Following Along: The Gender Gap in Returns to Geographic Mobility*

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Abstract

Using French administrative data, this paper examines how household location decisions differentially affect labor market outcomes across gender and partnership status. Implementing a staggered difference-in-difference design, I find that only partnered women experience income losses following moves, with earnings declining by approximately 7% in the two years post-relocation. Analysis of within-household dynamics reveals that moves typically reduce total household income and disproportionately benefit men's careers –even in couples where women were the primary earners pre-move. These findings are not consistent with income-maximizing models of household decision-making that predict prioritization of the higher earner's career. Instead, the results suggest that gender norms play a crucial role in household location choices, with men's career opportunities systematically prioritized over women's, regardless of their relative economic contributions.

Keywords: Tied movers, gender gap in earnings, household decisions, labor migration

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1 Introduction

The stark increase in female labor force participation over recent decades has transformed household decision-making, with dual-career couples becoming increasingly prevalent. These households must optimize career opportunities for both partners when making location decisions, creating complex trade-offs. Such joint household decisions significantly impact individual labor market trajectories: household members may need to make career-compromising choices to maintain their relationships. For instance, following a partner to a new city may necessitate job transitions, while remaining in place could mean forgoing opportunities elsewhere.

Since Mincer (1978)'s seminal work, which introduced the concepts of *tied-movers* and *tied-stayers* –individuals whose location decisions are driven by household-level considerations rather than individual gains– the prevalence of dual-career households has made this constraint increasingly salient. The household location decision process may contribute to the persistence of the gender income gap through its creation of career advancement trade-offs between partners. If households systematically prioritize men's careers, whether due to their status as primary earners or due to gender norms in household responsibility allocation, the phenomenon of tied moves could exacerbate the existing gender income gap.

In this paper I measure how moving affects labor market outcomes differently for men and women both coupled and single, and study the role of gender norms in household location choices.

Using French administrative data and a staggered difference-in-difference design with *not-yet-treated* individuals as the control group –to control at least partially for endogenous mobility– I examine the effects of moves on labor income and unemployment status by gender and couple status. I find that partnered women –either married or cohabiting– are uniquely disadvantaged by moves, experiencing substantial temporary income losses of approximately 7% during the first two years following relocation. Moreover, this group experiences a disproportionate increase in their likelihood of receiving unemployment benefits compared to other demographic groups. These findings suggest that women in relationships are more likely to be tied-movers, with household location decisions significantly compromising their labor market trajectories. Comparison between the outcomes of single and partnered men reveals that men in relationships also experience lower returns to mobility, suggesting that while men generally benefit more from moves, couple-based constraints affect both partners' labor market outcomes.

I then investigate whether this the gender gap in the effect of mobility is related to fertility dynamics. A large literature has documented the large impact of children on the gender gap in earnings, including in France (Meurs & Pora, 2019). The potential mechanisms for an interaction of this effect with mobility are twofold. If couples relocate post-childbirth, households may prioritize men's careers due to women's already diminished

earnings and reduced work hours. Alternatively, when planning for children, households might preemptively favor men's professional trajectories in anticipation of future "child penalities".

To test empirically this potential channel, I reproduce my analysis by age groups, revealing a remarkably consistent gender gap in mobility returns across different life stages. I obtain further insight by stratifying the sample according to fertility events surrounding geographic moves. Even among couples not experiencing proximate childbirth, a gender-differentiated mobility premium persists, though it is less pronounced. Notably, households experiencing childbirth both preceding and following relocation exhibit the most substantial gender divergence in mobility returns. These findings suggest that while the intersection of child penalties and relocation amplifies mobility-related earnings disparities, it is not their only determinant.

In a second part, I explore two potential mechanisms underlying the observed gender gap in mobility effects. One hypothesis is that households aim to maximize total income when making location decisions, favoring men's careers due to their higher pre-move earnings and potential returns. Alternatively, this pattern could reflect persistent traditional gender norms, where men are viewed as primary family providers and women's professional contributions are secondary.

To distinguish between these explanations, I analyze households stratified by the gender of the pre-move primary earner. I find that even in households where women were the higher earners prior to relocation, men still benefit more from the move. Furthermore, across most household categories, total labor income declines post-relocation. These findings suggest that the gender gap in mobility returns is not solely explained by men's being primary earners, nor by household-level income maximization. Instead, the results point to the likelihood that gender norms influence household location decisions and subsequent earnings disparities, which in turn reduces the households' total income

My paper is related to a strand of literature on joint location decisions by households. Early papers such as Mincer (1978) introduced the idea that family ties are an additional constraints in location decisions, and can result in tied-moves. Since then, work by Nivalainen (2004) in Finland has shown that migration is more likely to be determined by the husbands' career, while Jürges (2006) documents that this is only the case in Germany in couples who exhibit "traditional" values, measured through their division of housework. Tenn (2010) study the evolution of wives' contribution to inter-state migration decisions in the US, and shows that despite the rise in female attachment to the labor market, men have remained the primary determinant of migration between 1960 and 2000. While I do not directly observe the household decision-making process, this literature provides a plausible interpretative framework for my findings. The fact that women who move while in a relationship experience the most significant income losses is consistent with the concept of tied migration. In contrast, the large returns to relocation and the small gender gap for single individuals highlights the critical role of joint household

decision-making in explaining the disparities observed among cohabiting couples.

I also contribute to an empirical literature which has long tried to estimate the differential effect of moves on the income of husbands and wives. While a large part of it was not concerned with identifying causal effects (Sandell, 1977, Spitze, 1984, Bielby and Bielby, 1992, Boyle et al., 2001, Cooke, 2003...), some more recent papers made use of a fixed effects model (Cooke et al., 2009) or a difference-in-difference in which non-movers are used as control (Blackburn, 2010). All of those articles, which focus on the US and UK context, find that moves had a temporary negative effects on women's career (measured through wages, earnings, or probability of being employed), while they have either a positive or no effect on men's career. The closest paper to my work belongs to this empirical strand of literature. In a working paper, Jayachandran et al. (2024) use an event-study approach on German and Swedish data and find a persistent gap in the returns to moving, with men gaining significantly more than women from relocation. Finally, Gemici (2007) and Buchinsky et al. (2023) both estimate models of household decision making, in the US and Israel respectively, to quantify the negative impact of joint-decisions on women's labor market outcomes.

I complement this literature by using a different identification strategy, which uses not-yet-movers as control group, rather than relying simply on within-individual variation. Using this control group allows me to better estimate the causal effect of moving for the full sample of French movers. While moving is of course not an exogenous event, and households choose to relocate based on their expected returns from migration, my difference-in-difference approach allows me to examine the differential effect of this decision on men and women. This is made possible by exploiting the differential timing of migration for households who all move over a limited period of time and are very similar to each other.

Finally, I contribute to a large literature on the source of gender gaps in labor market outcomes, and more precisely on the role of household-level mechanisms. As underlined previously, many papers have shown that the "child penalty" is an important contributor to observed gaps on the labor market (recently, Kleven, Landais, and Søgaard, 2019, Kleven, Landais, Posch, et al., 2019, Meurs and Pora, 2019, Cortés and Pan, 2023). Research has also shown the negative impact on women's career of family constraints which limits their flexibility on the labor market. Goldin (2014) and Cortés and Pan (2019) show for instance that constraints which prevent women from working long hours affect negatively their career progression. Le Barbanchon et al. (2021) find that female jobseekers in France have a lower willingness to commute than men, which translates into a lower wage upon reemployment. Bertrand et al. (2015) study the prevalence of gender norms in within-household specialization. They find that wives who earn more than their husbands are not protected from gender roles, and tend to spend even more time on household chores. In this paper, I document another dimension through which family constraints and prioritization of men's career may affect the gender pay gap : women's

tied relocations, a channel which itself reinforces the child penalty.

The rest of the article is as follows: Section 2 presents the data I am using as well as the sample selection, and defines the main variables used in my analysis. Section 3 details the empirical approach I use, while section 4 presents my main results on the effect of moves by gender. Section 5 details the effect of moving on within household outcomes, and discusses the role of gender norms. Finally, section 6 concludes the paper.

2 Data and definitions

My main source of data is an administrative dataset, the Housing and Individual Demographic Files (FIDELI), which originates from the combination of several tax sources and covers all residents of France from 2014 to 2019.

Panel creation

The dataset's original structure consists of consecutive two-year cross-sections, where individual identifiers enable tracking across adjacent years only. I circumvent this limitation by taking advantage of the structure of the data to chain it together and create a panel spanning from 2014 to 2019. This approach leverages the overlapping structure of consecutive files. For example, both the 2016 and 2017 files contain information for 2016 on the same population. By exploiting the granularity of the provided variables, I am able to uniquely match most individuals and link individual records across consecutive files. Figure A1 in the Appendix illustrates the matching rates across consecutive years, disaggregated by age and gender. The procedure achieves unique matches for over 95% of adults aged 25-60, with matching precision increasing with age.

Demographics and income

For each person living in France in that time period, I observe demographic information such as age, gender, city of birth, and marital status. The data also details pre-tax annual income of different types, including unemployment insurance, wages, and income from independent professions (agricultural, industrial, commercial and non-commercial profit). The sum of wage and independent income is what I will define as "labor income" in the rest of the paper.

Location and moves

The FIDELI dataset provides precise residential addresses for all households as of January 1st of each year, enabling the identification of residential mobility through changes in city of residence. A limitation of the data is that it only captures the fact that a move occurred between two consecutive January 1st dates, without specifying the exact timing or potential multiple moves within the same year. However this limitation is unlikely to significantly affect the analysis, as repeated movers seem to be relatively rare: only 8% of

mover individuals relocate in two consecutive years, and the share is likely to be lower within a year.

Given my focus on labor market outcomes, I concentrate specifically on inter-city moves that entail a change in local labor markets. For this purpose, I define movers as households who relocate across Urban Areas, defined by the National Institute of Statistics (INSEE) for the year 2010. Figure A2 provides a map of all French Urban Areas, with the Paris Urban Area highlighted in blue. These administrative units are designed around a central urban core containing at least 1,500 jobs. The Urban Area boundaries are then extended to include surrounding municipalities where at least 40% of the working population is employed within the urban area.

Households

A last dimension of the FIDELI data, particularly important to this research, is its detailed household composition information. The data links married couples and those in civil unions through a shared household identifier, as they are required to file joint tax returns. This identifier also connects dependents, including children, to their reference household, allowing me to observe both the presence and age of children. The precise housing data, which specifies the exact flat or house of residence, enables me to further identify cohabiting individuals. Throughout this paper, I define couples as individuals who are either married, in a civil union, or cohabiting in a two-adult household at the beginning of the year.

To validate the accuracy of my couple identification methodology, particularly for cohabiting couples, I compare the distribution of couple types in my panel with French Census data. This comparison is made possible by the 2015 revision of the French Census, which introduced explicit questions about both cohabitation ("live in a couple") and marital status. Figure 1 demonstrates that the proportion of individuals who are married, in civil unions, or cohabiting (corresponding to my definition of couples) shows remarkable consistency between these two data sources. Even though married or civil union couples are slightly more numerous in Fideli data, the share of individuals who are cohabiting, married or in a civil union (corresponding to my definition of couples) is the same in both data sources for all years considered.

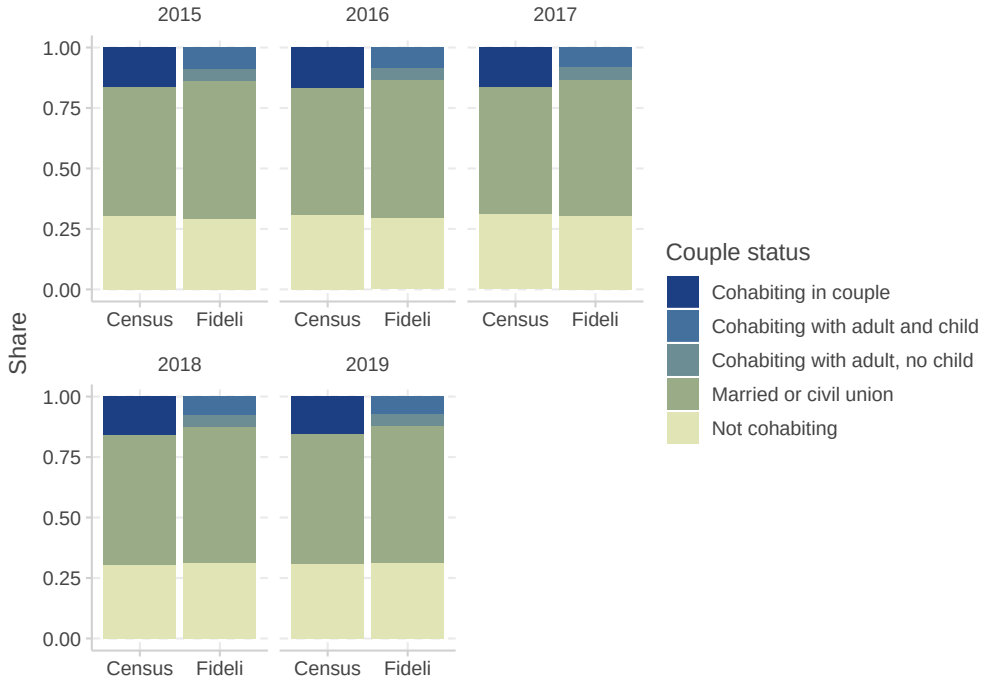
To address potential concerns that my baseline definition of couples may be overly inclusive and capture other living arrangements, I conduct robustness checks using two more restrictive definitions. The first considers only individuals who are married or in civil unions, while the second extends this to include cohabiting adults in two-adult households with at least one minor child present. The results of these alternative specifications, presented in Online Appendices B.4 and B.5, confirm my main findings.

Sample selection

My sample consists of individuals aged 25-60 who live in mainland France's urban areas (excluding Corsica and overseas territories) and relocated between urban areas between 2015 and 2019. I focus on individuals who moved exactly once during this period, representing 84% of all movers, as households which move repeatedly over so short a period may differ from others.

Several data limitations necessitate additional sample restrictions. My dataset only records household addresses and composition on January first of each year, preventing me from observing the within-year timing of events. This creates challenges for analyzing joint moves: when household composition changes in the same year as a move, I cannot determine whether the move preceded or followed the household change. Therefore, I exclude all households that experience both a move and a composition change in the same year. Using my main definition of couples (married and cohabiting), this restriction removes 15.3% of moves, including 1.3% coinciding with divorces or breakups and 14% with marriages or new cohabitation.

Figure 1: Distribution of couple status, in Fideli and Census data



Note: This figure presents the distribution of individuals' marital and partnership status by year in two different data sources. It is computed from two data sources: Fideli, and 2017 Census. In both data sources the sample used is made of individuals aged 25 to 60 years old, and living in an urban area in mainland France. Shares from the census are computed using individual weights. Not cohabiting category for census data includes individuals who report being single, widowed or divorced. Marriage, civil union, and cohabitation are directly reported by individuals in the census.

I also exclude same-sex couples (approximately 1% of moving couples), as these households likely face different gender norms than those I aim to identify. Furthermore, I cannot calculate gender-specific income share for those households, a crucial variable

for my analysis of gender norms.

To maintain sample balance, I also exclude couples where one member falls outside the sample restrictions (e.g., one partner is over 60 or moved multiple times). The final sample comprises approximately 1 million individuals, observed on average over 5 years, with 64% of individuals across all years.

Table 1 presents descriptive statistics across my three alternative couple definitions. Single movers differ notably from coupled movers: they are younger, less likely to have children, and earn lower annual labor income on average. The definition of couples affects sample characteristics: restricting couples to married individuals only (versus including cohabiting couples) yields a sample with fewer children and lower pre-move income. The third definitionincluding both married couples and cohabiting couples with childrenproduces characteristics between these two extremes.

Table 1: Descriptive statistics by couple status

	Married or cohabiting (main definition)		Married		Married or cohab. w/ child	
Variable	Yes	No	Yes	No	Yes	No
Age	39.05	38.34	39.25	37.64	39.49	37.70
	(8.60)	(10.18)	(8.43)	(9.54)	(8.47)	(10.08)
Female	0.50	0.51	0.50	0.52	0.50	0.51
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
Number minor children	1.21	0.33	1.37	0.41	1.32	0.26
	(1.12)	(0.75)	(1.13)	(0.84)	(1.11)	(0.68)
Has minor child	0.69	0.21	0.73	0.25	0.75	0.17
	(0.46)	(0.41)	(0.45)	(0.44)	(0.44)	(0.37)
Has child under 10	0.57	0.13	0.59	0.17	0.62	0.11
	(0.49)	(0.34)	(0.49)	(0.38)	(0.49)	(0.31)
Has child under 6	0.45	0.09	0.46	0.12	0.49	0.07
	(0.50)	(0.28)	(0.50)	(0.32)	(0.50)	(0.25)
Has child under 3	0.28	0.05	0.30	0.06	0.30	0.04
	(0.45)	(0.21)	(0.46)	(0.24)	(0.46)	(0.19)
Has newborn	0.09	0.02	0.10	0.02	0.10	0.01
	(0.29)	(0.13)	(0.30)	(0.14)	(0.30)	(0.12)
Oldest child age (if any)	8.71	11.20	9.06	10.67	8.71	11.40
	(6.14)	(6.44)	(6.41)	(6.47)	(6.14)	(6.50)
Youngest child age (if any)	5.70	8.90	5.84	8.41	5.68	9.16
	(5.49)	(6.34)	(5.70)	(6.24)	(5.48)	(6.48)
Annual labor income	27,125	20,590	28,331	20,751	27,637	20,805
	(32,375)	(21,211)	(33,831)	(19,331)	(33,556)	(20,260)
Annual unemployment income	1,737	1,720	1,114	1,451	1,731	1,739
	(4,652)	(4,100)	(4,152)	(3,881)	(4,701)	(4,116)
Received some unemployment	0.26	0.29	0.15	0.24	0.26	0.29
	(0.44)	(0.45)	(0.36)	(0.43)	(0.44)	(0.45)
Urban area population - Origin	3,615,967	2,404,701	3,692,419	2,630,196	3,609,156	2,478,014
	(5,194,276)	(4,393,591)	(5,233,260)	(4,579,706)	(5,193,786)	(4,445,277)
Urban area population - Destination	1,239,380	1,711,544	1,197,212	1,439,880	1,238,303	1,739,745
	(2,891,209)	(3,645,677)	(2,821,426)	(3,291,056)	(2,895,170)	(3,657,715)
Number of individuals	492884	378638	379774	498918	448260	499688

Note: Standard deviation in parenthesis. This table is computed from Fideli data. All variables are measured in the year preceding the move. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved once between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

3 Empirical approach

I estimate the impact of moving on income using the staggered difference-in-difference estimator developed by Callaway and SantAnna, 2021. Because moving is not an exogenous event, I cannot use a traditional difference-in-difference approach using non-movers as a control groups. Households may choose to move for many reasons, but many will be related to either labor market events (new job opportunity, unemployment spell...), or change in household composition (birth of a child, marriage...) which can themselves affect labor market outcomes. The decision to move is made in accordance to both realized shocks, anticipated ones, and other life choices, making households who change city very different to those who don't. Furthermore, households may anticipate the fact that they want to move in the close future, and adjust their labor supply accordingly. As a result, movers and non-movers are likely to differ both in characteristics and behaviors, and it is unlikely that their income would follow parallel trends absent treatment.

Instead, I use "not-yet-treated" individuals as my control group: people who move during 2014-2019 but have not moved by a given year. In its simplest version, the Callaway and SantAnna (2021) estimator first groups treated individuals into cohorts based on their moving year. For each cohort and time period, it estimates treatment effects by comparing outcome changes between the treated cohort (e.g., wage evolution between 2014 and 2016 for 2015 movers) and not-yet-treated cohorts (e.g., wage changes between 2014 and 2016 for 2017-2019 movers). To analyze moving's dynamic effects on income, I employ their time-to-event aggregation approach, which computes weighted averages of group-time treatment effects by time from treatment.

I implement this estimator with covariates including age and indicators for children in different age groups (under 1, 3, 6, 10, and 18 years). Following SantAnna and Zhao (2020), I use their "double-robust" approach, which combines two covariate adjustments. First, it uses a regression method to model the conditional expectation of the evolution of the outcome variable for both groups. Second, it uses Abadie (2005)'s inverse probability weighting to model individuals' conditional probability of belonging to a certain group.

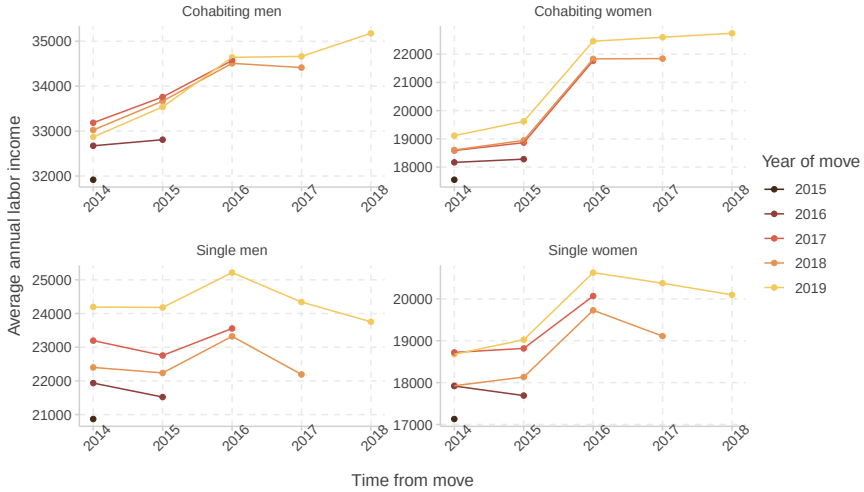
The key identifying assumption when using not-yet-treated cohorts as controls is conditional parallel trends: absent treatment and conditional on covariates, movers' income would have followed the same trend as those who haven't yet moved.

In order to assert the plausibility of this assumption, I plot unconditional pre-move trends by mover cohort in Figure 2 and 3. Figure 2 shows average annual labor income before moving, separated by gender and couple status at move time. The trends are remarkably similar across cohorts.[1] While this similarity in pre-move trends doesn't prove

[1]The sharp income increase in 2016 reflects a rise in individuals reporting salaried income. This discontinuity disappears when examining only individuals with non-zero labor income. Whether this represents a real change or data inconsistency is unclear, but since it affects all mover cohorts identically, it does not threaten identification.

the validity of the parallel trends assumption, it suggests that not-yet-movers serve as a plausible control group for analyzing the impact of moves on income.

Figure 2: Pre-move average income by gender and couple status



Note: This figure presents the pre-move average annual labor income by gender, cohabiting status, and year of move. It is computed from Fideli data. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved once between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

In Figure 3, I examine my second outcome variable: the share of individuals receiving unemployment income during the year. Here, the parallel trends assumption appears less tenable, as trajectories begin diverging one year before the move. This likely reflects the endogenous nature of moving decisions: households may be more likely to move following an unemployment shock, creating a correlation between unemployment status and treatment assignment. This endogeneity threatens a causal interpretation of the difference-in-difference estimates for this outcome.

However, my primary interest lies in analyzing gender *gaps* in moving effects, making my approach more analogous to a triple-difference. Since men and women exhibit similar pre-move anticipation patterns, any gender differences that emerge post-move likely stem from the move itself. Therefore, I will still apply the Callaway and SantAnna (2021) estimator to unemployment outcomes, but shift my focus from the absolute treatment effects (which may be biased by endogeneity) to the gender gap in these effects.

Figures A3, A4, A5 and A6 in Appendix present more detailed descriptive graphs. For each mover cohort, I plot annual mean labor income and share receiving unemployment insurance against their corresponding *not-yet-treated* control group, extending through post-move years. These graphs illustrate the variation I exploit to identify moving effects in my empirical strategy.

Figure 3: Pre-move share receiving some unemployment by gender and couple status

Note: This figure presents the pre-move share of people receiving non-zero unemployment income during the year by gender, cohabiting status, and year of move. It is computed from Fideli data. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved once between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

4 Effect of a move by gender and marital status

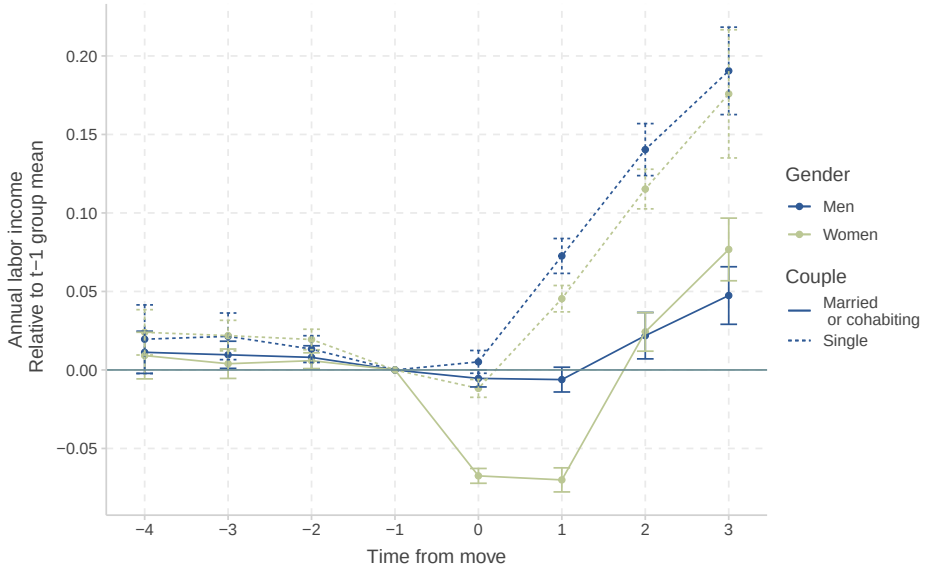
4.1 Main results: The gendered effect of moving

Figure 4 shows the dynamic effects of moving on labor income by gender and partnership status, relative to each group's average income in the year preceding the move. The results reveal a striking pattern: women in relationships are the only group who experience immediate income losses from moving, suffering an annual 7% decline in the first two years post-move. While these women eventually recover and see gains from mobility, their male partners benefit from the move after two years without experiencing initial losses.

The comparison with single movers provides additional insight. While there is a small gender gap in the effect of moves for single individuals, it is much smaller in magnitude, and the dynamic effect of relocation follows very similar trajectories for both genders. Both groups begin experiencing positive returns one year after moving, suggesting that gender disparities in mobility returns primarily emerge within couples.

This contrast between single and coupled movers suggests that household location decisions differ from individual ones, though this comparison needs to made with caution given potential selection into marriage and systematic differences between single and partnered individuals. In particular, it is interesting to note that while coupled men gain more from moves than their female partners, they benefit less than single men do. This pattern could reflect the fact that, although household moves tend to prioritize male careers, men may not have complete control over location choices, leading to suboptimal outcomes for their own careers relative to what they could achieve without household

Figure 4: Effect of a move on annual labor income, by gender and couple status



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit). The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

constraints.

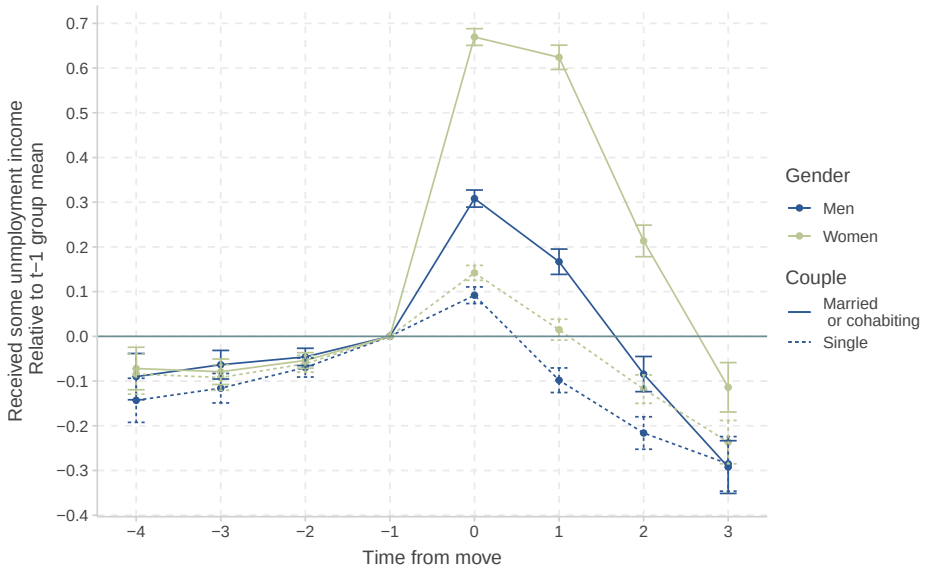
Another notable feature in Figure 4 is that, after two years, the dynamic effect of move becomes more positive for partnered women than for men. This could be partly explained by the fact that in France individuals who quit their job follow their partner qualify for up to two years of unemployment insurance. Consequently, while women may not initially benefit from the move, they have time to job search post-relocation, which could lead to better long-term outcomes than for men. It is important to note, however, that since Figure Figure 4 is based on income relative to pre-move levels, this relative improvement partly reflects the lower pre-move income of married women.

Because the outcome here is *annual* labor income, this pattern could stem from either intensive margin effects, where women find jobs with lower hourly wages, or extensive margin effects, where they work fewer hours annually post-relocation. Unfortunately, the FIDELI data lacks information on hours worked, preventing separate testing of these mechanisms. To approximate this distinction, I replicate the analysis using an indicator for receiving any unemployment benefits during the year. Although the variable is coarse and covers unemployment spells of various lengths, it helps study the likelihood to fall into unemployment around a move, which is an extreme case of reduction in hours worked. It is worth noting however that this indicator does not perfectly capture unemployment status, as some unemployed individuals do not receive benefits due to reasons

like exhausting entitlements. Notably, individuals who quit their job to follow a partner are eligible for unemployment benefits even if they are cohabiting without being married.

Figure 5 presents results using this new measure. As anticipated from the descriptive statistics in Figure 3, significant pre-trends complicate the direct interpretation of treatment effect magnitude. However, in line with a triple-difference approach, its notable that while pre-move estimates show no gender difference, a gap emerges immediately post-relocation, particularly for couples. Cohabiting women experience the largest and most persistent increase in unemployment probability after the move. Again, comparisons with single individuals (while limited by selection concerns) further suggest that household joint decisions yield different results than those of singles, with both coupled men and women experiencing worse post-move outcomes than their single counterparts.

Figure 5: Effect of a move on the probability of receiving some unemployment, by gender and marital status



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status. Regressions use as an outcome an indicator for receiving UI, and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

Given the nature of the outcome variable, this result combines individuals with long periods out of the labor market and those experiencing only brief unemployment spells. To check if the previous finding is driven by married women having more frequent but shorter unemployment periods, I reproduce the estimation using the annual amount of unemployment income received as the outcome. This measure, which correlates with unemployment duration, helps differentiate the effect: if married women mainly experience brief, repeated unemployment spells, then the increase in receiving *some* unemployment income would be correspond to a much smaller effect on the total amount received. Fig-

ure B3 in Appendix shows that the gap between coupled men and women remains, and is even more pronounced and persistent when considering the amount of unemployment income.

To further explore both the intensive and extensive margins of annual labor income, I examine in Figure B4 in Appendix whether married women are more likely to exit the labor force entirely. I replicate the analysis using an indicator for any labor income during the year. Interestingly, moving appears to negatively impact this probability for both partnered men and partnered women. Yet, no clear gender gap emerges, suggesting that the increase in unemployment probability shown in Figure 4 does not primarily result from married women leaving the labor force. In the medium term, about three years post-move, moving seems to raise the probability of receiving labor income by 4%, aligning with earlier results indicating that married women recover from relocation effects after two to three years.

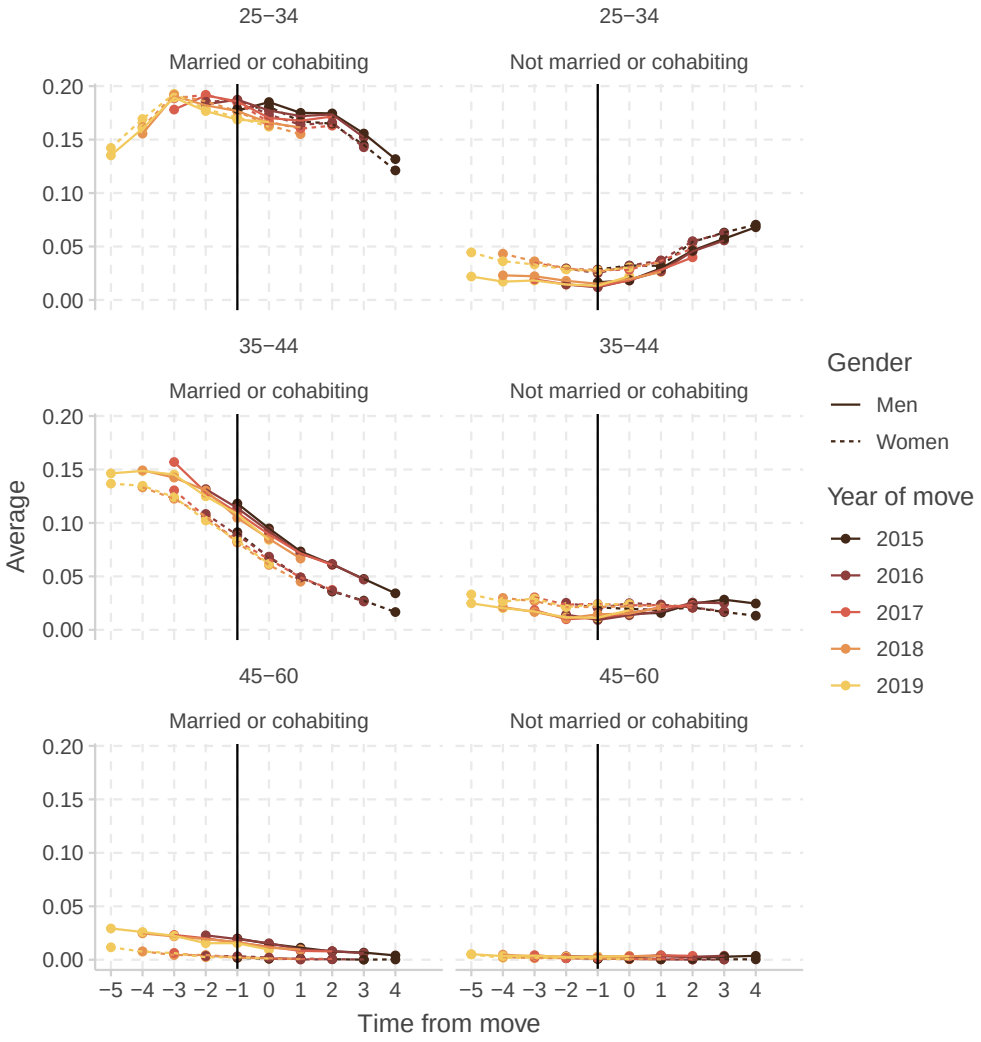
Overall, these results indicate that joint location decisions within households generally favor men's career outcomes relatively to women. They suggest that partnered women are more likely to be tied-movers and experience longer adjustment periods after relocating, marked by income losses and an increased likelihood of receiving unemployment benefits. At the end of the third year post-move, the average annual effect on these women's careers remains negative, as seen in Figure A7 and Tables A1 and A2, which summarize the average treatment effects (ATT) by category. Each ATT coefficient corresponds to the average annual income change due to relocation after three years. Due to the time limitations in the data, I cannot confirm whether coupled women eventually see positive effects from relocation after additional years, though this seems plausible given the upward trend in the dynamic effect.

4.2 A child penalty effect?

In the previous analysis, I controlled for the presence of children in the household. However, gender differences in relocation outcomes may still be shaped by specific groups, such as those having children near the time of the move.

A large literature on the "child penalty" shows that women's careers are negatively affected by motherhood (Kleven, Landais, & Søgaard, 2019). Couples who recently had children and are making a location decision may hence choose to keep favoring the man's career, while couples who are considering having a child after moving could also anticipate the child penalty in their decision making. While this does not threaten my identification strategy, as long as moves and childbirth events are not perfectly correlated, it is interesting to understand how much of my main result can be interpreted as a facet of the child penalty.

Figure 6: Fertility around a move by age group



Note: This figure presents the share of individuals having a new child in a given year around a move, by gender, cohabiting status, year of move, and age at move. Age at move is grouped in three categories (25-34, 35-44, and 45-60). It is computed from Fideli data, on the sample described in section 2. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

Effects of move by age group

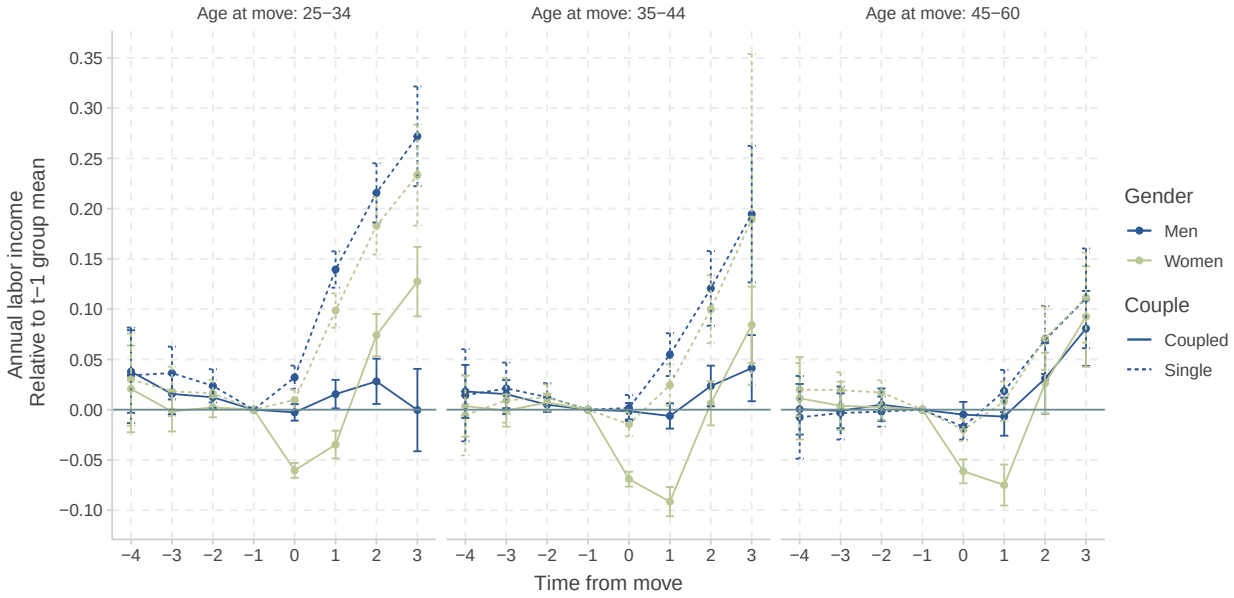
To assess the relevance of this channel in explaining gender differences in mobility outcomes, I first examine the relationship between relocation and childbirth. Figure 6 shows the share of individuals having a new child each year, by age at the time of relocation. Specifically, I divide movers into three age groups: 25 to 34, 35 to 44, and 45 to 60 years old. One initial observation from this figure is that while many movers, especially younger ones, have children around the time of relocation, there is no clear spike in childbirth in any year around the move. The figure also highlights that movers aged 25 to 44 years old are generally within their prime childbearing years, suggesting that relocation decisions for these groups could be more intertwined with family planning choices. The oldest group (45 to 60), however, is mostly beyond their childbearing years,

so fertility considerations are less likely to influence their relocation decisions. Additional descriptive statistics for these age groups are available in Table A3.

Building on these observations, I next repeat the difference-in-difference analysis for each age group separately. Figures 7 and 8 reveal that the main patterns emerge across age groups. For all groups, relocation is associated with a notable income loss for married women –around 5 to 10% annually inthe first two years post-move– while married men show no similar shock. Additionally, relocation more negatively affects women's employment status than men's. In the oldest group of movers (ages 45+), who are less likely to be making relocation decisions based on fertility, the observed gender gap in the economic impact of moving is less likely to be driven by the timing of childbirth and location decisions.

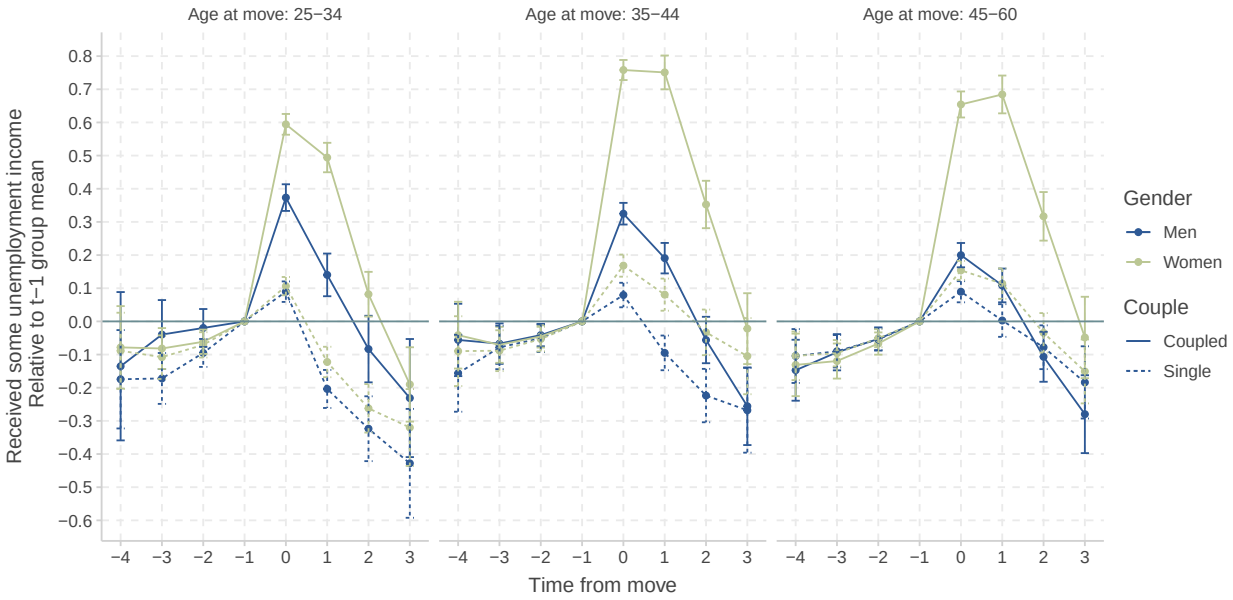
As before, the effect of moving on labor income turns positive for women after two years, particularly for younger movers. For younger movers, the combination of this catch up effect for cohabiting women and an almost null effect of moving for cohabiting men lead the total ATT on labor income, presented in Figure A9 to be approximately the same. The difference is also not significant for older movers, contrary to the 35-44 age groups for whom, three years after the move occurred, the average annual effect of relocation is still negative for women, and positive for men.

Figure 7: Effect of a move on annual labor income by age groups



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and age at move. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. Couple status is defined at the year of the move, as well as the age at move. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men aged 25-34: 270,454; single women aged 25-34: 253,165; cohabiting men aged 25-34: 300,219; cohabiting women aged 25-34: 372,867; single men aged 35-44: 168,435; single women aged 35-44: 192,455; cohabiting men aged 35-44: 426,340; cohabiting women aged 35-44: 381,366; single men aged 45-60: 205,520; single women aged 45-60: 268,507; cohabiting men aged 45-60: 336,085; cohabiting women aged 45-60: 241,996

Figure 8: Effect of a move on the probability of receiving some unemployment by age groups



Nots: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and age at move. Regressions use as an outcome an indicator for receiving UI, and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender, couple status, and age at move. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men aged 25-34: 270,454; single women aged 25-34: 253,165; cohabiting men aged 25-34: 300,219; cohabiting women aged 25-34: 372,867; single men aged 35-44: 168,435; single women aged 35-44: 192,455; cohabiting men aged 35-44: 426,340; cohabiting women aged 35-44: 381,366; single men aged 45-60: 205,520; single women aged 45-60: 268,507; cohabiting men aged 45-60: 336,085; cohabiting women aged 45-60: 241,996

Effects of move by fertility profile

To further examine the role of children in the impact of relocation, I leverage the fertility information in my data to categorize the sample into four distinct groups:

(a) Movers without a child aged ten or younger at the time of the move, who do not have a new child afterward;
(b) Movers with a child aged ten or younger at the time of the move, who do not have another child afterward;
(c) Movers without a child aged ten or younger at the time of the move, who have one new child afterward;
(d) Movers with a child aged ten or younger at the time of the move, who have another child afterward.

I then apply the difference-in-difference estimation for each group separately, allowing a closer look at how the gender gap in relocation effects varies across these fertility profiles.

Yet it is worth noting that this approach also comes with two caveats. The first one is a measurement issue. While I can use the age of the youngest child in a household to

identify all people who had a child in the ten years before the move (except for rare child mortality events), I only know whether someone has a child *after* moving for as long as they remain in the data. This means that, while I know the fertility of 2015 movers for four years post-move, I only know that of 2018 movers for one year post-move. As a result, my restrictions do not affect all cohort of movers in the same way, meaning that the control and treatment groups might be slightly different.

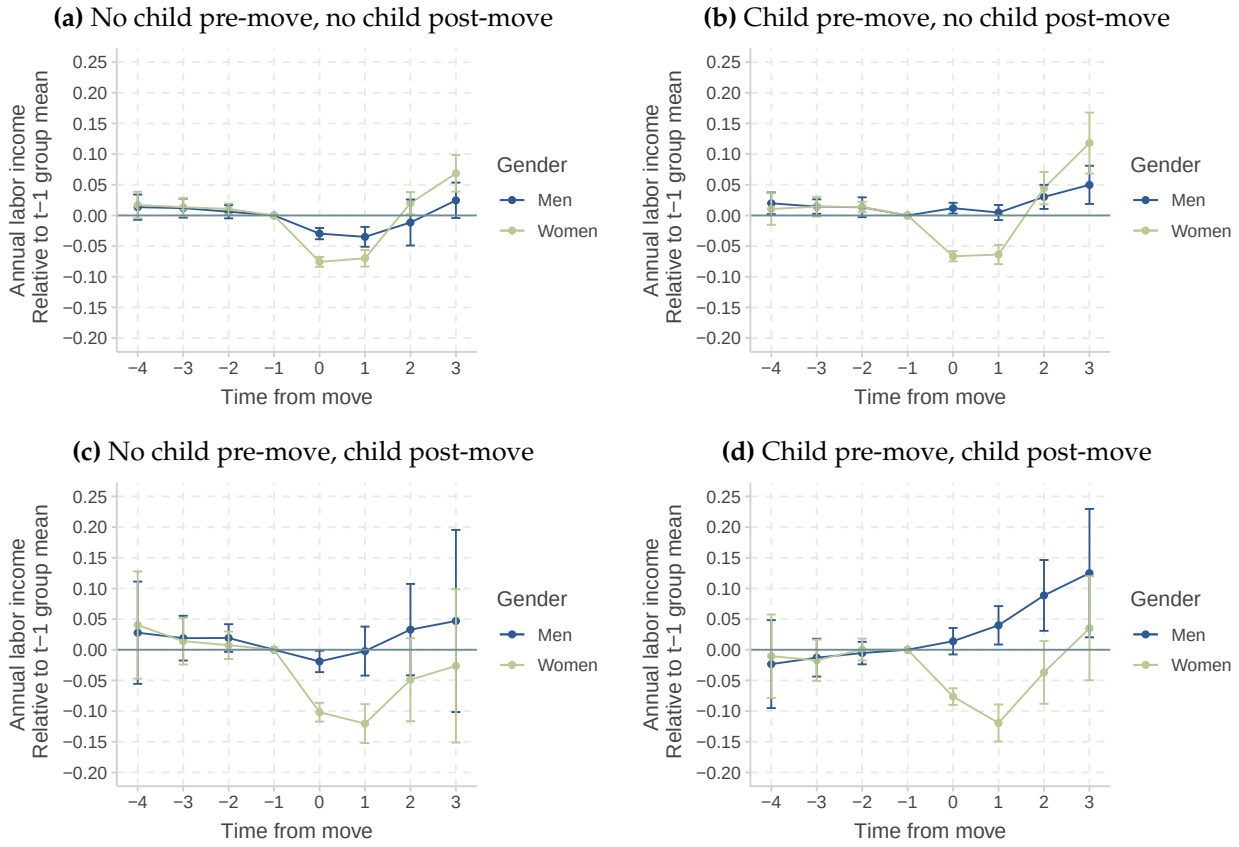
The second important limit of this approach is that I cannot use covariates for the presence of children in the household when splitting my sample based on fertility. This results from the way the Callaway and SantAnna (2021) estimator uses variation in covariates among the control units to then partial out the variation in outcome that is due to the covariates. When I restrict households to those not having a child before moving, it means that there is no variation in fertility among control units (not-yet-movers) and I cannot apply this approach. For this reason, the results presented below only include age as a covariate. This is an important aspect to keep in mind: it means for instance that, by construction, in the third category, I am comparing a control group made of people who do not have a child (not-yet-treated) to a treatment group who are having children (as they are treated *and* have a child post-move). The effect I estimate is hence a combination of the effect of the move, and the child penalty effect. Still, since there is no clear spike in the probability of having a child exactly in the year of the move (as can be seen in Figure 6), the timing of two treatments is not be perfectly correlated. Furthermore, this limitation does not affect the estimation for the group of individuals who do not have children before or after the move, and who should be exempt from child penalty considerations at the time of the move.

Figures 9 and 10 presents the result of the estimation conducted on coupled movers only. Because there are not many single people who have children in the few years around they relocate, the very few observations in some categories mean that the estimation is very noisy and becomes hard to read. Figures A11 and A12 in Appendix present the results including single movers. While the ten years-old threshold is arbitrarily chosen, I show in Online Appendix B.2 that using different age thresholds (6 or 3 years-old respectively) yields very similar results.

If household relocation decisions are indeed influenced by either existing income losses from children or the anticipation of a future child penalty, we would expect different effects across these household types. Specifically, the gender gap should be widest for households that relocate between two childbirth events. In these cases, the birth of a first child may have already shifted the household's focus toward the man's career, and the prospect of another child could reinforce this priority. This is precisely what we observe in panel (d) of Figure 9, where the gender gap in the impact of relocation is largest and most persistent out of all groups.

Conversely, we would expect the smallest gap among households without a young child at the time of the move and who do not have one afterward. Although some of these

Figure 9: Effect of a move on annual labor income, by fertility profile

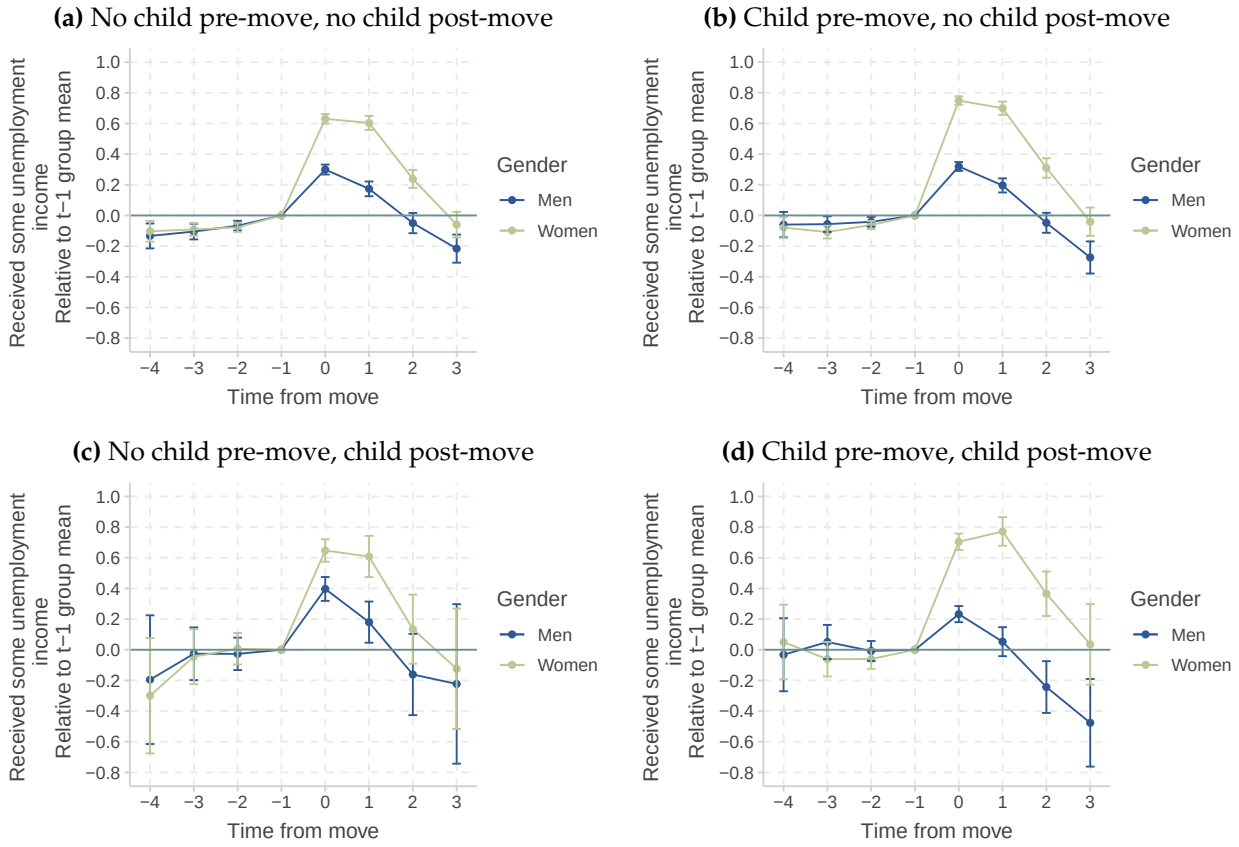


Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged ten or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged ten or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged ten or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged ten or younger at the time of the move, who have another child afterward The number of observations for each regression is: cohabiting men of panel (a): 373,284; cohabiting women of Panel (a): 350,874; cohabiting men of panel (b): 458,226; cohabiting women of panel (b): 427,676; cohabiting men of panel (c): 93,690; cohabiting women of panel (c): 91,347; cohabiting men of panel (d): 137,444; cohabiting women of panel (d): 126,332

couples may have had a child more than ten years ago, any career impact on the woman should have largely stabilized by the time of relocation. As shown in panel (a) of Figure 9, a small gap appears at the time of the move even for this group. Some women in this group may have had a child over ten years before, and the associated income loss might have reduced these women's bargaining power, indirectly contributing to the observed gap. However, there is no reason to attribute this difference to a recent or anticipated child penalty for this group.

Panels (b) and (c) reveal that the gender gap is larger for couples who have a child post-move (panel (c)) than for those who had a child before moving (panel (b)). This is again consistent with the fact that, as discussed previously, the estimate in panel (c) will capture by construction some of the impact of having a child on female income.

Figure 10: Effect of a move on unemployment status, by fertility profile



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged ten or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged ten or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged ten or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged ten or younger at the time of the move, who have another child afterward The number of observations for each regression is: cohabiting men of panel (a): 373,284; cohabiting women of Panel (a): 350,874; cohabiting men of panel (b): 458,226; cohabiting women of panel (b): 427,676; cohabiting men of panel (c): 93,690; cohabiting women of panel (c): 91,347; cohabiting men of panel (d): 137,444; cohabiting women of panel (d): 126,332

The same patterns emerge when examining the effect of relocation on the likelihood of receiving some unemployment benefit. As shown in Figure 10, across all fertility profiles, women are consistently more likely than men to experience unemployment as a result of moving. Again, the effect is largest in households relocating between two childbirth events, and in households who have a child post-move but no child pre-move. This time however, the gap is also large and significant for households who do not have children at all around a move. The corresponding annual ATT can be found in Figure A14 in Appendix.

Overall, results in this section support the idea that the effect of joint location decisions and childbirth can exacerbate each other. Once households have chosen to prioritize men's labor market outcomes, and women have started to sacrifice their career, it is

more likely they will make a similar choice again. Yet it is not the case that the entirety of the gender gap in returns from relocation can be explained by simultaneity of relocation and fertility events. In Appendix A.5, I also show that excluding households which undergo a matrimonial event around a move does not significantly affect my results.

5 The role of gender norms

Two different non-exclusive decision making process could explain the occurrence of a gender gap in the returns to moving. A first explanation could be that, when households make their location choices, their objective is to maximize total household income. Prioritizing the career of the primary earner would then be a way to ensure that the costs incurred by the tied-mover are compensated by the benefits earned by the primary earner, whose returns from moving should be higher on average. If men are more likely to be the main earner of their household, this would translate in a general pattern where they benefit more from moves than women. An alternative explanation could be that the persistence of gender norms in which men should be the ones in charge of providing for their family could lead households to put more weight on men's career in their decision making, even in cases where women are not out-earned by their partner.

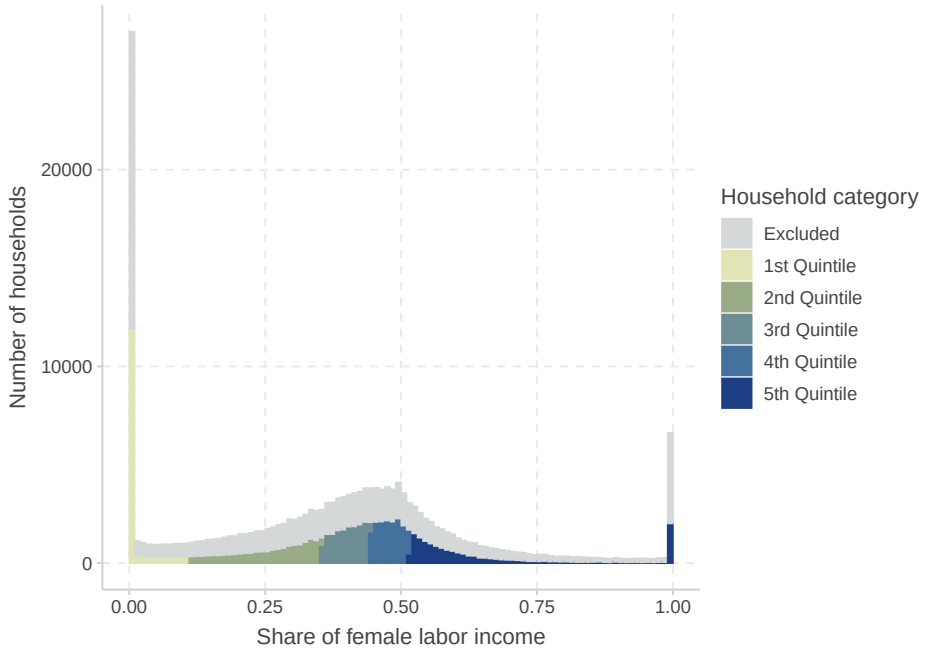
In order to disentangle these two mechanisms, I distinguish different types of households, based on the gender of the primary earner. If households made location decisions based entirely on maximizing total income, and were not influenced by gender norms, we should see that on average moving has a positive impact on the total labor income in the household. We would also expect to find that in general the primary earner of the household is the one that benefits the most from relocating. In this section, I show that this is not the case. For most couples, moving leads to a loss of total labor income, and men benefit more from moves than their partners, even in couples in which they are the lesser earner.

5.1 Defining the primary earner

Before testing these predictions, I first need to classify households according to which member is the primary earner before they move. An important challenge to this classification is that, because I only observe realized income I may mis-classify households in which one member experienced a bad shock in a given year but still has the higher earning *potential*. A high-skilled individual who falls into unemployment or becomes sick and earns little labor income for a year could still have a higher potential return from moving than their partner. It could even be that households in this situation choose to move specifically to allow a faster recovery of the individual who experienced such a negative shock. In their case, prioritizing the career of the lowest earning member could be consistent with maximizing the total household income.

To avoid this pitfall, I focus on households in which both members have a relatively stable income before they move, in order to exclude individuals whose status as a low

Figure 11: Distribution of share of income earned by woman in year preceding the move



Note: This figure presents the distribution of the share of female labor income (female annual labor income divided by total household annual labor income). Excluded households in grey are those for which at least one member experienced before they moved a yearly change in labor income below the tenth or above the ninetieth percentile of the distribution for their gender. The figure is computed from Fideli data. The sample is made of households who moved while in a couple between 2015-2019. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

earner is a result of a temporary shock. More precisely, I calculate the absolute change in labor income for each individual by year and gender. I then exclude households where one member experienced an income change, in any pre-relocation year, that falls below the 10th or above the 90th percentile of the distribution for their gender and year. Table A4 in Appendix provides the corresponding bounds, as well as the median change in yearly income for each category. This restriction also means that I exclude households who moved in 2015, as I only observe income one year prior to their move, and cannot measure how their income changes for any year before the move. This leaves me with over seventy five thousand households.

For the remaining households, I compute the share of the household's labor income earned by the female member.

Finally, I group households by quintiles of this share in the year immediately preceding the move. Figure 11 shows the distribution of the share in the year immediately preceding a move, together with household category. Table 2 shows some descriptive statistics at the household level for each of the household categories, in the year preceding the move.

With a share of labor income earned by the woman of 1% on average, the First Quintile category is one in which men are very clearly the primary earner. As could be expected, this category is the most likely to have children. They also have the lowest av-

Table 2: Descriptive statistics by household category

Variable	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	Excluded households
Female labor income	594	14,903	23,041	27,076	30,146	19,123
	(1,523)	(8,263)	(8,123)	(9,757)	(14,599)	(21,244)
Male labor income	34,406	40,848	34,348	29,410	18,243	34,979
	(24,569)	(19,496)	(12,126)	(10,565)	(12,113)	(52,252)
Share female labor income	0.01	0.26	0.40	0.48	0.66	0.37
	(0.03)	(0.07)	(0.03)	(0.02)	(0.16)	(0.27)
Total household labor income	35,000	55,751	57,389	56,486	48,389	54,102
	(25,091)	(26,385)	(20,005)	(20,164)	(24,223)	(58,398)
Woman age	40.23	39.55	37.59	36.90	38.31	37.55
	(8.71)	(8.42)	(7.88)	(7.78)	(8.17)	(8.44)
Man age	42.58	41.36	39.30	38.36	40.00	39.50
	(8.49)	(8.41)	(8.04)	(8.02)	(8.53)	(8.69)
Have minor child	0.75	0.72	0.72	0.68	0.67	0.69
	(0.43)	(0.45)	(0.45)	(0.47)	(0.47)	(0.46)
Have child under 10	0.59	0.53	0.58	0.56	0.53	0.57
	(0.49)	(0.50)	(0.49)	(0.50)	(0.50)	(0.50)
Have child under 6	0.46	0.39	0.45	0.45	0.41	0.46
	(0.50)	(0.49)	(0.50)	(0.50)	(0.49)	(0.50)
Have child under 3	0.28	0.23	0.29	0.29	0.25	0.31
	(0.45)	(0.42)	(0.45)	(0.45)	(0.43)	(0.46)
Have newborn	0.07	0.09	0.10	0.10	0.09	0.10
	(0.26)	(0.28)	(0.31)	(0.30)	(0.29)	(0.31)
Ever changed household 2014-2019	0.03	0.06	0.08	0.09	0.09	0.08
	(0.18)	(0.23)	(0.27)	(0.29)	(0.28)	(0.27)
Urban Area Population - Origin	2,458,095	3,148,324	4,146,253	4,413,465	4,009,783	3,936,034
	(4,459,540)	(4,924,845)	(5,436,536)	(5,539,139)	(5,383,556)	(5,331,375)
Urban Area Population - Destination	1,330,078	1,090,379	948,368	988,904	991,192	1,231,624
	(3,155,094)	(2,643,613)	(2,301,447)	(2,383,177)	(2,426,161)	(2,861,047)
Number of households	15488	15488	15488	15488	15489	104653

Note: Standard deviation in parenthesis. This table is computed from Fideli data. All variables are measured in the year preceding the move. The sample is made of households who moved while in a couple between 2015-2019. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

erage total income. It is worth noting that the average female income is so low in this group of households (at €594 annually), that it is almost impossible for it to decrease, and that the effect of moves on female income is almost bounded to be above zero. In the second and third quintiles, the average share of female labor income remains below half, at 26 and 40% respectively. Households in those two categories are slightly younger and less likely to have children than in the first one, and earn over €20,000 more in total annual income. The fourth quintile corresponds to a category of almost egalitarian couples: women in these households earn on average 48% of the total household income. Finally, in the fifth quintile, women are the primary earner of their household, with a share of female labor income of 66% on average. Most men in these households seem to participate in the labor market, and their average income of €18,000 is above the annual salary of a full-time minimum wage worker – and significantly higher than the €594 earned by women of the first quintile. While households in the first category, and to a lesser extent those in the last category, seem to differ on important characteristics (in particular

total household income) the three middle groups appear to be very similar except for the within household distribution of income.

5.2 Results by primary earner

Total income

If couples abstracted from gender consideration in their decision making, and only tried to maximize total household income, we should find that on average couples move when the gain to one partner compensates for the cost incurred by the other, and that moving has a positive impact on the total labor income of the household. I test this prediction in Figure 12, by applying my difference-in-difference set-up to the total labor income of the household, for each of the five categories, and show that this is not the case. For households in which the man was almost the only earner before the move, in panel (a), it does appear that moving leads to an immediate income gain for the household. In households where women are the primary earner before the move, the picture is less clear-cut, with moves leading to a small loss of income on average in the first two years of the move, before it becomes positive. For all other types of households however, moving has a large and significant negative effect, which peaks in the year following the move, when households experience a 10% income loss. Table A5 summarizes this by showing that over the first three years of the move, households in the three middle quintiles experience an average income loss of 2500 to 3700 annual euros (4.5 to 6.6% of pre-move income). Household in the first quintile however gain an average €1900 annual income (5.4 % of pre-move income), and moving has a non-significant effect for households in the last quintile. This supports the idea that households facing strong dual-constraints in their decision making, with relatively similar income, find it more difficult to optimize their decisions.[2]

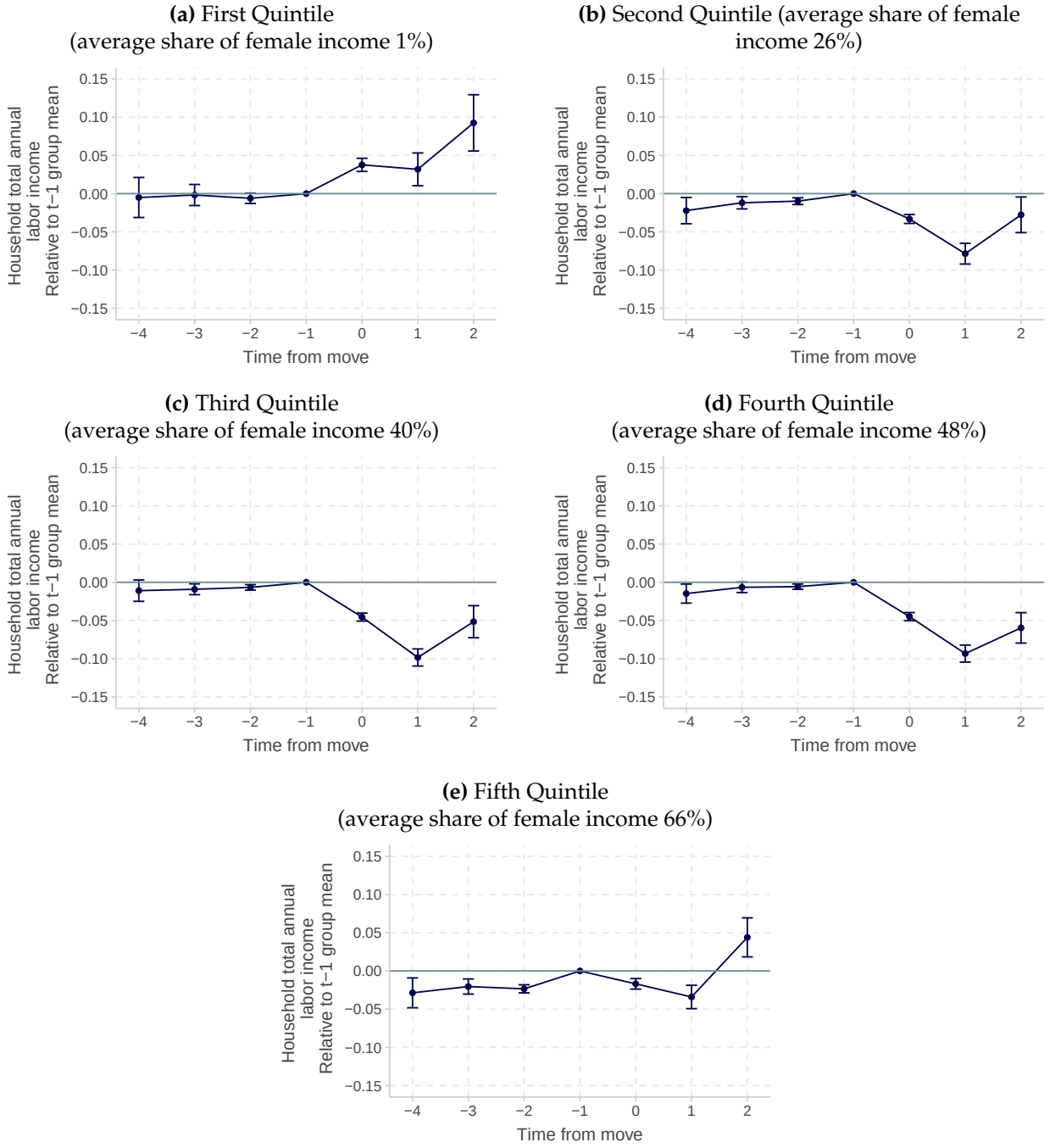
In order to further explore the role of gender norms, I now study how this total income loss is distributed among household members,

Income by gender

Under the reasonable assumption that individuals with high-earnings have higher expected returns from moving, we should expect primary-earners to benefit more from moves on average. If households make their location decision based only on the total household income, they should be more likely to move for the career of the primary earner, who could compensate their partner for the loss they incur. In the egalitarian households of the fourth quintile, we should see a more balanced effect: men should be

[2]It is worth noting however that this analysis relies on annual nominal income, and is not corrected for differences in local cost of living. Given that households move on average towards smaller cities, as can be seen in Table 2, it is possible that they experience an income loss which is compensated by a lower cost of living. Yet, the cost of living being the same by definition for men and women who live together means that the gender gap in nominal or real income is identical.

Figure 12: Effect of a move on total household income, by share of female labor income pre-move



Nots: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and share of female income category (quintiles). Regressions use household total annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. The sample is made of households who moved while in a couple between 2015-2019. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression is: Panel (a): 73,028 (15,488 households); Panel (b) 73,836 (15,488 households); Panel (c): 73,700 (15,488 households); Panel (d): 73,271 (15,488 households); Panel (e) 73,006 (15,489 households)

as likely as women to be the tied-mover in their relationship. In the fifth quintile, we should even see the reverse pattern, with women benefiting more from the move on average as they were previously the highest earner. In Figure 13, I estimate the effect of moving on male and female labor income for each category of households.

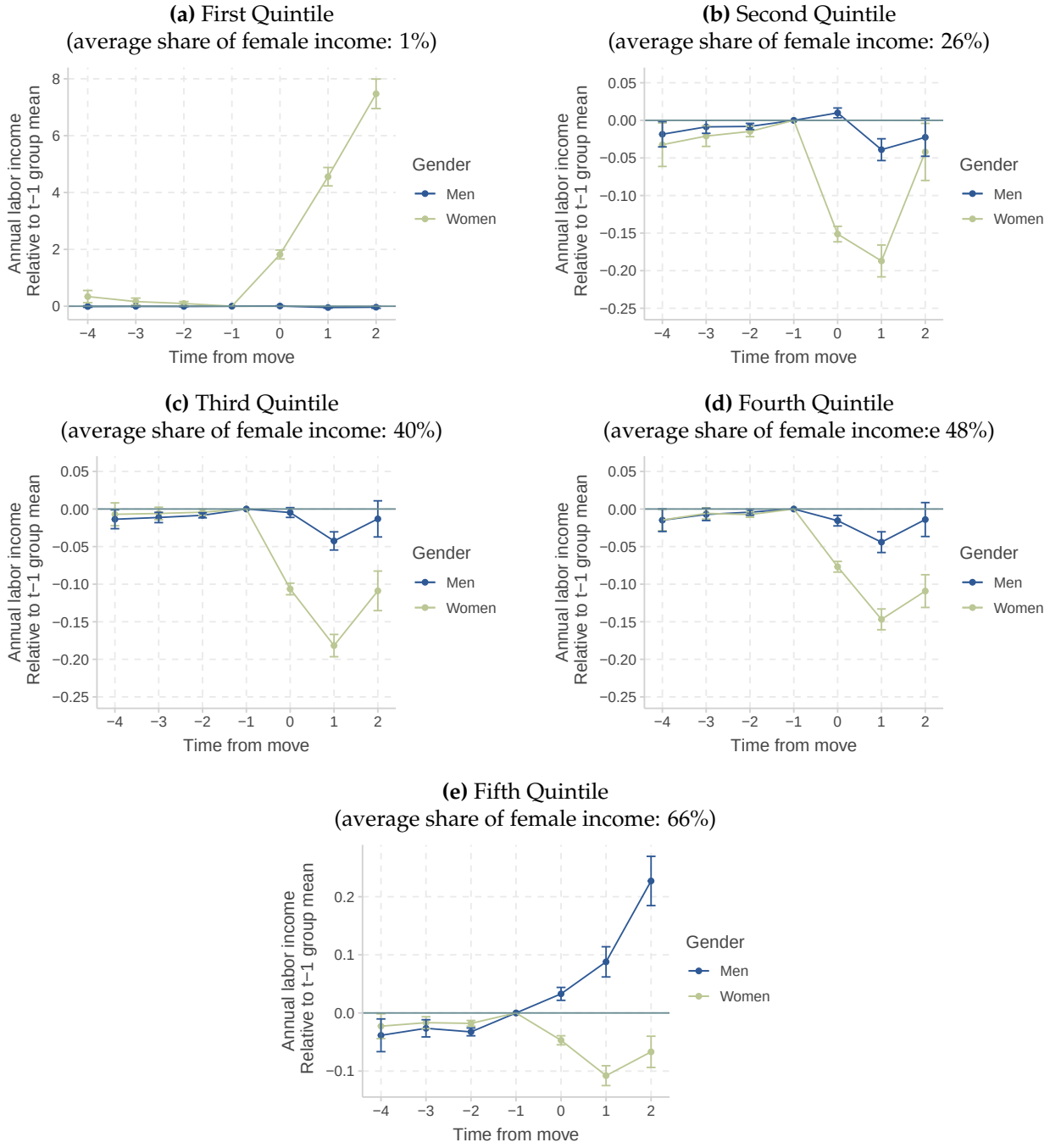
The broad pattern that emerges from this Figure is that in all categories of couples where both members are working, women benefit less from moves than men. Earning approximately the same as their partner (in panel (d)), or being the primary earner of the household before the move (in panel (e)) does not lead to significantly different outcomes for women: moving is associated to to a 10 to 20% annual income loss, while their partners either benefit from the move (in panel (e)) or experience much smaller losses.

The only category in which women appear to gain more from moving than their partner is the first group, in which they are by far the lowest earner. The result suggest that for women of this group, moving leads to a striking 800% increase in income. While this result seems counter-intuitive at first, two important notes must be made before interpreting it. First, as discussed above, the pre-move income for women in the first category is so low that the scaled estimate, while significantly positive, becomes mechanically much higher than for any other categories. Results expressed in absolute value, which are easier to read for this category in particular, can be found in Figure A17. As can be seen, the 800% higher income in the second year post-move corresponds to a reasonable €5,000 annual income gain. Furthermore, 67% of women in these households earn no income at all before moving, which means that, for them, the estimate is bounded at zero and cannot be negative.

To better visualize how the gender gap in the effect of moves changes with quintiles, I plot in Figure 14 the average annual effect of moves at the end of the second-year post move, by category. The background color shows the bounds of each quintile. Each point represents the average annual treatment effect over the first three years of the move, for the corresponding quintile and gender, and is positioned horizontally according to the average share of female income pre-move in the quintile. Because the percent effect is large for women of the first group, for reasons previously explained, the y-axis is split in two, for readability. Again, a version of this graph showing results in annual euros rather than percent can be found in Appendix in Figure A18.

It is striking that, for men of the first four quintiles, moves are associated with an annual income loss which remains very stable, around 1 to 2% of pre-move income. It is only in the last category, where they are the lowest earner of their relationship before the move, that the effect of the move becomes positive, with an annual 10% income gain. For women however, there is more variation. When looking at quintiles above the first, there seems to be a positive correlation between the share of female labor income pre-move and the effect of move, which is consistent with households putting more weight on the career of women in their decision making, when they contribute significantly to the household income. This however is counterbalanced by the fact that, despite this

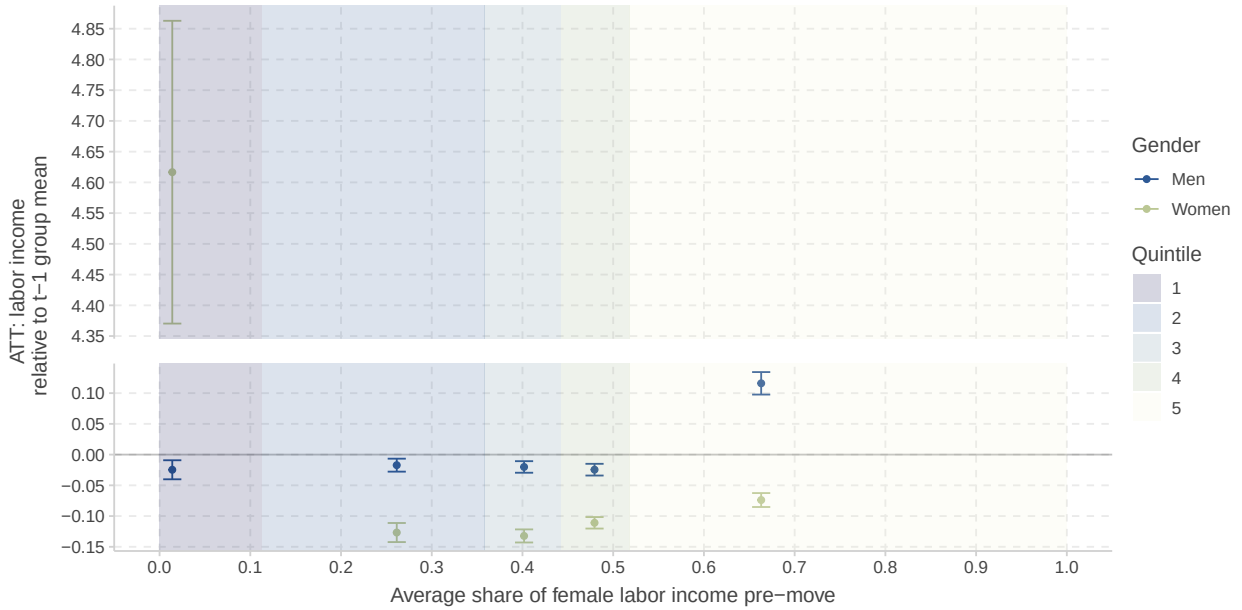
Figure 13: Effect of a move on labor income by gender, by primary earner category



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and share of female income category (quintiles). Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. The sample is made of households who moved while in a couple between 2015-2019. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression is: Panel (a): 73,028 (15,488 households); Panel (b) 73,836 (15,488 households); Panel (c): 73,700 (15,488 households); Panel (d): 73,271 (15,488 households); Panel (e) 73,006 (15,489 households)

positive correlation, women never experience an income *gain* due to the move, and the gap remains in all categories in favor of men. Interpretation of the results of the fifth quintile could be complicated by the fact that, despite my attempt to restrict to household who have stable income, part of the effect I am capturing may still arise from men who have lower income, but a high potential. This could explain both the striking positive returns to moves for men, and the gender gap in those returns. In the fourth quintile where couples are almost equalitarian however, this should not be as much as a concern. The persistence of a gender gap for both these category points to a role of gender norms in the decision-making of households.

Figure 14: Annual labor income ATT, by gender and primary earner quintiles



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender and share of female income category (quintiles). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The plotted coefficient corresponds to the average annual treatment effect in the first three years of the move, relative to the group average one year before moving. The sample is made of households who moved while in a couple between 2015-2019. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression can be found in the notes of Figure 13

In Online Appendix B.3, I show that the same patterns can be observed when splitting the sample into deciles rather than quintiles of share of female labor income.

6 Conclusion

Despite significant progress toward gender equality in recent decades, a persistent income gap between men and women remains. This gap largely reflects gendered patterns in intra-household division of labor, with women often reducing work hours after childbirth or selecting less demanding occupations. In this paper, I document another crucial mechanism through which household decision-making perpetuates income disparities:

asymmetric returns to geographic mobility. Using comprehensive administrative data from France and a difference-in-difference framework, I show that residential moves generate substantial –though temporary– income losses and increased unemployment risk for partnered women, while benefiting their male partners. This gap is exacerbated by the interaction of location decisions with fertility choices. However, I show that the "child penalty" is not its primary driver.

While this result is in line with some of the previous literature, I am able to further explore the role of gender norms in this gap, by examining households based on the primary earner's gender. I show that even in households which were egalitarian before the move, or in which women were earning a larger share of the total household income, men benefit more from moves than their partner. This systematic prioritization of men's careers, even when they are not the primary earner, points to the persistent influence of gender norms in household decision-making rather than pure income maximization.

One puzzling result found in this analysis is the average negative effect of moves for households in the short run. Notably, this income loss is concentrated in households with relatively equal earnings and absent in households where women have almost no labor income. This pattern could reflect an efficiency-equity trade-off in household decision-making: while men may drive mobility decisions, they might still incorporate their partner's potential outcomes in their calculations. As a result, they may accept lower personal gains than what they could achieve if optimizing solely for their own career trajectory, effectively trading off some income gains for reduced within-household inequality.

A second potential explanation is that households are not solely maximizing their nominal income, but their overall utility, and hence take into account both amenities and cost-of-living in their decision making. This hypothesis is difficult to test due to the absence of local price index data in France, though one could be constructed from housing transaction data. However, accounting for cost-of-living would not affect the core finding of this paper regarding the role of norms in explaining the gender gap in returns from moving: men and women within the same couple move to the same places. Future could explore this dimension by studying how differences in destination choices contribute to the gap in returns from geographic mobility between single men and single women, who may optimize for different local characteristics.

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Following Along: The Gender Gap in Returns to Geographic Mobility

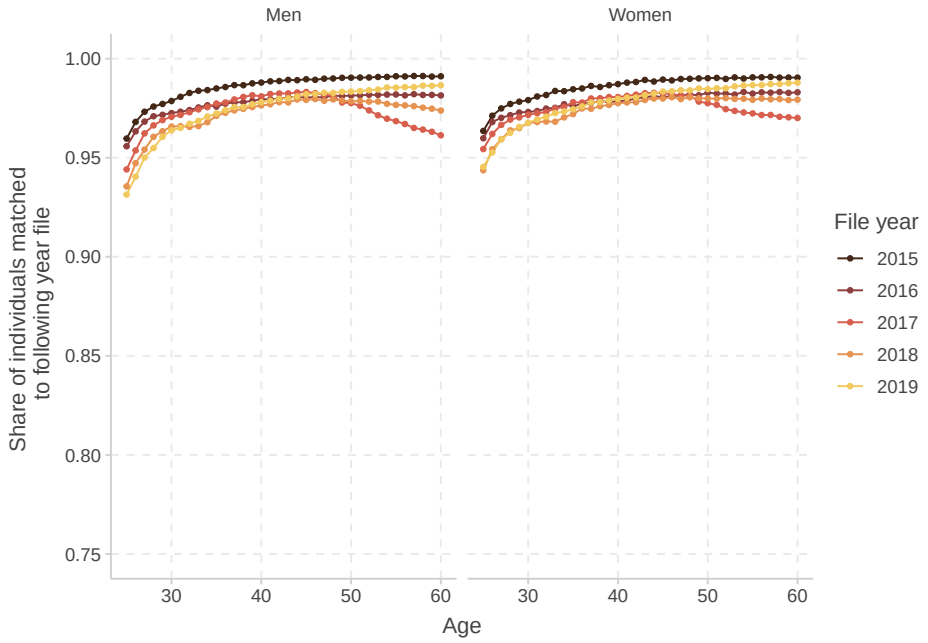
Appendix

Mylène Feuillade

A Appendix

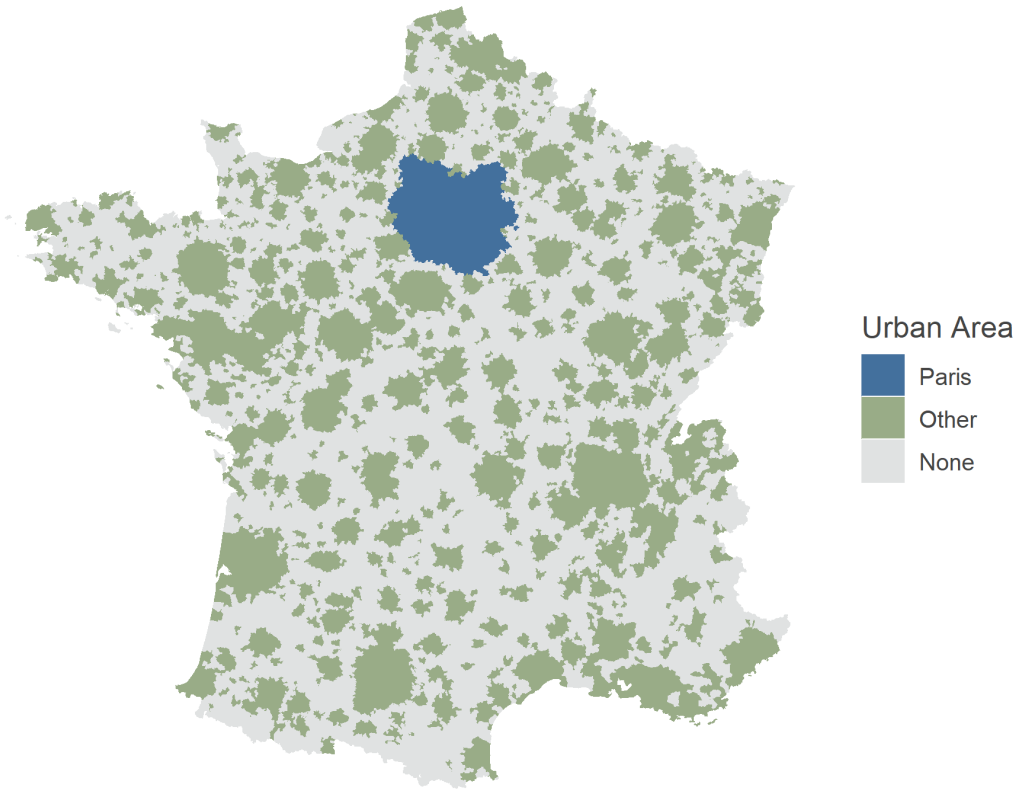
A.1 Descriptive statistics main sample

Figure A1: Share of individuals matched between consecutive files



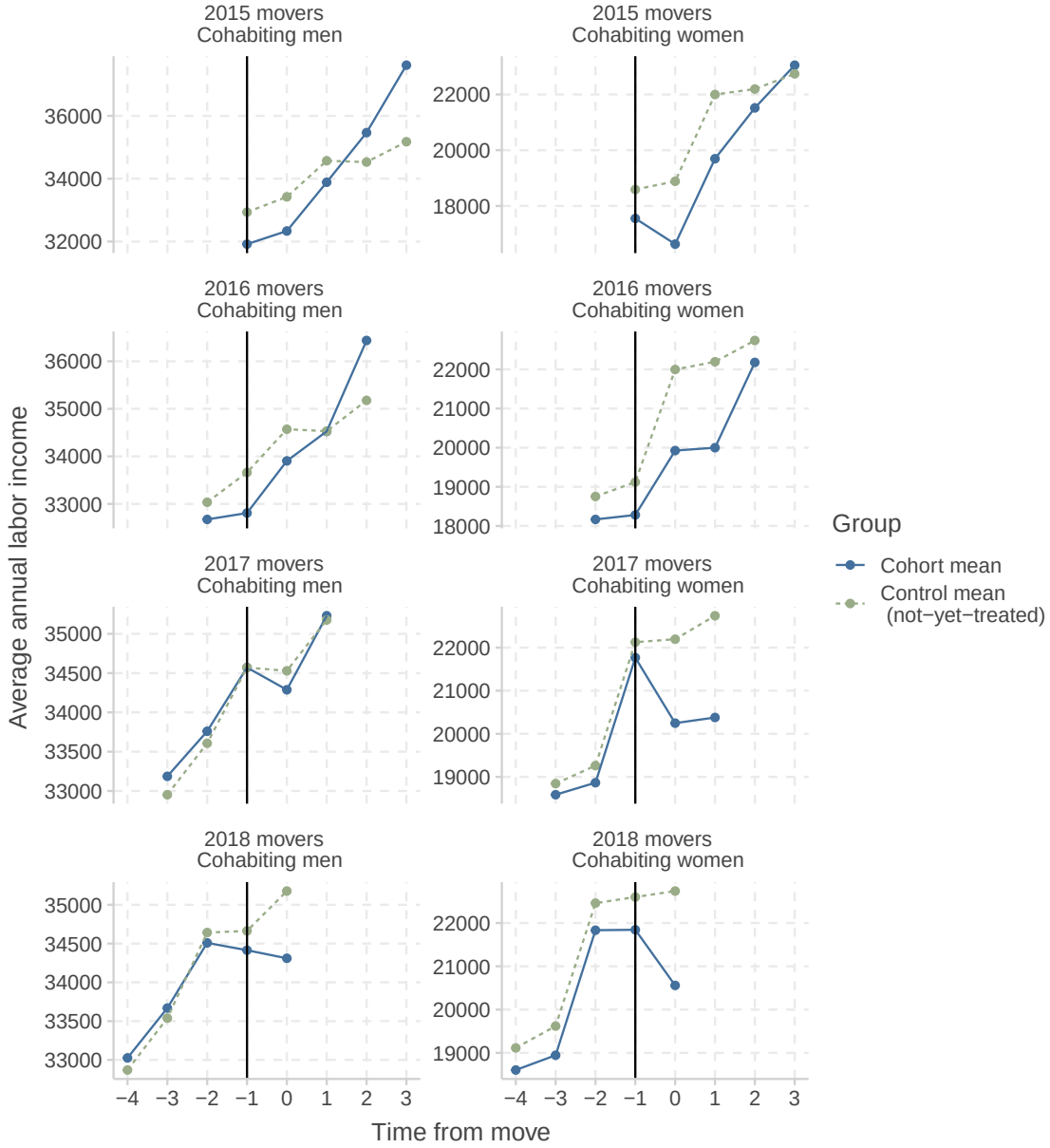
Note: This figure presents the results of the panelisation process described in section 2. It is computed from Fideli data. For Fideli files 2015 to 2019, it presents the share of individuals who were matched to a single individual in the following year file, by gender and age. The sample includes all individuals aged 25 to 60 living in a house or an apartment in France.

Figure A2: Map of Urban Areas in France



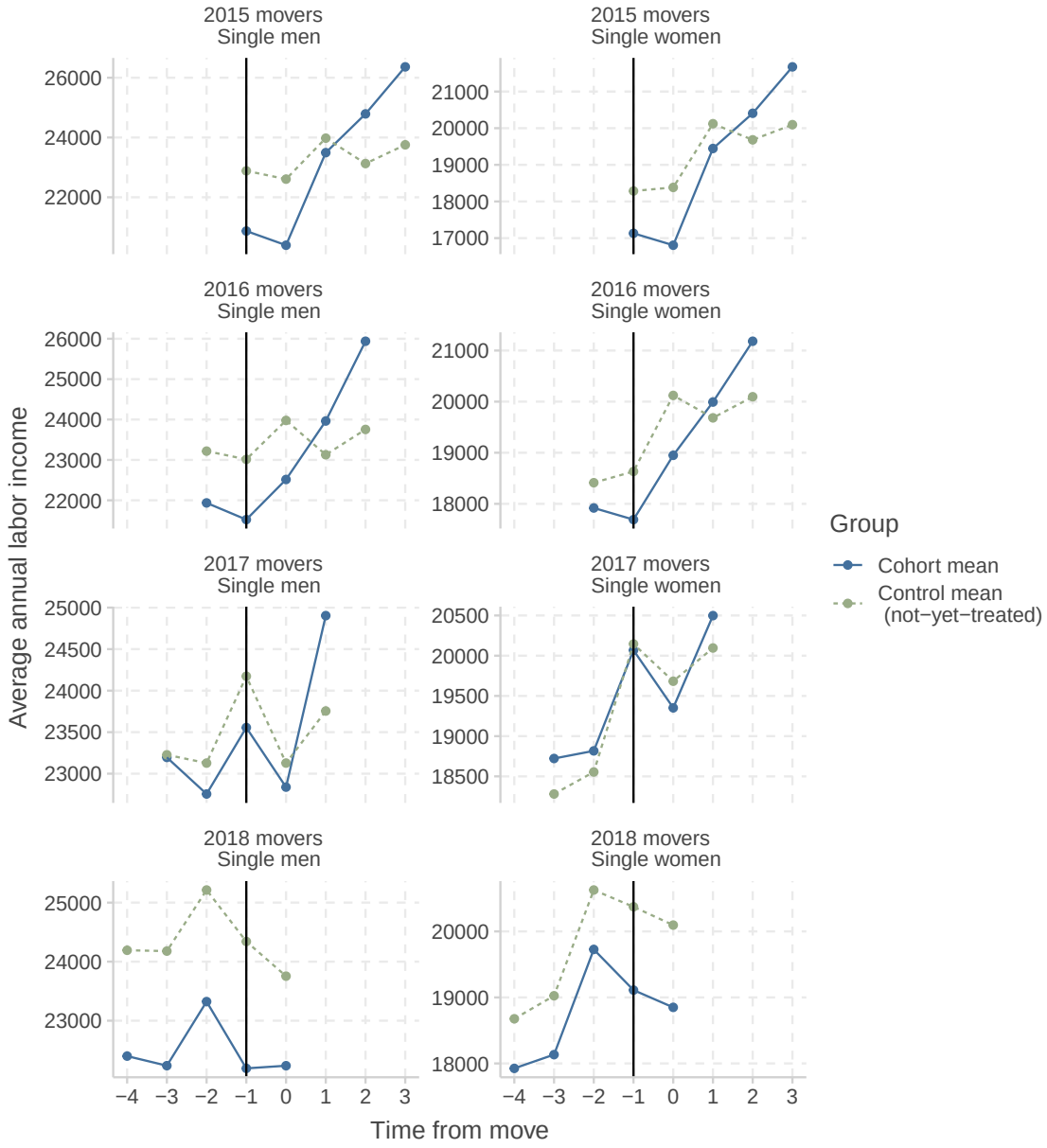
Note: This map presents the geography of French Urban Areas, isolating the Paris Urban Area in blue to isolate it from neighbouring urban areas.

Figure A3: Labor income around a move, by cohort and treatment status, couples



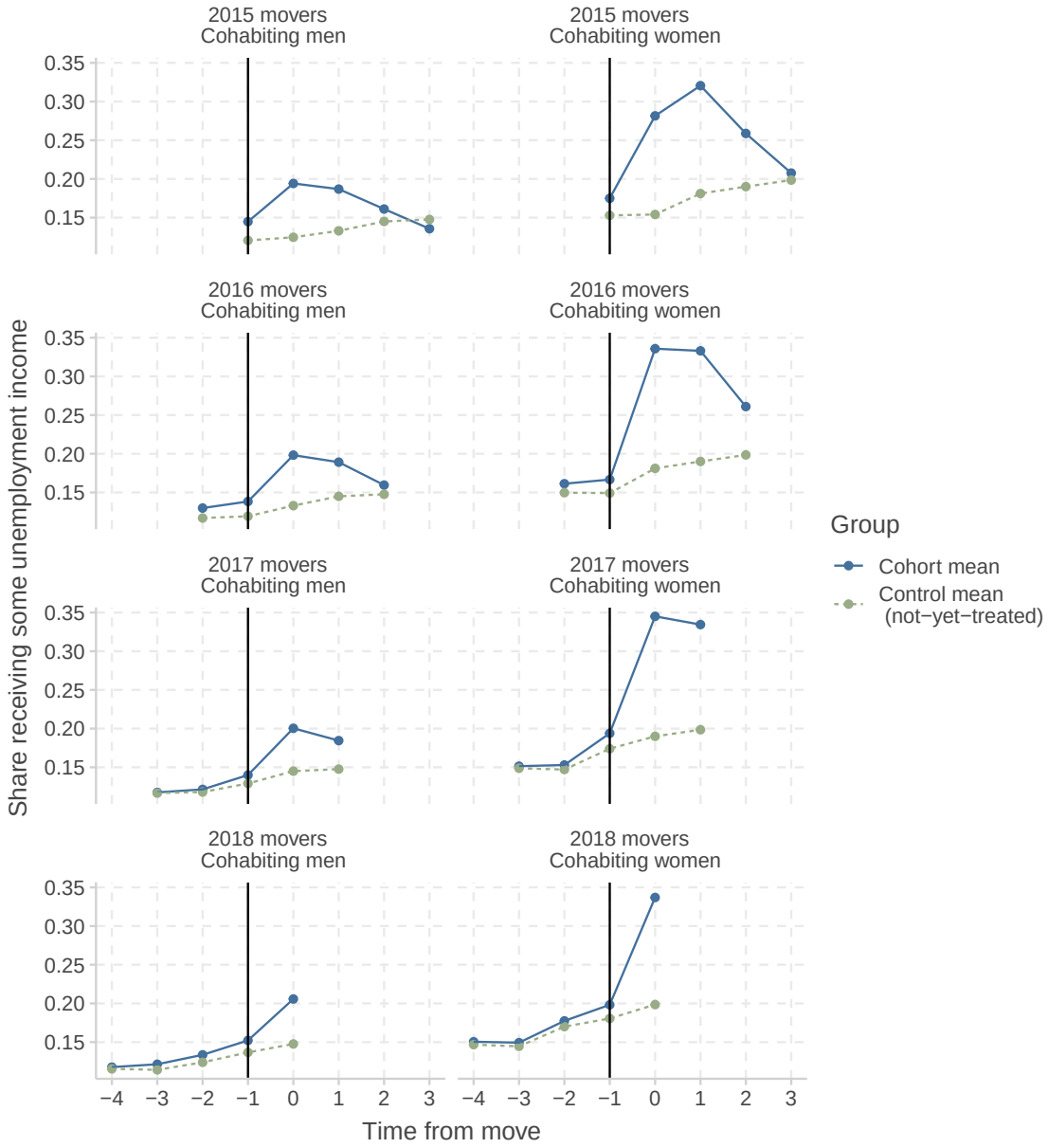
This figure presents the average annual labor income around a move by gender, year of move, and treatment group, for individuals who move while in a relationship. For each panel, the "Cohort mean" line corresponds to the average annual labor income of people who moved in that year. The "Control mean" line corresponds to the average annual labor income of individuals who have not yet moved at that point, defined in the same way as in Callaway and SantAnna (2021). For pre-move years, not-yet movers are individuals who move after the considered cohort. For instance, in the 2017 panel, the not-yet movers at time 0 (year 2017) are defined as individuals who move in 2018 or 2019. The not-yet movers at time 1 (year 2018) are individuals who move in 2019. The not-yet movers at time -3 to -1 are individuals who move in 2018 or 2019. The figure is computed from Fideli data. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved while in a relationship between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

Figure A4: Labor income around a move, by cohort and treatment status, singles



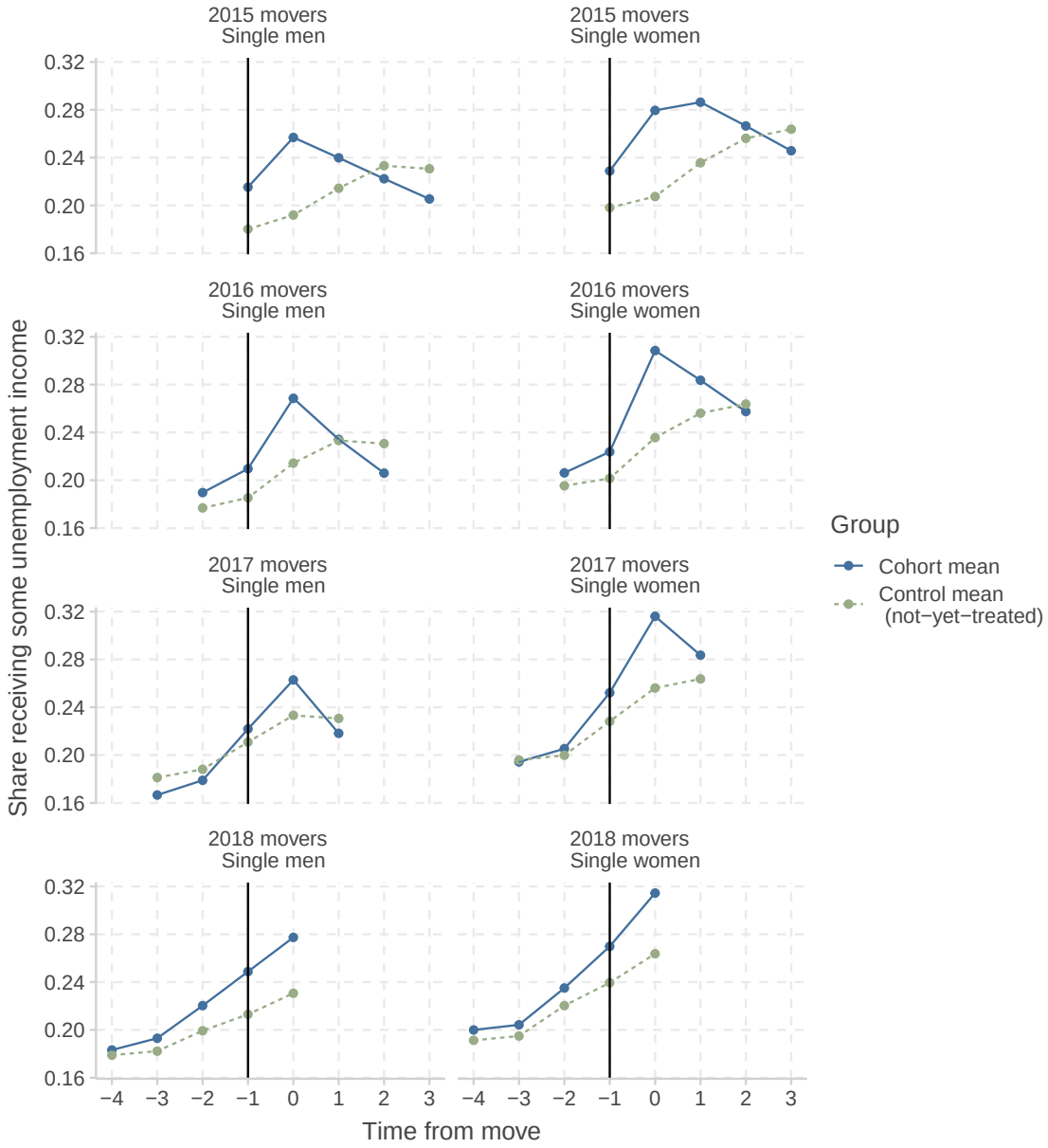
This figure presents the average annual labor income around a move by gender, year of move, and treatment group, for individuals who move while single. For each panel, the "Cohort mean" line corresponds to the average annual labor income of people who moved in that year. The "Control mean" line corresponds to the average annual labor income of individuals who have not yet moved at that point, defined in the same way as in Callaway and SantAnna (2021). For pre-move years, not-yet movers are individuals who move after the considered cohort. For instance, in the 2017 panel, the not-yet movers at time 0 (year 2017) are defined as individuals who move in 2018 or 2019. The not-yet movers at time 1 (year 2018) are individuals who move in 2019. The not-yet movers at time -3 to -1 are individuals who move in 2018 or 2019. The figure is computed from Fideli data. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved while single between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

Figure A5: Share receiving some unemployment around a move, by cohort and treatment status, couples



This figure presents the share of people earning some unemployment income around a move by gender, year of move, and treatment group, for individuals who move while in a relationship. For each panel, the "Cohort mean" line corresponds to the share of individuals earning unemployment income for people who moved in that year. The "Control mean" line corresponds to the same share for individuals who have not yet moved at that point, defined in the same way as in Callaway and SantAnna (2021). For pre-move years, not-yet movers are individuals who move after the considered cohort. For instance, in the 2017 panel, the not-yet movers at time 0 (year 2017) are defined as individuals who move in 2018 or 2019. The not-yet movers at time 1 (year 2018) are individuals who move in 2019. The not-yet movers at time -3 to -1 are individuals who move in 2018 or 2019. The figure is computed from Fideli data. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved while in a relationship between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

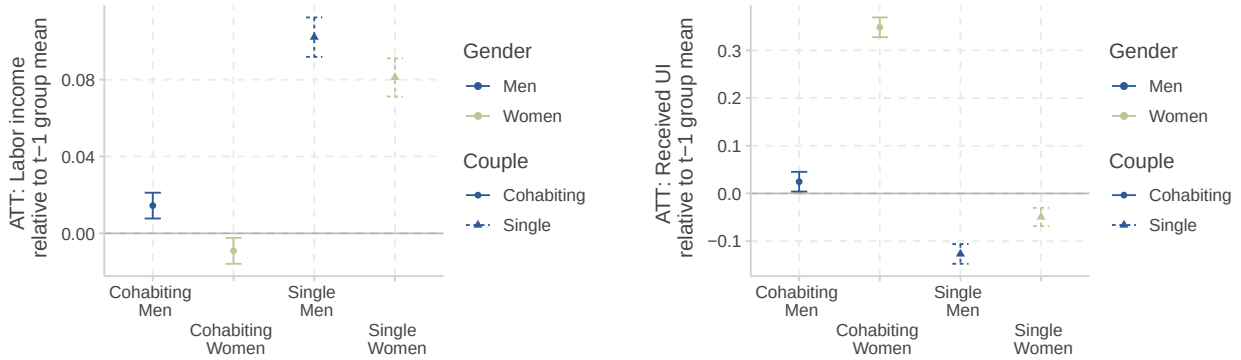
Figure A6: Share receiving some unemployment around a move, by cohort and treatment status, singles



This figure presents the share of people earning some unemployment income around a move by gender, year of move, and treatment group, for individuals who move while single. For each panel, the "Cohort mean" line corresponds to the share of individuals earning unemployment income for people who moved in that year. The "Control mean" line corresponds to the same share for individuals who have not yet moved at that point, defined in the same way as in Callaway and SantAnna (2021). For pre-move years, not-yet movers are individuals who move after the considered cohort. For instance, in the 2017 panel, the not-yet movers at time 0 (year 2017) are defined as individuals who move in 2018 or 2019. The not-yet movers at time 1 (year 2018) are individuals who move in 2019. The not-yet movers at time -3 to -1 are individuals who move in 2018 or 2019. The figure is computed from Fideli data. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved while single between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing.

A.2 Main results

Figure A7: ATT: annual labor income and receiving UI, by gender and couple status



(a) Outcome: Annual labor income

(b) Outcome: Receiving UI

Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and couple status. Panel (a) uses annual labor income in euros as outcome. Panel (b) use as an outcome an indicator for receiving UI. Regressions in both panels include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move, relative to the group average one year before moving. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

Table A1: ATT: Labor income

	Married or cohabiting		Not married or cohabiting	
	Men	Women	Men	Women
ATT	487.8416	-185.6927	2295.3488	1533.7830
	(115.7955)	(70.2281)	(117.5906)	(95.8374)
Pre-move average	33797.57	20372.84	22471.22	18892.88
Number of individuals	243,927	239,690	178,307	185,332
Number of observations	1,062,644	996,229	644,409	714,127

Note: Standard errors in parenthesis. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2.

Table A2: ATT: Received UI

	Married or cohabiting		Not married or cohabiting	
	Men	Women	Men	Women
ATT	0.0036	0.0648	-0.0289	-0.0123
	(0.0015)	(0.0020)	(0.0024)	(0.0024)
Pre-move average	0.145	0.186	0.228	0.250
Number of individuals	243,927	239,690	178,307	185,332
Number of observations	1,062,644	996,229	644,409	714,127

Note: Standard errors in parenthesis. Regressions use as outcome variable an indicator for receiving some unemployment income during the year and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2.

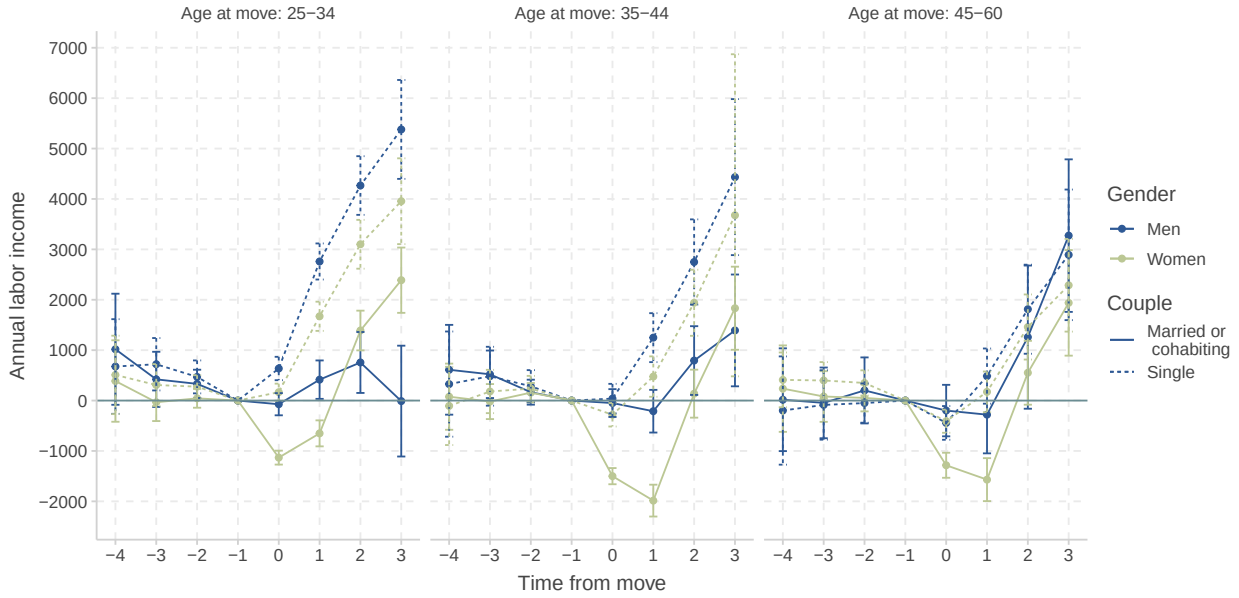
A.3 Results by age at move

Table A3: Descriptive statistics by couple status and age at move

	Married or cohabiting			Not married or cohabiting		
Variable	25-34	35-44	45-60	25-34	35-44	45-60
Age	29.81	38.05	49.85	28.76	38.28	50.78
	(2.24)	(2.85)	(4.30)	(2.32)	(2.92)	(4.41)
Female	0.57	0.49	0.44	0.48	0.53	0.56
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
Number minor children	0.92	1.74	0.91	0.25	0.70	0.33
	(0.98)	(1.10)	(1.09)	(0.68)	(1.11)	(0.72)
Has minor child	0.62	0.89	0.54	0.15	0.38	0.22
	(0.49)	(0.32)	(0.50)	(0.36)	(0.49)	(0.42)
Has child under 10	0.61	0.78	0.22	0.15	0.25	0.05
	(0.49)	(0.41)	(0.41)	(0.35)	(0.44)	(0.23)
Has child under 6	0.59	0.59	0.10	0.12	0.14	0.02
	(0.49)	(0.49)	(0.30)	(0.32)	(0.35)	(0.14)
Has child under 3	0.47	0.33	0.04	0.07	0.06	0.01
	(0.50)	(0.47)	(0.20)	(0.25)	(0.24)	(0.08)
Has newborn	0.18	0.10	0.01	0.02	0.02	0.00
	(0.38)	(0.30)	(0.10)	(0.14)	(0.13)	(0.04)
Oldest child age (if any)	3.53	8.34	15.55	5.55	11.09	16.51
	(3.29)	(4.99)	(5.12)	(3.89)	(5.29)	(4.41)
Youngest child age (if any)	1.76	4.64	12.12	3.68	7.81	14.46
	(2.00)	(3.90)	(5.71)	(3.08)	(4.81)	(5.02)
Annual labor income	22,344	28,043	32,338	18,419	21,004	22,957
	(17,363)	(25,780)	(47,983)	(14,886)	(18,919)	(27,072)
Annual unemployment income	995	1,134	1,352	1,284	1,581	1,600
	(2,970)	(3,979)	(5,227)	(3,117)	(3,987)	(4,673)
Received some unemployment	0.18	0.16	0.16	0.25	0.25	0.22
	(0.38)	(0.36)	(0.36)	(0.43)	(0.43)	(0.42)
Urban area population - Origin	3,830,600	4,024,305	3,083,558	2,417,480	2,693,443	2,496,981
	(5,270,185)	(5,386,338)	(4,915,280)	(4,359,634)	(4,652,936)	(4,520,932)
Urban area population - Destination	1,228,911	1,147,156	1,097,129	2,050,656	1,351,404	990,312
	(2,838,823)	(2,695,619)	(2,750,288)	(3,963,952)	(3,167,230)	(2,670,362)
Number of individuals	151729	173639	125986	125756	80462	105884

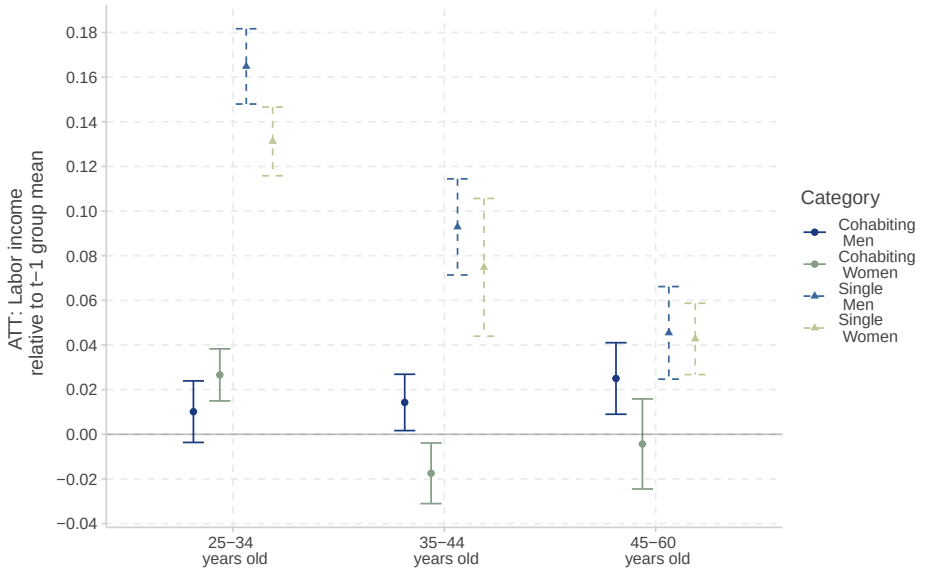
Note: Standard deviation in parenthesis. This table is computed from Fideli data. All variables are measured in the year preceding the move, by couple status and age at the time of the move. The sample is made of individuals living in an urban area in mainland France, aged 25-60, who moved once between 2014-2019 without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

Figure A8: Effect of a move on annual labor income by age groups in absolute terms (euros)



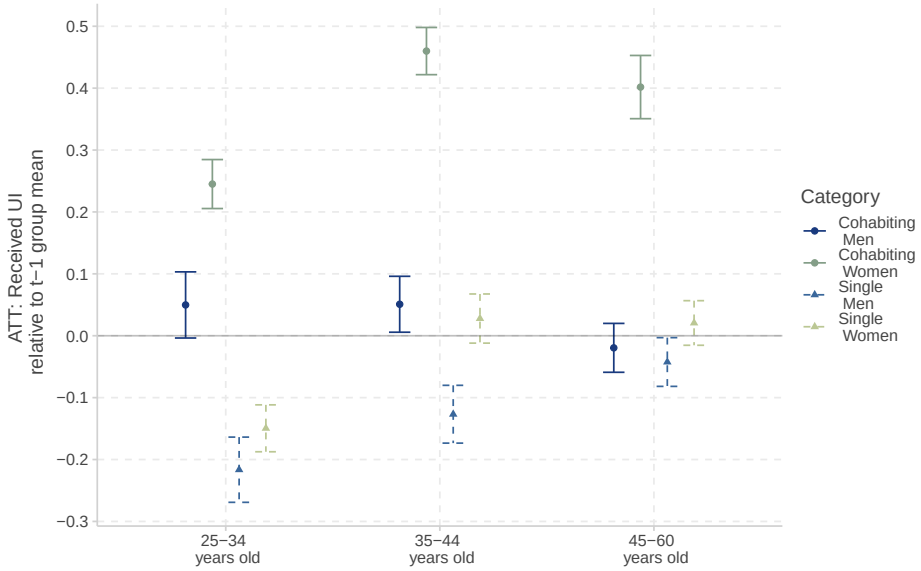
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and age at move. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. Couple status is defined at the year of the move, as well as the age at move. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men aged 25-34: 270,454; single women aged 25-34: 253,165; cohabiting men aged 25-34: 300,219; cohabiting women aged 25-34: 372,867; single men aged 35-44: 168,435; single women aged 35-44: 192,455; cohabiting men aged 35-44: 426,340; cohabiting women aged 35-44: 381,366; single men aged 45-60: 205,520; single women aged 45-60: 268,507; cohabiting men aged 45-60: 336,085; cohabiting women aged 45-60: 241,996

Figure A9: ATT: Annual labor income, by gender, couple status and age at move



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and age at move. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move, as well as the age at move. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2.

Figure A10: ATT: Receiving unemployment income, by gender, couple status and age at move

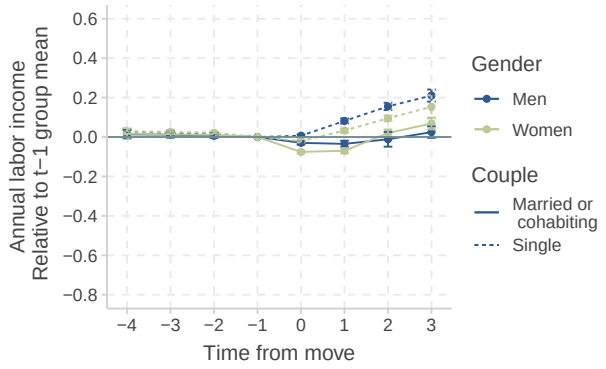


Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and age at move. Regressions use as outcome an indicator for receiving some unemployment income during the year and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move, as well as the age at move. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2.

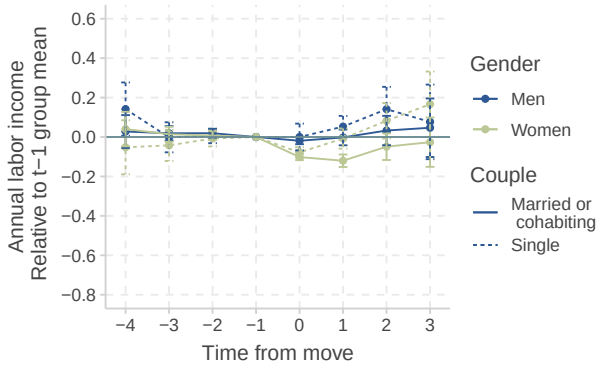
A.4 Results by fertility profile

Figure A11: Effect of a move on annual labor income, by fertility profile (child ten or younger), all categories

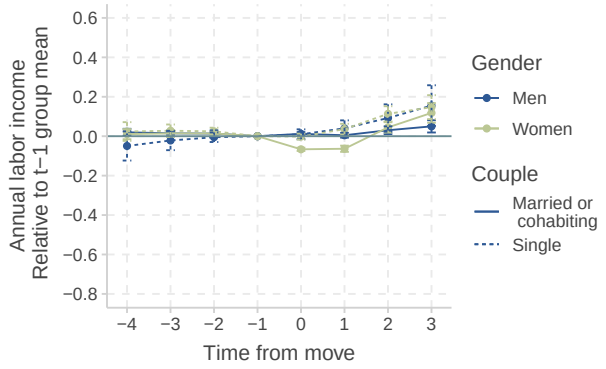
(a) No child 10 or younger pre-move, no child post-move



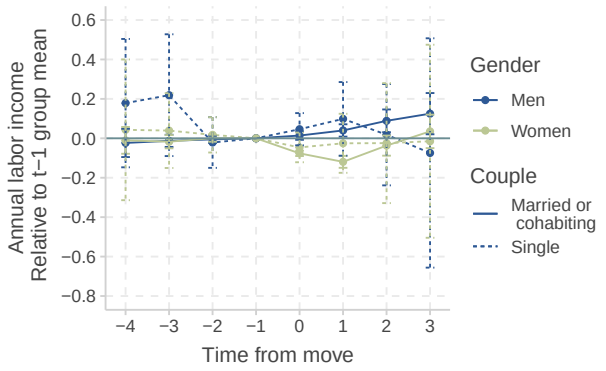
(b) Child 10 or younger pre-move, no child post-move



(c) No child 10 or younger pre-move, child post-move



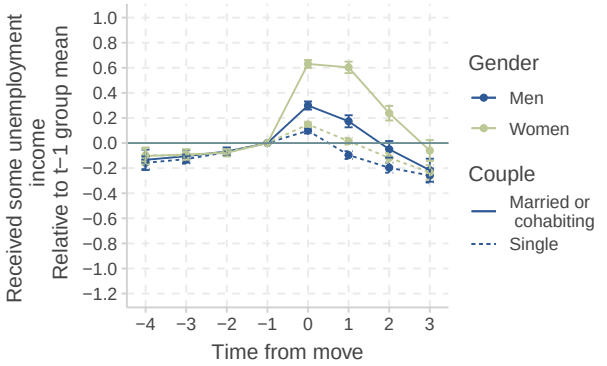
(d) Child 10 or younger pre-move, child post-move



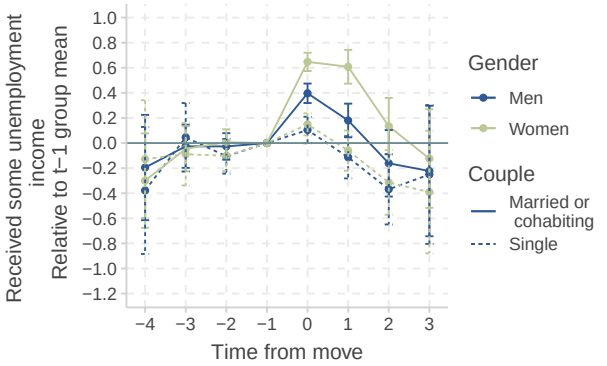
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged ten or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged ten or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged ten or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged ten or younger at the time of the move, who have another child afterward. The number of observations for each regression is: cohabiting men of panel (a): 373,284; cohabiting women of Panel (a): 350,874; single men of Panel (a) 561147; single women of Panel (a): 556432; cohabiting men of panel (b): 458,226; cohabiting women of panel (b): 427,676; single men of panel (b): 46483; single women of Panel (b): 116998; cohabiting men of panel (c): 93,690; cohabiting women of panel (c): 91,347; single men of panel (c) 31,005; single women of panel (c): 28,673; cohabiting men of panel (d): 137,444; cohabiting women of panel (d): 126,332; single men of panel (d): 5774; single women of panel (d): 12024

Figure A12: Effect of a move on unemployment status, by fertility profile (child ten or younger)

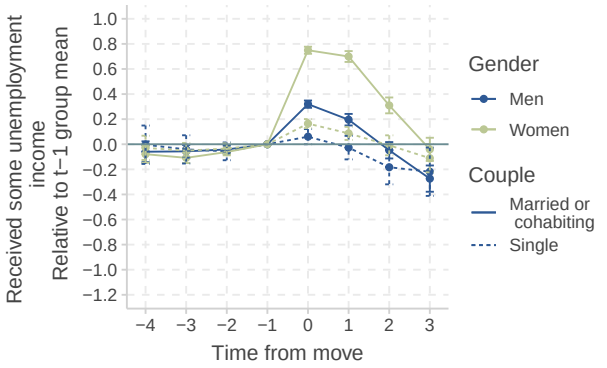
(a) No child 10 or younger pre-move, no child post-move



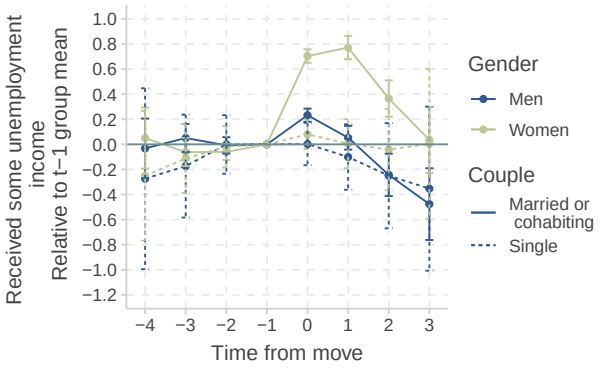
(b) Child 10 or younger pre-move, no child post-move



(c) No child 10 or younger pre-move, child post-move

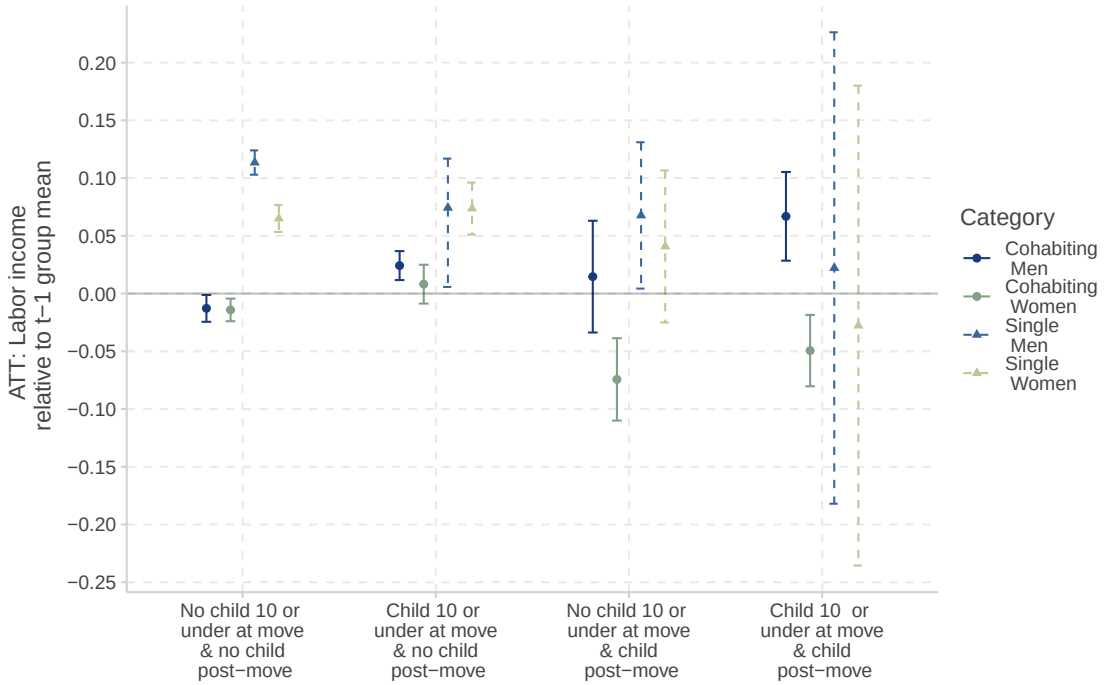


(d) Child 10 or younger pre-move, child post-move



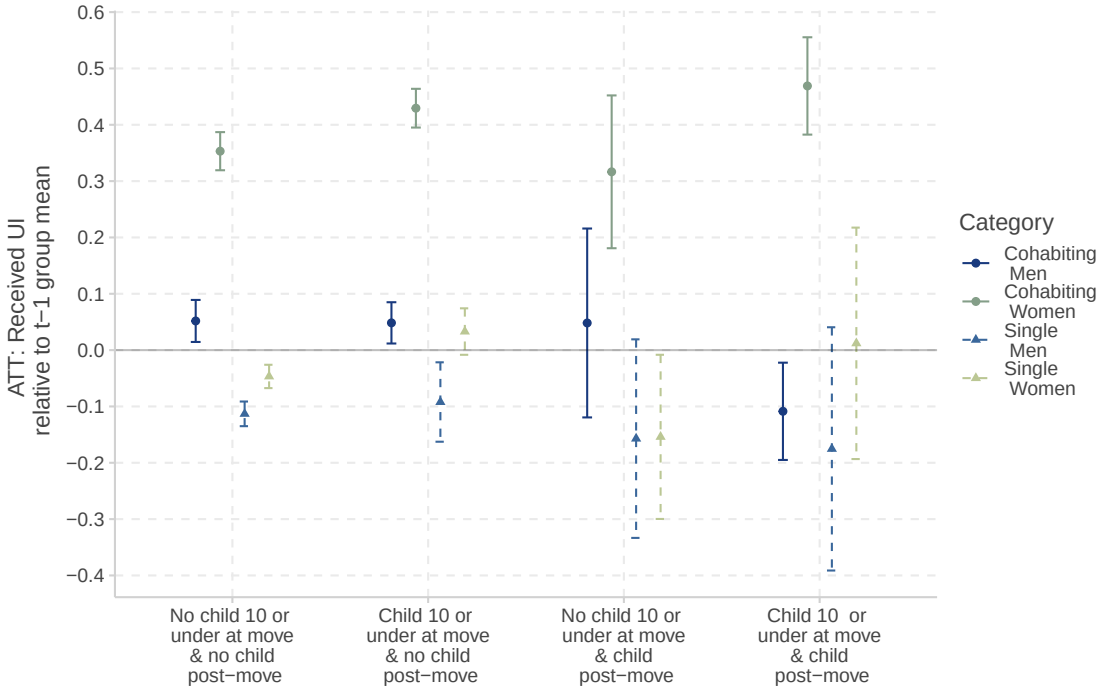
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged ten or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged ten or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged ten or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged ten or younger at the time of the move, who have another child afterward. The number of observations for each regression is: cohabiting men of panel (a): 373,284; cohabiting women of Panel (a): 350,874; single men of Panel (a) 561147; single women of Panel (a): 556432; cohabiting men of panel (b): 458,226; cohabiting women of panel (b): 427,676; single men of panel (b): 46483; single women of Panel (b): 116998; cohabiting men of panel (c): 93,690; cohabiting women of panel (c): 91,347; single men of panel (c) 31,005; single women of panel (c): 28,673; cohabiting men of panel (d): 137,444; cohabiting women of panel (d): 126,332; single men of panel (d): 5774; single women of panel (d): 12024

Figure A13: ATT: Annual labor income, by gender, couple status and fertility profile (child ten or younger)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged ten or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged ten or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged ten or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged ten or younger at the time of the move, who have another child afterward.

Figure A14: ATT: Receiving unemployment income, by gender, couple status and fertility profile (child ten or younger)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged ten or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged ten or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged ten or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged ten or younger at the time of the move, who have another child afterward.

A.5 Household changes

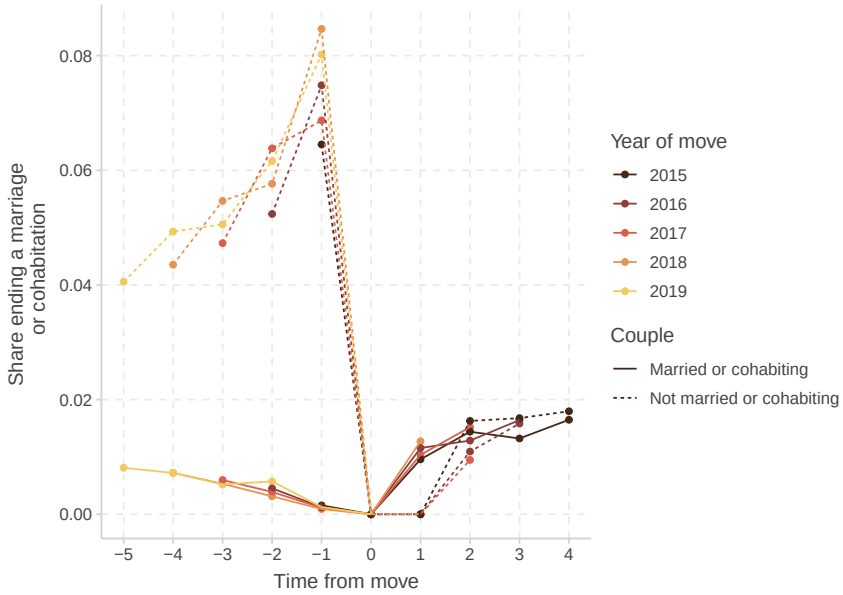
Another potential channel for the gap in the effect of a move relates to changes in household composition, meaning couple formation or break-up. In all the regressions above, household type is defined in the year of the move: individuals who move while in a relationship are defined as "partnered" in all years, regardless of their current status. Yet, partnership status can evolve over time, and as a result some of the individuals belonging to the 'partnered at move' category may have ended their relationship after they move. A recent literature underlines the existence of a gender gap in the effect of divorce **??**. If moves lead to an increased probability of a change in household composition, this could explain a part of the observed gap. In order to evaluate the importance of this channel, I plot in Figure A15 the share of individuals who change household around a move. Note that since I exclude the people who change relationship in the same year they move, the share in some years are set to zero by construction.

- For all groups, the share is always zero in the year of the move
- For single people: the share quitting their partnership one year after they move is zero. Since they were single at the beginning of year 0 and of year 1, they have no partnership to quit in year 1.
- For single people: the share entering a partnership one year before they move: if they entered a partnership in year -1 it would mean they were in a relationship at the beginning of year 0, which is contradictory with them being single at move

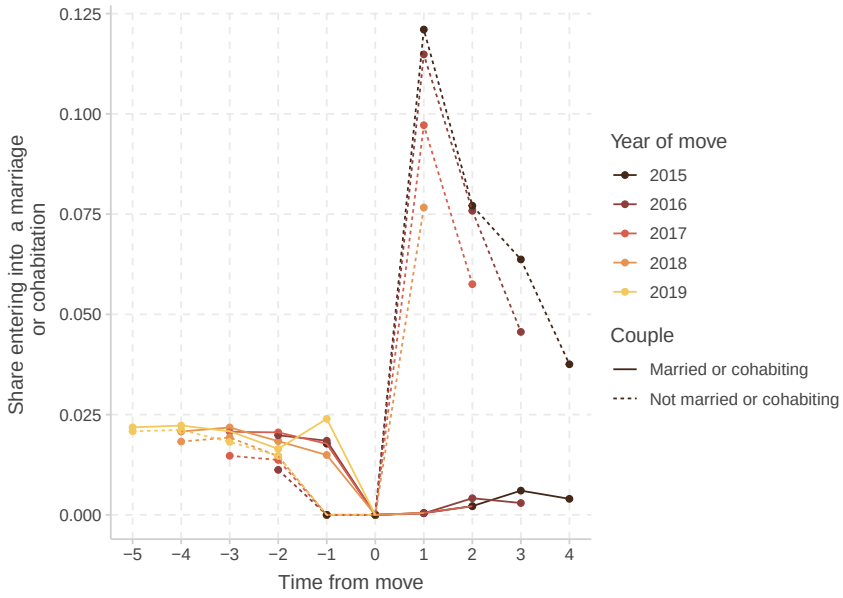
A large share of single movers undergo matrimonial events around moves: around 8% of them exited a relationship in the year preceding the move, while 12% enter one immediately after moving. Among partnered movers, the shares entering or exiting relationships around moves are much lower, with around 1.5% of couples breaking up in the year after the move.

To explore how much household formation and dissolution events contribute to my results, I reproduce my estimation for the subsample of households who stay identical over the 2014-2019 period, meaning that the adult members remain either single or in a relationship with the same individual. Excluding individuals who enter or exit relationships does not affect my results at all, as can be seen in Figure A16. This indicates that, the gender gap in the effect of moves is not driven by changes in household composition around a move which could affect men and women differently (Leopold, 2018).

Figure A15: Yearly share of individuals switching household around a move, by couple category



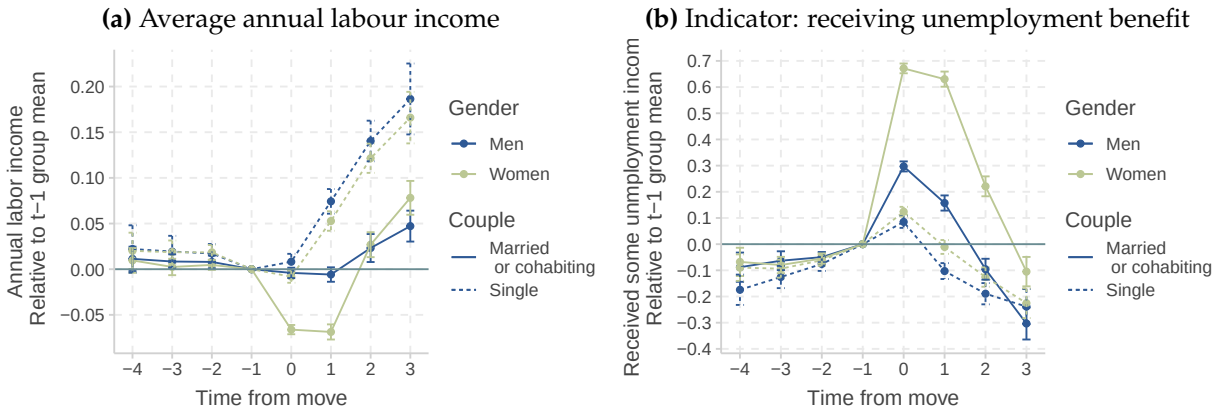
(a) Ending a marriage or cohabitation



(b) Entering into a marriage or cohabitation

Note: This figure presents the share of individuals going through a matrimonial event around a move, by year of move, gender, and couple status in the year of the move. Entering into a marriage or cohabitation in year t, means being part of a different household in Jan 1st of year t and Jan 1st of year t+1, with the year t+1 household being a couple. Ending a marriage or cohabitation in year t means being part of a different household in Jan 1st of year t and Jan 1st of year t+1, with the year t household being a couple. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. It is computed from Fideli data, on the sample described in section 2.

Figure A16: Effect of a move on annual labor for stable households



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status, for individuals who remain in the same households over the 2014-2019 years. Panel (a) uses annual labor income in euros as outcome. Panel (b) use as an outcome an indicator for receiving UI. Regressions in both panels include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit).

A.6 Results by primary earner category

Table A4: Percentiles yearly income change

		Deciles bounds - Yearly income change for not-yet-movers		
Gender	Year	10%	50%	90%
Women	2015	-5,042	172	6,312
Men	2015	-4,797	551	7,196
Women	2016	-4,699	187	6,462
Men	2016	-4,838	592	7,685
Women	2017	-5,115	302	6,393
Men	2017	-5,433	710	8,050
Women	2018	- 5,454	296	6,765
Men	2018	-5,473	891	9,374

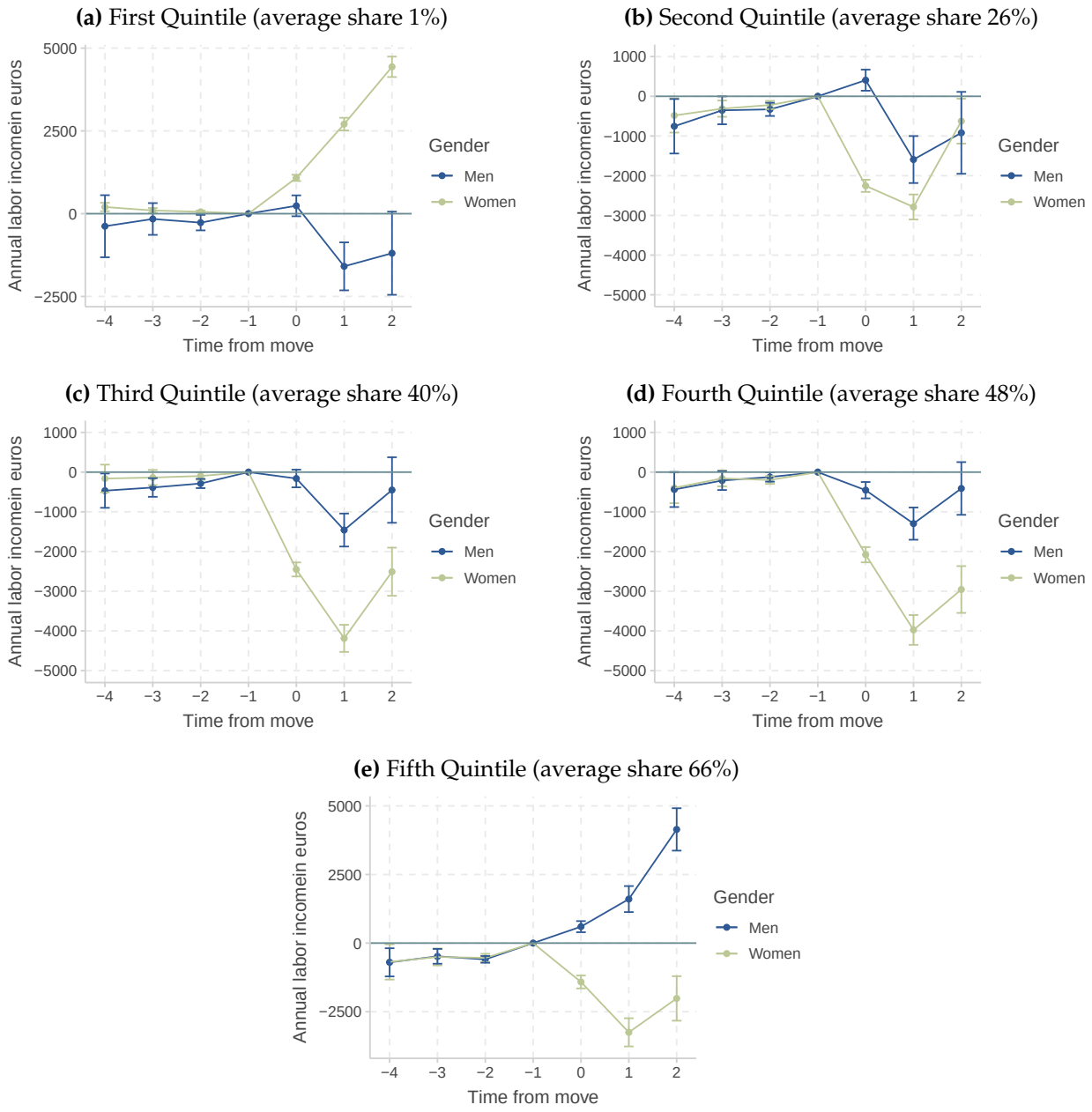
This table provides the 10^{th}, 50^{th} and 90^{th} percentile of absolute change in annual labor income relative to the previous year, for individuals who have not yet moved, by gender and year. This table is computed from Fideli data. The sample is made of individuals who moved while in a couple between 2014-2019, defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

Table A5: ATT: Total household income by quintiles of pre-move share of female income

	Quintiles - share of female income				
	1	2	3	4	5
ATT	1891.3931	-2591.9568	-3739.5528	-3725.6304	-112.6316
	(275.0246)	(282.7955)	(230.3772)	(238.7352)	(261.8020)
Pre-move average	34999.80	55751.01	57389.24	56486.49	48388.78
Pre-move share female income	0.014	0.261	0.402	0.479	0.663
Number of households	15,488	15,488	15,488	15,488	15,489
Number of observations	73,028	73,836	73,700	73,271	73,006

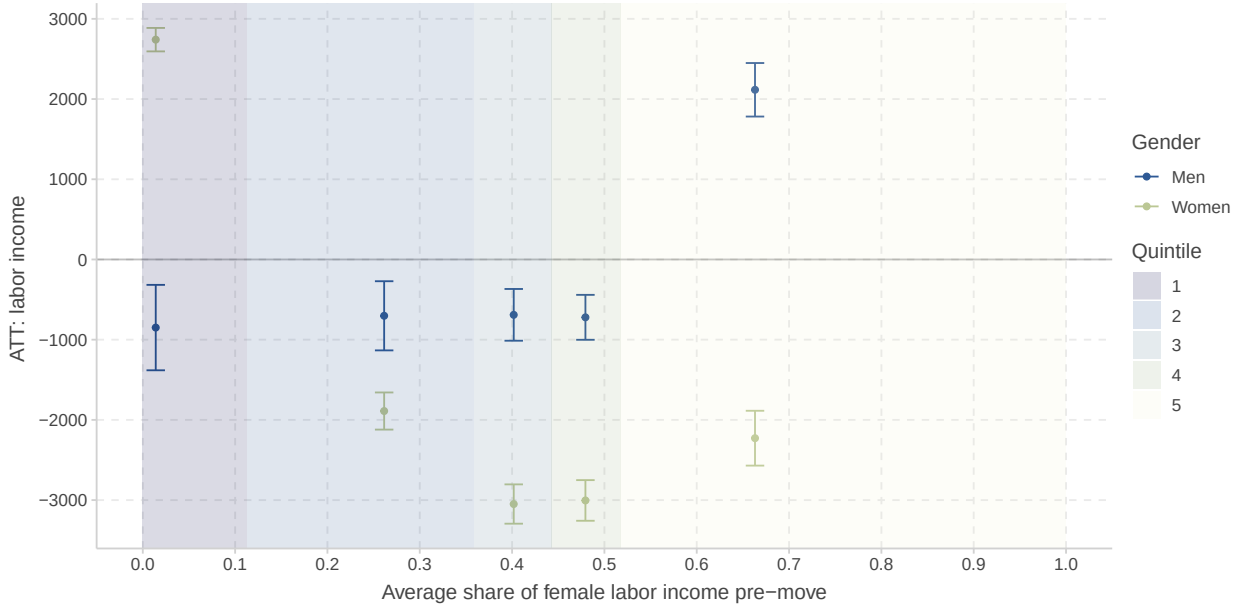
Note: Standard errors in parenthesis. The regressions are run separately by gender and share of female income category (quintiles). Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender. The ATT coefficient corresponds to the average treatment effect by duration of exposure to the treatment. The sample is made of households who moved while in a couple between 2015-2019. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

Figure A17: Effect of a move on labor income by gender, by share of female labor income pre-move, in absolute terms (euros)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and share of female income category (quintiles). Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment. The sample is made of households who moved while in a couple between 2015-2019. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression is: Panel (a): 73,028 (15,488 households); Panel (b) 73,836 (15,488 households); Panel (c): 73,700 (15,488 households); Panel (d): 73,271 (15,488 households); Panel (e) 73,006 (15,489 households)

Figure A18: ATT: Annual labor income, by gender and primary earner quintiles, in absolute terms (euros)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender and share of female income category (quintiles). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The plotted coefficient corresponds to the average annual treatment effect in the first three years of the move. The sample is made of households who moved while in a couple between 2015-2019. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression can be found in the notes of Figure 13.

Following Along: The Gender Gap in Returns to Geographic Mobility

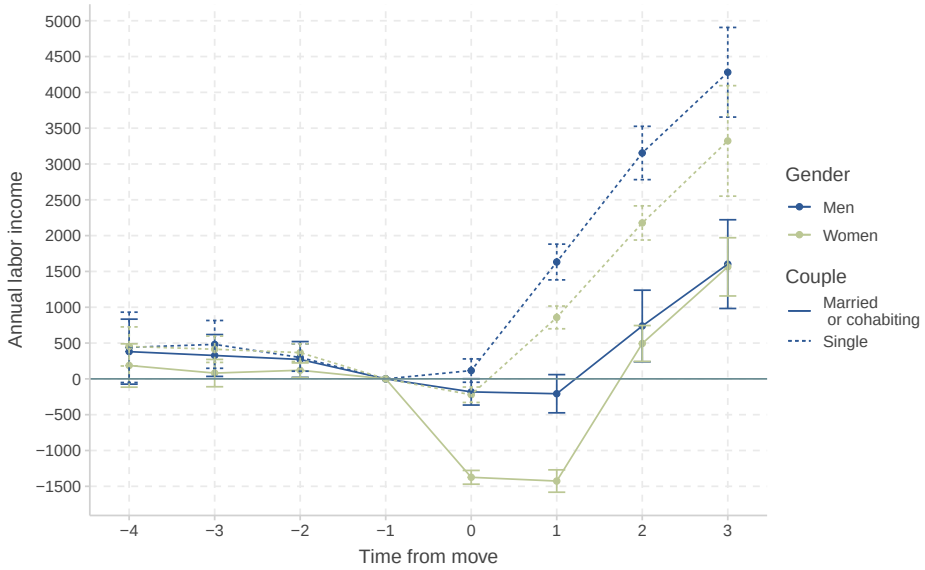
Online Appendix

Mylène Feuillade

B Online appendix

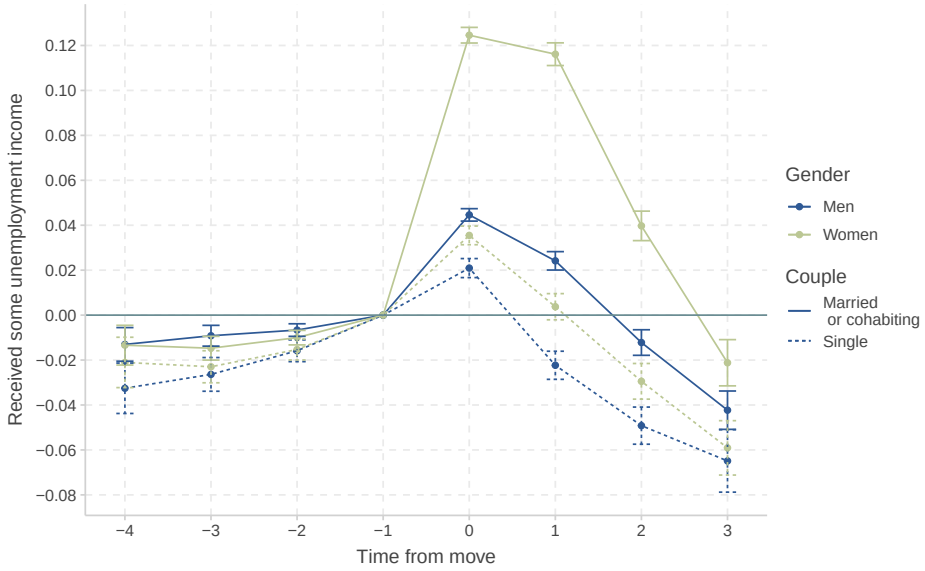
B.1 Results on unemployment income and participation

Figure B1: Effect of a move on annual labor income, by gender and couple status, in absolute terms (euros)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and couple status. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

Figure B2: Effect of a move on the probability of receiving some unemployment, by gender and marital status, in absolute terms



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and couple status. Regressions use as an outcome an indicator for receiving UI, and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

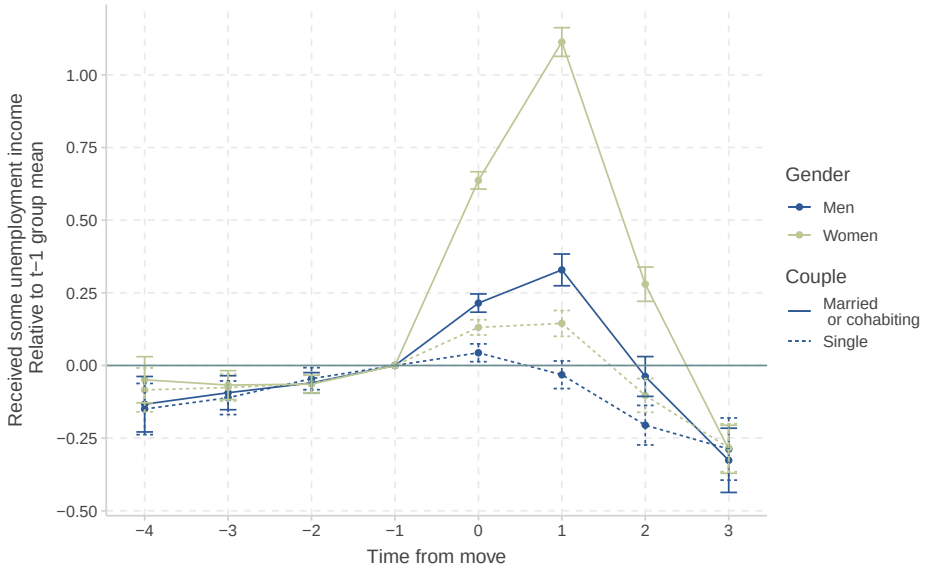
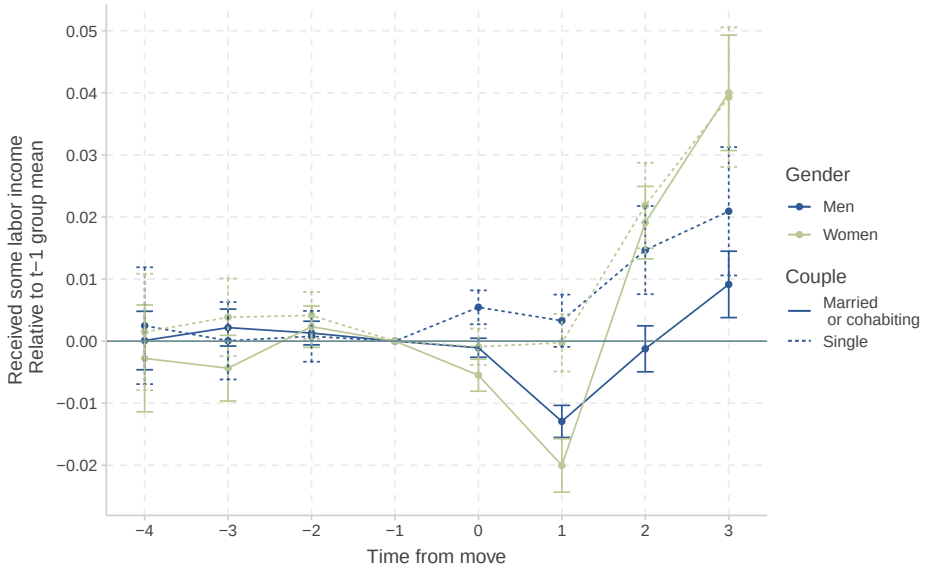


Figure B3: Effect of a move on unemployment income, by gender and marital status

Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and couple status. Regressions use annual unemployment income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before the move. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

Figure B4: Effect of a move on probability of receiving some labor income, by gender and marital status



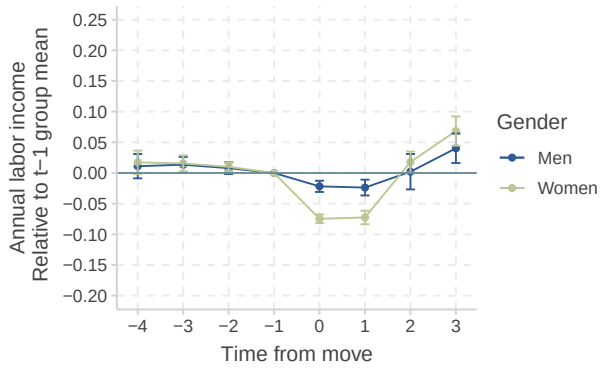
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender and couple status. Regressions use as an outcome an indicator for some labor income, and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 644,409 (178,307 individuals); single women: 714,127 (185,332 individuals); cohabiting men: 1,062,644 (243,927 individuals); cohabiting women: 996,229 (239,690 individuals)

B.2 Results by fertility profile

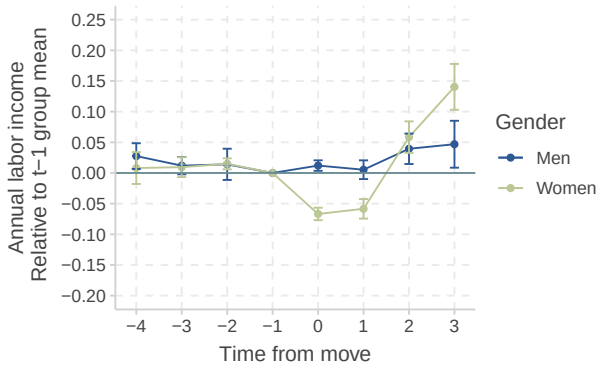
Child six or younger

Figure B5: Effect of a move on annual labor income, by fertility profile (child six or younger)

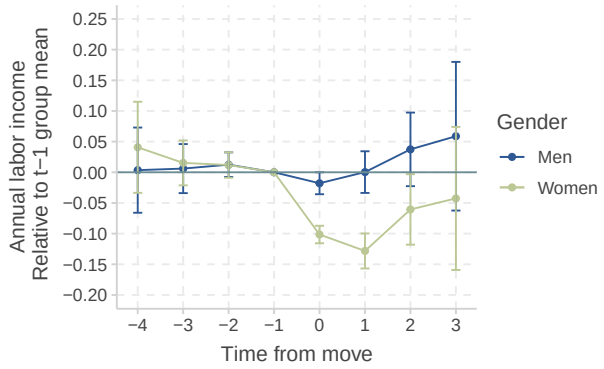
(a) No child 6 or younger pre-move, no child post-move



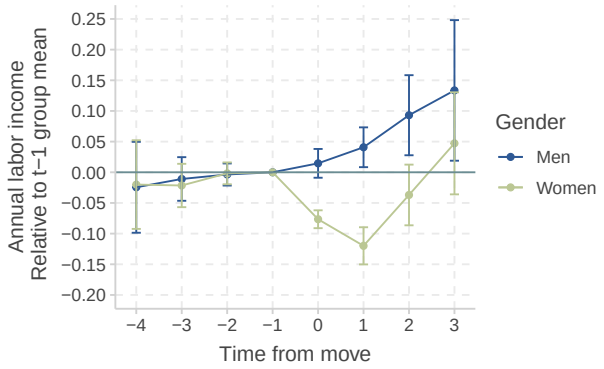
(b) Child 6 or younger pre-move, no child post-move



(c) No child 6 or younger pre-move, child post-move



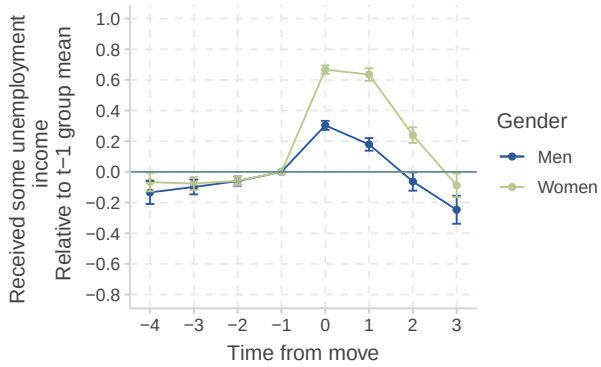
(d) Child 6 or younger pre-move, child post-move



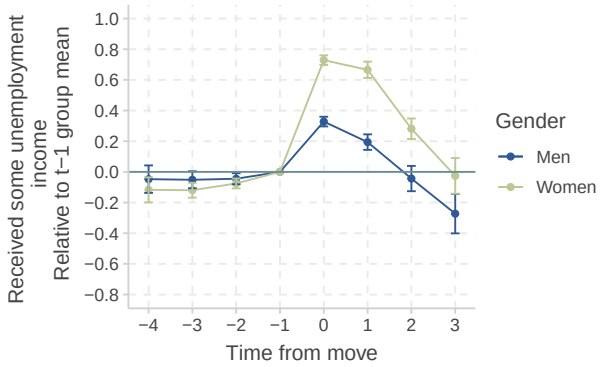
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged six or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged six or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged six or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged six or younger at the time of the move, who have another child afterward. The number of observations for each regression is: cohabiting men of panel (a): 489,079; cohabiting women of Panel (a): 460,107; single men of Panel (a) 577,944; single women of Panel (a): 606,581; cohabiting men of panel (b): 342,431; cohabiting women of panel (b): 318,443; single men of panel (b): 29,686; single women of Panel (b): 66,849; cohabiting men of panel (c): 101,078; cohabiting women of panel (c): 98,240; single men of panel (c) 31,863; single women of panel (c): 32,023; cohabiting men of panel (d): 130,056; cohabiting women of panel (d): 119,439; single men of panel (d):4,916; single women of panel (d): 8,674

Figure B6: Effect of a move on unemployment status, by fertility profile (child six or younger)

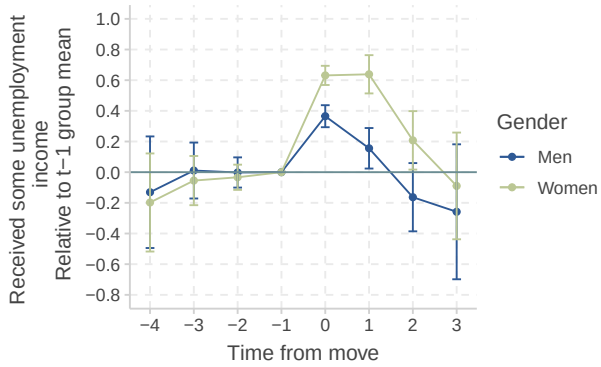
(a) No child 6 or younger pre-move, no child post-move



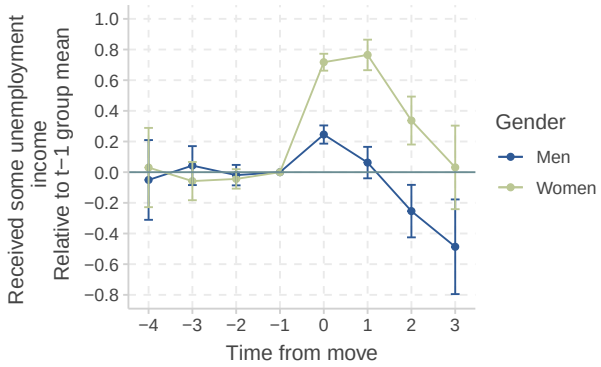
(b) Child 6 or younger pre-move, no child post-move



(c) No child 6 or younger pre-move, child post-move

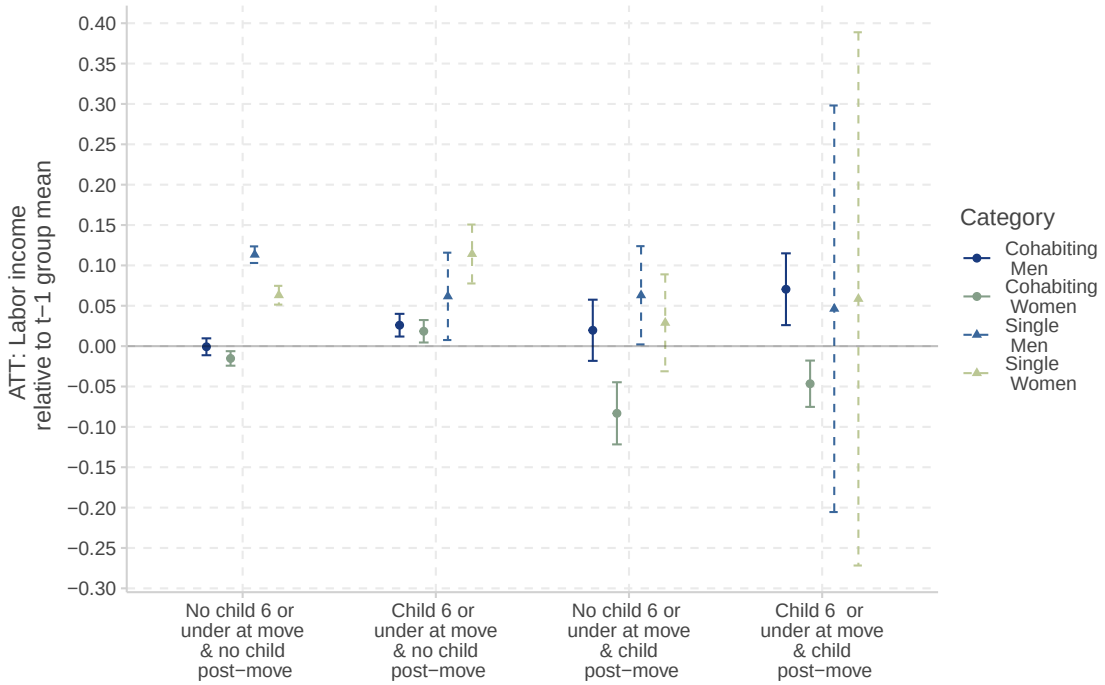


(d) Child 6 or younger pre-move, child post-move



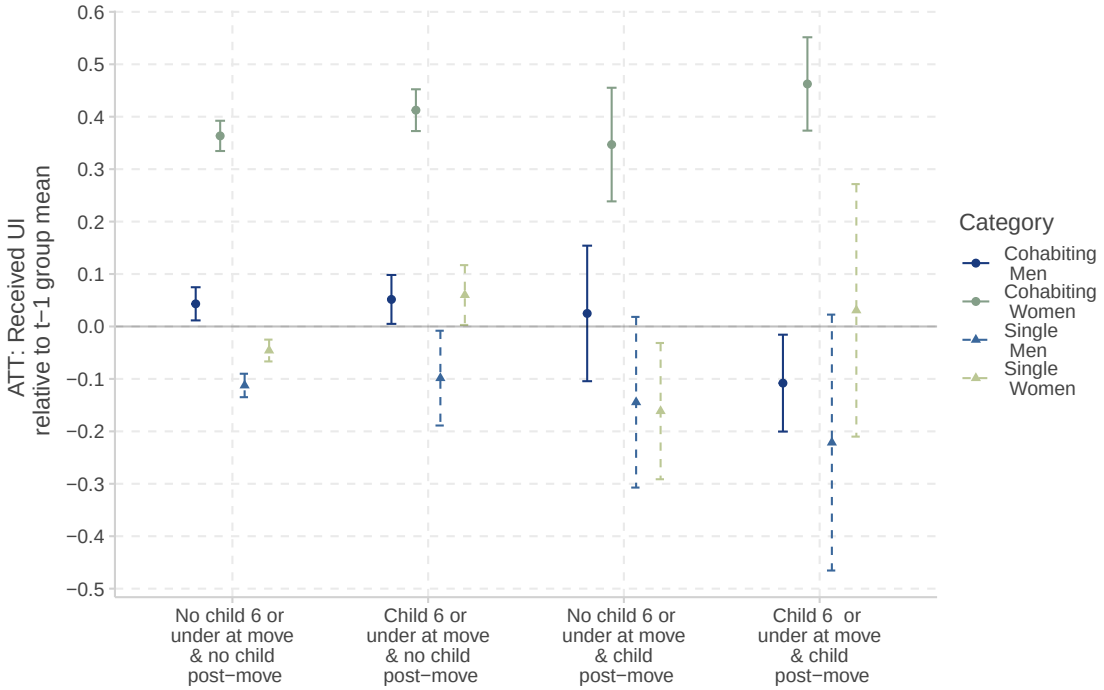
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged six or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged six or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged six or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged six or younger at the time of the move, who have another child afterward. The number of observations for each regression is: cohabiting men of panel (a): 373,284; cohabiting women of Panel (a): 350,874; single men of Panel (a) 561147; single women of Panel (a): 556432; cohabiting men of panel (b): 458,226; cohabiting women of panel (b): 427,676; single men of panel (b): 46483; single women of Panel (b): 116998; cohabiting men of panel (c): 93,690; cohabiting women of panel (c): 91,347; single men of panel (c) 31,005; single women of panel (c): 28,673; cohabiting men of panel (d): 137,444; cohabiting women of panel (d): 126,332; single men of panel (d): 5774; single women of panel (d): 12024

Figure B7: ATT: Annual labor income, by gender, couple status and fertility profile (child six or younger)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged six or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged six or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged six or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged six or younger at the time of the move, who have another child afterward.

Figure B8: ATT: Receiving unemployment income, by gender, couple status and fertility profile (child six or younger)

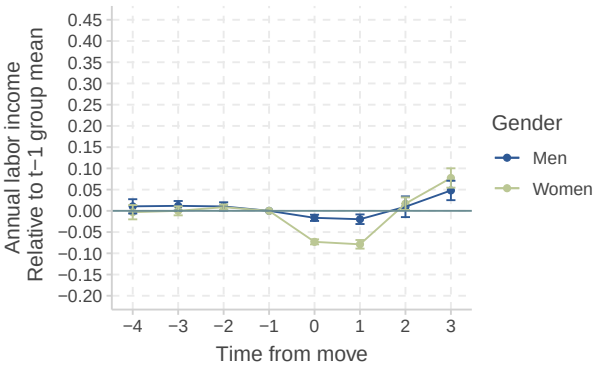


Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged six or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged six or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged six or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged six or younger at the time of the move, who have another child afterward.

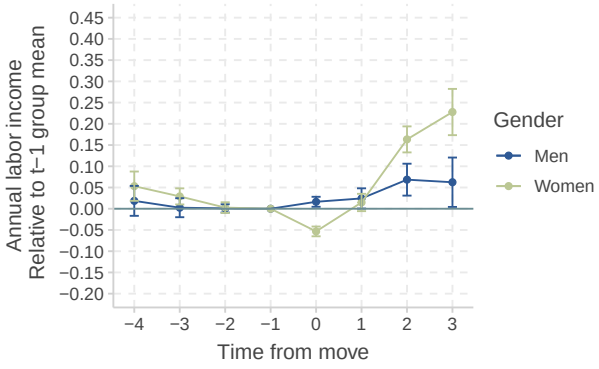
Child three or younger

Figure B9: Effect of a move on annual labor income, by fertility profile (child three or younger)

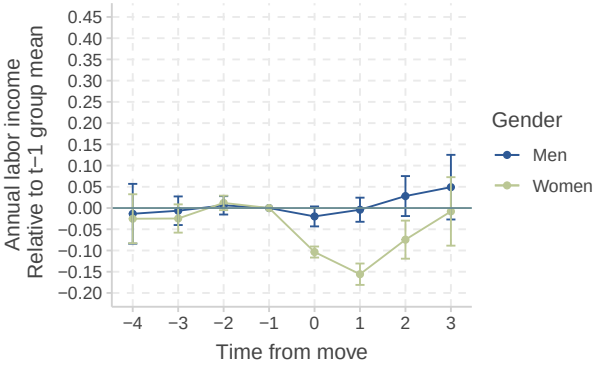
(a) No child pre-move, no child post-move



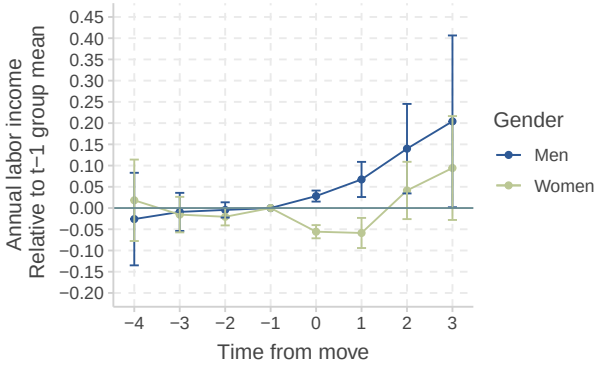
(b) Child 3 or younger pre-move, no child post-move



(c) No child 3 or younger pre-move, child post-move



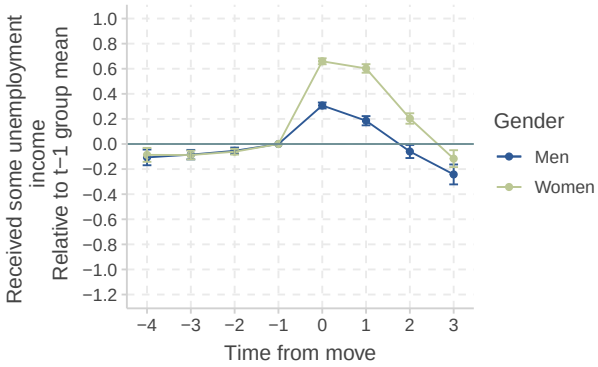
(d) Child 3 or younger pre-move, child post-move



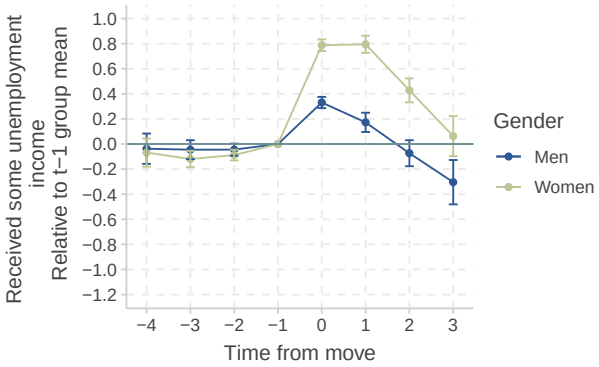
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged three or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged three or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged three or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged three or younger at the time of the move, who have another child afterward. The number of observations for each regression is: cohabiting men of panel (a): 623,432; cohabiting women of Panel (a): 585,841; single men of Panel (a) 592,780; single women of Panel (a): 644,143; cohabiting men of panel (b): 208,078; cohabiting women of panel (b): 192,709; single men of panel (b): 14,850; single women of Panel (b): 29,287; cohabiting men of panel (c): 133,392; cohabiting women of panel (c): 128,031; single men of panel (c) 33,457; single women of panel (c): 36,182; cohabiting men of panel (d): 97,742; cohabiting women of panel (d): 89,648; single men of panel (d): 3,322; single women of panel (d): 4,515

Figure B10: Effect of a move on unemployment status, by fertility profile (child three or younger)

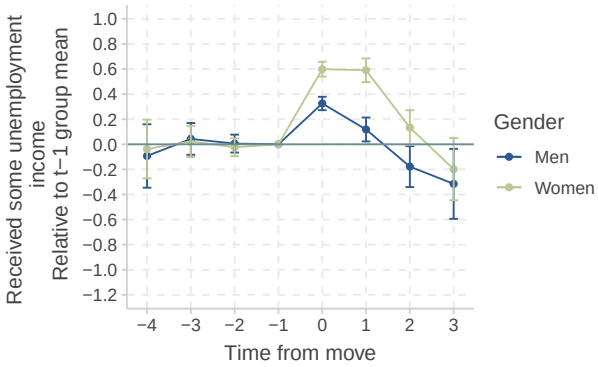
(a) No child 3 or younger pre-move, no child post-move



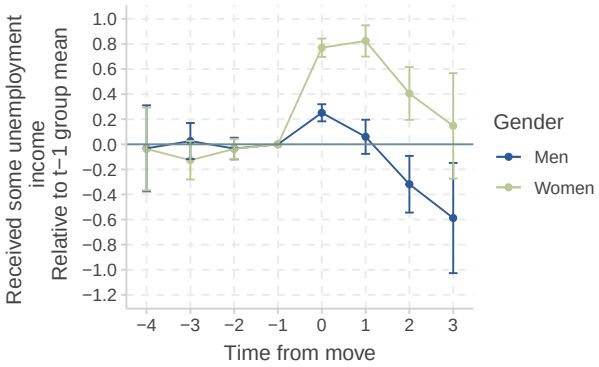
(b) Child 3 or younger pre-move, no child post-move



(c) No child 3 or younger pre-move, child post-move

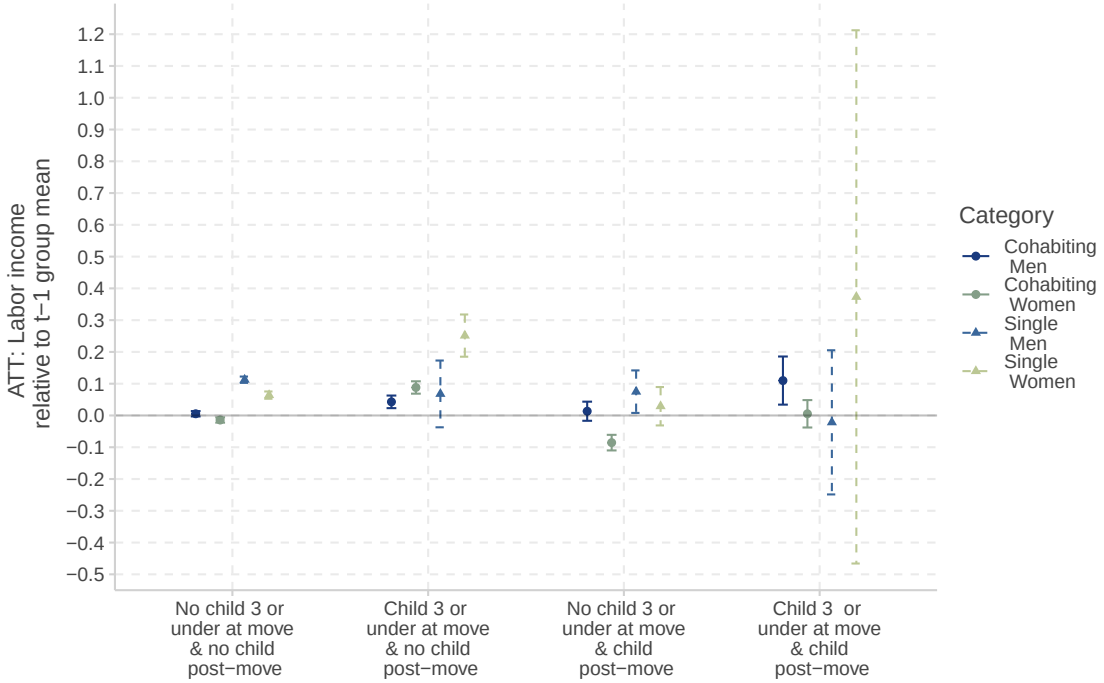


(d) Child 3 or younger pre-move, child post-move



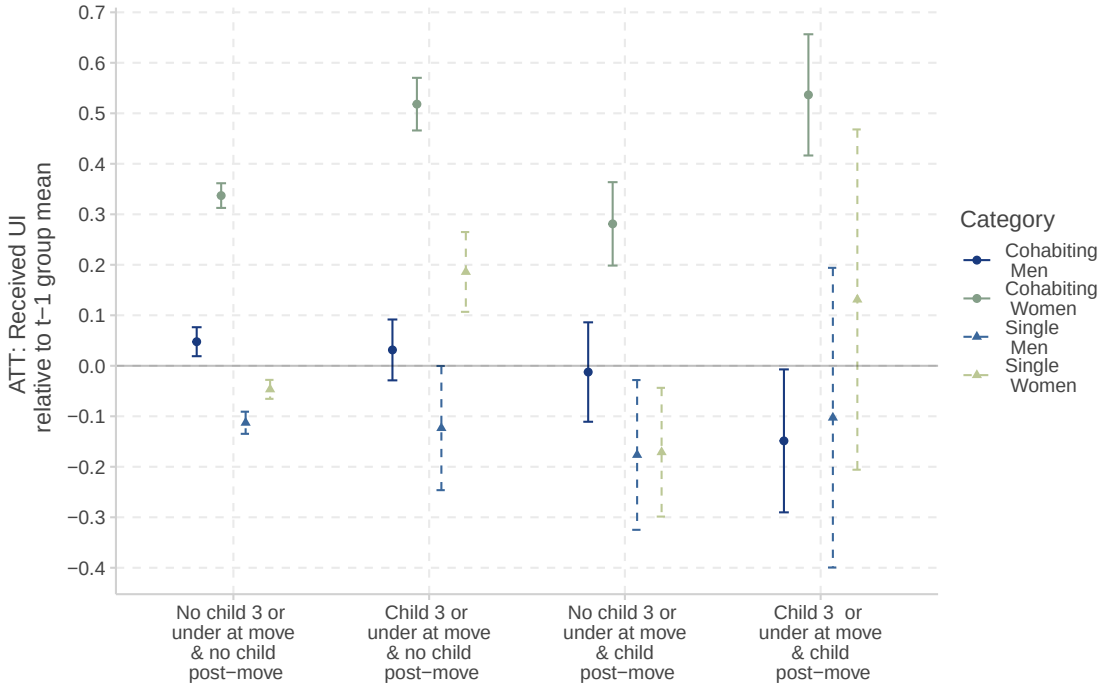
Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged three or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged three or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged three or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged three or younger at the time of the move, who have another child afterward. The number of observations for each regression is: cohabiting men of panel (a): 623,432; cohabiting women of Panel (a): 585,841; single men of Panel (a) 592,780; single women of Panel (a): 644,143; cohabiting men of panel (b): 208,078; cohabiting women of panel (b): 192,709; single men of panel (b): 14,850; single women of Panel (b): 29,287; cohabiting men of panel (c): 133,392; cohabiting women of panel (c): 128,031; single men of panel (c) 33,457; single women of panel (c): 36,182; cohabiting men of panel (d): 97,742; cohabiting women of panel (d): 89,648; single men of panel (d): 3,322; single women of panel (d): 4,515

Figure B11: ATT: Annual labor income, by gender, couple status and fertility profile (child three or younger)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use annual labor income in euros as outcome variable and include age as a covariate. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged three or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged three or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged three or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged three or younger at the time of the move, who have another child afterward.

Figure B12: ATT: Receiving unemployment income, by gender, couple status and fertility profile (child three or younger)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. The regressions are run separately by gender, couple status, and fertility profile. Regressions use as an outcome an indicator for receiving UI and include age as a covariate. The plotted coefficient corresponds to the average annual treatment effect in the first four years of the move. Couple status is defined at the year of the move. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. The regressions are computed from Fideli data, and the sample described in section 2. Panel (a) correspond to coupled movers without a child aged three or younger at the time of the move, who do not have a new child afterward. Panel (b) corresponds to coupled movers with a child aged three or younger at the time of the move, who do not have another child afterward. Panel (c) corresponds to coupled movers without a child aged three or younger at the time of the move, who have one new child afterward. Panel (d) corresponds to coupled movers with a child aged three or younger at the time of the move, who have another child afterward.

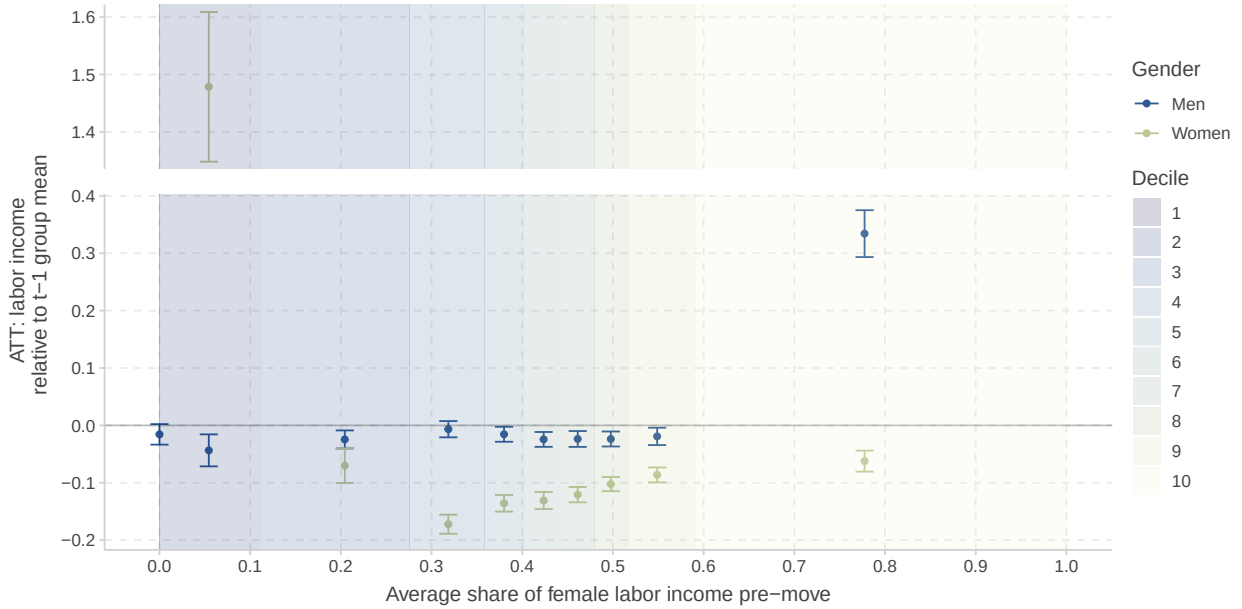
B.3 Results by primary earner category (deciles)

Table B1: ATT: Total household income by deciles of pre-move share of female income

	Deciles - share of female income									
	1	2	3	4	5	6	7	8	9	10
ATT	1984.549	1682.651	-1775.920	-3524.028	-3535.640	-3961.191	-3881.279	-3535.205	-3104.275	1972.586
	(320.0677)	(580.7692)	(422.2530)	(358.0256)	(328.2386)	(343.0139)	(334.0753)	(322.0715)	(333.5645)	(441.2901)
Pre-move average	32606.23	41895.03	52202.30	59299.71	57797.55	56980.92	56715.81	56257.11	55416.32	41362.16
Pre-move share female income	0.000	0.054	0.204	0.319	0.380	0.424	0.461	0.498	0.549	0.777
Number of households	11,497	3,991	7,744	7,744	7,744	7,744	7,745	7,743	7,744	7,745
Number of observations	54,111	18,917	36,833	37,003	36,946	36,754	36,555	36,716	36,665	36,341

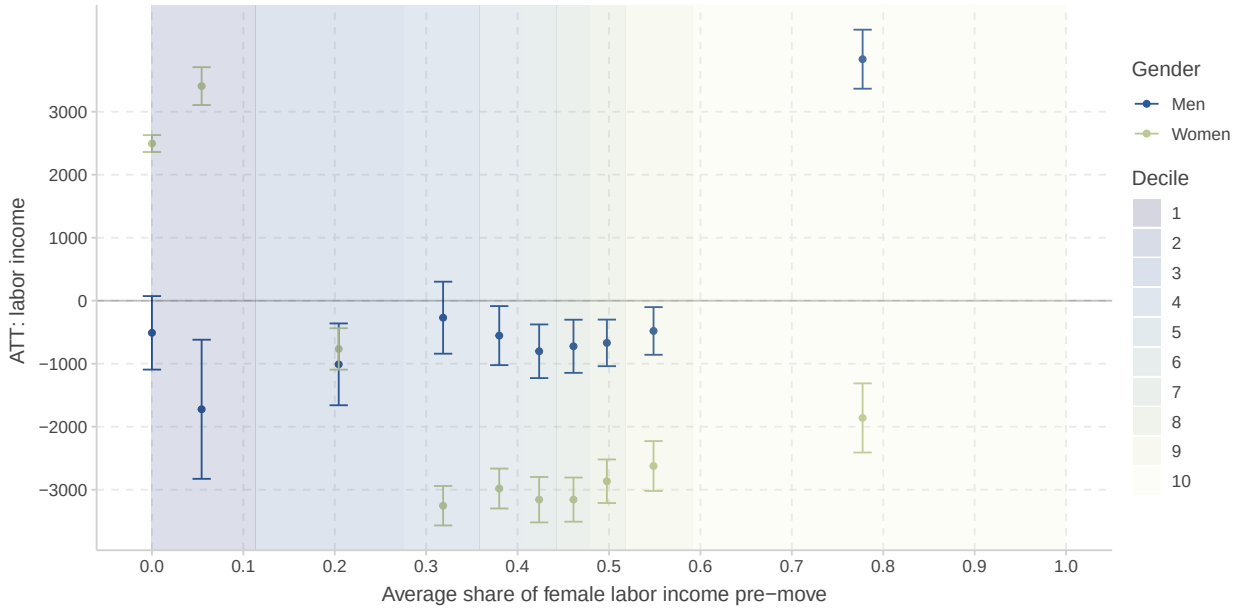
Note: Standard errors in parenthesis. The regressions are run separately by gender and share of female income category (deciles). Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender. The ATT coefficient corresponds to the average treatment effect by duration of exposure to the treatment. The sample is made of households who moved while in a couple between 2015-2019. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped.

Figure B13: ATT: Annual labor income, by gender and primary earner deciles, in percent



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender and share of female income category (deciles). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The plotted coefficient corresponds to the average annual treatment effect in the first three years of the move, relative to the group average one year before moving. The sample is made of households who moved while in a couple between 2015-2019. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression is: First decile: 54,111 (11,497 households); Second decile: 18917 (3,991 households); Third decile: 36,833 (7,744 households); Fourth decile: 37,003 (7,744 households); Fifth decile: 36,946 (7,744 households); Sixth decile: 36,754 (7,744 households); Seventh decile: 36,555 (7,745 households); Eighth decile: 36,716 (7,743 households); Ninth decile: 36,665 (7,744 households); Tenth decile: 36,341 (7,745 households).

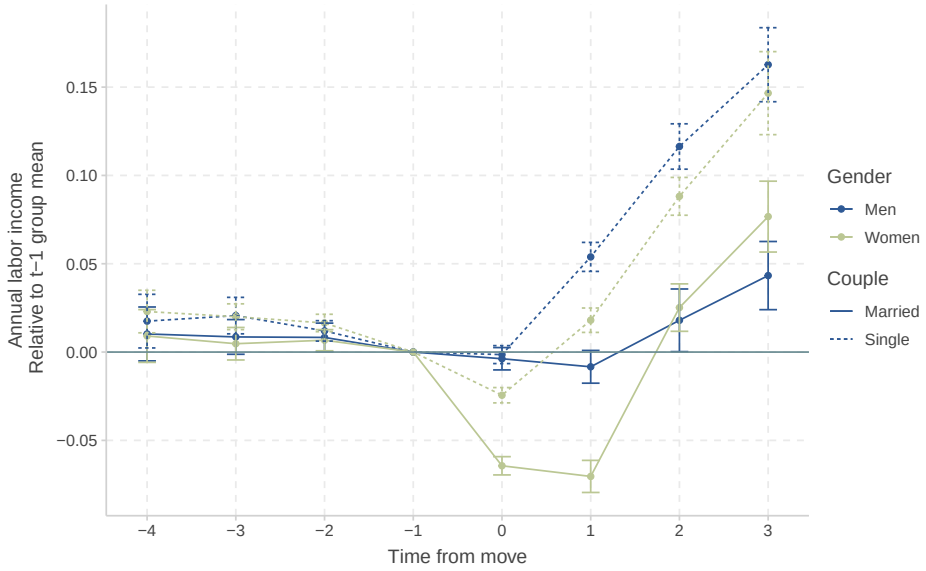
Figure B14: ATT: Annual labor income, by gender and primary earner deciles, absolute terms (euros)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions use annual labor income as an outcome, and include covariates for average age of couple members, and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The regressions are run separately by gender and share of female income category (deciles). Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing. Couple status is defined at the year of the move. The plotted coefficient corresponds to the average annual treatment effect in the first three years of the move. The sample is made of households who moved while in a couple between 2015-2019. The sample is further restricted to people living in an urban area in mainland France, aged 25-60, who moved without changing household composition during their move year. Same-sex couples are excluded, and balanced sampling is ensured by removing entire households if one member was dropped. The number of observations for each regression is: First decile: 54,111 (11,497 households); Second decile: 18917 (3,991 households); Third decile: 36,833 (7,744 households); Fourth decile: 37,003 (7,744 households); Fifth decile: 36,946 (7,744 households); Sixth decile: 36,754 (7,744 households); Seventh decile: 36,555 (7,745 households); Eighth decile: 36,716 (7,743 households); Ninth decile: 36,665 (7,744 households); Tenth decile: 36,341 (7,745 households).

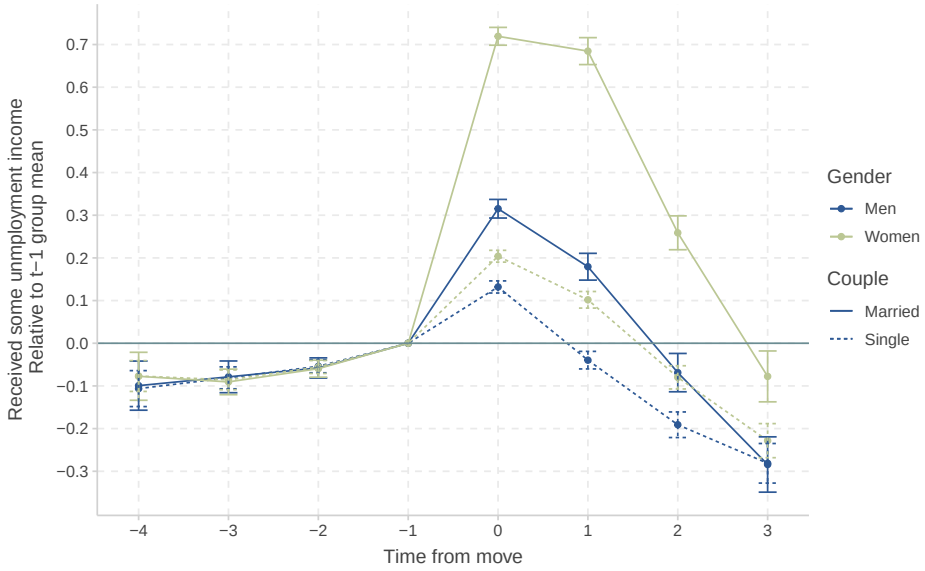
B.4 Alternative couple definitions: marriage or civil union

Figure B15: Effect of a move on annual labor income, by gender and marital status



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18.The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples defined as pairs of adults linked by a marriage or civil union (PACS). Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit). The number of observations for each regression is: single men: 1,070,419 (283,858 individuals); single women: 1,147,221 (294,512 individuals); married men: 896,564 (201,933 individuals); married women: 834,025 (198,006 individuals)

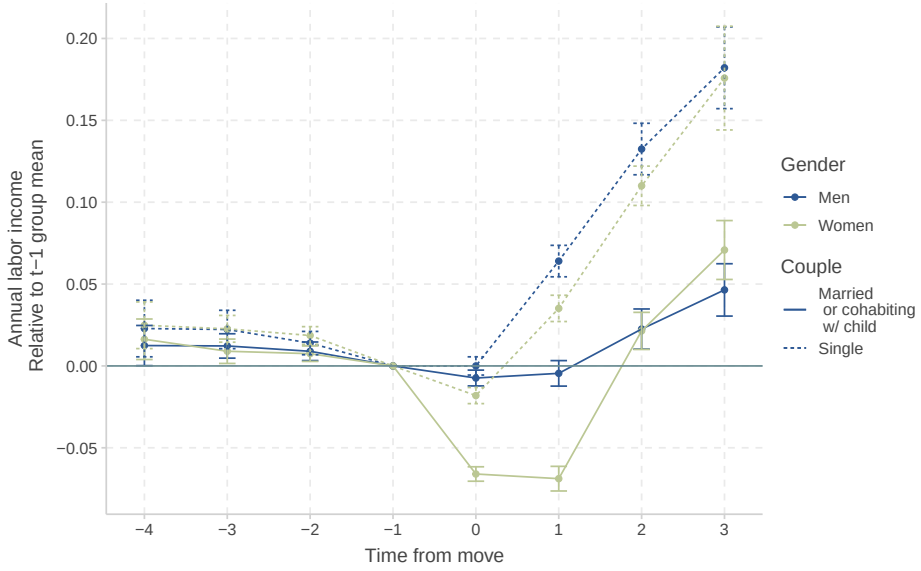
Figure B16: Effect of a move on the probability of receiving some unemployment, by gender and marital status



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status. Regressions use as an outcome an indicator for receiving UI, and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing in which a minor child is also living. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 1,070,419 (283,858 individuals); single women: 1,147,221 (294,512 individuals); married men: 896,564 (201,933 individuals); married women: 834,025 (198,006 individuals)

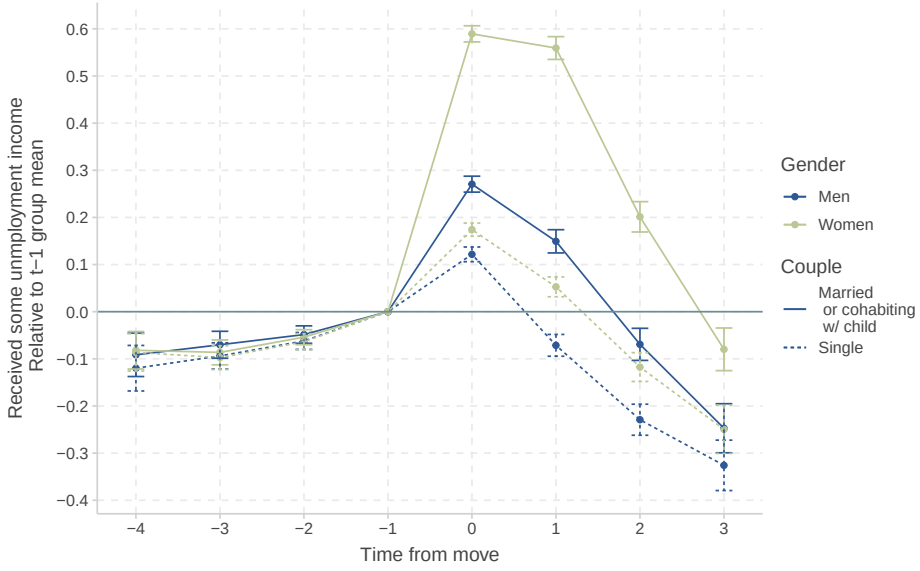
B.5 Alternative couple definitions: marriage, civil union, or cohabitation in presence of a child

Figure B17: Effect of a move on annual labor income, by gender and couple status (marriage or cohabitation with child)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status. Regressions use annual labor income in euros as outcome variable and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18.The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing in which a minor child is also living. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. Annual labor income is defined as the sum of wage and independent income (agricultural, industrial, commercial and non-commercial profit). The number of observations for each regression is: single men: 868,966 (236,550 individuals); single women: 941,264 (245,507 individuals); cohabiting men: 1,284,855 (288,513 individuals); cohabiting women: 1,239,617 (294,302 individuals)

Figure B18: Effect of a move on the probability of receiving some unemployment, by gender and couple status (marriage or cohabitation with child)



Note: Bars represent 95% simultaneous confidence band, computed from bootstrapped standard errors, clustered at the individual level. Regressions are run separately by gender and couple status. Regressions use as an outcome an indicator for receiving UI, and include covariates for age and dummies for the presence of children aged under 1, 3, 6, 10 and 18. The plotted coefficient corresponds to the average treatment effect by duration of exposure to the treatment, relative to the group average one year before moving. Couples are defined as pairs of adults linked by a marriage or civil union (PACS), or cohabiting in a two-adult housing in which a minor child is also living. Couple status is defined at the year of the move. The regressions are computed from Fideli data, and the sample described in section 2. The number of observations for each regression is: single men: 868,966 (236,550 individuals); single women: 941,264 (245,507 individuals); cohabiting men: 1,284,855 (288,513 individuals); cohabiting women: 1,239,617 (294,302 individuals)