Professional Consequences of Couple Internal Migration: Evidence from France

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Summary:

This article examines the impact of internal migration on dual-earner couples' labor market participation and earnings in France. The analysis is based on longitudinal data from the French version of the European Community Household Panel. Internal mobility is a rare event in France, specially for couples. Controlling for self-selection of migrants, results show that household income diminishes the year following migration, as the probability to be employed, strongly for women. Once controlling for the market labor participation, migration has a positive impact on male income, but not on female one. The year after, migration is more profitable, but essentially for men, meaning that women are often the 'tied movers'. The rigidity of the French labor market associated with a high level of unemployment may explain both the difficulty and the weak benefit to move in couple.

Keywords:

Internal migration, couple, gender, income, labor market participation

Introduction

The researches on professional outcome of migration are largely individual-centered. Their implicit hypothesis is that the mobility decision is taken by the working partner belonging to single-earner couples, or that the decision-making process is driven by the head of the household (or the partner with the higher wage) in dual-earner couples. Results show that migration behaviors differ according to sex. Traditionally, men have a greater professional mobility that can be explained by their smaller familial responsibilities, their smaller risk aversion or their larger job search area.

With increasing women labor force participation, such assumptions about the migration decision process seem less valid. It seems obvious that moving is a couple decision -or even a family decision since it implies all the family members. This joint decision for the couple may be the result of a bargaining process between spouse, the economic power of each partners being determinant.

Moreover, the migration may have different consequences for both partners in terms of labor market participation, job type or earnings. For instance, among people who have stopped a former job for personal reasons in the survey we use, the reason "my partner has to move because of his/her job" is declared in 15% of cases for women against only 4% for men. This figure points out that couple migration could have different impact for partners according his/her sex.

The purpose of this article is to examine the migration decision process while taken the couple as a unit of analysis, and to measure the professional consequences of *couple* internal migration. It studies the influence of migration on spouses labor market participation, total household income and the relative earnings of partners. How do each partner's characteristics play on the family decision to move? How does migration affect the labor market participation of each partner? How does the migration affect the household and individual earnings and the earning gap between partner? While answering those questions, we will take into account the potential correlation between unobserved household characteristics exerting influence on both the decision to migrate and on outcomes.

This paper is structured in the following way. It first provides a short review of the literature and of earlier researches linking household migration, labor market participation and income. Next section presents both the database and the method used. Then it gives the results on the determinants of mobility and its outcomes in terms of employment and income. The final section provides some concluding comments.

Background and previous research

Most researches on the determinants and consequences of migration are based on the human capital theory. In that framework, people maximize their lifetime utility and migration is viewed as a human capital investment (Polachek and Horvath, 1977). Individuals migrate when the long terms returns exceed the moving costs (monetary and non monetary costs like loss of social networks, neighborhood knowledge).

DaVanzo (1976), Sandell (1977) and Mincer (1978) were the first to consider family migration decision-making. In that traditional unitary model, the spouses have a single utility function, male and female income are pooled, and the household well-being does not depend on the intra-household resource allocation. The spouses maximize this single utility function when taking the decision to migrate. According to Mincer's initial model, the household migrates if the household net benefit of migration (gains less costs) is positive. This optimum reached at the household level may differ from the optimum people would have reached at the individual level. One spouse's post migration individual income may decrease whereas the household income increases. As women's market power is generally lower than their partner' one, women are likely to be 'tied movers', i.e. they move although they wouldn't have moved if the migration decision have been taken on a individual basis, because their income would have been higher by staying. In that case, migration reinforce earnings gap between the spouses. On the other hand, men are more often 'tied stayers', i.e. they do not migrate although they would have increased their individual earning while moving. This is more likely when their partner contributes to the household income in a large proportion and when women have a continuous career path. Finally, as couples have to consider both spouses outcomes, spouses are less mobile than singles.

Empirical studies, mainly conducted on American panel data, tend to support the human capital model of migration. Several researches confirm that dual-earner couples are less mobile than single-earner couples (Long, 1974; Mincer, 1978; Nivalainen, 2004). Moreover, women tend to

follow their partner whereas the reverse is less likely (Markham and Pleck, 1986 ; Shihadeh, 1991). After migration, their professional prospects worsen: they are more likely to be unemployed or out of labor force (Boyles *et al*, 2001 ; Duncan and Perrucci, 1976; LeClere and McLaughlin, 1997), and employment quality decreases (Morrison and Lichter, 1988). But these results depend on the local job market of the arrival location, since a mobility toward a extensive job market may encourage female careers (Bonney and Love, 1991). The majority of researches found that migration deteriorates female incomes (Bird and Bird, 1985). This negative impact, stronger for educated women, is mainly due to a reduction of working hours (LeClere and McLaughlin, 1997) and is recovered two years later (Lichter, 1983 ; Spitze, 1984). On the contrary, migration generally involves an increase in male incomes (Sandell, 1977; Cooke, 2003). There is no consensus in the literature concerning the migration impact on the household income. Sandell (1977) and Cooke (2003) found a positive effect, while it is not significant for Axelsson and Westerlund (1998), and negative for Jacobsen and Levin (1997). From the Survey on Income and Program Participation, they show that the migration returns depend on the macro-economic situation of the country. Some migrants are obliged to move because of their weak opportunities in their starting country (« *push effect* »), rather than because they are attracted by better perspectives (« *pull effect* »).

A more recent and growing literature move away from the human capital model of migration. New theoretical models, the collective models, analyse interactions between spouses who maximize separate utilities. Lundberg and Pollack (2003) have developed a non cooperative model of family migration. As the location may affect future relative bargaining of spouses, some migration will not occur even if the family income would increase after a move. One spouse may refuse migration when its bargaining position is weakened after migration.
Finally, some papers place gender roles at the core of the migration decision process. Some researches show that women mobility patterns and outcomes do not differ from men's ones in the absence of traditional gender role, e.g. in case of lesbian same-sex couples (Cooke, 2005) or equalitarian couples in terms of housework allocation (Bielby and Bielby, 1992; Jürges, 2005). Other researches point out the asymmetry between men and women in the family migration decision making. For instance, Duncan and Perruci (1976) and Lichter (1982) point up that female characteristics do not explain the migration process, on the contrary to men's ones. However, Rabe (2006), using an estimate corrected for selection of both participation and migration, shows that dual-earner couples weight equally each partners expected wages in the decision process.

Like in other European countries, French internal migration is relatively weak compared to the United States (Long, 1992). It may be explained by higher costs of moving, the labor market rigidity, the high rate of unemployment, the weak return of migration and the dominant model of dual-earner households. The literature dealing with the returns of migration in France focuses on individual migration (Simmonet, 1996, Drapier and al., 2002). It shows that internal migration favours male career path (Arrighi and Roux, 2006). The sole research dealing with family migration was based on the tree-years panel of the labor force survey. It finds that the higher the migration distance, the higher probability one spouse become inactive or unemployed, particularly women. It shows that migration does not favour women to find a job while unemployed before migration (Courgeau, Meron, 1995).

Data and Methodology

Data

The data used in this study comes from the French version of the longitudinal European Community Household Panel (ECHP). This survey carried out by the French National Institute of Statistics (INSEE) contains eight waves, from 1994 to 2001. All household members aged 17 and more are interviewed at one-year interval, in October. This panel is individual based, i.e. all people interviewed in the first wave were approached the waves after, conditionally not being absent two years in succession. The panel contains yearly information regarding socio-demographic characteristics, professional status, individual and household income, housing and mobility. A total of 7,344 households (14,332 adults) were initially interviewed, they were 5345 households (9,218 adults) in the last wave. Individuals were followed up in case of move or decohabitation, except if they move abroad or in institution. Attrition is higher in case of moving, however more than eight individuals out of ten answers after moving (Breuil-Genier *et alii*, 2000). This non-answering after moving is greater in case of couple splits, which are out of scope since we are interested in intact household moves.

We pooled the eight panel waves in one large data set, which counts 63,212 year-observations of individuals. We keep all individuals in age to participate to the labor market from 17 to 60 years old, except students and retired people. The idea is to avoid spatial move associated with completing education or entering retirement. Rather than focusing on individuals, our sample covers couples living in the same household, being married or not, who report family income. As Boyles et alii (2001), we need to use the household as a unit of analysis if we are interested in the impact of migration when couples had moved together. We do not restrict the analysis to dual-earner couples, in order to include people who experience employment status change during the migration period. It also minimizes sample selection bias related to labor market participation. Finally, our sample contains 22,887 year-observation couples. Sample characteristics are given in the appendix 1.

Definitions

We focus here on long-distance migration (within France) of couples. A migration is defined as occurring when a household changes his '*département*'[1] of residence between two yearly waves of the survey, rather than just moving between counties within a department, or between residence within a county. We focus here on long distance migrations that are more likely to be linked with employment rather than other reasons like housing conditions, etc[2]. Indeed, when asking people the reason of moving, the professional reason is advanced in 55% of cases when the household move outside the *département* against 11% in case of move within the département[3] (appendix 2).

Migration is a quite rare event in France: only 3.7% of singles and 1.8% of couples experienced a move outside the *département* during in a two-years interval. Migration is more frequent when one spouse does not work: 1.6% of dual-earner couples had moved and 1.9% of single-earner couples.

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[1] France is divided into 95 areas called "départements". A département change is a quite significant change since it implies new local government, schools, car registration plate, etc…

[2] An inter departmental migration is not necessary a long distance move. We have distinguished border départements migration from migration farer. The results obtained are very similar as those with our definition which was kept because the sample was larger.

[3] This information if given in the survey on a household basis. Unfortunately, we do nor have this information for each spouse, which could have been a way to identify tied and lead migrants..

We measure different migration outcomes. On the one hand, we are first interested in spouses labor force participation, whether both spouses work after migration (dual-earner couple). On the other hand, we study the influence of migration on income. We examine three measures of income and earnings:

- The family income which is family's average monthly income[4];
- The individual average monthly income which is made up of wages, income from secondary activity, income from self-employment, parental leave benefit, unemployment and other benefits;
- The individual average monthly wage for people who are working as wage earners (including bonuses);
- The men's share in the couple income related with labor market participation (wage, unemployment benefit, work pension, etc.).

Like Axelsson and Westerlund (1996), we consider changes in real incomes rather than nominal income. Earnings are expressed in 2001 euros and in logarithms.

Selection Bias

Long distance migration is often related to job opportunities and wages incentives. Workers would get different incomes in different areas because local job markets are differentiated and workers' skill can be rewarded differently in each area (Gobillon & Leblanc, 2003). In this context, selection into migrants and non migrants may be non random: migrants may differ from stayers in observed and unobserved characteristics witch also affect participation and wages (Borjas, 1987; Guillermin, Rosenzweig, 1990). For instance, level of education, age, but also individual dynamism, polyvalence or language knowledge may explain both the moving behavior and the wage level. Migration is thus a self-selection process and movers and stayers' earnings are not randomly selected.

We correct from these possible selection biases (Nakosteen, Zimmer, 1980; Vella 1997) and endogeneity problem. A two-stage model according to the Heckman's method (Heckman, 1979; Axelsson, Westerlund, 1998 for an application) is used. We first estimate the probability that the couple moves outside the current department. Secondly, we analyze the consequences of the couple migration in terms of labor market participation and income.

Econometric specification

The econometric specification is the following. First we estimate the migration equation using a probit model.

$$(1) \begin{cases} M_i = 1 & if \quad M_i^* > 0 \\ M_i = 0 & if \quad M_i^* \le 0 \end{cases}$$

with $M_i^* = \gamma' Y_i + e_i$

M_i is equal to 1 if the couple migrates outside the department and 0 otherwise. Y_i is a set of explanatory variables for the migration benefit M_i^*, which is a latent variable ¨expressing" the propensity to migrate. We assume that e_i are normally distributed.

The migration equation includes socio-demographic characteristics such as marital status, number of children, the age of the head, the age difference between spouses, the education level of each spouse. We distinguish three levels of education: high for people who get a university diploma, medium for people who get a secondary diploma and low for others. Employment

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[4] Information related to earnings are collected on an annual basis. We have computed a monthly average amount.

status is added: dummies variables indicting whether the man does not work, whether the woman is unemployed or out of the labor force. Some variables are linked with the dwelling: one binary variable indicates home ownership, one its dilapidation. As instruments, we introduce the type of dwelling (house or not) and the migration history, i.e. each spouse has moved from his/her birth department or not and. All of these variables are measured at *t-1*. We control also by the year and type of settlement (large urban area or not).

The probit estimation (1) provides estimation for $\hat{\gamma}$. Then $\phi(\hat{\gamma}'Y_i)$ and $\Phi(\hat{\gamma}'Y_i)$ which are respectively the density and distribution function of normal law, can be computed. The inverses of Mills ratios follow the formulas:

(2) $\qquad \hat{\lambda}_{i1} = \dfrac{\phi(\hat{\gamma}'Y_i)}{\Phi(\hat{\gamma}'Y_i)}$ for couples who migrate (M_i=1)

$\qquad \hat{\lambda}_{i0} = -\dfrac{\phi(\hat{\gamma}'Y_i)}{1-\Phi(\hat{\gamma}'Y_i)}$ for couples who do not migrate (M_i=0)

We then estimate models on the professional consequences of migration on participation to the labour market P_i, household income I and wages W_f and W_h.

The models are the following:

(3) $P_i = \beta X_i + \alpha \lambda_i + \chi M_i + u_i$

(4) $I_i = \beta X_i + \alpha \lambda_i + \chi M_i + u_i$

(5) $W_f = \beta X_f + \alpha \lambda_i + \chi M_i + u_f$ and $W_h = \beta X_h + \alpha \lambda_i + \chi M_i + u_h$

with X_i the characteristics of the household, and X_f and X_h the characteristics of respectively the female and male partner.

α is the parameter effect of the selection effect. If the unobserved characteristics of migrants (or non migrants) are correlated to the unobserved characteristic of explained variables, the selection should be corrected and α will be significantly different of 0.

χ is the parameter of the migration effect, once corrected the selection effect and other characteristics.

Results

The probability of couple migration

The migration probability is modeled as a function of individual, labor-market and housing characteristics of the couple in the year prior to that in which a move could have occurred (table 1). The results show that being married has no impact on the probability of migration whereas the presence of children reduces it. The number of children living in the household, more than their age, weaken the migration strategies. Man's age tends to reduce it[5], which is a common result to most migration studies. As expected, the probability of migration increases with education for both partners since more highly educated individuals would tend to have a better information about non local job opportunities and may be more adaptable to change. Once controlled for individual characteristics, the employment status of each partner has no significant impact on the probability of moving.

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[5] Only the husband's age is included given the high correlation in spouses' age.

The size of settlement of the starting place and some housing conditions (living space, quality of the housing, property form) play also a role. For instance, home owners are less mobile. To instrument our equation, we use three covariates. Two are direct indicators of preference to move, since it is a dummy indicating if the individual (male or female) is still living in his birth area. The third is a dummy of living in a house instead of a flat that indicates that mobility implies higher costs. These three instruments are highly significant and robust.

Finally, family and household characteristics are the main determinants of migration. It does not appear that the husband's situation is stronger than his wife's one in the migration decision process: the fact that the woman is not working does not significantly affect migration and the age difference between spouses is not significant. Being highly educated even offers women a stronger power of negotiation.

When making a distinction between long distance and short distance migration, i.e. whether the household moves to a bordering department or farer, results emphasize that long distance migration is strongly influenced by human capital factors, specially of the female partner (education and activity status). Short distance migration is more influenced by demographic factors (number of children, age of respondents).

Table 1. Probit regression: Determinants of couple migration

Variable	B		s.e.	
Intercept	3.393	***	1.108	
Family characteristics				
married	0.175		0.148	
0 child	ref			
1 child	-0.146		0.158	
2 children	-0.310	*	0.183	
3 and more children	-0.539	***	0.237	
man's age	-0.242	***	0.059	
man's age squared	0.002	***	0.001	
age man - age woman	-0.004		0.015	
Education				
male high	0.289	*	0.160	
male medium	0.354	**	0.180	
male low	ref			
female high	0.341	**	0.165	
female medium	0.198		0.182	
female low	ref			
Employment status				
non working man	-0.163		0.213	
unemployed woman	0.070		0.177	
OLF woman	0.140		0.164	
Instruments				
woman never moved	-1.063	***	0.154	
man never moved	-1.091	***	0.154	
house	-0.384	**	0.154	
Dwelling				
run-down dwelling	-0.082	**	0.034	
owner	-0.651	***	0.151	
big city	-0.035		0.026	
year				
1995	-0.142		0.152	
1996	-0.193		0.149	
1997	0.023		0.144	
1998	-0.106		0.150	
1999	0.129		0.139	
2000	-0.093		0.154	
2001	ref			
N(event)	18194(308)			
* p<0,010; **p<0,005; *** p<0,001				

Spouses labor market participation after migration

To answer whether migration has an effect men's and women's labor market participation, we initially examine their average participation rate and unemployment rate before and after migration. Then, we estimate a logit model of participation for each spouse.

Table 2 indicates that the female participation rate decreases sharply after moving while the male one is not affected by migration. Two years after migration, their initial level of participation is not recovered. Movers, men as women, are more often unemployed than stayers, but the gap is stronger for women. This emphasizes the push effect of migrants: that profittake advantage from unemployed to migrate. Indeed, unemployment allowances continue to be perceived after migration and the migration cost is then reduced. Arrival housing market may be lowercheaper and employment opportunities greater. Furthermore a large share of migrant women living in couple become unemployed, their unemployment rate being more than double than non-migrant women. Again, a large share of moving women is still unemployed two years after migration.

Table 2. labor market participation before and after migration occurring between t-1 and t

	t-1	t	t+1
Male participation rate			
stayers	89.0	88.8	88.7
movers	88.3	88.1	89.4
Female participation rate			
stayers	67.3	67.1	67.1
movers	68.1	60.9	61.4
Male unemployment rate			
stayers	5.2	5.3	5.2
movers	6.9	6.3	5.2
Female unemployment rate			
stayers	8.3	8.2	8.0
movers	13.3	18.5	17.8

The estimates of the logit model of the probability of employment are listed in table 3. The first set of columns gives the estimates of being a dual-earner couple, the two last sets of columns give the results for male and women employment respectively.

Migration diminishes significantly the probability of being a dual-earner couple the year following the migration. It comes from the worsening of women labor market opportunities after migration. Indeed, the parameter estimate associated with migration is significantly negative for women whereas it is insignificant for men. Women living in couple seem to be tied movers and to be in trouble to get a job after migration. Indeed, finding a new job in France may be a quite long process since the labor market is quite rigid, the unemployment rate high. Moreover, networks that are a useful way to find a job, may be weakened in the new settlement. However, this negative impact is short lived, it disappears two years after moving (appendix 3). The positive returns of couple migration is delayed because both partners have to adapt to the new settlement and labor market.

Controlling covariates play as expected. The number of children diminishes the probability of being a dual-earner couple, again because it reduces the probability of female employment. Female education increases the likelihood to be a dual-earner couple, whereas male education

has no impact. There is a huge inertia in professional situations since working the year before increases the risk of working the year after. The dual-earner status depends more on the woman's characteristics that on man's ones, due to the higher heterogeneity in women's labor force participation patterns. The parameter estimate associated with the migration self-selection bias variable is not significant.

Table 3. Probit regression: Probability to be a dual-earner couple

Probability	Dual-earner couple		Female participation		Male participation	
Variable	B	s.e.	B	s.e.	B	s.e.
mob(t-1/t)	-1.783 ***	0.749	-2.001 ***	0.732	-0.394	1.110
Inverse Mill's ratio	0.213	0.203	0.229	0.197	-0.040	0.260
Family characteristics						
0 child	Ref.					
1 child	-0.136 *	0.074	-0.169 **	0.080	0.182 **	0.091
2 children	-0.410 ***	0.081	-0.528 ***	0.085	0.217 **	0.101
3 and more children	-0.736 ***	0.093	-0.913 ***	0.097	-0.030	0.112
man's age	0.229 ***	0.037			0.387 ***	0.035
man's age squared	-0.003 ***	0.000			-0.005 ***	0.000
woman's age	0.190 ***	0.036	0.344 ***	0.028		
woman's age squared	-0.002 ***	0.000	-0.004 ***	0.000		
Education						
male low	-0.082	0.082			-0.292 **	0.113
male medium	Ref.				Ref.	
male high	-0.003	0.095			0.461 ***	0.144
female low	-0.304 ***	0.081	-0.355 ***	0.083		
female medium	Ref.		Ref.			
female high	0.215 **	0.095	0.316 ***	0.098		
Employment						
man work in t-1	3.049 ***	0.107			4.247 ***	0.097
woman work in t-1	4.147 ***	0.069	4.479 ***	0.070		
mother'woman never work	-0.214 ***	0.051	-0.221 ***	0.054		
Citizenship						
French man	0.136	0.150			0.297 *	0.146
French woman	0.285 *	0.170	0.449 ***	0.124		
Area						
Town	0.004	0.009	0.024 **	0.010	-0.044 ***	0.013
Intercept	-12.225 ***	0.595	-7.966 ***	0.550	-7.279	0.735
control by year, robust s.e.						
N(events)	18194(308)					

Household income after migration

Table 4 compares the household monthly average income for movers and stayers over a three years period: the year before moving (if so), the moving year and the year after. Movers have in average a higher income before migration. The household average income is affected by interdepartemental move. Moving seems to have a negative effect on family income the migration year, which is not totally recovered one year after.

Table 4. Household monthly average income and individual monthly average income, before and after migration occurring between t-1 and t (€)

	t-1	t	t+1
Median household income			
Stayers	2,805	2,809	2,835
Movers	2,976	2,856	2,960
Median male income			
Stayers	1,560	1,558	1,571
Movers	1,675	1,628	1,723
Median female income			
Stayers	838	838	848
Movers	1,048	936	918
Men's share of income			
Stayers	68.8%	68.7%	68.7%
Movers	64.6%	64.8%	67.0%
Median male wage (if wage-earner)			
Stayers	1,509	1,531	1,549
Movers	1,589	1,582	1,629
Median female wage (if wage-earner)			
Stayers	1,046	1,057	1,065
Movers	1,192	1,102	1,205

The multivariate analysis confirms descriptive statistics (Table 5). Migration has a significant negative impact on the household income, once controlled for self-selection of migrants and stayers. This result fits in with Axelsson and Westerlund (1998) and Jacobsen and Levin (1997) ones on US data, but is opposite to Mincer's model prediction according to which the household migrates if net benefit is positive. Our result may suggest that the costs of migration within France are so high that they do not cover the benefit from migration, at least the first year. The hypothesis advanced is that individuals (and furthermore couples) need more time to capitalize human capital. Another explanation would be the push effect. If the departure area is very poor in terms of working opportunities, migration could be a mean to run away from the area and does not imply necessary an increase of income. We find a significant positive selection for stayers that tends to confirm this hypothesis. Unobserved characteristics that explain a higher income, also explain the sedentarity.

Table 5. OLS regression: Determinants of household income

log(household income)	All		movers		stayers	
Variable	B	s.e.	B	s.e.	B	s.e.
mob(t-1/t)	-0.123 **	0.066				
Inverse Mill's ratio	0.041 **	0.019	-0.005	0.025	0.987 ***	0.185
Family characteristics						
0 child						
1 child	0.057 ***	0.015	0.117 **	0.058	0.053 ***	0.015
2 children	0.150 ***	0.016	0.114 *	0.068	0.147 ***	0.016
3 and more children	0.233 ***	0.021	0.281 ***	0.090	0.229 ***	0.021
man's age	0.012 **	0.006	0.046 **	0.022	0.008	0.006
man's age squared	0.000 ***	0.000	0.000	0.000	0.000	0.000
woman's age	-0.002 ***	0.002	0.000	0.008	-0.002	0.002
Education						
male low	-0.202 ***	0.019	-0.079	0.067	-0.206 ***	0.019
male medium						
male high	0.181 ***	0.022	0.170 **	0.073	0.183 ***	0.023
female low	-0.145 ***	0.018	-0.228 ***	0.060	-0.142 ***	0.018
female medium						
female high	0.146 ***	0.020	0.109 *	0.056	0.151 ***	0.020
Employment						
Male experience	0.003 **	0.002	-0.001	0.007	0.003 **	0.002
Female experience	0.012 ***	0.001	0.016 ***	0.004	0.012 ***	0.001
Male not employed	-0.249 ***	0.020	-0.310 ***	0.079	-0.249 ***	0.020
Female unemployed	-0.156 ***	0.018	-0.070	0.051	-0.155 ***	0.019
Female out of labor force	-0.196 ***	0.017	-0.115 *	0.060	-0.198 ***	0.017
Intercept	7.480 ***	0.117	6.725 ***	0.403	7.582 ***	0.120
control by year, town, robust s.e.						
N(events)	18194(308)		299		17641	

Individual labor market income after migration

But loosing at the household level does not mean that each partner experiences a loss in his/her individual income. To focus on that, we examine individual income related to labor market participation. Movers have in average a higher individual income than stayers before migration, specially women (table 4). However, this average income decreases with migration. The decrease in median labor market income is higher and longer for women: while the male median income increases again two years after migration, it still decreases for women. Before migration, the husband's share in family labor related income is lower for movers than stayers: couple who move have higher average income, they are couples for which women have high individual income, and are more equalitarian than stayers. However, with migration, the gap between male and female income increases so that it near reach the stayers' level.

We regress men's and women's individual income (in log) after potential migration. Since participation may change due to migration, we need to take into account a second self- selection, i.e. selection into participation to the labor market. Results are presented in table 6 with correction of this selection[6]. Without correction, we find no effect of migration on individual

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[6] Instrument for female participation is her own mother career path: a dummy indicates whether or not 'own mother has never worked'. For male participation the instrumental variable is his father position: a dummy if

income for men and women. Once controlled for participation selection bais, there is a positive effect on male outcome. The effect of migration on female individual income is also positive but not significant. The negative impact of migration on participation is confirmed for both sexes, but stronger for women.

These results suggest that moving couples are two types: those who are in a weak labor market position before migration and then after, and those for whom migration is undertaken to fulfil the career aspirations of the husband.

Table 6. OLS regression on individual income (with and without selection on labor market participation)

log(individual income)	Female with selection		Male with selection	
Variable	B	s.e.	B	s.e.
mob(t-1/t)	0.192	0.137	0.366*	0.205
Inverse Mill's ratio	-0.013	0.039	-0.082	0.067
Family characteristics				
1 child (ref=0)	-0.050**	0.023	-0.059	0.041
2 children	-0.047*	0.026	0.016	0.041
3 and more children	-0.101***	0.038	-0.016	0.050
man's age	-0.014	0.014	0.045**	0.021
man's age squared	0.000	0.000	-0.001**	0.000
Education (ref=medium)				
Low	-0.280***	0.027	-0.242***	0.052
High	0.368***	0.028	0.342***	0.058
Employment				
Experience	0.059***	0.006	0.008	0.008
Squared experience	-0.001***	0.000	0.000	0.000
Unemployed				
OLF				
Intercept	7.022***	0.224	6.150***	0.362
with selection on labour market participation				
mob(t-1/t)	-0.904**	0.372	-0.625**	0.318
Inverse Mill's ratio	0.086	0.101	0.095	0.080
Other characteristics				
1 child	0.053	0.038	0.129***	0.042
2 children	-0.021	0.036	0.200***	0.048
3 and more children	-0.157***	0.043	0.184***	0.055
mother never worked	-0.121***	0.028		
father executive			0.339***	0.090
age	-0.004***	0.002	-0.020***	0.002
education low	-0.141***	0.040	-0.190***	0.065
education high	0.160***	0.047	0.009	0.075
work last year	2.570***	0.039	1.516***	0.062
French citizen	0.298***	0.067	0.255***	0.056
intercept	-1.185***	0.105	0.301**	0.126
control by year, town, robust s.e.				
N(censored)	17,424 (5947)		17,940 (1897)	

Male and female wages after migration

Migration have a different impact on men's and women's wages (table 4). Indeed, the female median monthly wage is really lower after migration while the male one decreases slightly.

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father was executive.

However, the initial median wage of female wage-earners who moved is recovered two years after migration.

Results on the regression (Table 7) on woman and man's wages (in log) confirm trends: signs are positive for men and negative for women but, once controlled for selection on participation, the parameters are not significant. The wages are not directly affected by migration once controlled by covariates.

Table 7. MCO on Husband and wife's wages (log)

log(wage)	t+1			
	Female with selection		Male with selection	
Variable	B	s.e.	B	s.e.
mob(t-1/t)	-0.009	0.156	0.029	0.188
Inverse Mill's ratio	0.018	0.041	-0.006	0.050
with selection on labor market participation				
mob(t-1/t)	-0.724 **	0.315	-0.736 **	0.316
Inverse Mill's ratio	0.035	0.084	0.101	0.084
Instruments				
mother never worked	-0.091 ***	0.027		
father executive			0.345 ***	0.072
control by number of children, age, age 2, education, public sector , part-time job, experience and experience2, year, town, robust s.e.				
N(censored)	16822(5947)		15723(1887)	

self-employed excluded

Conclusion

This article examines the impact of internal migration on dual-earner couples' labor market participation and earnings in France. Compared to the United States or former British colonies, French couples migrate scarcely: less than 2% move outside their district (French "department") each year. The empirical analysis based on longitudinal data from the French version of the European Community Household Panel shows clearly that migration has asymmetric outcome for men and women. Indeed, it has negative effects on labour market outcome for women, in spite of their high initial labor market position. Their opportunities of finding a job is reduced upon moving. However, this negative effect is short lived. Once controlled for self-selection into migration and participation, women do not experience any variation in their wages and/or income whereas migration has a positive effect on male income. The year after, migration is more profitable, but essentially for men, meaning that women are often the 'tied movers'. The rigidity of the French labor market associated with a high level of unemployment may explain both the difficulty and the weak benefit to move in couple.

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Appendix 1. Descriptive statistics

	Stayers	Movers
Married	83.70	70.95
1 child	28.10	31.92
2 children	31.31	25.24
3 children and more	16.33	8.58
Age difference between spouse	2.28	1.47
man's age	42.29	35.62
woman's age	40.00	34.15
French man	93.70	96.40
French woman	94.84	96.74
Male low	65.93	43.97
Male medium	12.20	14.11
Male high	21.86	41.92
Female low	62.62	39.01
Female medium	13.88	15.79
Female high	23.50	45.20
Paris area	14.59	17.82
Men part-time	14.59	17.82
Women part-time	34.14	27.53
Men public	25.7	35.3
Women public	30.1	36.9
Men never moved	59.21	18.98
Women never moved	59.14	20.70
Owner	68.71	34.38
House	69.47	37.64
Housing bad quality score	8.70	8.05
Mother never worked	43,6	41,0
Father executive	8,6	15,3

Appendix 2. Main reason for moving (%)

	Move within the 'département'	Move outside the 'département'
A household member found a job here	2.6	20.7
For another reason linked with work	8.6	34.4
For reason linked with the dwelling	55.7	13.7
For other reasons	33.1	31.3

Data: French ECHP, 1994-2001

Appendix 3. Probit regression: Probability to be a dual-earner couple (t+2)

	Dual-earner couple			Female participation			Male participation	
	B		s.e.	B		s.e.	B	s.e.
mob(t-2/t)	0,279		0,199	0,098		0,224	-0,432	0,352
Inverse Mill's ratio	-0,231	***	0,073	-0,277	***	0,071	-0,037	0,108