c]. Significance levels are indicated with p<0.1=~, p<0.05=* and p<0.01=**.

Table 11. Children and geographic mobility. Other European countries.

	Employed wives			Non-employed wives		
	Univariate	Bivariate	CFE	Univariate	Bivariate	CFE
			A. Inter-regional moves			
Children	0.028	0.235	-0.477	-0.082	0.806	-
	(0.097)	(0.241)	(0.480)	(0.217)	(0.731)	
Free care[a]	-0.002	-0.002	-0.036	-0.026**	-0.010~	
	(0.003)	(0.003)	(0.027)	(0.004)	(0.006)	
Unemp. rate[b]	0.002	0.002	-0.008	-0.001	0.001	
	(0.005)	(0.005)	(0.016)	(0.008)	(0.015)	
Children, regional[c]	0.022	0.018**	0.050	-0.063**	-0.036	
	(0.003)	(0.005)	(0.073)	(0.015)	(0.040)	
Selection equation						
Free care	-	0.001	-	-	0.004	
		(0.002)			(0.005)	
Unemp. rate	-	0.002	-	-	0.007	
		(0.002)			(0.008)	
Children, regional	-	0.035**	-	-	0.035**	
		(0.007)			(0.012)	
Correlation coeff.	-	-0.201	-	-	-0.470	
		(0.140)			(0.451)	
Log likelihood	-374.1	-3,788.8	-184.7	-205.8	-816.2	
Sample size	9,142	9,142	625	3,151	3,151	
			B. Intra-regional moves			
Children	0.047	0.925	0.208	0.267	-[d]	0.415
	(0.065)	(1.385)	(0.396)	(0.250)		(1.101)
Free care	0.010	0.004	0.039	0.011		0.065
	(0.001)	(0.004)	(0.034)	(0.009)		(0.054)
Unemp. rate	-0.001	-0.002	-0.008	-0.006		0.012
	(0.007)	(0.006)	(0.014)	(0.004)		(0.016)
Children, regional	-0.004~	-0.007	-0.180	-0.032		-0.101
	(0.001)	(0.025)	(0.322)	(0.038)		(0.238)
Selection equation						
Free care	-	0.001	-	-		-
		(0.002)				
Unemp. rate	-	0.002	-	-		-
		(0.002)				
Children, regional	-	0.035**	-	-		-
		(0.007)				
Correlation coeff.	-	-0.524	-	-		-
		(0.890)				
Log likelihood	-1,517.2	-4,677.2	-485.1	-591.2		-185.7
Sample size	9,142	9,142	1,771	3,151		604

Notes: Standard errors adjusted for regional clustering in parentheses. The above regressions control for the husband's age and employment status, both spouses' levels of education, health status and migration records and for whether they own their dwelling or not. Regional and wide effects are captured by including region and year dummies, the regional share of women aged 25-45 years old that do not pay for children looked after on a regular basis[a], the regional unemployment rate[b] and the regional share of households with at least one child[c]. [d] None of the specified models converges. Significance levels are indicated with p<0.1=~, p<0.05=* and p<0.01=**.