

# Professional Outcomes of Internal Migration by Couples: Evidence from France

Ariane Pailhé\* and Anne Solaz  
*INED, 133 bd. Davout, 75020 Paris, France*

## ABSTRACT

**This article examines the impact of internal migration on the labour-market participation and earnings of couples in France. The analysis is based on longitudinal data from the French version of the European Community Household Panel. Controlling for self-selection of migrants, the results show that household income falls after migration, as does women's likelihood of being employed. Controlling for labour-market participation, migration has a positive impact on women's income, but not on men's. In France, mobility is quite scarce, especially for couples. One explanation is that migration is generally not profitable in terms of professional outcomes. The rigidity of the French labour market, associated with high unemployment, may explain both the difficulty and the limited benefits of moving as a couple, especially for the women who are often the 'tied movers'. Copyright © 2008 John Wiley & Sons, Ltd.**

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## INTRODUCTION

In 1982, Courgeau reported that French people moved only half as frequently as American people do. Internal migration is still relatively low in European countries compared with the US (Long, 1992). Within Europe, Italy and Greece have the lowest mobility rates, while Scandinavian countries have the highest. France has an intermediate position: according to Census data, each year 2.8% of people moved outside their *département*<sup>1</sup> over the period 1990–1999. The annual rate slightly increased to 3.1% over the period 1999–2004 (Baccaini, 2005) but remains low.

This rather low mobility may be attributable to the high costs of moving. For instance, the French housing market presents several kinds of financial hurdle, such as high property transfer tax, high deposits for renting accommodation, and demanding income requirements on the part of owners. Moreover, the labour market is less flexible in France than in Anglo-Saxon countries. There are long-term employment relationships in France, the attachment between firms and their employees being quite strong.<sup>2</sup> The downside of this high level of job protection is less dynamic labour-market flows, less job creation and a high unemployment rate – especially long-term unemployment.<sup>3</sup> Alongside the factors related to housing and the labour market, the family also plays a role in the migration decision. For instance, a representative survey conducted in 2007 shows that 81% of French people declare they do not want to move for family or friendship reasons. Those factors take precedence over job-related factors (68%) or housing-related factors (43%).<sup>4</sup> Family factors must be taken into account,

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\*Correspondence to: Ariane Pailhé, INED, 133 bd. Davout, 75020 Paris, France. E-mail: pailhe@ined.fr

since the majority of French people of working age are living in couples and most of them have children.<sup>5</sup> In particular, spouses tend to be less mobile than single people – in France they move half as often – since couples have to consider both spouses' migration outcomes.

Furthermore, migration is not gender neutral (Boyle and Halfacree, 1999). Firstly, men are more often the drivers of mobility (Mincer, 1978). For instance, in the French part of the European Community Household Panel Survey, the reason 'my partner had to move because of his/her job' is cited by 15% of women versus only 4% of men who left a former job for personal reasons. Secondly, gender differences in the career consequences of family migration have been shown by a large body of the literature (Bailey and Cooke, 1998; Boyle *et al.*, 2001; Cooke *et al.*, 2008).

These empirical studies have mainly concerned Anglo-Saxon countries, and there is little evidence of the consequences of family migration in France. The literature dealing with return migration in France mainly focuses on individual migration (Simmonnet, 1996; Drapier and Jayet, 2002), and it shows that internal migration favours men's careers (Arrighi and Roux, 2006). There is little research dealing with family migration, except Courgeau and Meron (1995), who found using the three-year panel of the labour force survey that the greater the migration distance, the higher the probability that one spouse, usually the wife, will stop working.

The purpose of this article is to examine the migration decision process and to measure the professional consequences of long-distance internal migration by couples in the French context. It studies the influence of migration on the spouses' labour-market participation and on the partners' relative earnings. Using the couple as a unit of analysis, it examines the influence of each partner's characteristics in the family decision to move, and the impact of migration on the labour-market participation and individual earnings of each partner. Finally, in a country where the dominant model is that of dual-earner households, can the low French mobility be explained by the gap in returns from migration between spouses?

This paper is structured as follows. It first provides a review of the literature and earlier research linking household migration, labour-market participation and income. The next section

describes the data-set and the method used, which takes into account the potential correlation between unobserved household characteristics exerting influence on both the decision to migrate and on outcomes. It then 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

There are two competing explanations of the gender disparities in the labour force returns of migration. For the human capital theory, these disparities come from female lower investment in human capital, while the non-cooperative microeconomic model and the gender-role explanation focus respectively on the lowest bargaining position and the secondary role of women.

### The Human Capital Theory of Family Migration

Most research on the determinants and consequences of migration is based on the human capital theory. Within that framework, people maximise their lifetime utility, and migration is viewed as a human capital investment (Polachek and Horvath, 1977). Individuals migrate when the long-term returns exceed the costs of moving (monetary and non-monetary costs such as loss of social networks and neighbourhood 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 is pooled, and household well-being does not depend on intra-household resource allocation (Becker, 1991). The spouses maximise this single utility function when taking the decision to migrate. According to Mincer's initial model, the household migrates if the household's net benefit from migration (gains less costs) is positive. This optimum reached at household level may differ from the optimum that might have been achieved at individual level. One spouse's post-migration individual income may decrease, whereas household income increases. According to this theory, the sex differences in the returns from migration are entirely explained by sex differences in human capital investments: since women's market power

is generally lower than that of their husband or partner, they are more likely to be 'tied movers': they move even though they would not have moved if the migration decision had been taken on an individual basis, because their income would have been higher if they had stayed. In that case, migration widens the earnings gap between the spouses. On the other hand, men are more often 'tied stayers': they do not migrate even though they would have increased their individual earnings by moving. This is more likely when their partner makes a high contribution to household income and when women have continuous careers.

### Spouses' Bargaining Power

A more recent and growing body of the migration literature is moving away from the human capital model of migration. These alternative economic models dealing with household decision-making processes and strategic interactions between spouses have given an alternative explanation of migration decision-making (Lundberg and Pollak, 2003). In that framework, each spouse maximises his or her own well-being, whereas in the previous model, there is a single well-being function for the family. Each spouse takes into account his or her current and future bargaining position in the migration decision. Since the location could affect the spouses' future relative bargaining power, some migrations will not occur even if the family income were liable to increase after the move. One spouse may refuse to migrate if his/her bargaining position is weaker after migration. In other words, this spouse prefers a larger share in a smaller cake. These models show that spouses may not move even if moving is potentially beneficial. They give an additional explanation for the lower rates of migration of couples compared with singles, and for the lower rates of migration of couples with fairly equal bargaining power between spouses (fairly equal earnings, level of education, age, etc.).

### Gender-Role Theory of Family Migration

Sociological theory emphasises the role of norms and gender roles in explaining the migration decision process, and the unequal consequences of migration between spouses. It underlines that despite women's massive entry into the labour force, men and women often play distinctly

different roles in their partnerships. It also highlights the asymmetry between men and women in family migration decision-making: husbands' jobs are often deemed more important than their wives' jobs (Dex, 1987) and husbands' careers takes precedence over those of their wives in relocating decisions. In other words, the husband's career gains and losses often weigh more than the wife's career gains and losses when calculating the output of the migration decision. These weights may reflect cultural norms held by one or both spouses about the roles that men and women should hold (Hochschild, 1989; Potuchek, 1997): in 'traditional' partnerships the male career dominates, while in 'egalitarian' partnerships both spouses careers are equally considered (Green, 1995; Cooke, 2008).

### Empirical Studies

Empirical studies, mainly conducted on US panel data, tend to support the human capital model of migration. Several studies confirm that dual-earner couples are less mobile than single-earner couples (Long, 1974; Mincer, 1978; Nivalainen, 2004). Moreover, women tend to follow their partners, whereas the reverse is less likely (Markham and Pleck, 1986; Shihadeh, 1991). After migration, their career prospects worsen: they are more likely to be unemployed or out of the labour force (Duncan and Perrucci, 1976; LeClere and McLaughlin, 1997; Boyle *et al.*, 2001), and employment quality decreases (Morrison and Lichter, 1988). The majority of research has found that migration causes women's incomes to fall (Bird and Bird, 1985). This negative impact, stronger for educated women, is mainly due to a reduction in working hours (LeClere and McLaughlin, 1997) and is recovered two years later (Lichter, 1983; Spitze, 1984). In contrast, migration generally involves an increase in men's incomes (Sandell, 1977; Cooke, 2003).

There is no consensus in the literature concerning the impact of migration on household income. Sandell (1977) and Cooke (2003) find a positive effect, Axelsson and Westerlund (1998) find no significant effect, and Jacobsen and Levin (1997) find a negative effect. Using the Survey on Income and Program Participation, they show that migration returns depend on the macroeconomic situation of the county. Some migrants have to move because of low opportunities

in their starting county (push effect), rather than because they are attracted by better prospects (pull effect). It is then necessary to take into account some regional variables such as the unemployment rate.

There is also empirical evidence that gender roles explain the migration decision process and the unequal consequences of migration. For instance, Duncan and Perrucci (1976) and Lichter (1982) contend that women's characteristics do not influence the migration process, unlike men's. Some studies show that women's mobility patterns and outcomes do not differ from men's when there are no traditional gender roles, such as in the case of couples that share housework equally (Bielby and Bielby, 1992; Jürges, 2005). However, some studies which correct for selection of both participation and migration show that dual-earner couples give equal weighting in the decision process to each partner's expected earnings (Rabe, 2006).

### The Impact of Institutional Context and Prevailing Social Norms

The sex difference in the returns from migration may be dependent upon the institutional and societal context. Observing a different institutional context than that prevailing in Anglo-Saxon countries may be one way of testing these competing theories. As seen previously, France represents a different institutional context and diverges significantly in terms of welfare-state regime and employment systems from Anglo Saxon countries. The French labour market is not very flexible, which may deter some flows in the labour market and ultimately mobility. The market mechanisms underlining the human capital theory may be disrupted. From this, we formulate the following hypothesis:

H1. The high risk of unemployment should deter family migration in France.

There are gender differences in the French labour market, which are greater compared to the US: female unemployment rates consistently exceed those of men, women's share of part-time work is also higher in France (79% against 68% in the US), and professional segregation is higher (the dissimilarity index stands at 56% in France compared with 46% in the US). We can thus assume:

H2: Due to the higher female unemployment rate, females have a higher risk of not working after moving.

H3: Women also have a higher risk of obtaining a job that does not match their qualifications, and so are less well paid after moving.

There is also an asymmetry in gender roles within the family. Gender disparities in the division of labour are strong: regardless of the partners' employment status, women spend more time doing domestic tasks than men (Anxo *et al.*, 2007). However, women's traditional role seems to be less pronounced in France. For instance, according to the World Value survey, fewer French women agree with the statement that 'Being a housewife is just as fulfilling as working for pay': 56%, compared with 76% in the US (Fortin, 2005). France differs from Anglo-Saxon countries in terms of prevalent social norms. Our fourth hypothesis is that:

H4: The asymmetry of gender roles within the family implies that men are more often the drivers of mobility. Less traditional roles imply that the female career is taken more fully into account, which reduces the propensity to move.

## 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, conducted by France's national statistics institute (INSEE), consists of eight waves, from 1994 to 2001. All household members aged 17 and over were interviewed at one-year intervals, in October. This panel is individual-based; all people interviewed in the first wave were approached in subsequent waves, on condition that they were not absent for two or more consecutive years. The panel contains annual information regarding sociodemographic characteristics, occupational status, individual and household income, housing and mobility. A total of 7344 households (14,332 adults) were initially interviewed, and a remaining 5345 households (9218 adults) were included in the last wave. Individuals were followed up if they moved or

separated from their partners, except if they moved abroad or into institutions. Although attrition was greater after moving, more than eight individuals out of ten continued to respond after moving (Breuil-Genier *et al.*, 2002). The non-response rate after moving was higher when couples separated. These cases are out of scope in any case, since this study is concerned with whole household moves.

The eight panel waves were pooled into one large data-set, consisting of 63,212 year-observation individuals. The set contains all individuals of working age (17 to 60), except students and retirees, in order to exclude spatial moves associated with completing education or entering retirement. Rather than focusing on individuals, the sample covers couples living under the same roof, whether married or not, who report household income. As many couples do not marry in France, even after having children, we do not restrict the analysis to married couples. We call them spouses even if they are not married. As in Boyle *et al.* (2001), the household is used as a unit of analysis in order to determine the impact of migration among couples that move together. The analysis is not limited to dual-earner couples, so as to include people whose employment status changed during the migration period. It also minimises sample selection bias related to labour-market participation. Lastly, our sample contains 22,887 year-observation couples. Sample characteristics are given in Appendix 1.

### Definitions

This paper focuses on long-distance migration (within France) of couples. Migration is defined as occurring when a household changes *département*<sup>6</sup> of residence between two annual waves of the survey, rather than just moving between *communes* (municipalities) within the same *département*, or between residences within the same municipality. The focus here is on long-distance migration, which is more likely to be linked to employment rather than to other reasons like housing conditions (Gobillon, 2001).<sup>7</sup> When asked the reason for moving, employment is cited in 55% of cases when the household moves outside the *département*, versus 11% when the move takes place within the *département* (Appendix 2).<sup>8</sup>

As mentioned previously, migration is quite a rare event in France: only 3.7% of singles and

1.8% of couples moved outside their *département* within a two-year interval. Migration is more frequent when one spouse does not work: 1.6% of dual-earner couples moved, compared with 1.9% of single-earner couples.

Different migration outcomes are measured: firstly, the spouses' labour-force participation (i.e. whether both spouses work after migration); and secondly, the influence of migration on income. Two measures of income and earnings are examined:

- The family income, which is the family's average monthly income;<sup>9</sup>
- The individual average monthly income, consisting of wages (including bonuses), income from secondary activities, income from self-employment, and parental leave, unemployment and other benefits.

Like Axelsson and Westerlund (1998), this paper considers changes in real rather than nominal incomes. Earnings are expressed in 2001 Euros and in logarithms.

### Selection Bias

Long-distance migration is often related to job opportunities and wage incentives. Workers can earn different incomes in different places because local job markets are differentiated and workers' skills may be rewarded differently (Gobillon and 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 (Borjas, 1987; Guillermin and Rosenzweig, 1990). For instance, moving behaviour may be attributable to observed characteristics such as level of education and age, or unobserved characteristics such as individual motivation, multiple skills or language knowledge. Migration is thus a self-selection process, movers and stayers' earnings are not randomly selected, the non-migrants' income if they had moved cannot be observed, and likewise the migrants' income if they had not moved (DaVanzo and Hosek, 1981). Moreover, there may be a selection into labour-market participation after migration.

These possible selection biases (Nakosteen and Zimmer, 1980; Vella, 1997) were corrected.<sup>10</sup> A two-stage model based on Heckman's method (Heckman, 1979; see Axelsson and Westerlund,

1998, for an application) was used. Firstly, the probability of the couple moving outside the current *département* is estimated. Secondly, the consequences of the couple's migration are analysed in terms of labour-market participation and income.<sup>11</sup>

### Econometric Specification

The econometric specification is as follows. Firstly, the migration equation is estimated using a probit model.

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

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

$M_i$  is equal to 1 if the couple migrates outside the *département*, 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 characteristics of the couple such as marital status, number of children, the age of the head of family and the age difference between spouses. It includes also individual characteristics of each spouse. Three levels of education for each spouse are defined: high for people with a tertiary qualification, medium for people with a secondary qualification, and low for others. Employment status is added: dummy variables indicate whether the man does not work, and whether the woman is unemployed or out of the labour force, or works part-time. One variable indicates whether at least one partner has civil servant status. Some variables are linked to the dwelling: one binary variable indicates home-ownership, one the type of dwelling (house or not), another the dwelling age and state of repair. The migration history (whether each spouse has moved from his/her *département* of birth) is introduced as an identification variable. The analysis also controls by the year and for local and regional variables such as the type of settlement (large urban area or not) and the unemployment rate of the *département*. All of these variables are measured at  $t - 1$ .

The probit model (1) estimates  $\hat{\gamma}'$ . 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:

$$\hat{\lambda}_{i1} = \frac{\phi(\hat{\gamma}'Y_i)}{\Phi(\hat{\gamma}'Y_i)} \quad (2)$$

for couples who migrate ( $M_i = 1$ ), and

$$\hat{\lambda}_{i0} = -\frac{\phi(\hat{\gamma}'Y_i)}{1 - \Phi(\hat{\gamma}'Y_i)}$$

for couples who do not migrate ( $M_i = 0$ ).

We then estimate models on the professional consequences of migration with participation in the labour market  $P_i$ , household income  $I_i$  and wages  $W_f$  and  $W_h$ . The models are the following:

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

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

$$\begin{aligned} W_f &= \beta X_f + \alpha \lambda_i + \chi M_i + u_f \text{ and} \\ W_h &= \beta X_h + \alpha \lambda_i + \chi M_i + u_h \end{aligned} \quad (5)$$

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

$\alpha$  is the parameter of the selection effect. If the unobserved characteristics of migrants (or non-migrants) are correlated with the unobserved characteristic of explained variables, the selection should be corrected and  $\alpha$  will be significantly different from 0.  $\chi$  is the parameter of the migration effect, once corrected for the selection effect and other characteristics.

## RESULTS

### The Probability of Couple Migration

Migration probability is modelled as a function of the individual, labour-market and housing characteristics of the couple in the year prior to that in which a move could have occurred (Table 1). Several factors tend to deter migration. The number of children living in the household inhibits migration strategies: having two or more children substantially reduces the likelihood of migrating. The age of the children did not have a significant effect on the probability of moving and was not included. Being married compared with cohabiting has no impact on the probability of migration. Certain housing conditions (living space, quality of housing and tenure type) play a role. For instance, home-owners and people

Table 1. Logistic regression: determinants of couple migration.

Variable	Coef.	Robust S.E.
Intercept	1.766***	0.492
<i>Family characteristics</i>		
Married	0.093	0.067
0 child (ref.)		
1 child	-0.049	0.071
2 children	-0.145*	0.079
3 and more children	-0.215*	0.112
Man's age	-0.105***	0.027
Man's age squared	0.001***	0.000
Man's - woman's age	-0.003	0.006
<i>Education</i>		
Male high	-0.004	0.090
Male medium (ref)		
Male low	-0.185**	0.090
Female high	0.062	0.074
Female medium (ref)		
Female low	-0.042	0.076
<i>Employment status</i>		
Non-working man	-0.027	0.089
Unemployed woman	0.071	0.083
OLF woman	0.090	0.081
Woman part-time	-0.036	0.069
At least 1 civil servant	0.126**	0.057
<i>Exclusion variables</i>		
Woman never moved	-0.454***	0.060
Man never moved	-0.419***	0.059
<i>Dwelling</i>		
Run-down dwelling	-0.042***	0.015
Owner	-0.320***	0.068
Big town	-0.018	0.011
House	-0.146**	0.070
Unemployment rate	-0.027***	0.010
<i>Year</i>		
1995	-0.123	0.099
1996	-0.219**	0.096
1997	-0.076	0.097
1998	-0.134	0.097
1999	-0.048	0.092
2000	-0.128	0.095
Pseudo R <sup>2</sup>	17.7%	
N (events) clustered	18,294(308)	

\* $P < 0.10$ ; \*\* $P < 0.05$ ; \*\*\* $P < 0.01$ .

living in a house rather than a flat are less mobile. Two exclusion variables are used in this equation. They are indirect indicators of propensity to move, since there are dummies indicating whether the individual (man or woman) is still living in his/her birth area. These two

identification variables are highly significant and robust.

Local and regional characteristics matter. People living in urban areas are more mobile than those living in rural areas. The unemployment rate of the departure area affects the migration decision, but it acts negatively rather than exerting a push effect, as if people were discouraged in advance about leaving. One possible explanation is that with a high unemployment rate in the county, the threat of unemployment is real and people with a job do not want to take the risk of leaving it to move away.<sup>12</sup> Our first hypothesis seems to be confirmed: *the high risk of unemployment deters family migration in France.*

After controlling for individual characteristics, the employment status of each partner has no significant impact on the probability of moving. However, for working people, the risk of mobility increases if at least one partner has civil servant status. Indeed, in France, civil servants often cannot choose the geographical location of their first appointment. They may finally reach their preferred location after some years of tenure, involving several geographical moves. Some relative characteristics of spouses matter. The man's age - more than the woman's - tends to reduce migration.<sup>13</sup> This result is common to most migration studies. But there is no additional impact of difference in age between partners. According to non-cooperative bargaining models, the age difference between partners may indicate an unequal balance of power between spouses, with a strategic advantage in favour of the older of the two (Bozon, 1991; Anxo *et al.*, 2002). Being older than his/her spouse does not seem to play on the balance of power in France. As expected, the probability of migration increases with male education: more highly educated individuals tend to be better informed about non-local job opportunities and may be more adaptable to change. But, as for age, there is no additional effect of female education. Male characteristics seem to be determining factors in the couple's decision to migrate, whereas those of women have a smaller role, which is consistent with the hypothesis of male-female hierarchy in careers.

Lastly, family and household characteristics are the main determinants of migration. The husband's situation seems to have more influence than the wife's in the migration decision process,

which tends to validate our fourth hypothesis of male–female career hierarchy within households: *the asymmetry of gender role within the family implies that men are more often the drivers of mobility.*

### Spouses' Labour-Market Participation after Migration

To determine whether migration has an effect on men's and women's labour-market participation, their average participation rate and unemployment rate were first examined before and after migration. Then a logit model of participation for each spouse was estimated.

Table 2 indicates that the female participation rate decreases sharply after moving, while the male rate is not affected by migration. Two years after migration, women have still not recovered their initial level of participation. Movers, both male and female, are more often unemployed than stayers, but the gap is wider for women. This emphasises the push effect of migrants, who take advantage of unemployment to migrate. Unemployment benefits continue to be paid after migration, which reduces the cost of migration. Housing prices in the arrival location may be cheaper and employment opportunities greater. Furthermore, a large share of migrating women in couples become unemployed, and their unemployment rate is more than double that of non-migrating women. Again, a large share of women who move are still unemployed two years after migration.

Table 2. Labour-market participation before and after migration occurring between  $t$  and  $t - 1$  (%).

	Year		
	$t - 1$	$t$	$t + 1$
Male participation rate			
Stayers	90.0	88.9	88.8
Movers	90.5	88.6	89.6
Female participation rate			
Stayers	67.6	67.2	67.1
Movers	68.1	58.3	60.3
Male unemployment rate			
Stayers	5.0	5.2	5.1
Movers	7.3	5.9	5.1
Female unemployment rate			
Stayers	8.0	8.0	7.8
Movers	12.1	18.7	17.7

Source: French ECHP, weighted values.

The estimates of the logit model of the probability of male and female employment are listed in Appendix 3A, but a summary of the effects of migration on different outcomes appears in Table 3.

The multivariate analysis confirms the results of the descriptive statistics: migration significantly decreases women's labour-market opportunities, whereas it has no impact for men. Women in couples seem to be tied movers and to have trouble finding a job after migration. Finding a new job in France can be quite a long process, since the labour market is fairly rigid and the unemployment rate high. However, this negative impact is not short-lived. Two years after moving there is still a negative effect of migration on female participation. Our second hypothesis is confirmed: *due to the higher female unemployment rate, females have a higher risk of not working after moving.* One explanation may come from the availability of relatively generous unemployment benefits. Tied movers could afford to wait for an acceptable job.

Controlling covariates exert the expected influence on labour-market participation. In France, almost all children are enrolled at school at the age of three. Furthermore, parental leave (paid from the second child) ends three years following the birth. For these two reasons, there is a dip in the labour-force participation rate of mothers with children under age 3. The result confirms that having a young child reduces the likelihood of labour-force participation for mothers, whereas it has no impact on fathers. Having an only child increases the working probabilities for both sexes. A greater number of children tends to reduce the mother's probability of working and to increase that of men.

The effect of age forms an inverse U-curve. The workforce participation of young people is low in France due to generalised long studies. The low senior employment rate may be explained by a relatively low retirement age, extensive use of early retirement schemes,<sup>14</sup> a high rate of senior unemployment, and by the existence of specific retirement regimes (with earlier retirement age) in certain sectors. A woman is less likely to work if her mother never worked. There is a transmission from mother to daughter of the propensity to work. This variable will be used as an exclusion variable for the female participation selection. Having education greatly increases the

Table 3. Summary table on outcomes of migration (full table with all covariates are available in Appendix 3).

Method	Labour market participation				Household income		Individual Income				
	Women		Men		OLS		Women		Men		
	Logistic		Logistic				OLS		OLS		
	in $t$	in $t + 1$	in $t$	in $t + 1$	in $t$	in $t + 1$	in $t$	in $t + 1$	in $t$	in $t + 1$	
Migration between $t - 1$ and $t$	-2.526***	-4.102***	-1.667	-1.380	-0.405***	-0.423***	1.994***	0.707***	-0.194	-0.420	
Inverse Mill's ratio	0.644	1.461***	0.516	0.439	0.182***	0.189***	-0.840***	-0.22**	0.066	0.235*	
<i>Selection equation on female participation</i>											
Migration between $t - 1$ and $t$							-1.487***	-2.343***			
Inverse Mill's ratio							0.510***	0.747***			
Pseudo R <sup>2</sup>	0.59	0.48	0.48	0.40	0.42	0.41			0.13	0.14	
$n$ (censored)	18,283	14,445	18,275	14,438	17,941	14,184	18,127 (6,036)	9,279 (1,351)	16,233	12,821	

Robust S.E., clustered.

\* $P < 0.10$ ; \*\* $P < 0.05$ ; \*\*\* $P < 0.01$ .

Source: French ECHP, 1994–2001.

likelihood of working, but there is no additional effect of the partner's education. Being a French citizen increases the likelihood of working. This effect is both the result of racial discrimination in the labour market and of possible differences in cultural norms relating to female employment, especially for foreign women.

There is high inertia in occupational situations, since working the year before increases the risk of working the year after. Moreover, the unemployment rate in the area plays negatively on the male and female working probabilities. This confirms the importance of the local job market for participation. Lastly, living in a town generally increases female employment, since the job opportunities, childcare facilities and transportation linkages are better than in rural areas.

The parameter estimate associated with the migration self-selection bias variable is not significant in the first period.

### Household Income after Migration

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

The multivariate analysis confirms descriptive statistics (Table 3 and Appendix 3B) of a significant negative impact on the household income, after self-selection of migrants and stayers has been controlled. This result fits with those of Axelsson and Westerlund (1998) and Jacobsen and Levin (1997) for US data, but contrasts with Mincer's (1978) model prediction, according to which the household migrates if the net benefit

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

	Years			Variation
	$t - 1$	$t$	$t + 1$	
<i>Mean household income</i>				
Stayers	3249	3244	3275	↗
Movers	3547	3356	3338	↘
<i>Mean male income</i>				
Stayers	1954	1943	1956	→
Movers	2026	1941	2064	↘↗
<i>Mean female income (all)</i>				
Stayers	919	919	924	→
Movers	1130	1035	1025	↘
<i>Mean female income (working women)</i>				
Stayers	1237	1240	1246	↗
Movers	1461	1430	1414	↘
<i>Men's share of income (mean)</i>				
Stayers	68.8%	68.5%	68.5%	→
Movers	64.6%	65.5%	67.6%	↗

Source: French ECHP, weighted values.

is positive. The result here may suggest that the costs of migration within France are so high that they are not offset by the benefits of migration, at least in the first two years. One hypothesis is that individuals (and even more so, couples) need more time to capitalise upon human capital. Another explanation would be the push effect. If the departure area has very low employment opportunities, migration may simply be a way to leave the area and does not necessarily imply a higher income. A final explanation would be that the male career prevails in the migration decision and that the female difficulties in finding a job after migration were not anticipated. Our previous results on the determinants of migration rather favour this last explanation.

### Individual Labour-Market Income after Migration

Losing at the household level does not mean that each partner experiences a loss in his/her individual income. To focus on that, individual income was examined in relation to labour-market participation. Movers have a higher individual income on average than stayers before migration, especially women (Table 4). However, this average income decreases with migration.

The decrease in average labour-market income is higher and longer-lasting for women. While male average income increases again two years after migration, it continues to decrease for women. Before migration, the husband's share in family labour-related income is lower for movers than stayers: moving couples have a greater female share of global income. They are couples in which the woman has high individual income and that are more egalitarian in terms of income than stayers. However, with migration, the gap between male and female income increases to close to the stayers' level. This result is not in line with the bargaining model which states that the higher the female bargaining, the lower the family mobility. It would rather validate the hypothesis of male–female career hierarchy.

Men's and women's individual income is regressed (in log) after potential migration (cf. Table 3 and Appendix 3C). As has been shown, female participation is affected by couple migration. We then need to take into account this second selection bias when studying female income. In other words, there are two types of couples who migrate: on the one hand, couples with a woman who becomes or remains out of labour force after migration, and couples with a woman who continues to work after migration. This last group is greatly selected and the female earnings are higher after migration.

Our third hypothesis is not validated: *once controlled for the participation and migration selection bias, women do not have a higher risk to be less well paid after moving*. The negative impact of migration plays only through access to work, not through income. Migration harms women by causing unemployment, but among those who are employed, migration may increase their income. In other words, unemployed women after migration seem to prefer waiting for a job in line with their qualifications, rather than being paid less than before migration. For males, there is no impact of migration on their individual income. These trends endure two years after.

### CONCLUSION

This article examines the impact of internal migration on dual-earner couples' labour-market participation and earnings in the specific institutional and societal context of France. Compared with the US, French couples rarely migrate: fewer

than 2% move outside their district (*département*) each year. The empirical analysis based on longitudinal data from the French version of the European Community Household Panel shows that the threat of unemployment deters migration in France. The male situation seems to have more influence than the female situation in the migration decision process: men's individual characteristics matter, while women's do not. Those results tend to validate our hypothesis of male-female career hierarchy within households. Men are more often the drivers of mobility.

Migration has asymmetric outcomes for men and women. It has negative effects on the labour-market participation for women, in spite of their high initial labour-market position. Moving reduces their likelihood of finding a job. In contrast to Anglo-Saxon countries, this negative effect is not short-lived: a large share of women who move are still unemployed two years after migration. The high unemployment rate and the low labour flows in France explain this long-lasting effect. The negative impact of migration plays only through access to work, not through income. Once controlled for self-selection by migration and participation, women experience a positive change in their individual income. It is also possible that the availability of unemployment benefits allows French women to wait to find a job in line with their qualifications, rather than getting a job earlier but less well paid.

However, many couples do not move, probably because they anticipate the negative effect of migration for at least one of the partners. Since French women have a strong commitment to work, they may not be ready to give up the labour market to fulfil their husband's career aspirations. It may then be assumed that tied stayers are more numerous in France than in the US. The low flexibility of the French labour market, associated with a high level of unemployment, may explain both the difficulty and the limited benefits of moving as a couple.

## NOTES

- (1) France is divided into 95 administrative divisions called '*département*'.
- (2) The average job tenure is 11.2 years in France, compared with 6.6 years in the US (Eurostat).
- (3) At the beginning of the period covered by the study, the unemployment rate was 12.3%, while

at the end it was 8.9%. In 2001, the average duration of unemployment was 14.5 months.

- (4) The survey was conducted by the Opinionway Institute for AFPA in October 2007 on a representative sample of 4274 people aged 18 and more (AFPA, 2007).
- (5) France has Europe's second-highest birth rate (2.0 in 2007), which is bucking the trend of declining European birth rates.
- (6) A change of *département* is quite significant since it implies new local government, schools, car license plate, etc.
- (7) Migration to another *département* is not necessarily a long-distance move. A distinction is made between migration to a neighbouring *département* and migration farther away. The results obtained are very similar to those using this definition, which was kept because the sample was larger.
- (8) This information is given in the survey on a household basis. Unfortunately, this information is not available for each spouse, which would have been a way to identify tied and lead migrants.
- (9) Information related to earnings is collected on an annual basis. A monthly average amount was calculated.
- (10) Some research also considers migration as endogenous, i.e. the decision to migrate is correlated with unobservable characteristics that affect income. In that case, the solution would be to use instrumental variables (IV) or 2 standard least squared (SLS), according to the number of instruments, and to include the predicted probabilities of migration as regressor in the income equation.
- (11) Alternative models such as conditional differences and differences models used, for instance, by Shauman and Noonan (2007) would also have been possible.
- (12) Conversely, we also tested an indicator of job opportunities (the range of job offers in the previous year), but it is not significant.
- (13) Only the husband's age is included, given the high correlation between spouses' ages.
- (14) Because of declining demand and rising unemployment, early retirement has been increasingly considered by firms as a way to deal with their excess capacities and rejuvenate their workforce.

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## APPENDICES

## 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 (M.F)	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 education low	65.93	43.97
Male education medium	12.20	14.11
Male education high	21.86	41.92
Female education low	62.62	39.01
Female education medium	13.88	15.79
Female education 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
Other work-related reason	8.6	34.4
Dwelling-related reason	55.7	13.7
Other reasons	33.1	31.3

Source: French ECHP, 1994–2001.

### Appendix 3A. Logistic Regression with Correction of Selection on Migration: Determinants of Male and Female Labour-Force Participation

	Male participation				Female participation			
	in $t$		in $t + 1$		in $t$		in $t + 1$	
	Coef.	Robust S.E.	Coef.	Robust S.E.	Coef.	Robust S.E.	Coef.	Robust S.E.
Migration in $t - 1$	-1.667	1.340	-1.380	1.349	-2.526***	0.901	-4.102***	0.946
Inverse Mills ratio	0.516	0.575	0.439	0.555	0.644	0.423	1.461***	0.416
Child under 3 0 child (ref)	-0.104	0.129	-0.170	0.161	-1.161***	0.094	-1.589***	0.108
1 child	0.172*	0.092	0.118	0.113	0.245***	0.086	0.307***	0.104
2 children	0.225**	0.102	0.145	0.125	-0.094	0.089	-0.102	0.108
3 and more children	0.027	0.119	-0.020	0.144	-0.356***	0.104	-0.321**	0.127
Age	0.375***	0.037	0.467***	0.047	0.242***	0.030	0.253***	0.037
Age2	-0.005***	0.000	-0.006***	0.001	-0.003***	0.000	-0.004***	0.000
Mother never worked					-0.159***	0.057	-0.173**	0.070
Female education								
Low	-0.081	0.116	-0.134	0.140	-0.335***	0.088	-0.335***	0.106
Medium (ref)	ref		ref		ref		ref	
High	0.016	0.149	0.105	0.187	0.439***	0.105	0.528***	0.126
Male education								
Low	-0.275**	0.115	-0.253*	0.147	-0.082	0.096	-0.099	0.118
Medium (ref)	ref		ref		ref		ref	
High	0.381***	0.144	0.378**	0.185	-0.141	0.110	-0.135	0.134
Unemployment rate	-0.038***	0.013	-0.039**	0.016	-0.053***	0.010	-0.058***	0.012
Non-working man	-4.148***	0.097	-3.430***	0.115	-0.306***	0.094	-0.279**	0.110
Unemployed woman	-0.481***	0.113	-0.433***	0.139	-3.454***	0.083	-2.666***	0.097
OLF woman	-0.224***	0.082	-0.208**	0.099	-5.211***	0.087	-4.325***	0.094
French citizenship	0.277*	0.145	0.327*	0.185	0.371***	0.140	0.427**	0.168
Big town	-0.041***	0.013	-0.032**	0.016	0.029***	0.010	0.028**	0.013
1995	0.104	0.133			0.186*	0.108		
1996	0.042	0.132	0.016	0.128	0.143	0.106	0.212**	0.100
1997	0.140	0.134	0.020	0.131	0.125	0.110	0.191*	0.100
1998	0.001	0.139	-0.014	0.131	0.045	0.111	0.092	0.099
1999	0.074	0.133	0.019	0.130	0.081	0.112	0.111	0.100
2000	0.088	0.145	0.000	0.104	0.002	0.107	0.013	0.076
2001 (ref)				1.027				
Intercept	-2.105**	0.831	-3.951***		-0.933	0.604	-1.272*	0.764
Pseudo R <sup>2</sup>	49.0		39.8		59.2		58.3	
$n$	18,276		14,438		18,283		14,445	

\*  $P < 0.10$ ; \*\*  $P < 0.05$ ; \*\*\*  $P < 0.01$ .

Source: French, ECHP, 1994–2001.

## Appendix 3B. Household Income: OLS Regression with Correction of Selection on Migration

Household income	in $t$		in $t + 1$	
	Coef.	Robust S.E.	Coef.	Robust S.E.
Migration in $t - 1$	-0.404***	0.123	-0.423***	0.143
Inverse Mills ratio	0.182***	0.056	0.190***	0.063
0 child (ref.)				
1 child	0.041***	0.015	0.035**	0.017
2 children	0.124***	0.016	0.118***	0.018
3 and more children	0.216***	0.020	0.206***	0.022
Age	-0.016*	0.009	-0.016	0.010
Age2	0.000**	0.000	0.000	0.000
Age difference between spouses (M.F)	-0.003**	0.002	-0.002	0.002
Female education				
Low	-0.199***	0.018	-0.199***	0.019
Medium (ref.)				
High	0.185***	0.022	0.183***	0.023
Male education				
Low	-0.134***	0.018	-0.138***	0.019
Medium (ref.)				
High	0.136***	0.020	0.134***	0.021
Male civil servant	0.009	0.013	0.015	0.013
Female civil servant	0.047***	0.014	0.061***	0.014
Male experience	0.015***	0.003	0.015***	0.004
Male experience2	0.000***	0.000	0.000***	0.000
Female experience	0.022***	0.003	0.024***	0.003
Female experience2	0.000***	0.000	0.000***	0.000
Non-working man	-0.250***	0.019	-0.240***	0.022
Unemployed woman	-0.159***	0.018	-0.142***	0.020
OLF woman	-0.193***	0.019	-0.158***	0.021
Female part-time	-0.066***	0.012	-0.063***	0.013
Paris and suburbs	0.132***	0.022	0.128***	0.023
Unemployment rate	-0.011***	0.002	-0.010***	0.002
Town	0.011***	0.002	0.011***	0.002
1995	0.028**	0.012		
1996	0.018	0.012	0.018	0.013
1997	0.070***	0.012	0.070***	0.013
1998	0.038***	0.012	0.040***	0.013
1999	0.006	0.010	0.009	0.010
2000	0.014*	0.008	0.014	0.008
2001 (ref)				
Intercept	8.028***	0.148	8.024***	0.170
Pseudo R <sup>2</sup>	42.7		41.1	
$n$	17,941		14,184	

\* $P < 0.10$ ; \*\* $P < 0.05$ ; \*\*\* $P < 0.01$ .

Source: French, ECHP, 1994–2001.

## Appendix 3C. Men and Women Individual Incomes

	Female income				Male income			
	in $t$		in $t + 1$		in $t$		in $t + 1$	
	Coef.	Robust S.E.	Coef.	Robust S.E.	Coef.	Robust S.E.	Coef.	Robust S.E.
Migration in $t - 1$	1.994***	0.562	0.707***	0.231	-0.195	0.331	-0.420	0.286
Inverse Mills ratio	-0.840***	0.252	-0.220**	0.102	0.068	0.157	0.236*	0.128
0 child (ref.)								
1 child	0.015	0.065	-0.019	0.025	0.006	0.039	-0.001	0.045
2 children	0.175**	0.074	0.060**	0.027	0.107***	0.039	0.106**	0.044
3 and more children	0.119	0.112	0.057	0.042	0.051	0.049	0.036	0.056
Age	-0.069**	0.034	-0.031**	0.014	0.059**	0.025	0.051***	0.019
Age2	0.000	0.000	0.000	0.000	-0.001**	0.000	-0.001***	0.000
Education								
Low	-0.178**	0.080	-0.251***	0.029	-0.261***	0.048	-0.277***	0.053
Medium (ref.)								
High	0.426***	0.075	0.276***	0.029	0.375***	0.056	0.373***	0.061
Experience	0.045***	0.014	0.037***	0.006	0.011	0.009	0.013***	0.005
Experience2	0.000	0.000	0.000**	0.000	0.000	0.000	-0.003	0.002
Part-time job	-0.319***	0.037	-0.396***	0.021				
French citizenship					0.253***	0.073	0.272***	0.087
Non-working man					-0.456***	0.054	-0.376***	0.070
Self-employed					-0.821***	0.077	-0.911***	0.086
Unemployment rate					-0.010*	0.005	-0.008	0.006
Big town	0.058***	0.009	0.020***	0.004	0.024***	0.005	0.028***	0.006
1995	-0.099**	0.047			0.158***	0.037		
1996	-0.039	0.045	-0.041**	0.020	0.159***	0.035	0.156***	0.035
1997	-0.091**	0.040	-0.039*	0.021	0.079**	0.037	0.053	0.037
1998	-0.013	0.039	0.024	0.017	0.099***	0.036	0.082**	0.036
1999	-0.060*	0.032	0.000	0.016	0.073**	0.033	0.067**	0.034
2000	0.002	0.029	0.011	0.012	0.076***	0.027	0.067**	0.028
Intercept	8.108***	0.571	7.516***	0.245	5.751***	0.422	5.902***	0.363
<i>Selection equation of participation</i>								
Migration in $t - 1$	-1.487***	0.408	-2.343***	0.398				
Inverse Mills ratio	0.510***	0.185	0.747***	0.166				
Nained	-0.043	0.034	-0.058	0.049				
Child under 3	-0.381***	0.042	-0.543***	0.058				
0 child (ref.)								
1 child	0.078*	0.042	0.100**	0.045				
2 children	-0.070	0.045	-0.137***	0.049				
3 and more children	-0.129**	0.058	-0.232***	0.064				
Age	0.081***	0.015	0.146***	0.018				
Age2	-0.001***	0.000	-0.002***	0.000				
Mother never worked	-0.053**	0.023	-0.102***	0.035				
Female education								
Low	-0.140***	0.045	-0.203***	0.049				
Medium (ref.)								
High	0.070	0.049	0.174***	0.054				
Unemployment rate	-0.023***	0.004	-0.039***	0.006				
Unemployed woman	-1.380***	0.062	-1.113***	0.103				
OLF woman	-2.284***	0.074	-2.115***	0.154				

Short-term job contract	-0.576***	0.037	-0.530***	0.051		
French citizenship	0.126*	0.065	0.382***	0.074		
Big town	-0.010*	0.005	0.018***	0.006		
1995	0.056	0.048				
1996	0.030	0.047	0.059	0.042		
1997	0.032	0.046	0.148***	0.044		
1998	0.028	0.047	0.002	0.033		
1999	0.025	0.045	0.014	0.030		
2000	0.005	0.046	0.000	0.027		
Intercept	0.190	0.295	-1.209***	0.342		
Rho	-0.890***	0.012	-0.846***	0.032		
Lambda	-1.375***	0.051	-0.495***	0.047		
Pseudo R <sup>2</sup>					0.13	0.14
<i>n</i>	18,127	9,279	16,233			12,821
(censored)	(6,036)	(1,351)				

\* $P < 0.10$ ; \*\* $P < 0.05$ ; \*\*\* $P < 0.01$ .  
 Source: French, ECHP, 1994–2001.