The Gendered Effects of Children on Household Relocation

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Abstract

This paper studies how fertility and children reshape couples' relocation decisions and their gendered consequences for geographic job mobility, wages, and welfare. Using Australian panel data, I document that before children, both spouses' preferences equally predict long-distance moves; after the first birth, husbands' preferences dominate regardless of relative education and income, and the gender wage gap widens following relocation. To interpret these patterns, I develop a dynamic collective household model with endogenous fertility, joint job search, and bargaining over relocation under limited commitment, in which decision weights respond endogenously to spouses' outside options. The model highlights two mechanisms: children raise the payoff to specialization and weaken the primary caregiver's outside option, tilting decisions toward the male partner's preferences and gains. I validate these mechanisms using a quasi-experimental design based on a 2015 reform to Australia's Family Tax Benefit, which tightened eligibility for single-earner couples for a benefit paid directly to the non-working spouse. Estimates from the model show that fertility is a key margin shaping couples' geographic job mobility and that bargaining frictions induce moves that disproportionately lower women's wages and welfare. Eliminating this friction would not reduce aggregate mobility but would instead reallocate moves to those with more equal gains. Finally, I show that policies ignoring these internal dynamics—such as relocation subsidies—amplify within-household inequality, whereas family policies that strengthen women's bargaining position—such as childcare subsidies—promote more equitable moves without sacrificing mobility.

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1 Introduction

Geographic mobility plays a vital role in career advancement and wage growth, yet relocation decisions are often not made by individuals alone. For couples, especially the rising share of dual earners, relocation requires navigating joint career goals and trade-offs between individual and household gains. This often forces one partner to sacrifice career opportunities to support the other's move, creating a "tied" mover, a partner who relocates primarily for household's joint gains, despite individual losses. A large literature shows that women are disproportionately in this role and often experience subsequent employment and earnings losses. While this gendered pattern is well-documented, the intrahousehold dynamics that produce it, and how they are reshaped by major life events, remain less understood. This paper argues that the transition to parenthood is a critical turning point that fundamentally alters these dynamics, shifting not only the economic incentives for moving but also whose preferences ultimately drive the decision.

I shed light on households' joint decision-making using novel evidence from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, a longitudinal Australian household panel. Leveraging spouse-specific survey measures of moving preferences, I document a sharp shift around the first birth: before children, both spouses' stated preferences predict relocation equally; once a young child is present, men's preferences become the main driver of relocation choices, regardless of relative spousal education and income. Two additional facts reinforce this pattern: job-related moves rise around childbirth but are concentrated in men's careers, and the spousal wage gap widens significantly after a move. Together, these facts point to changes not only in economic incentives but also in the relative decision-making power that governs high-stakes household decisions.

The goal of this paper is to understand these empirical patterns and to show how fertility and children reshape the frictions that govern job-related migration for couples, along with the consequences for men's and women's geographic job mobility, wage growth, and welfare. Specifically, I aim to quantify how much of these gendered relocation patterns reflect household joint maximization—where couples choose to de-prioritize the primary carer's career—versus frictions in the joint decision-making process. To that end, I develop and estimate a dynamic structural model of household with three key features. First, to explain the observed timing of moves around childbirth, the model treats both fertility and relocation as endogenous choices, allowing couples to coordinate

these major life decisions. Second, to capture the observed importance and shift in decision power, the model frames relocation as the outcome of a bargaining process under limited commitment. In this framework, relative spousal influence over decisions is not fixed; it shifts endogenously with each partner's outside options defined as non-cooperation, which are asymmetrically affected by the arrival of children through their differential impacts on employment prospects, childcare responsibilities, and the value of non-market time. Because relocation is a high-stakes, discrete choice with potentially large and divergent individual gains and losses, this framework clarifies how couples navigate these decisions and how shifts in decision-making power shape both joint choices and individual outcomes. Third, this bargaining process is embedded in a dynamic joint job-search environment with stochastic wage offers and search frictions, where spouses are unable to coordinate non-local offers. The relocation choice creates a unique collective labor-supply problem: a move presents a bundle of wage opportunities simultaneously (a gain for one spouse and, often, a loss for the other), generating incentives for specialization that increase joint household utility while also creating dynamic individual costs.

The framework delivers two mechanisms through which fertility and children reshape migration decisions and outcomes. First, the specialization channel operates through efficient time allocation: with young children, market childcare costs and the rising value of home production make temporary single-earner arrangements attractive. Relocation choice uniquely interacts with this by bundling wage changes—one spouse's career gain often coincides with the other's job separation—increasing the value of single-offer moves. The bargaining channel operates through shifts in outside options. Children asymmetrically affect spouses' outside options due to the unequal burden of childcare, and they often push one spouse (typically the mother) toward non-employment or reduced hours, thereby deteriorating her outside option via immediate employment risk and depreciation of human capital and future wages. Under limited commitment, this weakened outside option reduces her ability to veto moves that are privately harmful or to negotiate for a larger share of the relocation surplus.

To validate and separately identify these mechanisms, I exploit Australia's 2015 reform of Family Tax Benefit Part B, which tightened eligibility for a subsidy supporting single-earner couples with children, with the payment made directly to the primary carer. This setup makes the 2015 cut an informative quasi-experiment for the specialization and bargaining margins relevant for migration decisions. On the specialization margin, tightening eligibility reduces the return to a

single-earner arrangement for couples, especially for couples with young children. On the bargaining margin, because the payment is made to the primary carer, the cut directly decreases her private outside option when she is non-employed or has low earnings. Put differently, the same legislative change altered couples' joint returns to specialization and, separately, lowered the wife's outside option, thereby weakening her bargaining power. Using a difference-in-differences design around the income threshold that leverages heterogeneity in exposure to these channels among affected couples, I find that the reform reduced husband-led job-related moves among couples with young children—precisely where specialization incentives were strongest. Simultaneously, it increased such moves among families where wives had low incomes, consistent with a loss of bargaining power after the transfer received by the primary carer was eliminated. These results validate the model's dual channels and show how policy can shift the joint decisions that generate gendered outcomes.

I estimate the model using simulated method of moments, targeting HILDA-based moments on relocation, labor supply, wage dynamics, and fertility, while also matching the effects of the FTB-B reform on migration through its separate channels and reproducing the observed shift in decision-making power documented in survey responses on stated reasons for moving. First, the estimates highlight how migration and fertility decisions interact as couples navigate dynamic trade-offs created by stochastic offer arrivals. With search frictions, joint non-local offers are rare, so couples must choose between accepting a good offer for one spouse now or waiting for a joint opportunity that may never arrive. Endogenous fertility directly interacts with this trade-off: the presence or expectation of children raises the option value of single-offer moves by increasing specialization gains, and relocation amplifies this relative to local wage shocks by delivering joint changes in relative wages. In a counterfactual where both spouses can always simultaneously receive offers, the increase in moves for men's jobs around childbirth disappears. These results underscore that abstracting from fertility decisions risks missing the dynamic incentives and trade-offs that shape couples' relocation choices and gendered outcomes. The model predicts that couples anticipating a birth often accept such moves preemptively; however, while these moves raise joint household utility, they create dynamic private costs for the primary carer's wages and human capital.

Moreover, bargaining frictions also materially affect efficiency. Relative to a counterfactual with equal bargaining weights, about 10 percent of efficient moves (those that would create joint surplus) are foregone, especially among couples with young children, while roughly 9 percent of realized moves have negative joint surplus but occur because unequal bargaining power allows

one spouse to impose their preference. These inefficient moves disproportionately harm women's wages and welfare. At the same time, the results imply that equalizing bargaining power would not substantially reduce overall mobility; instead, it would reallocate moves toward cases with more equal gains. Thus, these results imply that well-designed policies can improve distributional inequality in migration outcomes without sacrificing aggregate mobility.

Finally, I conduct counterfactual policy analyses and demonstrate how different interventions operate through distinct channels with varying effectiveness for mobility, wages, and welfare, highlighting how ignoring intra-household dynamics can lead to misguided interventions. For instance, a moving subsidy raises mobility but, by ignoring bargaining frictions, it exacerbates within-household wage and distributional inequality. In contrast, family policies that insure the primary caregiver against career interruptions (e.g., childcare subsidies) promote relocations with more equal wage growth and welfare, while only modestly lowering overall mobility. In turn, I find that the migration margin is an important channel for the effects of family policy: by comparing economies with and without migration, I show that relocation responses explain about 10 percent of the reduction in the lifetime spousal earnings gap generated by childcare subsidies, suggesting that analyses of family policy that hold location fixed risk underestimating their true impact. The policy experiments underscore that the internal dynamics of household decision-making and bargaining are a critical mechanism behind gender inequality.

This project contributes to several strands of literature. First and foremost, this paper advances the understanding of how households make joint economic and family decisions. Theoretical and empirical studies of intra-household decision making emphasize that households are multi-agent units making joint decisions (Manser & Brown, 1980; McElroy & Horney, 1981; Thomas, 1990). However, a central challenge in modeling household behavior has been to empirically identify the internal dynamics of cooperation and conflict. This paper addresses this challenge by arguing that major, discrete choices like relocation provide a uniquely transparent setting in which to observe these dynamics in action. My core empirical contribution is to provide direct evidence of a shift in this process: using unique spouse-level preference data, I present evidence of a fundamental change in the household decision-making process. These findings offer validation for the theoretical predictions of the literature on household bargaining.

Prior studies have also investigated the presence of limited commitment in households, and its

impact on choices including labor supply, consumption, savings, and fertility, as well as the implications for inefficiency and welfare (e.g. Lundberg et al., 2003; Basu, 2006; Rasul, 2008; Fernández & Wong, 2014; Voena, 2015; Doepke & Kindermann, 2019; Lise & Yamada, 2019). In particular, my paper relates to recent work by Doepke & Kindermann (2019), who develop a model in which partners bargain over fertility under limited commitment and show that, while spousal agreement matters, frictions arise because childbearing asymmetrically changes spouses' outside options. I build on that framework in two ways. First, I extend the insight that for discrete choices with unequally distributed costs and benefits—such as fertility or migration—spousal agreement is central, and I provide direct evidence using survey data on each spouse's stated preferences. Second, I explicitly model the mechanisms and dynamic consequences through which children affect men's and women's outside options, showing that childbirth not only generates asymmetric outside options but also materially alters household bargaining and decisions *after* children arrive.

Second, this paper builds a bridge between the household bargaining and family migration literatures. The theoretical implications of limited commitment and bargaining over family migration were first highlighted by Lundberg & Pollak (2003). My structural model is among the first to treat relocation decisions as a bargained outcome, quantify how intra-household bargaining shapes relocation choices, and provide a direct empirical test of these theories. Building on the dynamic search frameworks of Kennan & Walker (2011) and others, I incorporate spousal ties and joint relocation choices into the analysis. Recent work has developed rich models of joint search and location choice (e.g. Gemici, 2011; Kennan & Walker, 2011; Guler et al., 2012; Foerster & Ulbricht, 2023) and documented their implications for gendered labor market outcomes, particularly for dual-earner couples (e.g. Costa & Kahn, 2000; Venator, 2020). While this literature has mostly emphasized external frictions, such as the difficulty of coordinating two careers across locations given geographic mismatch in occupations and wages, my contribution is to introduce the importance of internal commitment frictions as a driver of migration outcomes. Moreover, this paper provides a unified account of the gendered consequences of relocation. Existing studies highlight the roles of gendered labor market opportunities and norms (e.g. Gemici, 2011; Jayachandran et al., 2024), as well as how children affect long-distance migration (e.g. Liu et al., 2010; Anstreicher & Venator, 2022). I show in detail how children reshape couples' economic incentives and intra-household bargaining in ways that generate gendered labor market trajectories. Further, this framework jointly models fertility and relocation in a unified household decision-making setting to analyze how their interaction both

generates joint household gains and creates persistent within-household inequality.

Third, I contribute to the literature on joint household labor supply and its implications for individual labor market outcomes. Existing work documents how changes in one spouse's wage affect the other's labor supply (e.g., Chiappori, 1992; Blundell et al., 2005), and research on joint household search shows that modeling joint decision-making is crucial for understanding individual labor supply patterns (e.g., Dey & Flinn, 2008; Flabbi & Mabli, 2018). Relocation poses a distinct problem: it shifts both spouses' wage prospects across locations simultaneously, rather than changing one spouse's wage in isolation, creating scope for joint labor supply choice that is unavailable without moving. I show that these joint shifts can rationalize larger adjustments in household labor supply than standard local wage changes, while amplifying dynamic, spouse-specific consequences for earnings and employment. Further, this paper contributes to work on women's dynamic labor market choices and on the interaction between fertility and household decisions. Prior studies—especially those examining responses to childcare needs—include Francesconi (2002); Bick (2016); Yamaguchi (2019), and recent work such as Adda et al. (2017); Jakobsen et al. (2022) incorporates fertility as a central margin shaping women's career dynamics. I add to this literature by showing how joint job search interacts with couples' fertility decisions, how joint labor supply choices co-move with fertility in the presence of employment frictions and uncertainty, and how these forces generate gendered consequences.

Finally, this paper contributes to the literature on the gender wage gap and the evaluation of family policy (e.g. Blau & Kahn, 2017; Angelov et al., 2016; Kleven et al., 2019; Olivetti & Petrongolo, 2017). At the same time, a growing literature shows that the intra-household distribution of bargaining power is endogenous and also policy sensitive (e.g. Low et al., 2018; Verriest, 2024). I demonstrate in this paper that the shift in relative bargaining power triggered by parenthood is a significant mechanism that perpetuates gender inequality in wages and welfare, and offer a perspective on policy evaluation that ignoring intra-household bargaining can lead to misreading a policy's impact.

2 Motivating Facts

I first document empirical patterns indicating that moving decisions and outcomes are closely associated with the birth of the first child. Two facts emerge that suggest how fertility and children influence both relocation choices and their consequences. First, job-related moves cluster around childbirth and are often accompanied by widening spousal gaps in wages and employment. Notably, the gender gap arises not only from declining mobility among women but also from increased job-related mobility among men during this period. Second, when I examine intra-household decision-making using data on spousal preferences over moving, couples' relocation choices are predicted equally by either spouse's preferences prior to children, but with children the man's preferences overwhelmingly determine whether the household relocates.

Data This study utilizes the longitudinal dataset from Household, Income, and Labour Dynamics in Australia (HILDA). HILDA is a representative one in a thousand sample of the Australian population, and it is an ongoing annual panel dataset that has been collected since 2001. The dataset provides comprehensive information on household members and their individual characteristics, allowing for the analysis of joint spousal characteristics. The longitudinal nature of the dataset enables the examination of changes the households experience over time.

For the analysis, I construct an event history for each respondent covering employment, wages, relocation, and child presence. Annual employment and wage information for all household members allows me to study labor market decisions and outcomes for both spouses in a joint household context. HILDA also collects monthly relocation histories. While specific addresses are not disclosed, the data report the distance (in miles) between old and new residences. I restrict attention to moves exceeding 100 miles to ensure that commuting to the prior job is impractical.Whenever a household moves, *each* spouse reports the primary reason from a list of 21 categories that can be grouped into work-, family-, housing-, neighborhood-, or spouse-related reasons. I use the husband–wife reason pair to characterize joint motives for relocation. Specifically, I define "Move for i's job" as moves in which spouse i reports a work-related primary reason, regardless of spouse j's reason; this definition includes cases where both spouses move for their jobs. The reason for using this variable is to understand job-related moves, without inferring the reason from post-move labor market outcomes. Simply looking at increase in income as a way to identify job-related moves

could be noisy. Finally, HILDA contains detailed information on all household members, including children, which allows me to track basic characteristics of each child.

Because I am interested in relocations among working-age couples, the main sample includes cohabiting or married couples in which both spouses are aged 23–55, are observed as a couple in the current and prior waves, and have complete information on education, employment, earnings, relocation, and child presence. I exclude couples who have ever been separated or divorced and those that later separate in the panel. I restrict to waves 2002–2019 because relocation information is not available in 2001. Summary statistics of the sample are provided in Appendix Table A.1. Table 1, Panel A, presents average annual move frequencies. Consistent with prior work, couples are less likely to move than singles. In my sample, about 20% of households have moved at least once. Additionally, 40% of the moves occur with children under the age of five, and about 20.5% of couples within two years of childbirth move, indicating that relocation often occurs near childbirth or with young children present.

Table 1: Descriptive Statistics on Moves

Panel A: Move Frequency (average across waves)

Sample	
Total	0.031
Single Male	0.041
Single Female	0.040
Married Couple	0.028

Panel B: Moves among Couples

Moved Ever	19.4%
% of Movers with Pre-School Children	40.0%
% Couples who Move within $t-2/t+2$ of First Childbirth	20.5%

Note: Sample includes individuals of working age, between 23 and 55, and have complete information regarding education, employment, earnings, moving history, and child presence. Couple sample is restricted individuals who have been coupled in the current and previous periods. Sample periods span from 2002 to 2019. Moves are restricted to long-distance moves, where the distance between current and previous locations are above 100 miles.

2.1 Gendered Labor Market Outcomes of Moves

I begin by documenting how long-distance moves are associated with labor market outcomes, focusing on gender differences and the presence of children. In this section, I show that prior to childbirth, both men and women experience similar wage gains from relocation. With children, however, moves are associated with larger declines in women's employment and wages, while men experience positive changes. I document these patterns in an event-study framework, and employ

an event-study specification expressed as follows:[2]

$$Y_{ist}^{g} = \sum_{\tau \neq -1} \alpha_{\tau}^{g} \mathbf{1}\{\text{event}_{is} = \tau\} + \sum_{k} \beta_{k}^{g} \mathbf{1}\{\text{age}_{ist} = k\} + f(z_{ist}) + \lambda_{s} + \theta_{r(i,s)} + \nu_{ist}^{g}, \tag{1}$$

where Y_{ist}^{g} represents the outcome variable of interest for individual i of gender $g \in \{m, f\}$ in year s at event time t. The event time t is indexed relative to one year before the relocation. The outcome variable Y_{ist}^{g} includes labor force participation and wages for both the husband and wife. The equation regresses the outcome variable on event time dummies, controlling for age and calendar year indicators as in Kleven et al. (2019). The age indicators capture life-cycle trends, while the calendar year indicators account for broader time trends. Additionally, I control for the education levels of both spouses, their interactions, denoted as z_{ist}, and additionally control for child-age dummies where applicable. Lastly, I employ year (λ_s) and state ($\theta_{r(i,s)}$) fixed-effects. The event time dummy at $t = -1$ is omitted, meaning that the event time coefficients α_{τ}^{g} represent deviations from the baseline period. Using this event study design, I analyze how relocation is associated with changes in labor force participation and wages for husbands and wives. Leveraging annual panel data on employment and wages, I examine longer-term trends following relocation.[3]

I examine post-move labor market outcomes separately for couples with and without children.[4] The childless sample includes couples who have no dependent children aged 0 to 18 during the event study window, while the sample with children includes all others. For the child couple sample, I include child's age dummies, to understand the changes in employment and wages without child events like childbirth changing the outcomes. Figure 1 shows that post-move labor market outcomes vary substantially depending on the presence of children. For couples without children, there is essentially no gender difference in labor market outcomes: both men and women experience minimal changes in employment and similar post-move wage gains. However, for couples with children, a clear gender divergence emerges. Fathers' post-move employment and wages mirror those of non-fathers, while mothers experience a significant drop in employment for up to three years after moving, along with persistent wage declines lasting up to four years.

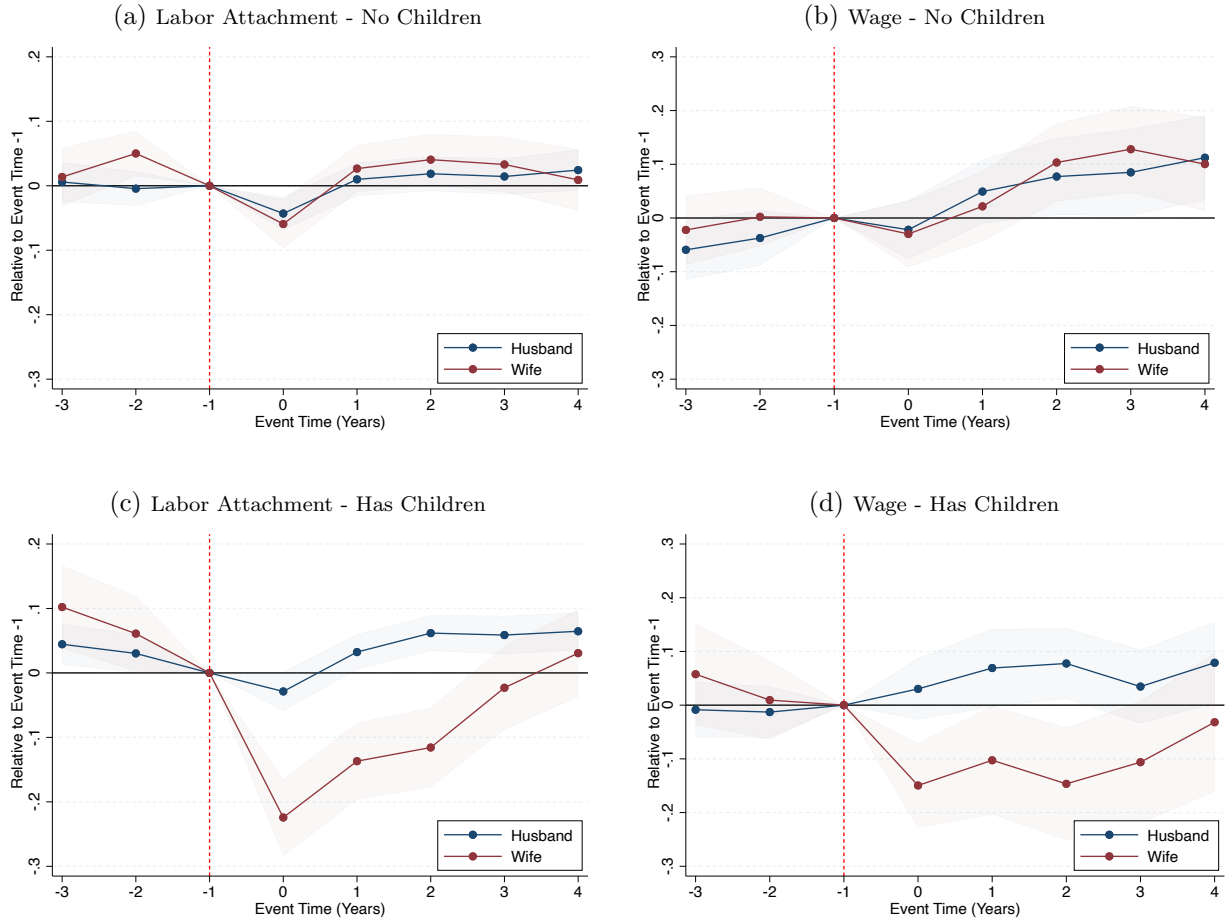
Figure 2 reports average annual rates of job-related moves in which only one spouse experiences

[2] I provide more in-depth analysis of moving patterns in HILDA in Appendix A.2

[3] It is important to acknowledge that relocation is not an exogenous event. The purpose of this analysis is not to estimate a causal effect of relocation on labor market outcomes, but rather to document patterns in labor outcomes following a relocation event.

[4] In the Appendix A.2, I provide the same analysis for all sample.

Figure 1: Post-Move Labor Market Outcomes by Child Presence

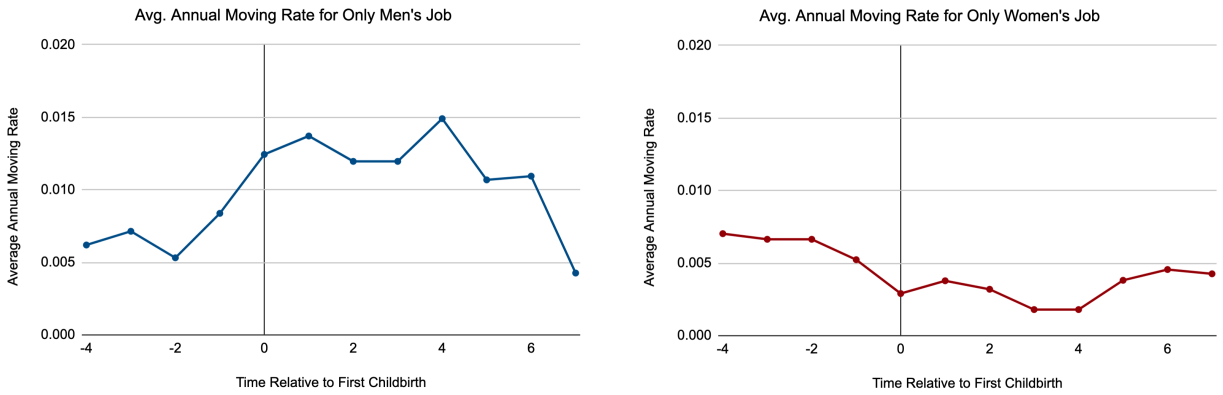


Note: These figures depict the event study coefficients derived from equation 1. They illustrate the percentage change (depicted as decimals) in outcome variables relative to one year before the move. Blue corresponds to coefficients for the husband sample, and red represents coefficients for the wives sample.

a wage increase near childbirth. Specifically, I consider moves where spouse i reports a job-related reason for moving and i's wage rises, while spouse j's wage does not increase. This aims to examine moves that involve a "tied" spouse in migration. Two patterns stand out. First, prior to birth, rates are similar for men and women, consistent with the earlier evidence that pre-child moves generate minimal gender gaps in outcomes. Second, around childbirth, these moves increase for men but decline for women; for men, the rate nearly triples when children are pre-school aged and then falls thereafter. Consistent with the evidence above, stated reasons indicate that job-related moves for men increase with children, while they decline for women. These patterns suggest childbirth asymmetrically alters mobility frictions: they relax for men and tighten for women.

Overall, these findings reveal life-cycle patterns in geographic job mobility for couples and

Figure 2: Average Annual Moving Rates for Job-Related Moves



highlight gender differences in post-move outcomes. While both spouses' job mobility is constrained by their partner's labor market attachment, this constraint appears to relax for men in the presence of children, as mothers face lower employment and earnings for several years after relocating. Together, the results suggest that children introduce gender-asymmetric constraints on job mobility that disproportionately affect women.

2.2 The Role of Spousal Moving Preferences on Relocation Decisions

The results above show that couples tend to move for men's jobs near childbirth, while such moves decline for women. A natural question is whether these patterns simply reflect efficient joint income maximization given women's potential reductions in labor supply due to childcare.

To probe the underlying decision-making process, I shift from examining post-move outcomes to who drives the decision to move in the first place. The previous section documents highly asymmetric labor market outcomes from relocation when children are present; understanding whose preferences matter for the decision to move is therefore crucial for interpreting these consequences. In this section, I use a unique survey question that elicits each spouse's preferences over relocation to provide evidence on the extent to which each spouse's desire to move predicts actual relocations, and how this relationship shifts with the presence of children.

To substantiate these findings, I use additional self-reported questionnaire data (SCQ) from HILDA, collected biennially from waves 4 to 20. In this survey, both spouses are separately asked:

"Now think about the local area in which you live.
How strong is your preference to continue living in this area?"

Respondents selected from five options: (1) Strong preference to stay, (2) Moderate preference to stay, (3) Unsure/No strong preference to stay or leave, (4) Moderate preference to leave, and (5) Strong preference to leave. Based on these responses, I classify individuals selecting options (1), (2), and (3) as "preferring to stay", while those selecting options (4) or (5) are classified as "preferring to leave." Consequently, four possible scenarios arise within a couple: (1) both partners want to stay, (2) both want to leave, (3) the wife wants to leave while the husband wants to stay, and (4) the husband wants to leave while the wife wants to stay.[5]

Using these four states, I estimate a regression model where relocation outcomes are regressed on the ex-ante relocation preferences of spouses in the previous period. The model is specified as follows:

$$\text{Moved}_{h,t} = \beta_0 + \beta_f \text{she leave/he stay}_{h,t-1} + \beta_m \text{she stay/he leave}_{h,t-1} + \beta_a \text{both leave}_{h,t-1} + \epsilon_{h,t} \quad (2)$$

where $\text{Moved}_{h,t}$ is an indicator equal to 1 if a couple relocates at next period t, which, here, a period is defined as two-years. The standard errors are clustered at the couple-level. The regressors capture combinations of spousal preferences in the previous period. Specifically, $\text{she leave/he stay}_{i,t-1}$ identifies couples in which the wife wants to leave and the husband wants to stay. Similarly, $\text{she stay/he leave}_{i,t-1}$ represents cases where the woman prefers to stay while the man prefers to leave. Finally, $\text{both leave}_{i,t-1}$ captures mutual preference to relocate. The constant β_0 reflects the baseline probability of relocation when both partners prefer to stay. The parameters β_f, β_m, and β_a quantify the increase in the probability of relocation compared to the baseline for couples in each of the three other states.

To interpret the regression outcomes, consider the following three stylized decision rules. First, if only wives have full control over household relocation decisions, the results would indicate $\beta_f = \beta_a > 0$ and $\beta_m = 0$. Second, if each partner's moving preference independently influences the probability of moving, the estimated coefficients would be $\beta_f > 0$, $\beta_m > 0$, and $\beta_a = \beta_f + \beta_m$. Finally, if relocation can only occur only with mutual agreement (i.e., each spouse has veto power),

[5] In the Appendix Table B.1, I provide the distribution of the combination of these responses, as well as how it differs by child presence, and I show that there is no gender difference in the preferences, and while the preference to leave decrease for both spouses with children, there is no gender difference within the group.

the results would show $\beta_f = \beta_m = 0$ and $\beta_a > 0$. Table 2 presents the least squares estimates of this regression using the full sample, as well as subsamples by child presence. To test whether the coefficients differ significantly, I perform tests of the null hypothesis that the corresponding regression coefficients are equal.[6]

Table 2: Spousal Moving Preferences on Probability of Move

	All	No Child	Young Child
She Stay/He Leave (β_m)	0.034***	0.038*	0.079***
	(0.009)	(0.023)	(0.024)
She Leave/He Stay (β_f)	0.036***	0.038*	0.029
	(0.009)	(0.020)	(0.019)
Both Leave (β_a)	0.115***	0.146***	0.097***
	(0.014)	(0.030)	(0.028)
Constant	0.036***	0.060***	0.033***
	(0.002)	(0.005)	(0.004)
N	15935	3609	3211
$\beta_m = \beta_f$	0.91	0.98	0.09
$\beta_f = \beta_a$	0.00	0.00	0.04
$\beta_m = \beta_a$	0.00	0.00	0.61
$\beta_m + \beta_f = \beta_a$	0.02	0.09	0.80

Note: This table reports the coefficients $\beta_f, \beta_m, \beta_a$ from Equation 2. Each column represents a linear regression of a binary variable indicating whether the couple has moved in period t. Column 1 presents the coefficients for the entire sample, while columns 2-3 present coefficients for subsamples categorized by child presence, including no children and having preschool children. The constant term (β_0) captures the baseline moving rate of couples in which both partners state they do not intend to leave. I also report the test for null hypothesis between coefficients. Appendix Table B.3 reports results with age, income and joint-employment covariates, and with couple-level fixed effects. The results are robust. $* \ p < 0.10$, $* * \ p < 0.05$, $* * * \ p < 0.01$

The results for the pooled sample reveal significant increases in the probability of moving for couples in each of the three alternative states compared to the baseline. Notably, the agreement term (β_a) exhibits the largest among all the coefficients, indicating its substantial impact on the probability of relocation. In fact, the effect size of β_a is 1.6 times greater than the combined effect of β_f and β_m, and I reject the null hypothesis that the sum of two coefficients are equal to the agreement term β_a at $p = 0.02$. This suggests that when both partners agree on their preferences to leave, the incremental likelihood of moving is more than three times higher compared to couples where either the husband or wife disagrees on the relocation intentions. These findings underscore

[6] In Appendix B.1, I show that while the the portion of the sample with stated preference to leave slightly decreases with children for both men and women, there is no gender difference for couples with and without children. Therefore, the results are not driven by the fact that preferences change differentially by gender with child presence.

the critical role of agreement in household relocation decisions.

Next, I analyze how spousal preferences on relocation decisions changes with the presence of children. Among childless couples, each spouse's preference has less statistically significant independent influence on the likelihood of moving, and agreement strongly predicts moves—couples who mutually prefer to relocate are 3.6 times more likely to move than those in disagreement, when comparing the ratio of incremental coefficients. However, when children are present, the man's preferences dominate the moving decisions. In case of disagreement, the probability of moving is much higher under man's preference to leave, compared to the opposite scenario, and $\beta_m = \beta_f$ is rejected at $p = 0.09$. More importantly, conditional on the man preferring to leave, the probability of moving when the woman wants to stay is statistically indistinguishable from the probability of moving when both spouses agree, with the null hypothesis $\beta_m = \beta_a$ not rejected at $p = 0.61$. This suggests that the woman's preferences do not alter the probability of moving when the man prefers to leave. [7]

These results show that couples are more likely to move according to the man's preference, regardless of the woman's. These findings suggest that while spousal agreement remains essential for relocation, women's ability to influence relocation decisions weakens in the presence of young children. More importantly, this pattern persists across subsamples defined by relative income and education. In Table 3, I report results of these regressions, for sub-samples conditional on the woman having higher educational degree than the man, or the woman having higher annual income than the man when their moving preferences were elicited. The results show that agreement continues to be important for these couples with no children, while the preference of the woman with higher relative education seem to exhibit greater predictive power on the moving decision than the man's. However, once young child is present, the man's preference has a much larger and more significant association with the moving decisions in the same way it did in the full sample: couples are more likely to move according to the man's preference, even when she is more educated or currently the higher earner.

This shows that these patterns are not necessarily generated by lower (potential) income of women relative to their partners with children, but rather a fundamental shift in intra-household

[7] In Appendix Table B.3, I report the results of these regressions, including covariates age, pre-move income and joint-employment, and couple-level fixed effects. All the results are robust. I also report results for the robustness check, dropping any "unsure" responses. These results are similar to the main result.

decision-making with children. Additionally, in the Appendix B, I show that these ex-ante moving preferences indeed matter: of moves that occurred despite ex-ante spousal disagreement, spouses who disagreed experience lower satisfaction related to their local labor market opportunities, neighborhood, home, and community upon moving. These results indicate that having less decision-making power over a move matters in terms of individual life satisfaction and utility.

Table 3: Spousal Moving Preferences on Probability of Move: By Relative Income and Education

	Women Has Higher Degree			Women Has Higher Income		
	All	No Child	Young Child	All	No Child	Young Child
She Stay/He Leave (β_m)	0.028***	0.033	0.089***	0.040***	0.043	0.126***
	(0.010)	(0.029)	(0.021)	(0.014)	(0.033)	(0.045)
She Leave/He Stay (β_f)	0.044***	0.084***	0.015	0.034**	0.046	0.069
	(0.009)	(0.024)	(0.022)	(0.013)	(0.030)	(0.047)
Both Leave (β_a)	0.121***	0.177***	0.094***	0.137***	0.186***	0.183***
	(0.010)	(0.026)	(0.022)	(0.014)	(0.031)	(0.042)
Constant	0.035***	0.064***	0.037***	0.036***	0.058***	0.020*
	(0.002)	(0.006)	(0.005)	(0.003)	(0.008)	(0.011)
N	5256	1020	1084	4417	1246	477
$\beta_m = \beta_f$	0.23	0.16	0.01	0.76	0.95	0.37
$\beta_f = \beta_a$	0.00	0.01	0.01	0.00	0.00	0.06
$\beta_m = \beta_a$	0.00	0.00	0.86	0.00	0.00	0.33
$\beta_m + \beta_f = \beta_a$	0.00	0.18	0.79	0.01	0.07	0.87

$* \ p < 0.10$, $* * \ p < 0.05$, $* * * \ p < 0.01$ Note: This table reports the coefficients $\beta_f, \beta_m, \beta_a$ from Equation 2. Each column represents a linear regression of a binary variable indicating whether the couple has moved in period t. Lower panel includes null hypothesis tests for the coefficients in the regressions. First three columns are regressions using subsample of couples where the woman has higher educational degree than the man. Last three columns are results using subsample of couples where at the time of stated preferences, the woman currently has higher annual income than the man. All standard errors are clustered on couple level. In the panel below, I report the test for null hypothesis between coefficients.

I further investigate the relationship between spousal disagreement on relocations and the potential shift in bargaining, specifically focusing on job-related moves. The central question is whether such spousal disagreement necessitates higher joint household gain, or a "compensation" in the form of additional wage gains, from the spouse who initiates the job-related move (the "leading spouse") to the spouse who follows them (the "tied spouse"). For instance, suppose a woman receives a job offer in a non-local area and wishes to relocate, while her husband strongly prefers to stay. In this situation, I investigate whether the wage offer the woman receives is higher (compared to a scenario where the husband does not have a strong preference to stay) for the move to occur under disagreement. I explore whether this relationship differs based on the gender of the

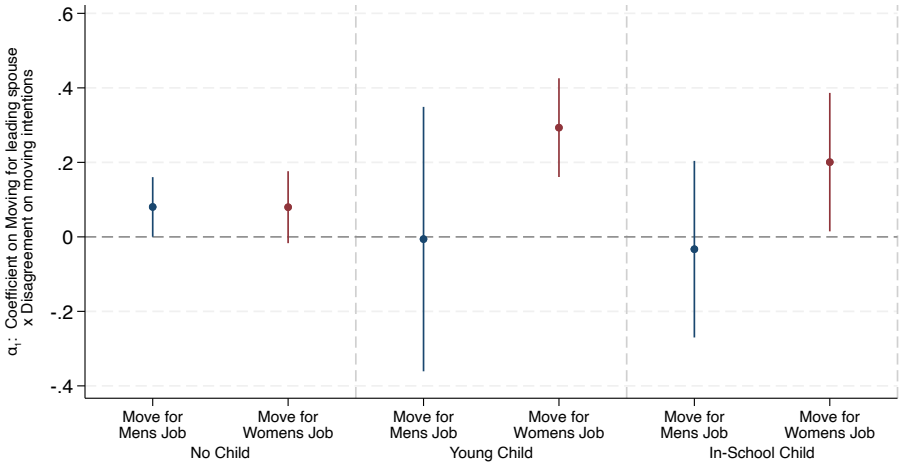
leading spouse and the presence of children in the household.

To address this question, I employ simple regressions as follows:

$$\begin{aligned}\log \text{wage}_{i,t} - \log \text{wage}_{i,t-1} =& \alpha_0 + \alpha_1 \text{Moved for spouse } i\text{'s job}_{h,t} \cdot \textbf{Disagreement}_{h,t-1} \\ &+ \alpha_2 \text{Moved for spouse } i\text{'s job}_{h,t} + \alpha_3 \text{Disagreement}_{h,t-1} \\ &+ X'_{h,t-1}\gamma + \lambda_t + \theta_{r(h,t)} + \varepsilon_{i,t}\end{aligned} \tag{3}$$

I control for the lagged employment status of both spouses, with year (λ_t) and location ($\theta_{r(h,t)}$) fixed-effects.[8] I cluster SE at the couple-level. I run this regression separately by the gender of the initiating spouse. Here, $\text{Disagreement}_{h,t-1}$ equals one when the tied spouse's ex-ante moving preference was to stay, while the initiating spouse's preference was to leave. The outcome $\log \text{wage}_{i,t} - \log \text{wage}_{i,t-1}$ denotes the change in wage of the initiating spouse. In this context, a positive α_1 indicates an additional increase in the wage of the leading spouse i from a move with ex-ante disagreement, compared to moves that occurred without disagreement. Figure 3 presents the coefficient α_1 from the regression results. The analysis uses pooled data for all couples and also examines samples divided by the presence of children.

Figure 3: Disagreement on Leading Spouse's Wage Increase from Job-Related Relocation



Note: This table reports the coefficient α_1 from equation 3, and I report 95% CI. Covariates include lagged employment status of both spouses, with year (τ_t) and location (θ_t) fixed-effects. The figure includes results from separate regressions by presence of children by the youngest child's age.

[8]For location fixed effects, I control by state and greater capital city statistical area to account for wage changes associated with geographic variations in the cost of living.

Figure 3 provides insights into the relationship between spousal disagreement on job-related relocations and wage increase experienced by the initiating spouse, broken down by the gender of the initiating spouse and the presence of children. The results reveal several important findings. First, for couples without children, ex-ante disagreement is associated with a greater wage increase for the leading spouse, regardless of gender. With disagreement, there is about 10% additional increase in income of the spouse initiating the job-related move. However, with children, I find that disagreement is no longer associated with a higher wage increase for men. In contrast, spousal disagreement leads to greater wage increase for women with children. These results corroborate the evidence of a shift in the decision-making process with children. It suggests that while women's disagreement with children have less influence on what the move she did not want entails, men's disagreement appear to change the types of moves that occur. Overall, the findings highlight the gender-specific dynamics of couples' joint decisions regarding job-related relocations, particularly in the context of children's presence.

3 Quantitative Model

The empirical analysis shows that relocation is shaped by gender, family structure, and labor market dynamics. First, job-related moves cluster around key child-related transitions but are disproportionately driven by men's careers. Second, the evidence points to an intra-household bargaining process that is both gendered and dynamic: spousal agreement is crucial for relocation, yet the relative influence of each spouse shifts with the presence of children. During the childrearing years, women are disproportionately affected by relocations, not only in their labor market outcomes but in the decision-making process itself.

These relationships between relocation, post-move outcomes, fertility, and spousal disagreement do not reflect a unidirectional causal mechanism. Rather, these outcomes arise jointly from the same household decision-making process. This motivates a structural model that incorporates three key features. First, because moves and births are tightly linked, relocation must be modeled jointly with fertility, allowing the economic incentives associated with children to affect job search and joint labor supply. Second, the prominent role of disagreement is inconsistent with a unitary model with shared preferences: the observed asymmetries in who initiates moves, who gains, and whose preferences prevail require a non-unitary framework. Third, the evidence shows that decision

power itself shifts with children, suggesting that bargaining weights should respond endogenously to outside options, not just relative incomes. In this section, I therefore develop a dynamic household model under limited commitment in which relocation results from bargaining between spouses with potentially unequal and evolving decision weights, and in which outside options are shaped by the presence of children as well as by labor market opportunities.

3.1 Model Set up

I consider a household with two adult spouses, $g \in \{m, f\}$, and n_t number of children, the youngest of age $a_{n,t}$. In each period t, the couple resides in one of two locations $l_t \in \{j, k\}$, where j denotes the status-quo (stay) location and k denotes the non-local (move) location. They can also decide to have a child while the woman is fertile, denoted by the fertility decision $b \in \{0, 1\}$. Time is discrete and each spouse has a weekly endowment of $T = 120$ hours, which must be allocated between market labor h_t^g, home-production time d_t^g and leisure ℓ_t^g:

$$T = h_t^g + d_t^g + \ell_t^g, \qquad \ell_t^g \geq 0 \tag{TC_t^g}$$

Denote the household's vector of choices by

$$a_t^C \equiv \{\, c_t^m,\ c_t^f,\ h_t^m,\ h_t^f,\ d_t^m,\ d_t^f,\ m_t^Q, b\},$$

where c_t^g is spouse g's private consumption, m_t^Q, d_t^g is the market and time input for home production, and b is the fertility decision. Household resources are summarized by net income:

$$\begin{aligned} Y_t^{\text{net}} =& w_t^m\, h_t^m + w_t^f\, h_t^f \\ &- \rho_c(a_{n,t})\, \mathbf{1}_{\{n_t>0, a_{n,t}\leq 4\}} \min\{h_t^m, h_t^f\} - \rho_c(a_{n,t})\, \mathbf{1}_{\{n_t>0, a_{n,t}>4\}} \max\{\min\{h_t^m, h_t^f\} - 30, 0\} \\ &- \kappa(n_t) + T(n_t, a_{n,t}) \end{aligned}$$

where w_t^g is spouse g's wage, $\rho_c(a_{n,t})$ is the hourly market child-care cost (i.e. daycare) which depends on the child's age $a_{n,t}$. When a child is under age five, they incur the full-cost of the work hours, but when a child is in school, they pay the hours outside of school. $\kappa(n_t)$ is a fixed per-child cost, and $T(n_t, a_{n,t})$ includes government welfare and transfers, including unemployment benefits

and child subsidies. The period-t budget constraint is then

$$c_t^m + c_t^f + m_t^Q = Y_t^{\text{net}}, \tag{BC_t}$$

which, together with the time constraints (TC_t^g), fully characterizes feasible allocations.

Preferences and Home Production Each spouse derives utility from private consumption c_t^g, leisure ℓ_t^g, and a public home-production good Q_t, as well as from location and children:

$$\begin{aligned} u_t^g(c_t^g, \ell_t^g, Q_t;\, l_t, n_t, a_{n,t}) =& \psi_C^g(a_{n,t}) \log(c_t^g) + \psi_L(a_{n,t}) \log(\ell_t^g) + \psi_Q^g(a_{n,t})\, \log(Q_t) \\ &+ \gamma_t^{g,l} + f_t^g(n_t, a_{n,t}, b_t) - \zeta(n_t, a_{n,t})\, \mathbf{1}_{[l_t=k]} \end{aligned}$$

Here $\psi_L(a_{n,t}) > 0$ is the marginal utility weight on leisure, and $\psi_Q^g(a_{n,t}) > 0$ the marginal utility weight on home production differs by gender and by the youngest child's age. Specifically,

$$\psi_L(a_{n,t}) = \begin{cases} \psi_{L,1} & \text{if } n_t > 0 \text{ and } a_{n,t} = 0 \\ \psi_{L,2} & \text{if } n_t > 0 \text{ and } a_{n,t} \in [1,4] \\ \psi_{L,3} & \text{if } n_t > 0 \text{ and } a_{n,t} > 4 \end{cases}$$

$$\psi_Q^g(a_{n,t}) = \begin{cases} \psi_{Q,1}^g & \text{if } n_t > 0 \text{ and } a_{n,t} = 0 \\ \psi_{Q,2}^g & \text{if } n_t > 0 \text{ and } a_{n,t} \in [1,4] \\ \psi_{Q,3}^g & \text{if } n_t > 0 \text{ and } a_{n,t} > 4 \end{cases} \qquad \text{for } g \in \{m, f\}.$$

The marginal utilities are normalized so that $\psi_C^g(a_{n,t}) = 3 - \psi_L(a_{n,t}) - \psi_Q^g(a_{n,t})$, and $\psi_C^g(a_{n,t})$ is a residual of the sum of other two terms.[9] $f_t^g(n_t, a_{n,t}, b_t)$ captures the utility of having children, and $\gamma_t^{g,l}$ captures spouse g's taste for current location l_t, which are both described more in detail in section below. Lastly, if the couple decides to move, there is a one-time moving cost $\zeta(n_t, a_{n,t})$, which includes all the cost of moving:

$$\zeta(n_t, a_{n,t}) = \zeta^0\, \mathbf{1}_{[n_t=0]} + \zeta^1\, \mathbf{1}_{[n_t>0, a_{n,t}\le 4]} + \zeta^2\, \mathbf{1}_{[n_t>0, a_{n,t}>4]} \cdot t$$

The baseline moving cost in a way captures and the possible differences in search costs and efforts from local and non-local jobs. Additionally, the moving cost could change with youngest child's

[9] With this normalization, each term is normalized such that $\mathbb{E}[\psi_L] = \mathbb{E}[\psi_Q^g] = 1$, and $\mathbb{E}[\psi_C^g] = 1$ by construction. Additionally, I fix $\psi_Q^f(0) = 1$ for normalization.

age, which capture the fact that couples with children tend to move less than childless couples. When the youngest child's age is school-aged, the cost grows over time, capturing the fact that mobility for older couples, especially with children in school, is low.

Home production combines spouse time and market inputs in a Cobb–Douglas form, allowing for gender-specific productivity:

$$Q_t = (d_t^m)^{\bar{\delta}_d^m} \, (d_t^f)^{\bar{\delta}_d^f} \, (m_t^Q)^{\bar{\delta}_m}.$$

The elasticities are derived from underlying, spouse-specific productivity parameters, where for each spouse $g \in \{m, f\}$, the time productivity parameter is $\bar{\delta}_d^g = \delta_d + \mathbf{1}[n_t > 0]\, \delta^g(a_{n,t})$. The corresponding market input parameter is defined as $\bar{\delta}_m = \delta_m - \mathbf{1}[n_t > 0] \left(\delta^m(a_{n,t}) + \delta^f(a_{n,t})\right)$. I normalize the baseline productivity of market input so that $\delta_m = 1$. These then create the final production elasticities:

$$\tilde{\delta}_d^g = \frac{\bar{\delta}_d^g}{S}, \quad \tilde{\delta}_m = \frac{\bar{\delta}_m}{S}, \quad \text{where } S = \bar{\delta}_d^m + \bar{\delta}_d^f + \bar{\delta}_m.$$

Here, $\delta_d, \delta_m > 0$ are baseline productivity parameters, and $\delta^g(a_{n,t}) > 0$ captures how the presence of children shifts the marginal productivity of spouse g's time. By construction, $\tilde{\delta}_d^m + \tilde{\delta}_d^f + \tilde{\delta}_m = 1$. The gender-specific productivity shift depends on the youngest child's age:

$$\delta^g(a_{n,t}) = \begin{cases} \delta_1^g & \text{if } n_t > 0 \text{ and } a_{n,t} = 0 \\ \delta_2^g & \text{if } n_t > 0 \text{ and } a_{n,t} \in [1, 4] \\ \delta_3^g & \text{if } n_t > 0 \text{ and } a_{n,t} > 4 \end{cases} \qquad \text{for } g \in \{m, f\}.$$

3.1.1 Job Offers, Wages, and Preference Shocks

Arrival Rates and Wage Offers I incorporate a job-search framework to my model, which is the key factor that generates trade-offs and uncertainty in labor supply and relocation decisions. At the beginning of the period, the individuals receive job offers that determine their choice set and labor supply. Each period begins with each spouse individually drawing a local and a non-local offer, each with probability λ^g, independent across spouses. This means that for a couple in a given period, the number of offers can range from 0 to 4, and it is possible that one spouse has an offer

while the other spouse does not have any.[10] In addition, the offer probabilities across spouses are independent of each other, so it is very possible for the offers to be not matched locationally.

Wage offers are drawn from a distribution that depends on individual characteristics. Specifically, the log of the wage is a function of observed variables, including gender and human capital/work experience ($x_{i,t}$), as well as unobserved components:

$$\ln\left(w_t^i\right) = \beta_g^1 + \beta_g^2 x_{i,t} + \omega_{i,t} + \omega_{i,t}^l + \theta_i \tag{4}$$

Wages are determined observable characteristics: gender and work experience, with the constant and slope differing by gender. Then, it is composed of three unobserved components: a permanent skill type θ_i, a job-specific match component $\omega_{i,t}$ and a location-specific match component $\omega_{i,t}^l$. The first term, θ_i, is drawn from gender specific distribution; the second term, $\omega_{i,t}$, is the job-specific term and remains the same within each job spell, and it is distributed normal $\omega_{i,t} \sim N(0, \sigma_g^\omega)$, with variance depending on gender. Job offers are parameterized as a draw of new $\omega_{i,t}$ from its distribution. It can be thought of as representing an individual's job match which remains as long as one stays in a the job, but is replaced when one changes location or is laid off/voluntarily separates. The second term, $\omega_{i,t}^l$, is the *location*-specific term and remains the same within each *location* spell, and it is distributed normal $\omega_{i,t} \sim N(0, \sigma_g^{\omega^l})$, with variance depending on gender. Whenever an individual gets a non-local k offer, they draw both $\omega_{i,t}$ and $\omega_{i,t}^k$ from their respective distributions, and these are known to them upon decision. This governs additional wage growth/loss individuals experience upon move. Whenever at least one spouse gets an offer, the other spouse (even without an offer) also gets a draw of this term $\omega_{i,t}^k$ for the non-local location they are considering. I assume that this location-match term $\omega_{i,t}^l$ is correlated across spouses by a parameter ρ_{ω^l}.[11] Additionally, there exists a probability that each spouse's job may be terminated, resulting in layoff. Upon being laid off, individuals lose their $\omega_{i,t}$ term and receive zero wages until they secure a new offer. I parameterize as a draw from Bernoulli distribution with some probability $\lambda^0 \in [0, 1]$. This can be considered as a draw from a uniform distribution for each spouse, where a draw less than λ^0 leads to layoff.

[10] (i) Both spouses could receive zero offers, (ii) Only one spouse can receive a local, non-local offer, or both, (iii) both spouses can receive local, non-local offer, or both, (iv) one spouse could receive only local offer while other spouse could receive only non-local offer

[11] The magnitude of this correlation can account for any potential assortative matching of spousal industry/occupation (which I treat exogenous), as well as the mismatch of spouses' jobs across locations.

Finally, the model incorporates human capital accumulation for both men and women, wherein an individual's total labor market experience in the subsequent period is influenced by their work experience and employment choice in the current period. Following participation in the labor market in period t, an individual's total labor market experience in period $t+1$ is determined by their work experience, $x_{i,t}$, and employment status h_t^i in period t:

$$x_{i,t+1} = \left[(1-\delta)x_{i,t} + \frac{h_t^i}{40}\right]\epsilon_{i,t+1}$$

where $\epsilon_{i,t+1}$ is transitory i.i.d. log-normal mean-one shock with $\log \epsilon_{i,t} \sim N(-0.5\sigma^2_{g,\epsilon}, \sigma^2_{g,\epsilon})$, and δ is depreciation rate. I follow a log-linear human capital accumulation similarly to the process of Keane & Wasi (2016). This formulation makes tracking of both spouses' human capital term computationally tractable. If the individual works in period t, their human capital increases by 1. If the individual works part-time, human capital increases by a percentage of that time in relation to full-time work. Lastly, if they do not work, they do not accumulate new human capital, while experiencing a depreciation by δ.

This job-search framework is the key factor that generates trade-offs and uncertainty in labor supply and relocation decisions. Under this framework, employment is not guaranteed: each period, working requires receiving or having a job offer. Wages depend on human capital and two idiosyncratic components: a job-specific match and a location-specific match. When a worker separates—voluntarily or not—they forfeit the current job match and face re-entry risk: future employment depends on the offer arrival rate, and the next wage draw is uncertain even at the same human capital level.

These search frictions govern relocation decisions for couples. A long-distance move requires one spouse to separate, giving up their job- and location-match, and risking a nontrivial unemployment spell before a new offer arrives. Because attractive offers for the other spouse are stochastic option arrivals, the household must weigh the joint surplus from exercising a high-return opportunity now—despite one spouse's private loss—against waiting and potentially foregoing an opportunity that may not reappear. With children, this trade-off is sharper: moving costs rise with child age, so delaying can make the same relocation strictly more expensive later. The household therefore solves a dynamic problem over offers, timing, and who bears the private loss.

Search frictions also depress the outside option of a spouse who is out of work or reduces market

hours to raise home production. Unlike standard limited commitment models where the main force is human-capital depreciation over time, here there is an immediate shift in outside option upon non-employment: without an offer in hand, the non-employed spouse's credible fallback today includes a hazard of continued non-employment (offer arrival risk) and a lower expected wage/match upon re-entry. Hence their current outside option is strictly below that of an otherwise identical employed spouse. Over time, optimal specialization with young children can further widen the gap: fewer market hours slow human-capital accumulation, and a relocation oriented toward the main earner can shift the caregiver's location-match distribution adversely. Under limited commitment, the couple cannot fully pre-commit to future transfers to insure against these risks, so children and search frictions together produce a contemporaneous tilt in bargaining that dynamics can amplify.

Location-Specific Preference Shocks Lastly, the model considers non-pecuniary utility derived from residing in a particular location. At the beginning of period, each spouse gets a draw of "location preference shock" γ_i^l, which is drawn from a normal distribution $\gamma_i^l \sim N(0, \sigma^\gamma)$. If the couple receives at least one non-local offer, both individuals independently draw a location preference γ_i^k for the non-local location k from the distribution.

3.1.2 Fertility and Children

The number of children within the household is denoted by $n_t \in \{0, 1, 2, 3\}$. The age of the youngest child, represented by $a_{n,t}$, evolves deterministically across periods, but if a child is born in the beginning of the period, $a_{n,t}$ resets to 0. This is tracked up to age 5 (when children start attending school), beyond which all children are considered similarly in terms of their impact on the household's decisions, to manage the model's state space efficiently. A household's decision to have a child in period t is captured by the binary choice $b_t \in \{0, 1\}$: if $b_t = 1$, then a child is born with probability p_t^f, which depends on the biological fecundity of the woman. The biological fecundity is falling in age and calibrated to match medical literature. Fertility choices are allowed only while the woman's age a_t does not exceed 38. Fertility and children enter the flow utility in the following manner:

$$f(n_t, a_{n,t}, b_t, t) = \sum_{i=1}^{3} \phi_{N,i} \, \mathbf{1}_{[n_t \geq i]} + \phi_{N,1}^1 t + \phi_{N,1}^2 t^2 + b_t \cdot (\eta_t + \tilde{\eta}^0 \mathbf{1}_{[a_{n,t}=0]})$$

Here, $\phi_{N,i}$ is the flow utility from children, with varying marginal utilities for having another child. $\phi^1_{N,1}$ and $\phi^2_{N,1}$ are parameters that determine the life-cycle changes in utility of having the first child over time.

To introduce both cross-household heterogeneity and serial correlation in the taste for having a child, I embed a instantaneous utility of the birth decision b_t with a persistent taste shock η_t. In each period the couple observes η_t, which enters additively into the flow utility of a birth. I assume that in its underlying continuous form η_t is drawn each redraw from a normal distribution with mean zero and variance σ^2_η, $\eta_t \sim \mathcal{N}(0, \sigma^2_\eta)$. The transition of η_t is governed by the household's fertility choice: if no child is born in period t ($b_t = 0$), then with probability π the couple retains their current taste ($\eta_{t+1} = \eta_t$), and with probability $1 - \pi$ they redraw $\eta_{t+1} \sim \mathcal{N}(0, \sigma^2_\eta)$; if a birth occurs ($b_t = 1$), η_{t+1} is always redrawn from $\mathcal{N}(0, \sigma^2_\eta)$. Formally,

$$\eta_{t+1} = \begin{cases} \eta_t, & \text{with probability } \pi\,(1 - b_t), \\ \tilde{\eta}_{t+1} \sim \mathcal{N}\big(0, \sigma^2_\eta\big), & \text{with probability } 1 - \pi\,(1 - b_t), \end{cases}$$

where $b_t \in \{0, 1\}$ is the birth indicator, $\pi \in (0, 1)$ governs the retention probability when no birth occurs, and $\tilde{\eta}_{t+1}$ is an independent draw from the underlying $N(0, \sigma^2_\eta)$ distribution. Here $\pi \in (0, 1)$ governs the serial correlation in fertility desire: larger π implies longer spells of high or low childbearing taste, while lower π leads to more frequent resets. I calibrate π and the variance parameter σ^2_η of the underlying normal draw so as to reproduce the observed autocorrelation in age-at-first-birth and the dispersion in completed fertility. The presence of η_t both generates the observed variation in fertility timing across households and, through its persistence, endows the couple with state-dependent expectations of future childbearing that, in turn, influence labor supply, home production and relocation choices.

Lastly, with decision to have a child $b_t = 1$, there are state-dependent "attempt cost." These capture the utility cost of trying or planning to conceive over the life-cycle. Specifically, $\tilde{\eta}^0$ denotes the potential dis-utility (if negative) of trying to conceive a child if they currently have a newborn. This helps matching the general pattern of child-spacing seen in data.

3.2 Household's Problem and Bargaining under Limited-Commitment

In many settings spouses cannot credibly commit ex-ante to a fixed sharing rule; instead, today's choices influence tomorrow's bargaining power, generating dynamic inefficiencies and state-dependent leverage within the household. Under full commitment, spouses would agree once and for all on a transfer scheme that insures each of them against shocks and implements all ex-post efficient allocations. In contrast, with limited commitment, any agreement must be renegotiation-proof in the sense that, at each period and state, it must be individually rational relative to their individual outside options. A growing empirical literature documents the relevance of such limited commitment in a variety of domains, including fertility (Rasul, 2008; Doepke & Kindermann, 2019), savings and financial decisions (Schaner, 2015), child investment (Gobbi, 2018), and labor supply (Theloudis et al., 2025). Relocation decisions, in particular, seem especially prone to these limitations: they involve large, long-term consequences (for wages, amenities, and careers), often benefit one spouse more than the other, and are often difficult to reverse, all of which introduces tension into household decision-making.

The empirical findings show that spouses frequently disagree on whether to move, and that these disagreements substantially reduce the likelihood of relocation. Under full commitment, such disagreement would not, by itself, prevent a move as long as the household-level gain is positive: the favored spouse could be fully compensated through intra-household transfers. The fact that disagreement matters in the data instead supports a framework of bargaining without full commitment, where each spouse cares about their own continuation payoff and evaluates a move not only in terms of joint surplus, but also in terms of how it affects their individual welfare relative to their threat point. Moreover, the empirical patterns reveal a striking gender asymmetry. Before children, both spouses' stated preferences over relocation have similar predictive power for actual moves. After children arrive, however, the predictive power of the wife's preferences declines sharply, even conditional on relative (potential) earnings, while the husband's preferences remain strongly predictive. This suggests that there is a fundamental, gender-asymmetric shift in effective decision power around the arrival of children, consistent with the idea that outside options and hence bargaining weights evolve in a way that systematically disadvantages the primary caregiver.

A model of household decision-making over relocation must therefore incorporate two key features: (i) private gains and losses matter beyond simply evaluating joint household surplus from

moving, and (ii) relative decision power is endogenous and shifts with the presence of children and other state variables. To capture this, I extend the collective model into a dynamic, limited-commitment framework in which the Pareto weight α_t—the period-t weight placed on the husband's utility in the cooperative problem—is renegotiated each period. Two conditions must be met for any cooperative decision (including joint decisions such as relocation): (i) the cooperative choice must yield strictly higher joint welfare than the status quo, and (ii) neither spouse may be worse off than their outside option (threat point). Formally, in each period, I compare each spouse's continuation value under cooperation to their outside-option value. If a spouse's participation constraint is binding at the status-quo weight α_{t-1}, the weight α_t is adjusted so that all participation constraints are satisfied.

Crucially, in this framework, the Pareto weight α_t endogenously responds to individuals' outside options, which themselves are functions of the current state, including employment, wages, location-specific prospects, and the presence and ages of children. Shocks that improve one spouse's outside option mechanically increase the value of outside option, tightening that spouse's participation constraint and shifting α_t in their favor. Conversely, events that worsen one spouse's outside option weaken their bargaining position and shift α_t away from them. In the context of relocation, this means that couples anticipate not only the direct wage and amenity consequences of moving, but also the induced changes in outside options and hence in future Pareto weights. The next subsection formalizes this bargaining environment. I define outside options as the value of non-cooperation within an ongoing cohabiting or marital relationship, characterize how these values depend on wages, employment, and child-related costs and benefits, and show how fertility and children reshape the bargaining process in ways that match the observed empirical patterns in relocation choices.

3.2.1 Household's Problem

At the start of period t, given state Ω_t, current local location l_t, the couple observes all the shocks, including wages, offers, and childbirth. Then, with the "status-quo" Pareto weight agreed in the

previous period α_{t-1}, the couple solves:

$$V_t^C(\Omega_t, l_t; \alpha_{t-1}) = \max_{a_t^C} \; \alpha_{t-1}\Big[U_t^m + \beta\, E_t\big[V_{t+1}^{C,m}(\Omega_{t+1}, l_t; \alpha_{t-1})\big]\Big] + (1-\alpha_{t-1})\Big[U_t^f + \beta\, E_t\big[V_{t+1}^{C,f}(\Omega_{t+1}, l_t; \alpha_{t-1})\big]\Big], \tag{5}$$

subject to the budget (BC_t) and time (TC_t^g) constraints. While $V_t^C(\Omega_t, l_t; \alpha_{t-1})$ denotes the joint household utility, $U_t^g + \beta\, E_t\big[V_{t+1}^{C,g}(\Omega_{t+1}, l_t; \alpha_{t-1})\big]$ denotes individual g's utility under cooperation. I assume discrete labor-supply choices where $h^f \in \{0, 25, 40\}$, and $h^m \in \{0, 40\}$.[12]

For each set of labor supply and fertility choices (h_t^m, h_t^f, b_t), the remaining first-order conditions deliver the following closed-form solutions:

$$c_t^g = \frac{\alpha^g \psi_C^g(a_{n,t})}{\bar{\psi}_C(a_{n,t}) + \bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_m} Y^{\text{net}}, \quad m_t^Q = \frac{\bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_m}{\bar{\psi}_C(a_{n,t}) + \bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_m} Y^{\text{net}},$$

$$d_t^g = \frac{\bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_d^g\,(T - h_t^g)}{\alpha^g\,\psi_L(a_{n,t}) + \bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_d^g}, \qquad \ell_t^g = T - h_t^g - d_t^g,$$

with $\bar{\psi}_Q(a_{n,t}) = \alpha\psi_Q^m(a_{n,t}) + (1-\alpha)\psi_Q^f(a_{n,t})$, $\bar{\psi}_C(a_{n,t}) = \alpha\psi_C^m(a_{n,t}) + (1-\alpha)\psi_C^f(a_{n,t})$ and $\alpha_t^m = \alpha_t$ and $\alpha_t^f = 1 - \alpha_t$. These allocations maximize the period utility sums given α_{t-1} and form the basis for both participation-constraint checks and threat-point computations. Then the continuation value is given by their current choices in labor supply, location, and fertility.

Period-by-Period Bargaining under Limited Commitment

The renegotiation of the Pareto weight α_t proceeds in four sequential stages each period, ensuring both individuals' participation constraints and positive joint gains.

Stage 1: Unconditional Pareto-efficient allocation: Upon observing the full state Ω_t and recalling the last period's weight α_{t-1}, spouses solve the intra-period Pareto problem in the status-quo location j:

$$V_t^C(\Omega_t, j; \alpha_{t-1}) = \max_{a_t^C} \; \alpha_{t-1}\Big[U_t^m + \beta\, E_t[V_{t+1}^{C,m}(\Omega_{t+1}, j; \alpha_t)]\Big] + (1-\alpha_{t-1})\Big[U_t^f + \beta\, E_t[V_{t+1}^{C,f}(\Omega_{t+1}, j; \alpha_t)]\Big]. \tag{6}$$

[12] This assumption is viable, as only 10% of men work part-time and their part-time status does not change depending on child presence, which is the key variation I target.

This yields both the allocations a_t^C and each spouse's cooperative continuation value

$$V_t^{C,g}(\Omega_t, j; \alpha_{t-1}) = u_t^g(a_{t-1}^C;\, j) + \beta\, E_t\big[V_{t+1}^{C,g}(\Omega_{t+1}, j; \alpha_t)\big]. \tag{7}$$

Stage 2: Outside options and incentive compatibility: I compute each spouse's outside option $V_t^{NC,g}(\Omega_t, j)$ by solving the equation in Section 3.2.2, described in detail below. I then compare $V_t^{C,g}(\Omega_t, j; \alpha_{t-1})$ to $V_t^{NC,g}(\Omega_t, j)$ for $g = \{m, f\}$. If both inequalities

$$V_t^{C,g}(\Omega_t, j; \alpha_{t-1}) \;\geq\; V_t^{NC,g}(\Omega_t, j) \tag{8}$$

hold, the participation constraints do not bind at α_{t-1}. In that event, I set $\alpha_t^j = \alpha_{t-1}$, and $l_t = j$, and a_t^C remains as solved in Stage 1.

Stage 3: Local weight renegotiation: If spouse i's participation constraint binds at α_{t-1}, the cooperative allocation is no longer incentive compatible. I then exploit the strict monotonicity of $V_t^{C,i}$ in α to identify the unique α_t^j satisfying

$$V_t^{C,i}(\Omega_t, j; \alpha_t^j) = V_t^{NC,i}(\Omega_t, j).$$

I re-solve the intra-period Pareto problem at this new weight α_t^j, restoring spouse i to her outside-option utility while preserving Pareto efficiency.

Stage 4: Joint-surplus and relocation decision. If no non-local offer arises, I set $(l_t, \alpha_t) = (j, \alpha_t^j)$ and the couple proceeds to next period $t+1$. If the couple receives a non-local offer, I first consider whether a move to the alternative location k raises joint welfare given the status-quo Pareto weight α_{t-1} by comparing the joint household value of moving $V_t^C(\Omega_t, k; \alpha_{t-1})$ to staying $V_t^C(\Omega_t, j; \alpha_{t-1})$. Only if relocation increases the weighted sum at α_{t-1} do the couple tentatively consider $l_t = k$. In that event, I repeat Stages 1–3 for location k, yielding a candidate weight α_t^k. Then, the couple moves if and only if the joint household value of moving is greater than staying,

$$V_t^C(\Omega_t, k; \alpha_t^k) > V_t^C(\Omega_t, j; \alpha_t^j),$$

in which case $(l_t, \alpha_t) = (k, \alpha_t^k)$. Otherwise, the couple remains in j with $\alpha_t = \alpha_t^j$, and proceeds to the next period. This four-stage bargaining process (i) ensures both spouses are incentive compatible in every period, (ii) retains Pareto efficiency conditional on the chosen weight, and (iii) only allows relocation when, even after renegotiation, the joint surplus of moving exceeds that of staying.

Implications This framework naturally captures the two empirical patterns regarding relocation decisions and outcomes. First, the need to satisfy incentive compatibility for both spouses in relocation decisions implies that, while joint surplus is necessary for relocation, a move cannot generate sufficiently large negative surplus for either spouse relative to their outside option. In such cases, spouses can "bargain" and "negotiate" over relocation choices: whenever a move creates diverging private gains and losses across spouses and would leave one spouse worse off than under their outside option, the spouse with positive surplus from the move can "bribe" the other by shifting the Pareto weight α_t toward their partner, granting them a larger intra-household allocation of consumption and leisure, as in Stage 4. However, if there is no reallocation of α_t that yields joint surplus from moving, the relocation is effectively vetoed and the move does not occur.

At the same time, even in the absence of a relocation choice, the framework captures dynamics in the Pareto weight that endogenously respond to outside options. From Stages 1 to 3, couples renegotiate the Pareto weight after shocks or shifts to their outside options, even without a relocation decision, to ensure that both spouses' participation constraints are satisfied. These renegotiations can generate shifts in the Pareto weight prior to any relocation opportunity, and, because joint surplus is evaluated as the Pareto-weighted sum of both spouses' utilities (with α_t as the weight, as in Equation 6), an unequal "status-quo" Pareto weight at the time of decision, α_{t-1}, can tilt the household choice toward the preferences of one spouse over the other's. The following section formalizes the outside options defined as non-cooperation within cohabitation or marriage, and discusses how fertility and children affect the bargaining process in ways that match the observed empirical patterns.

3.2.2 Non-Cooperative Outside Option

Each spouse's outside option is assumed to be determined by the equilibrium value resulting from a dynamic non-cooperative (Nash) game, which is similar in spirit to the (static) "separate spheres"

model introduced by Lundberg & Pollak (1993). Under non-cooperation (NC), the couple remains in the status-quo location j, but consumption and time choices are made *non-cooperatively*.

Denote $a_t^{NC,g} = \{h_t^{g,NC}, d_t^{g,NC}, m_t^{Q,g}\}$ the agent's non-cooperative solution, given their partner's solution $a_t^{NC,-g}$. The outside-option value satisfies

$$V_t^{NC,g}(\Omega_t, j) = \max_{a_t^{NC,g} | a_t^{NC,-g}} \Big\{ u_t^g(c_t^g, \ell_t^g, Q_t) + \beta \, E_t\big[V_{t+1}^{NC,g}(\Omega_{t+1}, j)\big] \Big\},$$

$$u_t^{g,NC}(c_t^g, \ell_t^g, Q_t;\, n_t, a_{n,t}) = \psi_C^g(a_{n,t}) \log(c_t^g) + \psi_L(a_{n,t}) \log(\ell_t^g) + \psi_Q^g(a_{n,t}) \, \log(Q_t) + \gamma_t^{g,l} + \sum_{i=1}^{3} \phi_{N,i} \, \mathbf{1}_{[n_t \geq i]}$$

subject to the individual budget constraint, and home production technology:

$$\begin{aligned} c_t^g =& w_t^g h_t^g - m_t^{Q,g} + T_t^g(n, a_n) \\ & - \tfrac{1}{2}\big[\kappa \, n_t + \rho_c(a_{n,t}) \, \mathbf{1}_{\{n_t > 0, a_{n,t} \leq 4\}} \min\{h_t^m, h_t^f\} + \rho_c(a_{n,t}) \, \mathbf{1}_{\{n_t > 0, a_{n,t} > 4\}} \max\{\min\{h_t^m, h_t^f\} - 30, 0\}\big] \end{aligned}$$

$$Q_t = (d_t^m)^{\tilde{\delta}_d} (d_t^f)^{\tilde{\delta}_d} (m_t^{Q,m} + m_t^{Q,f})^{\tilde{\delta}_m}$$

Thus, under non-cooperation, the utility flow is the same as under cooperation, and spouses can still enjoy consumption from home production and children. Importantly, I assume that no unilateral relocation or conception is allowed under non-cooperation, thus I hold location fixed $l_t = j$ and $b = 0$ at all times. Consequently, the instantaneous utilities from these choices do not appear in the flow utilities, and the choice set under non-cooperation do not include the choice of location l_t and conception b_t, and is simply $a_t^{NC,g} = \{h_t^{g,NC}, d_t^{g,NC}, m_t^{Q,g}\}$.

I also assume that the childcare costs are split equally between mother and father. This assumption is plausible given that although mothers generally get more burden of childcare under non-cooperation, men are usually more likely to financially support for the monetary costs. In addition, I assume that the government subsidies and welfare benefits are given directly to the relevant spouse. Home production remains Cobb–Douglas in the sum of individual contributions to purchased inputs and each spouse's time. There is no consumption allocation, as individuals consume their own net budget. Finally, with these restrictions, along with the fact that Pareto weight α does not play a role in non-cooperative settings, the state space under non-cooperation for spouse g is: $\Omega_t^{NC,g} \equiv \{x_{m,t}, n_t, a_{n,t}, \gamma_t^l, \theta_g, \omega_{g,t}, \omega_{g,t}^l\}$.

Solution to Non-Cooperative Nash Game With the change to gender-specific productivity, the home production function is now asymmetric:

$$Q_t = (d_t^{NC,m})^{\tilde{\delta}_d^m} \, (d_t^{NC,f})^{\tilde{\delta}_d^f} \, (m_t^{Q,m} + m_t^{Q,f})^{\tilde{\delta}_m}$$

Each spouse g maximizes their own utility u_t^g taking the actions of spouse $-g$ as given. For any labor supply profile (h_t^m, h_t^f), the static choices for home production time $d_t^{NC,g}$ and market inputs $m_t^{Q,g}$ are solved as follows.

Solution for Home Production Input The choice of home production time is a non-strategic individual decision. Spouse g chooses d_t^g to maximize $\psi_L^g(a_{n,t}) \log(\ell_t^g) + \psi_Q^g(a_{n,t}) \log(Q_t)$, treating all other inputs to Q_t as fixed. The first-order condition (FOC) is:

$$\frac{\partial u^g}{\partial d_t^g} = -\frac{\psi_L(a_{n,t})}{\ell_t^g} + \frac{\psi_Q^g(a_{n,t}) \, \tilde{\delta}_d^g}{d_t^g} = 0$$

This equates the marginal cost of lost leisure with the marginal benefit from home production, which is now a function of spouse g's unique productivity elasticity $\tilde{\delta}_d^g$. Solving for d_t^g:

$$\psi_Q^g(a_{n,t}) \, \tilde{\delta}_d^g \, \ell_t^g = \psi_L(a_{n,t}) \, d_t^g \quad \Longrightarrow \quad \psi_Q^g(a_{n,t}) \, \tilde{\delta}_d^g \, (T - h_t^g - d_t^g) = \psi_L(a_{n,t}) \, d_t^g$$

This yields the closed-form best response for home production time:

$$d_t^{NC^*,g} = (T - h_t^g) \, \frac{\psi_Q^g(a_{n,t}) \, \tilde{\delta}_d^g}{\psi_L(a_{n,t}) + \psi_Q^g(a_{n,t}) \, \tilde{\delta}_d^g}$$

Unlike the cooperative case, this choice depends only on the agent's own productivity and not on any bargaining power. Notably, compared to the cooperative case, where the allocation depended on the weighted sum of both spouses' marginal utilities from home production ($\bar{\psi}_Q(a_{n,t})$), it is now solely dependent on each individual's marginal utilities. These imply that the spouse who receive higher marginal utility from home production ($\psi_Q^g(a_{n,t})$) and/or is more productive at home ($\tilde{\delta}_d^g$) will devote a larger fraction of their non-market time to it.

The market input m_t^Q is a public good, and the choice of contributions forms a strategic subgame. For any spouse g contributing a positive amount ($m_t^{Q,g} > 0$), their FOC implies a

relationship between total contributions m_Σ and their own consumption:

$$m_\Sigma = \theta_g(a_{n,t}) c_t^g, \qquad \theta_g \equiv \frac{\psi_Q^g(a_{n,t})}{\psi_C^g(a_{n,t})} \tilde{\delta}_m$$

A full analysis reveals three distinct equilibrium cases, determined by the spouses' pre-contribution "spendable income," which I define as:

$$Y_t^g = w_t^g h_t^g - \tfrac{1}{2}\big[\kappa\, n_t + \text{market-based childcare costs}\big] + T_t^g(n_t, a_{n,t})$$

Let g^* be the spouse with the higher spendable income ($Y_t^{g^*} \geq Y_t^{-g^*}$). The equilibrium outcome depends on whether this income advantage is large enough to sustain a corner solution.

- **Case 1: Stable Corner Solution** with condition $\frac{1}{1+\theta_g(a_{n,t})} Y_t^{g^*} \geq Y_t^{-g^*}$. This occurs when the potential primary contributor's income is sufficiently high relative to their partner's. Specifically, if they were to contribute the entire amount, their resulting consumption would still be at least as high as their partner's. Under this case, the corner solution is a stable Nash Equilibrium. The spouse with higher spendable income contributes the full amount, and the other free-rides.

$$m_t^{Q,g^*} = \frac{\theta_g(a_{n,t})}{1+\theta_g(a_{n,t})} Y_t^{g^*} \quad \text{and} \quad m_t^{Q,-g^*} = 0.$$

- **Case 2: Interior Solution** with condition $\frac{1}{1+\theta_g(a_{n,t})} Y_t^{g^*} < Y_t^{-g^*}$. This occurs when the primary earner's income advantage is not large enough to satisfy the condition in Case 1 (or both spouses have the same income $Y_t^m = Y_t^f$). The corner solution is unstable because the potential free-rider's consumption would be higher, giving them an incentive to contribute. The only stable equilibrium is an interior one where both spouses contribute, and both FOCs hold:

$$m_\Sigma = \theta_m(a_{n,t})\, c_t^m = \theta_f(a_{n,t})\, c_t^f \qquad \Rightarrow \qquad \frac{c_t^m}{c_t^f} = \frac{\theta_t^m(a_{n,t})}{\theta_t^f(a_{n,t})} = \frac{\psi_Q^f(a_{n,t})/\psi_C^f(a_{n,t})}{\psi_Q^m(a_{n,t})/\psi_C^m(a_{n,t})}$$

  The strategic incentives force an outcome where their ψ_Q^g-weighted consumption levels are equalized. The equilibrium is solved by the system:

$$c_t^m = Y_t^m - m_t^{Q,m} \qquad c_t^f = Y_t^f - m_t^{Q,f} \qquad m_t^{Q,m} + m_t^{Q,f} = m_t^\Sigma$$

This yields a unique solution for the equalized consumption level and individual contributions:

$$c_t^g = \frac{Y_t^m + Y_t^f}{1 + \theta_t^g(a_{n,t}) + \frac{\theta_t^g(a_{n,t})}{\theta_t^{-g}(a_{n,t})}} \quad \text{and} \quad m_t^{Q,g} = Y_t^g - c_t^g \quad \text{for } g \in \{m, f\}.$$

- **Case 3: Double-corner**. This is never an equilbrium, as both spouses would prefer a positive amount of m^Σ, as $\partial u / \partial m^{Q,g}|_{m^\Sigma=0} = +\infty$

Therefore, finding the static Nash equilibrium involves first using the values of Y_t^m and Y_t^f to identify which regime applies, and then applying the corresponding rule to find the equilibrium contributions.

3.3 Discussion of Mechanisms

This section develops the core implications of the model for (i) the relocation friction faced by households, (ii) how children—including anticipated fertility—reshape that friction. A formal derivation is in Appendix Section C.

3.3.1 Collective Labor Supply under Joint-Job Search Framework

Children fundamentally reshape the trade-offs couples face when deciding whether to relocate. With young children, overlapping market hours induce paid childcare in the budget constraint, and the marginal utility and productivity of parental time at home rise. Both forces tilt the efficient collective allocation toward (possibly temporary) specialization, where one spouse focuses on market work and the other supplies more home production.

To see this, consider the cooperative intra-period problem for given hours (h^m, h^f) and children (n, a_n). With log utility in consumption, leisure, and home production, the optimal intra-period utility can be written in "log-share" form as

$$\begin{aligned} U^\star(h^m, h^f; n, a_n) =& S(a_n)\, \log Y^{\text{net}}(h^m, h^f; n, a_n) \\ &+ C_m(a_n)\, \log(T - h^m) + C_f(a_n)\, \log(T - h^f) + \text{const}, \end{aligned}$$

where $S(a_n)$ collects the effective weight on net income, $C_m(a_n)$ and $C_f(a_n)$ are effective weights of non-market time for each spouse. Specifically, $S = \bar{\psi}_C + \bar{\psi}_Q \tilde{\delta}_m$, $C_m = \alpha\psi_L + \bar{\psi}_Q \tilde{\delta}_d^m$, $C_f = (1-\alpha)\psi_L + \bar{\psi}_Q\, \tilde{\delta}_d^f$, meaning that these weights are a function of the primitive preference and technology parameters, which depend on the age of youngest child. The (simplified) net budget

$$Y^{\text{net}}(h^m, h^f; n, a_n) = w^m h^m + w^f h^f - \rho_c(a_n) \min\{h^m, h^f\}\, \mathbf{1}[n > 0] - \kappa(n)$$

subtracts childcare and fixed child costs whenever there is at least one child.

Even in a purely local setting (no relocation), this structure implies a familiar collective labor-supply logic: a wage offer/shock to one spouse can make it optimal to reduce the other spouse's hours when the value of home time is high and when additional hours trigger costly childcare. The relocation problem is more subtle because moving does not simply change a single wage. Instead, relocation presents a *bundle*, such as:

$$(w_K^m, w_K^f) = (r\, w_j^m, \phi\, w_j^f), \qquad r > 1,\ \phi \in [0, 1),$$

combined with a change in location tastes and, crucially, in the joint-search environment (offer arrival rates and future wage prospects). A male offer that would not induce specialization locally can, when bundled with a move, push the couple into an efficient specialization arrangement upon move.

Local benchmark. To fix ideas, start from a symmetric local benchmark in which both spouses earn the same wage w and work full-time:

$$w_j^m = w_j^f = w, \qquad h^m = h^f = 40.$$

Consider first a purely local male-only raise to $w_L^m = rw$ with $r > 1$, keeping w^f and the location fixed. Holding $h^m = 40$, the wife chooses her discrete hours from $\{40, 25, 0\}$. The cooperative gain from lowering her hours from 40 to $\bar{h^f} \in \{25, 0\}$ under the husband's local wage increase can be written as

$$\Delta U^L_{40\to\bar{h^f}}(r) = S(a_n)\, \log \frac{40rw + w\bar{h^f} - \rho_c(a_n) \min\{40, \bar{h^f}\}}{40rw + 40w - 40\rho_c(a_n)} + C_f(a_n)\big[\log(T - \bar{h^f}) - \log(T - 40)\big],$$

where the first term captures the effect on net income and purchased inputs, and the second term captures the gain from reallocating the wife's time from market work to leisure and home production. Because the numerator in the log term is increasing in r and the leisure/home term is positive for $\bar{h^f} < 40$, there exist finite thresholds $r^L_{40\to 25}$ and $r^L_{40\to 0}$ such that a local male wage raise induces the wife to cut hours if and only if r exceeds the relevant threshold (Appendix C). For intermediate r, she remains full-time despite the higher male wage.

Relocation as a bundle and the specialization threshold. Relocation changes the problem because the destination typically offers a bundle $(w^m_k, w^f_k) = (rw, \phi w)$ with $\phi < 1$, representing a strong male offer and a weaker or no offer for the wife. In addition, the couple anticipates different future offer arrivals and wage growth in new location k compared to j, which I discuss in more detail below. Here I focus on the static specialization margin at the destination.

Consider a candidate specialization corner in k with $h^f_* = 0$, so that the wife devotes all of her time to leisure and home production. Given the Cobb–Douglas home-production technology and intra-period structure, the wife's optimal split between leisure ℓ^f and home time d^f at this corner satisfies

$$\frac{d^f}{\ell^f} = \frac{\bar{\psi}_Q(a_n)\,\tilde{\delta}^f_d(a_n)}{\psi_L(a_n)},$$

where $\bar{\psi}_Q(a_n)$ is the Pareto-weighted marginal utility of home production and $\tilde{\delta}^f_d(a_n)$ is the productivity of the wife's home time. The intra-period marginal condition for moving away from the corner—that is, for raising h^f_* above zero—compares the net gain from additional earnings to the utility loss from reducing non-market time. Evaluated at $h^f_* = 0$, this condition can be written as

$$\left.\frac{\partial U^\star}{\partial h^f_*}\right|_{h^f_*=0} = S(a_n)\,\frac{w^f_K - \rho_c(a_n)}{Y^{\text{net}}} - \left(\frac{\psi_L(a_n)}{\ell^f} + \frac{\bar{\psi}_Q(a_n)\,\tilde{\delta}^f_d(a_n)}{d^f}\right).$$

Specialization at location k is optimal when this derivative is weakly negative. Evaluating Y^{net} at the symmetric local benchmark and rearranging yields a simple ratio test:

$$\frac{w^m_k}{w^f_k} = \frac{r}{\phi} \;\geq\; r^\star_{\text{child}}(n, a_n), \tag{9}$$

where

$$r^{\star}_{\text{child}}(n, a_n) \equiv \frac{S(a_n)}{40} \cdot \frac{w - \rho_c(a_n)}{w} \cdot \left(\frac{\psi_L(a_n)}{\ell^f} + \frac{\bar{\psi}_Q(a_n)\, \tilde{\delta}^f_d(a_n)}{d^f} \right)^{-1},$$

and (ℓ^f, d^f) are the corner-optimal non-market allocations at $h^f_* = 0$. Appendix C provides the full derivation and shows that, using the corner FOC, $r^{\star}_{\text{child}}$ can be expressed purely in terms of the preference and technology parameters.

Equation (9) says that specialization at the destination is efficient whenever the husband's relative wage advantage r/ϕ is large enough compared to the wife's effective net wage $w^f_k - \rho_c(a_n)$ and the marginal value of her home time. With young children, both $\rho_c(a_n)$ and the marginal value/productivity of home time are high, so $r^{\star}_{\text{child}}(n, a_n)$ is lower than in the childless case: it takes a smaller wage gap for specialization to be efficient. Once the couple specializes at k, childcare expenses drop out of the budget (because only one spouse works), and the wife's entire time endowment is reallocated to (ℓ^f, d^f), which enter utility with weight $C_f(a_n)$. Both the disappearance of childcare payments and the reallocation of time generate an additional positive term in the move's surplus beyond what a local wage increase could deliver.

Move with switch to specialization. Now compare the best local option for a "strict" case of couple—those for whom a local male raise does *not* change the wife's hours—to the best non-local option. In the local benchmark, the couple stays in j, takes the same male raise to rw, and remains dual-earner with $h^m = h^f = 40$. In k, if $r/\phi \geq r^{\star}_{\text{child}}(n, a_n)$, the optimal non-local choice is to specialize and set $h^f_* = 0$. The cooperative gain from moving and specializing can be written as

$$U^{\star}_K - U^{\star}_L = S(a_n) \log\left(\frac{r}{r + 1 - \rho_c(a_n)/w} \right) + \underbrace{C_f(a_n)\big[\log T - \log(T - 40)\big]}_{\equiv \Delta_{\text{time}}(n, a_n) > 0},$$

where the first term captures the net-income effect (including the disappearance of childcare costs) and the second term is the utility gain from reallocating the wife's time from full-time work to non-market activities. Allowing for a one-time moving cost ζ and a change in location-specific tastes

$$\Delta\Gamma \equiv \alpha(\gamma^m_k - \gamma^m_j) + (1 - \alpha)(\gamma^f_k - \gamma^f_j),$$

the move is accepted if

$$\zeta \leq S(a_n) \log\left(\frac{r}{r+1-\rho_c(a_n)/w}\right) + \Delta_{\text{time}}(n, a_n) + \Delta\Gamma. \tag{10}$$

Note that ϕ does not appear in (10) itself: once specialization is chosen, the wife's wage no longer enters Y^{net}. The parameter ϕ matters indirectly by determining whether r/ϕ crosses the specialization threshold (9) and thus whether the destination lies in the specialization region at all.

Move with both spouses working. When ϕ is large enough that $r/\phi < r^{\star}_{\text{child}}(n, a_n)$, the non-local optimum remains dual-earner. In that case, the acceptance region depends directly on ϕ as well as on r, and the decision compares joint utility with both spouses working at (w_k^m, w_k^f) versus working at (w, w) in j. The resulting ϕ-thresholds for acceptance can be derived explicitly under the log-share structure (Appendix C), and the key point is that partial reductions in the wife's hours (e.g. from 40 to 25) relax the ϕ requirement relative to keeping her full-time: the 25-hour option yields a lower $\phi_{\min}(r)$ than the 40-hour option. This embeds the usual collective-labor-supply response to wage changes into the relocation problem.

Implications for other cases. Starting from the strict symmetric case with both spouses working full-time with equal wages, and a male wage offer that would *not* change the wife's hours locally, a non-local bundle with $r/\phi \geq r^{\star}_{\text{child}}(n, a_n)$ can make it jointly optimal to specialize and move on a single male offer, provided Equation (10) holds. As we move away from this strict case, the conditions for "one-offer moves" become less stringent. If the wife would already reduce hours under a local raise, relocation with the same r expands the acceptance set; if she is not working locally, moving on a single offer becomes even less stringent.

The key comparative static is that, with children, both the specialization threshold $r^{\star}_{\text{child}}(n, a_n)$ and the moving condition in equation (10) become easier to satisfy: childcare costs $\rho_c(a_n)$ and higher home-time value make specialization more attractive, and the utility gain from reallocating time $\Delta_{\text{time}}(n, a_n)$ is larger. In short, children widen the region in which it is optimal to move without both spouses having wage gains, because the relocation bundle can support an efficient specialization pattern that a local, one-price wage shock would not trigger.

Importance of Dynamic Joint Search and Fertility. The previous analysis takes the destination bundle (w_k^m, w_k^f) and specialization decision as given in a single period. In the full model, relocation is a dynamic choice in a joint-search environment, with stochastic wage offers for both spouses and endogenous fertility. The decision to move on a single non-local offer trades off current-period gains against the option value of waiting for future joint opportunities.

Let Ω_t denote the current state, including location, human capital, and children. Given a status-quo Pareto weight α_{t-1} inherited from the previous period, the cooperative value of accepting a male-only offer in k can be written as

$$\Delta V_t(r) = \underbrace{U_t^k(r) - U_t^j}_{\text{current-period surplus}} + \beta \underbrace{\Big(E_t[V_{t+1}^C(\Omega_{t+1}, k) \mid \text{accept}] - E_t[V_{t+1}^C(\Omega_{t+1}, j) \mid \text{reject}] \Big)}_{\Delta V_{t+1}},$$

where $U_t^k(r)$ and U_t^j are the intra-period utilities in k and j, evaluated at the optimal hours and specialization decisions given state Ω_t and α_{t-1}. Because $U_t^k(r)$ is strictly increasing in r, there exists a dynamic reservation rule $r^\star_{\text{dyn}}(\Omega_t)$ such that accepting the offer is optimal if and only if $r/\phi \geq r^\star_{\text{dyn}}(\Omega_t)$ (Appendix C).

The continuation term ΔV_{t+1} reflects dynamic joint search problem. In each location, both spouses receive offers with some arrival rate, and future states are characterized by whether zero, one, or two spouses are employed, and whether a new child has arrived. The continuation value of moving can be decomposed into differences in the value of being in k versus j in each joint employment arrangement, weighted by the probabilities of those arrangements. A key component is the "two-offer" option value: the additional value of rejecting a move, and waiting for a state in which both spouses receive good non-local offers in the same location.

Fertility interacts with this option value. Let p_t denote the probability of a birth between t and $t+1$, given the couple's fertility choice. As shown in Appendix C, one can write the continuation gain as a convex combination

$$\Delta V_{t+1} = (1 - p_t)\, \Delta V_{t+1}^0 + p_t\, \Delta V_{t+1}^1,$$

where ΔV_{t+1}^0 is the continuation advantage of moving when no new child arrives, and ΔV_{t+1}^1 is the analogous advantage when a birth occurs. The intra-period analysis above implies that, with

a young child, specialization is efficient over a wider range of (w_l^m, w_l^f), and the marginal value of coordinating two full-time jobs is lower because holding two full-time positions is costly in terms of childcare and foregone non-market time. As a result, the additional value of a second offer—the "waiting for two offers" option value—is smaller when a child is present, so ΔV_{t+1}^1 exceeds ΔV_{t+1}^0 for a broad set of states: moving with one offer becomes relatively more attractive in the child state.

Differentiating the acceptance condition with respect to p_t, Appendix C shows that whenever $\Delta V_{t+1}^1 > \Delta V_{t+1}^0$, the dynamic reservation ratio $r_{\text{dyn}}^\star(\Omega_t)$ is strictly decreasing in the birth hazard:

$$\frac{\partial r_{\text{dyn}}^\star(\Omega_t)}{\partial p_t} < 0.$$

In words, when a near-future birth is more likely, the couple is more willing to accept a given male-only offer: the option value of waiting for joint offers falls because the efficient post-birth arrangement is already tilted toward specialization. This formalizes the idea that fertility and joint search are tightly linked: children and (anticipated) births expand the acceptance region for male-led moves and pull relocations closer to the childbirth window, consistent with the empirical clustering of such moves observed in the data.

3.3.2 Bargaining and Outside Options.

The previous section analyzed relocation and specialization under a given Pareto weight α_t. In the full model, α_t is itself endogenous and responds to spouses' outside options through limited commitment. Here I describe how children asymmetrically depress the primary caregiver's non-cooperative outside option and how this feeds into the evolution of Pareto weights and, ultimately, relocation decisions. Formal derivations of the non-cooperative problem and its comparative statics are provided in Appendix C.

Non-cooperative problem and individual contribution of childcare. Under non-cooperation, the couple stays in the current location j and cannot relocate or conceive unilaterally. Each spouse $g \in \{m, f\}$ chooses own hours and home inputs $a_t^{NC,g} = \{h_t^g, d_t^g, m_{Q,t}^g\}$ to maximize their period utility $u_t^g(c_t^g, \ell_t^g, Q_t; n_t, a_{n,t})$, subject to individual budget and time constraints and the shared

home-production technology:

$$c_t^g = w_t^g h_t^g - m_{Q,t}^g + T_t^g(n_t, a_{n,t}) - \frac{1}{2}\Big[\rho_c(a_{n,t})\chi_t + \kappa(n_t)\Big], \qquad h_t^g + d_t^g + \ell_t^g = T,$$

$$Q_t = (d_t^m)^{\tilde{\delta}_d^m}(d_t^f)^{\tilde{\delta}_d^f}(m_{Q,t}^m + m_{Q,t}^f)^{\tilde{\delta}_m}.$$

Here, χ_t collects the age- and schedule-dependent childcare term (e.g. $\min\{h_t^m, h_t^f\}$ or $\max\{\min\{h_t^m, h_t^f\} - 30, 0\}$ when $a_{n,t} \geq 5$). Monetary child costs are split equally, but each spouse internalizes only their own valuation $\psi_Q^g(a_{n,t})$ of the public good Q_t. Let $V_t^{NC,g}(\Omega_t, j)$ denote the resulting non-cooperative continuation value. By contrast, the cooperative problem in Section 3.3 allocates time and consumption jointly to maximize a Pareto-weighted sum of spouses' utilities; childcare costs enter the joint budget and Q_t is produced efficiently from both spouses' time and market inputs.

Time burden and under-provision of home production. At a given (h_t^m, h_t^f) and $(n_t, a_{n,t})$, the cooperative solution yields closed-form demands for home time and leisure:

$$d_t^{C,g} = (T - h_t^g)\,\frac{\bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_d^g}{\alpha_g\psi_L(a_{n,t}) + \bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_d^g}, \qquad \ell_t^{C,g} = T - h_t^g - d_t^{C,g},$$

where $\bar{\psi}_Q(a_{n,t})$ is the Pareto-weighted marginal utility of home production. Increasing ψ_Q^g or $\tilde{\delta}_d^g$ raises $d_t^{C,g}$: the spouse who values and produces Q_t more supplies more home time even under cooperation.

In the non-cooperative problem, the optimal $d_t^{NC,g}$ has the same functional form but uses the individual $\psi_Q^g(a_{n,t})$ instead of $\bar{\psi}_Q(a_{n,t})$ and omits Pareto weights in front of $\psi_L(a_{n,t})$. If, as in the calibration, the wife is the primary caregiver when children are present—so that $\psi_Q^f(a_{n,t}) > \psi_Q^m(a_{n,t})$ and $\tilde{\delta}_d^f > \tilde{\delta}_d^m$ for $n_t > 0$—then the non-cooperative solution implies

$$d_t^{NC,f} > d_t^{C,f}, \qquad \ell_t^{NC,f} < \ell_t^{C,f}.$$

In other words, in her outside option the mother devotes strictly more time to home production and enjoys less leisure than under cooperation, even though the monetary childcare cost is split equally and the household technology is unchanged.

Because Q_t is a public good and each spouse chooses $m_{Q,t}^{NC,g}$ based only on their own $\psi_Q^g(a_{n,t})$,

the total purchased input $m_{Q,t}^{NC,m} + m_{Q,t}^{NC,f}$ is lower than in the cooperative allocation. Standard public-good arguments then imply that $Q_t^{NC} < Q_t^C$, and the utility cost of this under-provision is larger for the spouse with higher $\psi_Q^g(a_{n,t})$ and higher $\tilde{\delta}_d^g$. Thus the immediate effect of childbirth on the non-cooperative problem is threefold for the mother: she faces a tighter time constraint, contributes more home time, and suffers greater utility loss from the under-provision of Q_t. Together these channels push $V_t^{NC,f}$ down relative to $V_t^{NC,m}$ at the time of birth.

The gap between cooperative and non-cooperative utilities for each spouse can be summarized by the cooperation surplus

$$S_t^g(\Omega_t, j; \alpha_t) \equiv V_t^{C,g}(\Omega_t, j; \alpha_t) - V_t^{NC,g}(\Omega_t, j).$$

Given the log–Cobb–Douglas structure, S_t^g is increasing in $\psi_Q^g(a_{n,t})$ and $\tilde{\delta}_d^g$: the spouse who values and produces the public good more has more to lose from falling back to non-cooperation.

Dynamic human capital, wages, and outside options. Children also affect outside options through dynamic human capital. Let x_t^g be human capital. If employment raises x_t^g and non-employment leads to depreciation, and if wage offers w_{t+1}^g are increasing in x_{t+1}^g, then any increase in the non-employment hazard for the primary caregiver lowers her expected future wages and her future non-cooperative value. In the model, when young children are present, the mother is more likely to reduce or pause market work, so that, even starting from identical pre-birth $x_t^m = x_t^f$, we have

$$E[w_{t+1}^f \mid n_t > 0, a_{n,t} \leq 4] < E[w_{t+1}^m \mid n_t > 0, a_{n,t} \leq 4],$$

and this inequality propagates forward. Since $V_t^{NC,g}$ is strictly increasing in expected earnings and concave in consumption, the expected outside-option gap $E[V_{t+s}^{NC,m} - V_{t+s}^{NC,f}]$ widens as s grows. Thus childbirth not only lowers the caregiver's outside option contemporaneously, but also changes the dynamic trajectory of outside options through human-capital and wage dynamics.

Cooperation surplus, participation constraints, and bargaining weights. Under limited commitment, cooperative allocations (a_t^C, α_t) must satisfy

$$S_t^g(\Omega_t, j; \alpha_t) \geq 0, \qquad g \in \{m, f\},$$

and deliver strictly positive joint surplus. Which participation constraint binds determines which spouse has leverage to renegotiate α_t. When the wife's constraint binds in location ℓ, the Pareto weight is determined by the equation

$$V_t^{C,f}(\Omega_t, \ell; \alpha_t) = V_t^{NC,f}(\Omega_t, \ell).$$

Because $V_t^{C,f}(\Omega_t, \ell; \alpha_t)$ is strictly decreasing in α_t (a higher α_t shifts resources toward the husband), raising the wife's outside option $V_t^{NC,f}$ requires lowering α_t to keep her just indifferent between cooperation and non-cooperation. Appendix C shows formally that, whenever her participation constraint binds,

$$\frac{\partial \alpha_t}{\partial V_t^{NC,f}} < 0.$$

In these states, improvements in the wife's outside option translate into higher bargaining weight for her; conversely, decreases in $V_t^{NC,f}$—such as those generated by childbirth, childcare constraints, and human-capital dynamics—may shift α_t upward, in favor of the husband.

In regions of the state space where neither spouse's constraint binds, small changes in $V_t^{NC,g}$ may leave α_t unchanged; in those states the weight evolves according to the bargaining rule and past α_{t-1}. But the mechanisms above imply that childbirth and sustained specialization tend to move couples into regions where the wife's participation constraint is slack and the husband's is more likely to bind, generating an upward drift in α_t as children arrive and age.

Finally, these bargaining adjustments do not occur only when relocation is on the table. Each period, between the realization of shocks and the Stage 4 cooperative decision, the couple compares cooperative and non-cooperative values and, if necessary, renegotiates α_t to restore both participation constraints. Shocks to wages, employment, and fertility therefore generate changes in the Pareto weight even in periods without relocation. Because joint surplus is evaluated as the Pareto-weighted sum of spouses' continuation values (Equation 6), the "status-quo" weight α_{t-1} at the time a relocation opportunity arrives already reflects past shocks to outside options and tends to be tilted toward the non-caregiver after childbirth. When spouses disagree about a male-favoring move, this tilted weight makes it easier for the husband's preferred relocation to satisfy the participation constraints and be implemented. In this way, the effects of fertility and children on non-cooperative outside options accumulate into persistent shifts in decision power, shaping both the timing and the direction of job-related moves in the model and in the data.

4 Testing the Theoretical Implications: FTB-B Policy Reform

A central implication of the model is that fertility and children affect couples' moving decisions via two forces: a specialization channel, which raises the joint surplus from moving by increasing the gains from a single-earner model when children are young, and a bargaining channel, which shifts intra-household decision power toward the husband when preferences conflict. The exercise that follows tests these mechanisms. I first show that a sharp eligibility change in a child subsidy that explicitly rewards single-earner families shifts only job-related moves for husbands, not relocations for wife's jobs or non-work related moves; I then examine the aggregate change along the two margins emphasized by the model.

The empirical strategy exploits a discrete tightening of Australia's Family Tax Benefit Part B (FTB-B) for partnered couples with children on 1 July 2015. FTB-B is a per-family transfer introduced on 1 July 2000 under the A New Tax System (Family Assistance) Act 1999 and administered by Centrelink/Services Australia. FTB has two parts: Part A, paid per child and means-tested on combined family income; and Part B, which provides extra support to single parents and to couple families with one main earner. For partnered couples, Part B applies a two-part test: eligibility requires the higher earner's adjusted taxable income to be below a cap, and conditional on that, the lower earner's income reduces the payment at 20 cents per dollar above the lower-earner income-free area. Crucially, for how the reform enters household decision problems, the payment is made to a single claimant—typically the primary carer—so the transfer maps directly into that individual's budget set.

The 2015 reform lowered the primary-earner cap for couples from $150,000 to $100,000 while leaving the secondary-earner income test and taper structure unchanged. Crucially, for identification, the cap cut was announced in the 2014–15 Federal Budget on 13 May 2014 with a fixed commencement date of 1 July 2015 (the start of the next financial year) and no phase-in, a standard one-budget-cycle lead that limits scope for within-household re-timing of relocation around the cut.[13]

This setup makes the 2015 cut an informative quasi-experiment for the two margins. On the specialization margin, FTB-B raises the return to a single-earner arrangement, especially when the

[13]The cap cut was announced on Budget night (13 May 2014), but remained contingent on parliamentary passage. The relevant amending Act received Royal Assent on 26 November 2014, with a fixed commencement of 1 July 2015.

youngest child is pre-school age; tightening eligibility at $100,000 reduces this return exactly for couples near the cutoff. On the bargaining margin, the two-part test makes the transfer most salient when the wife's own earnings are low or zero: because the payment is made to the primary carer, it directly increases her private outside option when she is non-employed or has low earnings. Put differently, the same legislative change altered the cooperative returns to specialization through the cooperative budget constraint (a change in the wife's effective net wages), and separately, lowered the wife's non-cooperative outside options, thereby weakening the woman's bargaining power.

I begin by documenting the aggregate effects of the reform on migration, before introducing any heterogeneity. The main empirical strategy is to estimate a difference-in-differences (DiD) around the new income threshold, using couple-year panel data from HILDA. For the analysis, I restrict my sample to couples with children of eligible age (under 13), and restrict my couple-year panel data from HILDA 2013–2018.[14] The sample restriction is chosen to observe couples in years near the reform. I define the the control and treatment groups by the primary earner's annual income near the eligibility threshold, where the treatment group consists of couples with primary-earner income of $100–125k; control couples are $75–100k. The treated indicator assigned using income measured before 2016 (the average of 2013–2015 earnings) to prevent sorting between bins after the policy change.[15] The DiD estimates rely on the assumption that, absent the reform, trends in migration would have been parallel for couples in the $100–125k and $75–100k pre-reform income bands, conditional on controls. The baseline specification is

$$Y_{it} = \beta \left(T_i \times \text{Post}_t\right) + X_{it}\gamma + \alpha_i + \lambda_{s\times t} + \varepsilon_{it}, \tag{11}$$

where (Y_{it}) is an indicator for a move, (T_i) is the treated indicator, $(Post_t)$ equals one for $(t \geq 2016)$, X_{it} includes a flexible control for the primary-earner income level, α_i are couple fixed effects, and $\lambda_{s\times t}$ are state×year fixed effects. I cluster SE at the couple level.

Using the same regression design, I estimate on three moving outcomes——husband–job moves, wife-job moves, and non-work moves—to establish where the reform bites. These moves are defined by the stated "main reason for moving" variable, reported by individuals at the year they moved,

[14] A later change removed FTB-B for partnered couples once the youngest child turned 13, commencing 1 July 2016, which I avoid by restricting to households with the youngest child under 13.

[15] In Appendix Table D.1, I show the sample mean and differences between two groups, and the treatment group consists of slightly older men and women, similar male and female employment status and presence of young children, with higher percentage of treatment group having men as the primary earner.

as described in Section 2. The estimates in Table 4 Panel A show a statistically significant response only for husband-job moves, with coefficients near zero for wife-job and non-work moves. That the aggregate change is concentrated on husband-led moves, while leaving other move reasons flat, is the empirical puzzle that motivates opening the aggregate effect into mechanisms. I document in Appendix Figure D.1 that there is no pre-trends in the moving probabilities prior to the reform for both treatment and control groups.[16]

Table 4: FTB-B Reform

Panel A

	Move for Men's Job	Move for Women's Job	Move for Family	Move for Location
$T \times \text{Post}$	-0.0093**	-0.0002	-0.0040	-0.0017
	(0.0046)	(0.0052)	(0.0030)	(0.0041)
N	3640	3640	3640	3640

Panel B

	Move for Men's Job		ATT
$T \times \text{Post}$	-0.0042	$\Delta_{S=0,B=0}$	-0.004
	(0.0080)		(0.008)
$T \times \text{Post} \times S$	-0.0579***	$\Delta_{S=1,B=0}$	-0.0621
	(0.0203)		(0.0207)
$T \times \text{Post} \times B$	0.0290**	$\Delta_{S=0,B=1}$	0.0248
	(0.0139)		(0.0112)
$T \times \text{Post} \times S \times B$	0.0250	$\Delta_{S=1,B=1}$	-0.008
	(0.0252)		(0.0106)
N	3640		

Note: This table reports difference-in-differences estimates of the effect of the 2015 FTB-B reform on long-distance moves. The outcome in each column is an indicator for whether the household undertakes a long-distance move for the indicated reason between survey waves. The sample consists of partnered couples with FTB-B–eligible children whose pre-reform average primary-earner income lies between \$75,000 and \$125,000. The treatment indicator T_i equals one for couples with pre-reform average primary-earner income between \$100,000 and \$125,000 and zero for those between \$75,000 and \$100,000. Post_t is an indicator for post-reform years ($t \geq 2016$). Panel A reports estimates of equation (11), where the coefficient on $T_i \times \text{Post}_t$ measures the average treatment effect on each move outcome. Panel B reports estimates of the decomposed specification in equation (12), which interacts $T_i \times \text{Post}_t$ with baseline subgroup indicators. S_i denotes high specialization pressure (youngest child aged 0–5 at the time of the reform), and B_i denotes high bargaining exposure (the wife's average pre-reform earnings are low enough that, conditional on the primary earner being under the cap, the family would be entitled to a positive FTB-B payment). The coefficients on $T_i \times \text{Post}_t$ and its interactions with S_i and B_i come from a single pooled regression; the $\Delta_{S,B}$ columns report the implied cell-specific average treatment effects for each (S, B) combination as linear combinations of these coefficients. All specifications include couple fixed effects, state-by-year fixed effects, and the baseline set of controls described in the text. Standard errors, reported in parentheses, are clustered at the couple level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

I then investigate how the reform affected migration behavior by separately tracing its impact on the two mechanisms in the model. In the model, FTB-B enters (i) the cooperative budget constraint as a function of earnings and child age, and (ii) the wife's non-cooperative outside option,

[16] Additionally, a joint F-test of the pre-reform event-study coefficients fails to reject the null of equal pre-trends ($F = 0.72$; $p = 0.49$), providing no evidence of differential pre-trends between treated and control couples.

as the payment is assigned to the primary carer. The cap tightening from \$150,000 to \$100,000 for the primary earner therefore shifts two key objects (see Appendix D.1 for formal derivations). First, for couples below the old cap with young children and a working wife, FTB-B effectively raises the payoff to a one-earner arrangement by partly offsetting the wife's foregone earnings when she reduces work, and (through the taper on her income) lowers her effective net wage. In the model's intraperiod solution this lowers the specialization threshold and enlarges the set of husband-job offers for which a "move-and-specialize" outcome is optimal. Removing eligibility for the treated income group eliminates this wedge: the wife's effective net wage increases, and the surplus gain from specializing after a husband-job move falls, implying a lower propensity to move for his job in states where specialization was previously attractive, in particular, treated couples with pre-school children.

Second, for couples in which the wife has low own earnings and qualifies for FTB-B, the payment contributes directly to her individual non-cooperative budget and has a disproportionately large effect on her outside option relative to her own resources, as utility is concave in own consumption. In the limited-commitment structure, a higher $V_t^{NC,f}$ tightens her participation constraint and is absorbed by a lower Pareto weight on the husband; conversely, when the cap cut removes FTB-B for treated couples, $V_t^{NC,f}$ falls, the cooperative surplus gap $S_t^f - S_t^m$ widens, and the equilibrium weight α_t shifts toward the husband. This reweighting matters exactly for husband-led job offers, where his gains and preferred locations exceed hers: for such moves, the model's implementation condition is strictly increasing in α_t, so the reform makes these husband-job moves more likely to go through.

Empirically, I therefore compare households just below and above the new cap and exploit (i) heterogeneity by youngest-child age to capture the specialization channel, predicting a decline in husband-job moves among treated couples with young children; and (ii) heterogeneity in the wife's earnings to capture the bargaining channel, predicting an increase in husband-led moves among treated couples where the wife previously had low earnings and FTB-B was quantitatively relevant for her outside option.

Because these two mechanisms have opposite implications for husband-job moves, I partition the sample into mutually exclusive cells based on (i) the presence of a young child (pre-school-age youngest child) and (ii) the wife's earnings / FTB-B relevance, and compare treated and

control households within each cell. The "young child, not low-earning wife" group isolates the specialization channel, where the reform should primarily reduce husband-led job moves. The "no young child, low-earning wife" group isolates the bargaining channel, where the reform should primarily increase husband-led moves. The "young child, low-earning wife" group is where the two forces operate in opposite directions, so observed effects reflect their interaction. Finally, households with no young child and no low-earning wife serve as a natural benchmark where neither mechanism is predicted to respond strongly to the FTB-B tightening. This design allows me to separately probe and contrast the specialization and bargaining predictions implied by the structural model.

To implement this decomposition empirically, I estimate a pooled DiD that saturates the treatment effect with interactions by subgroup indicators and then recover cell-specific effects by linear combinations. Let S_i indicate *high specialization pressure* (youngest child aged 0–5) and B_i indicate *bargaining exposure* (wife low income or non-employed). I define S_i using the presence of a pre-school-age child at the time of the reform (2015), so that it captures specialization pressure when the policy change occurs. I define B_i using the wife's average pre-reform earnings, and refer to a "low-income wife" as a wife whose own annual earnings are low enough that, conditional on the primary earner being under the cap, the couple is eligible for a positive FTB-B payment. The pooled specification is

$$\begin{aligned} Y_{it} =& \beta_{TP}(T_i \times Post_t) + \beta_{TP\times S}(T_i \times Post_t \times S_i) + \beta_{TP\times B}(T_i \times Post_t \times B_i) \\ &+ \beta_{TP\times S\times B}(T_i \times Post_t \times S_i \times B_i) + X_{it}\gamma + \alpha_i + \lambda_{s\times t} + \varepsilon_{it}. \end{aligned} \tag{12}$$

From a single regression with couple and state×year fixed effects, and couple-clustered standard errors, I obtain the four cell-specific average treatment effects on the treated (ATTs) as linear combinations:

$$\Delta_{00} = \beta_{TP}; \quad \Delta_{01} = \beta_{TP}+\beta_{TP\times B}; \quad \Delta_{10} = \beta_{TP}+\beta_{TP\times S}; \quad \Delta_{11} = \beta_{TP}+\beta_{TP\times S}+\beta_{TP\times B}+\beta_{TP\times S\times B}.$$

I then report and discuss the two mechanism contrasts directly: the specialization effect $\beta_{TP\times S}$ (bargaining "off") and the bargaining effect $\beta_{TP\times B}$ (specialization "off"), and the incremental interaction $\beta_{TP\times S\times B}$ telling us whether bargaining is differentially stronger when specialization pressure is high. The ATTs quantify annual changes in the probability of a husband-job move relative to the counterfactual control.

In Table 4 Panel B, the results line up with the model's theoretical predictions. First, the baseline cell, *no young child, high income wife* (S=0, B=0), the effect of the reform on probability of moves is statistically insignificant. In the *young child, high income wife* cell (S=1, B=0), ATT is -6.21 percentage points ($p = 0.003$): eligibility removal makes husband-job moves 6.21 pp less likely per year than they would have been absent the reform for otherwise similar couples, consistent with the reform removing a transfer that propped up single-earner viability when childcare demands are highest. Given baseline annual hazards of roughly 3%, this is a substantial shift; it corresponds to around 12–13 fewer moves per 1,000 couple-years, and around 50 fewer per 1,000 cumulated over 2016–2018.

In the *no young child, low income wife* cell (S=0, B=1), the ATT is +2.48 pp ($p = 0.026$): husband-job moves become 2.48 pp more likely per year relative to the control trend–about 7 additional moves per 1,000 couple-years, or around 28 per 1,000 over four years, consistent with the reform weakening the wife's outside option and veto power exactly where the program had previously raised it. In the overlap cell (S=1, B=1), the net effect is smaller because the two forces offset; and the four-way interaction $\beta_{TP\times S\times B}$ is correspondingly modest, meaning conditional on low wife's income, the incremental bargaining effect is not differentially larger in the presence of a young child, indicating no additional complementarity beyond the sum of the two channels. Substantively, the mechanism-consistent signs and the concentration of aggregate effects on husband-motivated moves validate the two-channel model, matching the direction of theoretical implications. The negative specialization contrast pins down how much the policy reduced the financial return to a one-earner allocation when children are young; the positive bargaining contrast quantifies how much the policy shifted intra-household relative threat points when the wife's outside option runs through non-employment. These are the exact wedges my model's comparative statics turn on, and they are where the data move most when the legislature moves the $100,000 cap.

Robustness As a robustness check on the baseline DiD, I first assess the parallel-trends assumption. Appendix Figure D.1 plots event-study coefficients for treated and control couples around the reform and shows no evidence of differential pre-trends in husband-job moves; a joint F-test of the pre-reform interactions cannot reject equality of pre-trends ($F = 1.18; p = 0.31$). I carry out the same event-study exercise within each (S_i, B_i) subgroup, and in all cases treated and control

couples track each other closely before the reform, with joint pre-period F-tests failing to reject equal trends. I then verify that the main results are not an artifact of the particular income bandwidth or sample definition. Appendix Table D.2 shows that widening or narrowing the income window around the cap (to \$70k–\$130k or \$80k–\$120k) yields very similar patterns: the aggregate effect of the reform remains concentrated on moves for men's jobs, and the signs and relative magnitudes of the subgroup contrasts are stable. Finally, I estimate placebo versions of the design in samples that should not be differentially exposed to the FTB-B change. Appendix Table D.3 reports that comparing households just below and above a higher "fake" threshold (primary-earner income \$100k–\$125k vs. \$125k–\$150k), or applying the treatment definition to couples with no FTB-B–eligible children, produces coefficients that are small and statistically indistinguishable from zero. These pre-trend and placebo results suggest that the estimated effects are not driven by violations of parallel trends, generic breaks in mobility across nearby income bands, or other shocks affecting ineligible households.

5 Estimation Strategy

I estimate the model parameters in two-steps. Some parameters, listed in Appendix Table 5, are externally calibrated outside the model. Then, I estimate the remaining parameters, Θ, within the model in a second step.

5.1 Externally Calibrated Parameters

The per-period fixed child cost κ_n captures expenditures attributable to the presence of children (food, housing quality upgrades, durables). I calibrate it from the ABS Household Expenditure Survey (HES) 2015-2016 composition tables by taking the ratio of average weekly total expenditure for couple households with dependent children relative to couple-only households with reference person aged under 35, and multiplying that ratio gap by sample average household disposable income to obtain κ_n. To scale expenditure with family size, I use HILDA microdata to average of households' reported weekly expenditure from Self-Completed Questionnaire (SCQ) by $n \in \{1, 2, 3\}$ and apply the ratios to the baseline cost per child.

I assign hourly childcare costs $\rho_c(a_{n,t})$ by using HILDA data on couples who both work full-time and pay for formal childcare. I cross-check this value with ABS Child Care / Childhood Education & Care survey which is a cross-sectional survey that reports mean cost per hour of formal care every three years from 2002 to 2017, which verifies that the cost accurately reflects the mean cost over thes sample period. For the government subsidies and benefits, I assign childcare subsidy rates (for FTB A and B) by using the HILDA tax-benefit model, which the HILDA survey team uses to estimate income taxes and family benefits. I assign the unemployment payment amount for individuals within coupled households using historical values within my sample period 2002 to 2019, from Australian Department of Social Services (DSS). [17]

I assign human capital depreciation rate to 0.1, following Keane & Wasi (2016), and the discount factor is set to $\beta = 0.95$. I assign involuntary layoff rate by averaging the historical annual retrenchment rate in the sample period, provided by ABS Participation, Job Search and Mobility. Lastly, biological fecundity by age calibrated based on medical literature (Khatamee & Rosenthal, 2002), which is reported in Appendix Table E.4. They are probabilities of conceiving in one year given the attempt to become pregnant.

Table 5: Externally Calibrated Parameters

Parameter	Description	Source
$\kappa_1, \kappa_2, \kappa_3$	Per-period fixed child cost, by number of children	ABS Household Expenditure Survey (HES) 2015-2016, HILDA SCQ
$\rho_c(a_n)$	Hourly rate of market-based childcare cost	ABS Child Care / Childhood Education & Care survey, HILDA
$T(n, a_n)$	FTB Subsidies	HILDA tax-benefit model
	Unemployment payment	Australian Department of Social Services (DSS)
δ	Human capital depreciation rate	Keane & Wasi (2016)
λ^0	Layoff Probability	ABS Participation, Job Search and Mobility
p_t^f	Biological fecundity	Khatamee & Rosenthal (2002)

Note: This table lists the preset parameters in the model, descriptions of the parameters, and the data source for the parameters.

5.1.1 Calibrated Parameters and Empirical Moments

Rest of the parameters of the model are estimated using indirect inference with the Method of Simulated Moments (McFadden, 1989). The parameters to be estimated are described in Table E.5. Using my model, I compute the vector of simulated moments, m_i^s, for each parameter vector guess Θ by solving the model backwards and then simulating the decisions of households. The parameter estimates are obtained by minimizing the sum of squared distances between the data

[17] Newstart Allowance was the main unemployment benefit for people 22 to Age Pension age who were unemployed (or treated as such) and met mutual-obligation activity requirements; it was paid fortnightly in arrears and continued as long as eligibility (including income and assets tests and participation requirements) was maintained.

moments and the simulated moments. Formally, the parameters are estimated to minimize the following objective function:

$$\hat{\Theta} = \text{argmin}_{\Theta}\, g(\Theta)' W g(\Theta)$$

where $g(\Theta) = \left(m_i^s(\Theta) - m_i^d\right)$ is a vector of differences between the empirical and simulated moments. W is a symmetric positive definite weighting matrix, and I use a diagonal matrix with the inverse of the variance of the empirical moments on the diagonal.[18]

The empirical moments I use for estimation is calculated from the HILDA data. Unless otherwise noted, all empirical moments are obtained as regression coefficients that include year and birth–cohort fixed effects.[19] Moments are computed at the couple–period level. Below I define the moments by parameter block; I defer all statements about how they identify parameters to Section 5.2. Additionally, I check my model against the DiD results of FTB-B reform on the migration outcomes for the heterogeneous treated groups, mirroring the same design as the DiD analyses above.

1. **Intra-period preferences and home technology:** I calculate some moments by the presence of children and age of youngest child. Denote $a_i \in \{0, 1, 2, 3\}$ denote child bins, where $a_i = 0$ indicates no children, $a_i = 1$ newborn, $a_i = 2$ pre-school-aged child (age 1-4), and $a_i = 3$ school-aged child (age 5+). Denote $\mathcal{H} = \{0, 40\} \times \{0, 25, 40\}$ as the the joint discrete labor-supply category. I calculate:

    - Share working for men and the share working full time and part time conditional on working for women, by age
    - Share working for men and share working full time and part time for women by child bins
    - Share of joint labor supply ($\mathcal{H}$) for non-movers, by child bins
    - Share of joint-employment transitions for non-movers, by child bins
    - Means of leisure and home time-input (sum of time spent on household chores and childcare) by gender, child bins, and labor supply.

[18] See the Appendix E for for details on numerical implementation and simulation the model for a given value of Θ.

[19] The model's time index is age, not calendar year, and does not include aggregate policy or macro states. Year and cohort dummies purge common shocks (policy, macro, cohort drift) that the model does not track as states. I discuss the within-sample policy reform below.

2. **Wage parameterization and job offers:** Let $M_i \in \{0,1\}$ denote mover status, and $\Delta \log w_i^g = \log w_{i,t}^g - \log w_{i,t-1}^g$. Among non-movers ($M_i = 0$), let $S_i^g \in \{0,1\}$ indicate a job switch by spouse g. I define whether an individual has switched jobs or not by using annual data on job tenure, and define a switcher if tenure ≤ 1 year for spouse g and non-switcher if tenure > 1 year. By construction, movers $M_i = 1$ are always job-switchers. I form three mutually exclusive samples: non-mover, non-switchers $\mathcal{S}_0^g = \{M = 0, S^g = 0\}$, non-mover, switchers $\mathcal{S}_1^g = \{M = 0,\ S^g = 1\}$, and movers $\mathcal{M} = \{M = 1\}$ (movers are treated as switchers by definition). I calculate the following moments, all by gender:

   - Mean and variance of log hourly wage when working by age and education
   - Mean log wage change for non-mover non-switchers ($\mathbb{E}[\Delta \log w_t^g | S_0^g]$), non-mover switchers ($\mathbb{E}[\Delta \log w_t^g | S_1^g]$), and movers ($\mathbb{E}[\Delta \log w_t^g | \mathcal{M}]$)
   - Probability of switching jobs for non-mover sample ($\mathbb{P}[S_1^g = 1 | M = 0]$)
   - Conditional mean log wage change $\mathbb{E}[\Delta \log w_t^g | \Delta \log w_t^g > 0]$ and $\mathbb{E}[\Delta \log w_t^g | \Delta \log w_t^g < 0]$, for all samples S_0^g, S_1^g, M
   - Variance of change in log wages. I calculate the residual from the following regression separately for each sub-sample S_0^g, S_1^g, M:

     $$\Delta \log w_t^g = \eta + \text{year FE} + \text{cohort FE} + \text{ occ} \times \text{industry FE} + e,$$

     I then calculate non-mover, non-switcher variance v_g^0, non-mover switcher variance v_g^1, and *mover variance* v_g^m
   - Spousal covariance in log wage residuals obtained from above regression for non-mover and mover samples, and define c^{move} and c^{stay}, respectively.
   - Person-mean of residualized wage

3. **Mobility and non-pecuniary location tastes:** Movers are couples with a long-distance relocation (>100 miles) between $t-1$ and t; by construction movers are job switchers. For each youngest–child age bin a, I calculate the following:

   - Moving rate, by age
   - Moving rate, by child bins
   - Share of joint-employment status for movers, by child bins

- Share of joint-employment transitions for movers, by child bins
- % Moves with log wage increase, by child bins and gender
- % Moves with weekly income wage increase, by child bins and gender
- % Moves with decrease in total household weekly income

4. **Fertility:**
   - Share with at least i children by age (for $i = 1, 2, 3$)
   - Distribution of birth spacing between first and second child

5.2 Identification

In this section, I provide an overview of proof of identification of the estimated parameters. I give a formal proof in the Appendix Section E. The parameters are jointly estimated in broadly three blocks of moments. The *intraperiod allocation block* (preferences over leisure and home production, and home technology) is pinned down by time-use and labor-supply moments within youngest-child age bins. The *wage-offer/acceptance block* (job-match dispersion and offer arrival) is identified by non-mover switching hazards and the distribution of wage changes for non-mover switchers. The *mobility block* (moving costs, location-taste dispersion, and location-match covariance across spouses) is identified by move rates and mover–stayer contrasts in the first and second moments of period-by-period wage changes, including *cross-spouse* covariances.

Within a youngest-child age bin a, the cooperative intraperiod problem yields first-order conditions that relate (i) the ratio of leisure to home time for spouse g to the ratio $\psi_{L,a}/\psi^g_{Q,a}$ and to the home-technology shares, and (ii) the *between-spouse* ratio of those marginal rates to the relative weights $\psi^m_{Q,a}/\psi^f_{Q,a}$ and the productivity shifts between male and female home time. First, within child age $a = 0$, a common $\psi_L(0)$ with normalization $\psi^f_Q(0) = 1$ identifies the baseline technology shares $\tilde{\delta}^g_d(0)$. Then, across child bins, $a \in \{1, 2, 3\}$, changes in time-use by same labor supply bin identify the gender-specific home-time productivity shifts $(\delta^{g,a}_d, \delta_d, \delta_m)$. With the technology shares identified from hours choice and time-use, $\psi_{L,a}/\psi^g_{Q,a}$ can be identified in each child bin, and combined with normalization, $\{\psi_{L,a}, \psi^g_{Q,a}\}$ can be identified.

Mobility parameters are disciplined by move probabilities and the economic outcome of moves. The moving cost vector $(\zeta_0, \zeta_1, \zeta_2)$ is identified by the differences in move rates across youngest-child

age bins and the age profile of move rates (higher costs tighten the threshold and reduce moves). The dispersion of non-pecuniary location tastes σ_γ^g is pinned by the mass of moves with small or negative wage gains and by the dispersion of move decisions among observably similar households, conditional on wages.

On the wage side, consider period-to-period changes $\Delta \log w_t^g$, split into job-specific ($\omega_{g,t}$), location-specific ($\omega_{g,t}^l$), and transitory ($\varepsilon_{g,t}$) components. For *non-mover switchers* (new job, same location), the variance increment of $\Delta \log w$ relative to non-switchers identifies the job-match dispersion $\sigma_{\omega_g}^2$. Additionally, I use the mean of $\Delta \log w$ *conditional on positive* and *conditional on negative* changes, by gender and mover status. The *mean* log gain change for non-mover switchers, together with the switch rate, separates the variance from the offer arrival λ^g (which raises the rate with little effect on the conditional mean) For *movers*, the additional variance increment over non-mover switchers identifies the location-match dispersion $\sigma_{\omega_g^l}^2$. Crucially, I empirically see that the *cross-spouse covariance* of residualized period-by-period wage changes jumps from approximately zero for stayers to a sizable positive value for movers. Matching that level (while replicating the same selection rule in the simulated panel) identifies the *correlation in spouses' location matches* ρ_{ω^l}.[20] Additionally, mean of $\Delta \log w$ *conditional on positive* and *conditional on negative*, together with the mover variance and covariance moments, allocate average gains between location technology (via $\sigma_{\omega_g^l}$ and ρ_{ω^l}) and selection on the move threshold (which the simulation reproduces). Because movers are selected (moves only occur if the surplus exceeds above a certain threshold), these contrasts reflect both true location dispersion and truncation. I measure the tightness of that truncation with the observed move rate (by youngest–child bin) together with moments that pin down variance in non-pecuniary location–preferences (the prevalence of small/negative pecuniary–gain moves and mover/stayer joint–employment transitions). Sign–conditional mover means provide an additional check that average gains are consistent with the inferred tightness.[21] Finally, I use variance of person mean residual, which can be decomposed into the variance of the permanent term and the variance of others, as identified above.

[20] Throughout, wage-change moments are constructed *after* residualizing $\Delta \log w$ on year, cohort and occupation×industry fixed effects, so national sectoral cycles are purged while the couple-level destination fit—our location-match object—is preserved. Since I do not account for geographic dispersion of wages by occupation/industry and the gender-composition of occupation/industry in my model, the gender difference in ω_g^l and the spousal correlation between the ω_g^l terms act as these variations.

[21] All wage–change moments are computed after residualizing $\Delta \log w$ on year, cohort, and *own* occupation×industry fixed effects (optionally interacted with year), so national sectoral cycles are purged while couple–destination fit is preserved. Any unmodeled cross–location industry/occupation dispersion loads onto the location–match objects ($\sigma_{\omega_g^l}, \rho_{\omega^l}$).

Lastly, fertility parameters (levels and age profile of ϕ_N, persistence π, innovation variance σ_η, and the postpartum spacing shifter $\tilde{\eta}_0$) are identified from parity-by-age shares and spacing distributions; the short-run spacing shifter is a local contrast between "youngest child age 0" and "age 1–2" within households.

6 Estimation Results

Appendix Table E.6 presents the parameters estimated using indirect inference. Several noteworthy observations emerge from these estimates. First, the presence of children—especially newborns—induces meaningful shifts in the relative utility weights on home production, leisure, and private consumption. In particular, the utility from home production rises with children around the same amount for men and women. Moreover, women's time is estimated to be more productive in home production than men's, with the gap being especially pronounced for couples with a newborn.

I estimate wage profiles that are broadly similar across genders, though men have a slightly higher baseline wage and return to human capital, as well as a higher variance in the job-specific match component. The probability of receiving a job offer is also marginally higher for men than for women. These patterns imply that women's lower life-cycle attachment to the labor market in the model is driven by the higher opportunity cost of market work when children are present—a finding consistent with the strongly gendered home-production parameters.

Men also exhibit greater variance in the location-match component of earnings. The cross-spousal correlation in location matches of around 0.2 indicates low assortative matching in location-job opportunities across spouses. This small magnitude of the correlation, combined with selection on one spouse's high draw and the partner's job separation risk, helps rationalize why a move can raise one wage while depressing the other. Finally, the estimated moving costs rise sharply with the arrival of a child. Importantly, the estimated levels are lower than those typically reported in the migration literature. Within the model's framework, this suggests that moving costs per se are not the primary impediment to relocation, even when potential gains are large.

6.1 Model Fit

The model aligns closely with the observed data moments. Figure F.3 shows that the model captures the overall patterns in moving rates by the presence and age of children. It also reproduces the decline in moving rates over time. Consistent with the data, Table F.3 indicates that moving rates depend on both whether couples have children and the child's age: couples are most likely to move before they have children; with children, overall moving rates fall but rise around childbirth.

Figure F.1 shows a close fit for employment rates. The model slightly overstates men's employment at older ages, which likely reflects the absence of explicit retirement and savings decisions, although it does capture the modest late-life decline. Figure F.3 reports employment rates by the child's age; the fit is close overall, with a mild overstatement of women's full-time employment for older children. This may stem from not distinguishing ages within the school-aged category, which limits the model's ability to match age-specific changes in maternal employment. Importantly, the model closely reproduces the relative changes in employment between movers and non-movers, indicating that it captures the selection into moves by child presence and the resulting effects on men's and women's employment.

The model also matches moments related to joint employment (Figure F.2), though it slightly overestimates the share of couples with an employed woman and an unemployed man. Wage profiles by age (Figure F.2) reveal that the model replicates wage growth very well, especially at younger ages, while slightly overstates men's and women's wages at older ages. It underrepresents moves in which both spouses experience wage declines, possibly because relocations in the model are triggered only by contemporaneous job offers, which may place relatively more weight on wage considerations than in the data. The model also matches log wage changes for job switchers and non-switchers.

For movers, the model fits the composition of joint wage changes (Table F.5) and joint employment (Table F.2) well. It modestly overstates moves in which the woman is employed and the man is unemployed, but it matches the relative differences across child ages and captures the pronounced shifts in joint employment around childbirth. Turning to time use, the model fits men's and women's hours well, though it produces slightly less dispersion in women's hours across employment states. It also somewhat overstates mothers' hours when children are school-aged, which

is consistent with not differentiating ages within that category. Finally, the model closely matches the distribution of households with children and the timing of fertility by age.

I further assess non-targeted moments in the simulated data, focusing on the motherhood penalty by mover status and women's employment by couple skill type. I calculate the child penalty using the following event-study specification in the HILDA data:

$$Y_{ist} = \sum_{\tau \neq -1} \alpha_\tau \mathbf{1}\{\text{birth}_{is} = \tau\} + \sum_k \beta_k \mathbf{1}\{\text{age}_{ist} = k\} + \lambda_s + \theta_{r(i,s)} + \nu^g_{ist}, \tag{13}$$

where the outcome variable Y_{ist} is women's weekly earnings in year s at event time t. The event time t is indexed relative to one year before childbirth. The equation regresses the outcome on event-time dummies, controlling for women's age as in Kleven et al. (2019), and includes year and state fixed effects. Analogously, in the simulated panel, I estimate the same regression but without calendar-year indicators and state fixed effects. I estimate this specification separately for women who have moved at least once during the period in which they are observed as part of a couple and for women who never move. Results are reported in Appendix Figure F.5, and the simulated regression closely matches the patterns in the data. In particular, women who move at least once during coupled years experience a larger child penalty. Lastly, I examine women's employment by couple skill type as an additional set of non-targeted moments to match heterogeneity in labor supply across couples' skill types. Results are reported in Appendix Table F.6 and show that the model reproduces differences in labor supply around the presence and age of children: high-type women exhibit stronger labor force attachment when children are present than low-type women.

Quasi-Experimental Evidence I check the model against the reduced-form evidence. I simulate the counterfactual in which the FTB-B subsidy is eliminated and estimate a DiD specification on the simulated panel that mirrors the empirical design. I restrict the sample to match the empirical treatment and control groups: couples with a primary earner in \$100–125k (treatment) and \$75–100k (control). I also replicate the subgroup decompositions used in the data: couples with pre-school children ($S_i = 1$) and couples with a no-/low-income wife ($B_i = 1$), where "low-income" follows the policy's eligibility definition.

To define a move for husband's job, I construct an indicator that equals one when the husband receives a non-local offer with a wage at least as high as his current wage. For each outcome—either

Table 6: Simulated Model: FTB-B

$\Delta_{S=0,B=0}$	-0.0120	$\Delta_{S=1,B=0}$	-0.0506
	(0.0100)		(0.0103)
$\Delta_{S=0,B=1}$	0.0211	$\Delta_{S=1,B=1}$	-0.0277
	(0.0076)		(0.0602)

the relocation indicator or this "moved for husband's job" indicator—I estimate:

$$\begin{aligned} Y_{it} &= \beta_{TP}\left(T_i \times Post_t\right) + \beta_{TPS}\left(T_i \times Post_t \times S_i\right) + \beta_{TPB}\left(T_i \times Post_t \times B_i\right) \\ &\quad + \beta_{TPSB}\left(T_i \times Post_t \times S_i \times B_i\right) + X_{it}\gamma + \alpha_i + \varepsilon_{it}, \end{aligned}$$

where $Y_{it} \in \{0, 1\}$ denotes the outcome, X_{it} are controls, α_i are couple fixed effects. The baseline ATT corresponds to the $(S = 0, B = 0)$ cell and equals β_{TP}; the subgroup-specific ATTs are obtained by adding the relevant interaction coefficients.

Table 6 shows that the simulated regression yields slightly lower levels across the board, but the ATTs closely track the quasi-experimental magnitudes. As in the data, the baseline ATT for $(S = 0, B = 0)$ is statistically insignificant. Empirically, the ATTs for $(S = 0, B = 1)$ and $(S = 1, B = 0)$ were 0.0248 and -0.0621, respectively, implying an absolute-effect ratio of about 0.40 (low-income-wife to pre-school-child). In the simulation, the corresponding ATTs are 0.0211 and -0.0506, yielding an almost identical ratio of 0.41. The $(S = 1, B = 1)$ cell also exhibits a smaller change in the moving probability, matching the empirical pattern. Overall, the simulated DiD replicates both the direction and the relative strength of the specialization and bargaining channels for moves, reinforcing the model's mechanism-level interpretation of the reform's effects.

Testing the Model: Empirical Finding on Spousal Disagreement on Moving Preferences While the model fit well to moments and the quasi-experimental evidence, a more stringent test is whether it reproduces the household decision-making process and how it changes with children documented empirically. In this section, I first use simulated data to replicate the key empirical findings as a validation exercise. Because some HILDA variables cannot be replicated exactly in simulation, I construct simulated counterparts that most closely reflect these measures and verify whether the empirical patterns persist. I then quantify the mechanisms that generate these outcomes.

Table 7: Simulated Model: Spousal Disagreement in Expected Values on Probability of Move

	No Child	Young Child
β_m	0.099	0.171
	(0.002)	(0.002)
β_f	0.098	0.082
	(0.002)	(0.001)

I test whether the model reproduces the relationship between individual spouses' moving preferences and the probability of moving. It is important to distinguish what the empirical analysis measures from what is feasible in the simulated panel. In HILDA, ex ante preferences indicate a desire to stay or leave but do not reference a specific destination (nor whether a concrete opportunity exists). In contrast, the simulation allows me to observe each spouse's expected values under moving versus staying when a non-local job offer arrives. I therefore examine how the probability of moving changes when spouses' expected values disagree, which still provides insight into how children shift whose preferences drive the joint relocation decision.

Specifically, among couples who receive a non-local job offer (i.e., have the option to move), I compare each spouse's value of moving relative to staying prior to any bargaining:

$$\Delta V_t^{C,g}(\text{move}, \Omega; \alpha_{t-1}) = V_t^{C,g}(\text{move}, \Omega; \alpha_{t-1}) - V_t^{C,g}(\text{stay}, \Omega; \alpha_{t-1}), \qquad g \in \{m, f\}$$

. Using these values, I estimate the following regression, mirroring the empirical exercise:

$$\text{relocate}_t = \beta_0 + \beta_f \text{she leave/he stay}_t + \beta_m \text{she stay/he leave}_t + \beta_a \text{she leave/he leave}_t + \epsilon_i$$

and the omitted category is $\text{SheStay/HeStay}_{it} = \mathbb{1}[\Delta V_t^{C,f} < 0 \wedge \Delta V_t^{C,m} < 0]$. Mechanically, because agents observe $\Delta V_t^{C,g}$, if both spouses have $\Delta V_t^{C,g} > 0$ relocation occurs, and if both have $\Delta V_t^{C,g} < 0$ it does not.[22] Hence identification comes from disagreement cases, and I focus on β_m and β_f. As in the empirical analysis, I estimate the regression separately by child presence.

Table 7 reports β_m and β_f by child status. For couples without children, spousal disagreement has similar effects on the probability of moving. For couples with young children, three patterns emerge relative to childless couples: (i) β_m for fathers is roughly twice as large as for non-fathers;

[22] In this case, no participation constraint binds, the Pareto weight is unchanged.

(ii) β_f for mothers declines relative to non-mothers; and (iii) β_m is about twice β_f among couples with children. These patterns exactly match the empirical evidence, indicating that the model reproduces the child-induced shift in whose preferences govern the joint relocation decision.

7 Evaluating Mechanisms & Counterfactual Policy Analysis

7.1 Understanding the Role of Joint Job-Search Frictions

First, I examine how the friction that arises from joint-job search affects couples' moving decisions, as it relates to fertility and children. In Table 8, I report—conditional on at least one non-local offer—the probability that an offer exceeds the current wage, $w^{g,k} > w^{g,\ell}$ (a "positive" offer). The results show that it is much less likely that both spouses receive positive offers than that only one does. Consistent with this, most moves are triggered by a single positive offer: about 60% of moves occur on one positive offer, while 35.5% occur when both spouses have positive offers.

Next, I ask when these one-offer moves occur. Figure 4 plots the difference in the average expected joint gain from moving with two positive offers versus one positive offer and traces how it evolves around childbirth:

$$\Delta V^C\big(\text{move};\, w^{g,k} > w^{g,\ell},\, w^{-g,k} > w^{-g,\ell}\big) - \Delta V^C\big(\text{move};\, w^{g,k} > w^{g,\ell},\, w^{-g,k} \leq w^{-g,\ell}\big).$$

Figure 4 shows the marginal value of a second offer declines sharply near childbirth, indicating that moves at this time gain less from an additional offer than in pre-birth years. Turning to the probability of moving conditional on any offer (Table 9), the increase in one-offer moves is concentrated among men: around childbirth, the probability of moving on the man's offer alone rises, while the probabilities of moving on the woman's offer alone or on joint offers fall.

Given that women are more likely to separate from employment with a newborn and young children—consistent with both the data and the model estimates—it is not surprising that couples become more likely to move with just one offer. The more puzzling pattern is that couples also move for the man's job prior to birth, when women are still more likely to be employed (as shown in the data and in the model fit). Table 10 speaks to this mechanism. It reports the value of moving and the marginal value of adding the woman's offer on top of the man's offer as a function of the

Figure 4: Marginal Value of Receiving One Additional Offer

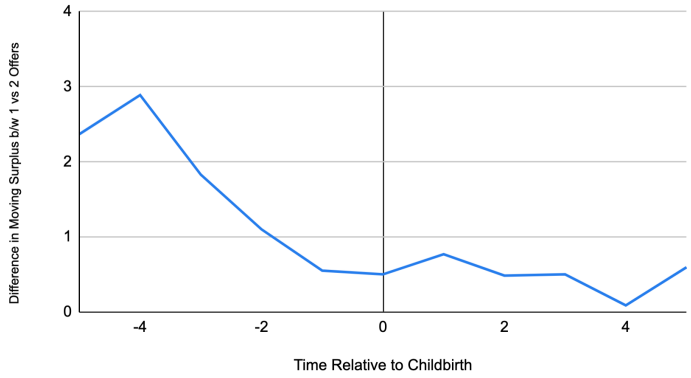


Table 8: Probability of Receiving Positive Offers, and % of Moves with Number of Positive Offers

	No Positive Offer	One Positive Offer	Two Positive Offers
Prob. Receiving:	61.2	35.4	3.4
% Moves with:	4.2	60.0	35.8

Table 9: Probability of Move by Offer, by Child Presence and Youngest Age

	No Child	Birth $t-2$	Birth $t-1$	Birth	Child 1-4	Child 5+
Only man received offer	1.36	1.63	1.75	2.30	1.76	0.65
Only woman received offer	0.52	0.25	0.18	0.14	0.35	0.31
Both received offers	3.34	3.30	3.21	3.20	2.70	1.32

Table 10: Joint Surplus from Moving, Conditional on Fertility Taste Shock

	Low η	High η
ΔV_t^C(move)	2.81	3.50
Marginal Value of Woman's Offer	1.02	0.82

persistent fertility taste-shock parameter η. When the taste shock is high, the value of moving rises, but the marginal value of the woman's additional offer falls. Given that the persistence of this shock π is estimated to be high (around 0.7), the model implies that couples anticipating childbirth tend to accept one-offer opportunities even before the birth occurs. As discussed earlier, child planning and the intertemporal trade-offs in the job-search framework encourage couples to preemptively accept one-offer moves despite both spouses currently working, because they foresee near-term gains from specialization. Moreover, since moving costs rise once children are present, couples are inclined to accept single-offer opportunities in anticipation of higher post-birth relocation costs. Waiting for a second offer risks forfeiting surplus, so decisions tilt toward accepting a one-offer move, even when it is inferior to the hypothetical two-offer outcome that might yield higher surplus if it materialized.

Given that couples time relocation around expected fertility while facing a dynamic joint job-search problem, I examine how search frictions contribute to their joint job and family decisions. Specifically, I ask to what extent geographic job search frictions induce couples to time moves within the window around childbirth in which the marginal gain from a second offer is lower. In this exercise, I simulate how couples would behave if both spouses always received distant job offers simultaneously and these offers exhibited perfectly correlated location-specific match values. Concretely, I let men's non-local job offer draws apply to both spouses and set $\rho_{\omega^l} = 1$. This does not eliminate all joint-search frictions: spouses still receive independent job-match terms (ω), and starting locations follow the baseline distribution. However, it substantially reduces the friction arising from geographic variation in non-local offers in my two-location framework. Because this counterfactual mechanically ensures that both spouses receive an offer, I focus on behavior conditional on receiving "positive" offers, defined as wage offers exceeding the current wage ($w_k^g > w_j^g$).

As shown in Table 11, under reduced search frictions a larger share of moves involves two positive offers relative to the baseline. This is mechanical but informative: perfect correlation in non-local offer arrivals guarantees offers for both spouses, while perfect correlation in location-specific match terms raises the likelihood that both offers are jointly favorable or unfavorable. More importantly, I study how this alters the interaction between moving and fertility. Table 12 reports the probability of moving, conditional on at least one positive offer, by childbirth timing and child presence. In the baseline, the probability of moving around childbirth rises when only the husband receives a positive offer but falls when only the wife or both spouses receive positive offers. Specifically, compared to no children, the probability of moving with only man's positive offer increases by 20% to 35% with children. Under reduced frictions, by contrast, the probability of moving with only a male positive offer remains roughly constant over the fertility window, with roughly 20 percent decrease in the probability these moves that occur between two-years prior to childbirth and youngest child's of age of four.

This pattern is mirrored in the joint surplus calculations. Table 13 reports differences in the expected value of moving and in the marginal value of the wife's offer between high and low fertility taste shocks. In the baseline, a high fertility taste shock raises the joint value of moving while lowering the marginal value of the wife's offer. Under the reduced-friction counterfactual, fertility taste shocks no longer materially affect either the value of moving or the marginal value of

her offer. Together, these results indicate that when couples face fewer geographic search frictions, there is less incentive to time relocation around childbirth in order to exploit asymmetries in offer arrivals.

Table 11: % of Moves with Number of Positive Offers

	No Positive Offer	One Positive Offer	Two Positive Offers
Baseline	4.2	60.0	35.8
Reduced Friction	3.8	31.0	65.1

Table 12: Probability of Move Conditional on Receiving Positive Offer

Only Man Receives Positive Offer

	No Child	Birth $t-2$	Birth $t-1$	Child 0-4	Child 5+
Baseline	4.22	5.05	5.10	5.71	2.69
Reduced Friction	4.21	4.26	4.25	4.07	2.60

Both Receive Positive Offers

	No Child	Birth $t-2$	Birth $t-1$	Child 0-4	Child 5+
Baseline	12.73	12.39	11.46	13.27	12.80
Reduced Friction	15.43	16.25	16.16	16.42	12.80

Table 13: Joint Surplus from Moving, Conditional on Fertility Taste Shock

	Baseline	Reduced Friction
$\Delta V_t^C(\text{move}; \text{high } \eta) - \Delta V_t^C(\text{move}; \text{low } \eta)$	0.697	0.181
Diff. in Marg. Value of Woman's Offer: High η - Low η	0.192	0.073

These findings underscore the importance of analyzing migration jointly with fertility: abstracting from fertility decisions risks missing the dynamic incentives and trade-offs that shape couples' relocation choices.

7.2 Understanding the Role of Limited Commitment and Bargaining

Having established the dynamic role of fertility in relocation under search friction, now I turn to a difference source of friction that arises in relocation decisions. I quantify (i) how endogenous bargaining weights affect moving decisions and (ii) how limited commitment generates inefficiency. The aim is to separate shifts in bargaining influence from joint-surplus maximization and specialization incentives.

Bargaining operates through two channels. First, the status-quo Pareto weight α_{t-1} tilts the objective toward one spouse's net gain or loss from moving. When neither spouses' participation

constraint binds, the allocation maximizes a weighted sum of spouses' values; in this case, a move can occur even if the strict sum of surplus is negative, provided the *weighted* surplus is positive. Second, outside options shape participation constraints: if a constraint binds, the couple renegotiates; the binding spouse can secure a larger share of any surplus (or a smaller loss) or veto the move altogether. I separately test how each channel affects relocation.

Table 14: Comparative Statics: Counterfactual Bargaining

Panel A

	CF1	CF2
Moves (Difference from Baseline)	(% Under)	(% Over)
All	10.1%	9.2%
No Child	5.0%	3.0%
Pre-School Child	10.8%	13.5%
School Child	14.2%	7.8%
$\Delta V_t^{C,m}$(move)	-0.525	0.366
$\Delta V_t^{C,f}$(move)	0.776	-0.573
ΔV_t^{C}(move)	0.251	-0.206
$\Delta \frac{w^f}{w^f+w^m}$	0.108	-0.049

Panel B

	Baseline	Counterfactual
PC binds for at Least One Spouse	9.9%	14.0%
% Moves Vetoed	21.9%	25.0%
	Counterfactual Negotiations	
% Newly Negotiated		
All	8.72%	
No Child	0.5%	
Pre-School Child	14.1%	
School Child	5.2%	
$\Delta V_t^{C,f}$(move)	-0.458	
$\Delta \frac{w^f}{w^f+w^m}$	-0.150	

I first assess what percent of moves are foregone because of unequal bargaining weights, to disentangle male-driven moves that reflect joint-surplus maximization from those driven by bargaining shifts. To that end, I compare the baseline to a counterfactual with equal bargaining weights, $\bar{\alpha} = 0.5$. Concretely, I identify cases where the joint value of moving is positive under $\bar{\alpha} = 0.5$ but negative under the realized α_t. Before turning to this exercise, I document how bargaining weights evolve over time in the simulated panel. Figure F.6, Panel A, shows the average implemented bargaining weight on the husband around the first birth. The weight is approximately

constant at 0.5 before childbirth, but jumps up and then gradually increases over time as couples have young children. As discussed above, this pattern arises because mothers accumulate less human capital than fathers, which lowers women's relative wages and, consequently, their outside options. [23]

Table 14, Panel A, shows that approximately 10% of moves are foregone because of unequal bargaining weights, with larger shares when children are present. This pattern is consistent with lower maternal bargaining weights in the presence of children, which reduces women's effective influence over relocation. In these foregone cases, women's expected value of moving is positive on average, men's is negative on average, and the joint surplus is nevertheless positive. Thus, bargaining frictions cause households to forgo Pareto-improving relocations. I then examine wage consequences. Table 14 reports the average change in women's wage share, $w^f/(w^f + w^m)$. The previously foregone moves would generate larger wage gains for women and raise their relative wage share. Hence, bargaining shifts associated with children lead households to disproportionately forgo relocations that would improve women's wages.

I then examine the opposite margin: moves that occur in the baseline but would not occur under equal bargaining weights. These are relocations that would be rejected if spouses had balanced bargaining power; I refer to them as "overtaken" moves due to bargaining frictions. Column CF2 of Table 14 reports that about 9.2% of baseline moves fall into this category, with substantial heterogeneity by child status. Now, it is informative to compare undertaken and overtaken moves by the youngest child's age. For couples with older or no children, overtaken moves are fewer than undertaken moves; for couples with young children, the pattern reverses: (i) fewer moves would occur under equal bargaining and (ii) more moves occur only under unequal bargaining (10.8% vs. 13.5%). Intuitively, with young children, women's gains from moving are lower because they face higher opportunity costs of work and lower employment probabilities, while anticipated dynamics (rising future returns to employment as children age, and the potential loss of human capital and wages if they move without an offer, which further depresses future bargaining weight) raise women's perceived costs of relocating. Thus, when children are young, moves are especially likely to be overtaken for the man's gains rather than the woman's.

Next, I isolate the role of limited commitment by focusing on relocations that would generate

[23] The estimated Pareto weights of around 0.55 with children are consistent with values in Verriest (2024) and Low et al. (2018).

joint surplus under full commitment but are renegotiated or vetoed under limited commitment. To that end, I examine the cases in which at least one spouse's participation constraint binds when a move is considered. Panel B Column 1 shows that at least one constraint binds about 10% of the time, triggering renegotiation; of these, roughly 22% of moves are vetoed. Thus, a meaningful share of joint-surplus moves is foregone due to the inability to commit.

I then study how asymmetries in outside options shape bargaining. First, I report the simulated difference in relative cooperation surplus between men and women. Cooperation surplus is defined as the difference between individual's value under cooperation and non-cooperation, $S_t^g = V_t^{C,g} - V_t^{NC,g}$. These value determine whether the participation constraint is more or less likely to bind, hence triggering renegotiation of the weight α under limited commitment. Figure F.6, Panel B, plots the relative surplus between spouses, $(S_t^f - S_t^m)$ around the birth of the first child. I find that women's cooperation surplus increases sharply relative to men's at childbirth. Comparing this pattern to the evolution of bargaining weights in Panel A, this change indicates that gradual human capital and wage divergence is not the only driver of shifts in bargaining power. Instead, an immediate decline in women's outside options—reflecting a higher individual childcare burden and under-provision of the public good Q under non-cooperation—makes their participation constraint less likely to bind, weakening their leverage in renegotiation over the surplus from moving and reducing their effective veto power over relocation.

To quantify the role of this shift in moving decisions and outcomes, I construct a counterfactual in which women have the same cooperation surplus as men, making the woman's participation constraint equally likely to bind. Let the man's cooperation surplus be $S_t^m \equiv V_t^{C,m} - V_t^{NC,m}$. Define the woman's counterfactual outside option $\tilde{V}_t^{NC,f} \equiv V_t^{C,f} - S_t^m$, so that $V_t^{C,f} - \tilde{V}_t^{NC,f} = S_t^m$. I then examine how the incidence of negotiation changes under this equalized-surplus scenario. Panel B, Column 2, shows that the share of cases with at least one binding constraint rises to about 14% (vs. 10% in baseline), and roughly 25% of these are vetoed.

Restricting attention to baseline moves that occurred without triggering renegotiation, I ask how many would become "newly" renegotiated or vetoed under the counterfactual. That is, among moves that happened in baseline with no binding constraints, I compute the share that would be negotiated under the counterfactual. On average, about 9% of these moves become newly negotiated, with higher rates as the youngest child's age increases. These newly negotiated moves systemat-

Table 15: Comparative Statics: Counterfactual Moves under "Equal Leverage"

Panel A

	Baseline	Counterfactual
Moved Ever	23.8%	22.4%

Panel B

	Counterfactual Moves Compared to Baseline
% Change in Avg. ΔV_t^m(move)	-0.52%
% Change in Avg. ΔV_t^f(move)	7.91%

	Baseline	Counterfactual
Avg. Spousal Lifetime Earnings Ratio f/m	0.780	0.801

Panel C

	Baseline Only	Counterfactual Only
Avg. $\Delta V_t^{C,m}$(move)	0.231	-0.095
Avg. $\Delta V_t^{C,f}$(move)	-0.260	0.199
Avg. Spousal Lifetime Earnings Ratio f/m	0.671	0.852

ically entail negative expected gains for women and larger post-move wage gaps. In aggregate, equalizing relative outside options across spouses reduces the number of joint-surplus moves that go through, but reallocates surplus more evenly among those that occur (via new negotiations) or screens out those that would be vetoed. Hence, while symmetric outside options can increase one source of inefficiency from limited commitment (more vetoes), they also shift surplus toward the spouse with less leverage in baseline.

Given that bargaining frictions substantially affect whether a move occurs, what is the net impact after removing these distortions? I construct a counterfactual set that eliminates bargaining frictions: I add back moves that were vetoed solely by unequal bargaining weights or asymmetric cooperation surpluses and drop moves that occurred only because of those frictions. I refer to the resulting set as "moves under equal leverage." Table 15 reports the comparison between these moves to baseline.

First, as shown in Panel A, the share of ever-movers falls modestly (by less than two percentage points), indicating that equal leverage need not materially change mobility rates. The distributional consequences, however, differ markedly. Panel B reports the percent change in the average expected value of moving for men and for women under the counterfactual relative to baseline moves, as well

as the spousal lifetime earnings ratio, $\frac{\sum_{t=0}^{T} w_t^f h_t^f}{\sum_{t=0}^{T} w_t^m h_t^m}$, for ever-movers under baseline and counterfactual. Under equal leverage, women's expected gains from moving are much greater (7.91%), men's are modestly lower (-0.52%), and the spousal lifetime earnings ratio increases. Thus, when bargaining frictions are neutralized, the moves that occur generate greater surplus and wage growth for women than the moves taken under baseline bargaining.

Lastly, I compare moves that occur *only* because of bargaining frictions with those that occur *only* under equal leverage. Panel C contrasts baseline-only moves (occur in baseline but not under equal leverage) with counterfactual-only moves (occur under equal leverage but not in baseline). Focusing on this margin isolates cases where bargaining directly determines the outcome. Consistent with earlier results, baseline-only moves deliver positive average expected gains for men and negative average expected gains for women, and they generate negative joint surplus on average—inefficient relocations induced by unequal bargaining power. By contrast, counterfactual-only moves reverse the sign for women while keeping men's losses small; crucially, they generate positive joint surplus on average. The spousal lifetime-earnings ratio is also higher for ever-movers in the counterfactual-only set. In short, bargaining frictions both widen the gap in who gains from relocation and induce inefficient moves that would be screened out under equal leverage.

These exercises reveal that bargaining frictions generates inefficiency in relocation: households forgo some joint-surplus moves and overtake some negative-surplus moves. These exercises reveal that children amplify these frictions in a gender-asymmetric way by shifting bargaining weights and outside options. The key implication is that equalizing bargaining power substantially changes who gains from relocation without materially reducing overall mobility. In this sense, policy designs that improve the balance of leverage can achieve a more equal distribution of surplus and wage gains without meaningfully sacrificing geographic mobility.

7.3 Understanding the Role of Endogenous Fertility

Given that children raise the gains from specialization while also affecting the relative decision weight in moving decisions, how does the ability to *choose* fertility timing affect with moving decisions and outcomes? I study this by running a counterfactual in which fertility is exogenous.

In this exercise, couples do not choose fertility. Instead, I match the birth hazards conditional

Table 16: Comparative Statics: Exogenous Fertility

	Baseline	Counterfactual
Moved Ever	23.8	20.1
Per-period Average Moving Rate		
No Child	3.00	2.23
Pre-School Child	2.72	2.65
School Child	1.87	1.99
% Change in Avg. Expected Value of Moving: Endogenous - Exogenous		
Couple	9.12%	
Men	6.62%	
Women	15.63%	

on observables—age, current number of children, and the youngest child's age—to those implied by the baseline model. This ensures that the counterfactual does not materially distort the distribution or timing of births while isolating the role of fertility timing choice. The fertility shock arrives at the beginning of the period. Table 16 reports the results. The most salient finding is that moving rates are lower under exogenous fertility, especially for couples without children. One reason is that relocation costs rise with children, so when births arrive exogenously couples cannot optimally time moves relative to those higher costs. A more nuanced mechanism comes from the results regarding the importance of persistence of the fertility taste shock η in earlier exercises: because η is persistent, couples with a high current realization anticipate a near-term birth, which raises the expected value of specialization. This is consistent with my earlier finding among movers in the baseline that the average (joint) value of moving is substantially higher at high η than at low η.

Together with earlier results, that moves with children can generate larger expected-value losses and wage declines for women, and that non-employment and bargaining shifts arrive immediately at childbirth, these patterns suggest that couples who can foresee elevated specialization value preemptively move before the decision process shifts with children. Negotiating relocation before childbirth gives both spouses more balanced influence over the terms, so the "compensation" embedded in the move more closely reflects each spouse's individual surplus. In line with this interpretation, Table 16 shows that women's average expected value of moving is much higher under endogenous fertility, whereas men's value changes little between baseline and the exogenous-fertility counterfactual.

However, two frictions limit the ability to time moves. First, attractive non-local offers arrive

stochastically. Even if couples prefer to move just before childbirth, a suitable offer may not arrive, forcing a trade-off between waiting for a better opportunity and delaying birth while facing age-related declines in fecundity. Thus, timing is a valuable but imperfect margin. Second, before children, the marginal utility of consumption is relatively high and the value of time in home production is lower, so income losses from job separation carry larger utility costs. This helps explain why many moves occur right before the first birth: the expected utility loss from near-term job separation is smaller than if the move were further in the future, and persistent η allows couples with high fertility tastes to plan within that window. Further, non-pecuniary motives—moving closer to family and friends, neighborhood amenities, schools—can also drive relocations around first birth. The model accommodates these via location preferences in individual utility, so such factors are directly reflected in the value of moving. Overall, endogenous fertility timing allows couples to negotiate and implement relocations that are closer to jointly optimal while bargaining power is more balanced.

In sum, allowing fertility timing does not eliminate unequal impacts of moves across spouses, because job-offer uncertainty and waiting costs (including fertility risks) remain. As shown in the previous section, these frictions still generate moves with distributional inequality. However, endogenous timing does partially mitigate unequal outcomes by enabling some moves to occur at times when the gains are more evenly shared. This exercise helps explain why many relocations cluster around the first birth and highlights the dynamic interplay between moving and fertility decisions.

7.4 Policy Exercises

Building on the preceding results on households' efficient time allocation, limited commitment, and bargaining, I now conduct counterfactual policy exercises to study how policies reshape behavior.

The comparative statics reveal two distinct issues that arise from intra-household bargaining under limited commitment: *inefficiency* (households sometimes forgo joint-surplus moves or overtake negative-surplus moves) and *distributional inequality* (surplus is shared unevenly across spouses). Effective policy must address both. The earlier exercises also highlighted a trade-off: interventions that appear to raise mobility can worsen distributional outcomes. For example, equalizing outside options across spouses reduced mobility in the model, which might seem unde-

sirable if one focuses solely on aggregate moves; however, among moves that still occur, surplus shares become more equal. Thus, a modest decline in mobility need not be welfare-reducing once intra-household equality is considered. Finally, I showed that, with careful targeting of the underlying channels, it is possible to improve both efficiency and distributional equality. The policies below are designed to tackle at least one of these margins.

Moving Subsidy I first examine a relocation subsidy, a common tool used to encourage geographic mobility. The subsidy is paid to households with a non-local job offer to offset moving costs and the spouse's temporary income loss from job separation. For this exercise, I give couples a one-time payment of $9,000, analogous to Australia's 2020 "Relocation Assistance to Take Up a Job" program, which provided up to $9,000 in assistance to eligible workers relocating outside their current capital city. Table 17 summarizes the effects.

The subsidy raises overall mobility by about 5 percentage points. Looking at the composition of moves, it increases all types of relocations, but the largest increase comes from moves in which only the man is employed after moving and the woman is non-employed. The subsidy also especially raises moving rates among couples with young children, consistent with more moves being single-earner (male) moves. These patterns are reflected in the woman's marginal offer value, which is lower under the subsidy than in the baseline. Together, these results indicate that the subsidy raises the value of single-offer moves and induces additional moves among couples at the margin of accepting such moves—particularly couples around childbirth or with young children.

Next, I examine the consequences of these counterfactual moves for the gender gap in wages and the distribution of gains from relocation. I compare the spousal lifetime earnings ratio for movers and non-movers. In the baseline, ever-movers exhibit a higher husband-to-wife lifetime earnings ratio than never-movers, consistent with migration widening the spousal earnings gap. With the subsidy, this ratio increases further for movers. Turning to the expected value of moving, the male–female difference in the expected gains from relocation is larger for movers with the subsidy, implying that men capture a greater share of the surplus. The share of moves with negative expected value for women also rises under the subsidy.

These findings show that while the subsidy increases the joint surplus from moving and alleviates under-mobility—primarily by making single-offer moves more attractive for couples with

Table 17: Counterfactual Policies: Moving Subsidy

	Baseline	Subsidy
Moved Ever	23.8	28.1
Annual Average Moving Rate		
Move with Only Man Working	1.65	2.57
Move with Only Woman Working	1.11	1.25
Move with Both Working	1.58	1.93
Annual Average Moving Rate		
No Child	2.91	3.65
Pre-School Child	2.78	3.95
School Child	1.82	1.66
Marginal Value of Woman's Offer	0.99	0.88
Lifetime Earning Ratio: Movers - Non-Movers	-0.049	-0.056
$\Delta V_t^{C,m} - \Delta V_t^{C,f}$	0.28	0.33
% Moves with $\Delta V_t^{C,f} < 0$	22.4	26.2

young children—it does so in a way that amplifies intra-household inequality. The additional surplus created by the policy is concentrated on men, and the incidence of moves with unequal gains, or losses for women, increases. In sum, the subsidy expands mobility on the extensive margin but worsens the distribution of labor market outcomes and surplus within couples.

Family Policy: Reduced Childcare Costs Children play a central role in determining which moves are taken and for whom. Comparative statics show that, in a job-search framework with uncertain wage offers, fertility and children alter the efficient allocation of time by raising the opportunity cost of the primary carer's work, thereby increasing the value of moving on the basis of a single offer. At the same time, the unequal childcare burden differentially affects spouses' outside options, shifting decision weights toward men and generating moves that are more closely aligned with men's preferences and gains. The relocation subsidy exercise above illustrates that such policies inevitably interact with these mechanisms, because fertility and children shape both the timing of moves and which spouse they favor.

I therefore study how migration patterns and outcomes respond to a family policy that facilitates women's employment with children, namely a subsidy that reduces market-based childcare costs. Lower childcare costs operate through both mechanisms: they reduce the opportunity cost of mothers' market work in cooperation and they lessen the childcare burden embedded in mothers'

outside options. Although the focus here is the migration margin, these counterfactuals clarify how family policies interact with intra-household decision-making and bargaining. They reshape the optimal allocation of time and resources with children while mitigating, to varying degrees, gender gaps in wages and welfare.

For this exercise, I reduce market-based childcare costs $\rho_c(a_{n,t})$ to half of their baseline value. Table 18 reports the results. Overall mobility declines slightly—by less than 2 percentage points. Panel A shows that moves involving a "tied" woman (non-employed upon moving) decrease, while moves with both spouses employed increase. Similarly, conditional-on-offer move probabilities indicate that lower childcare costs primarily reduce moves in which the woman would be a tied spouse. Thus, although the aggregate mobility rate changes only modestly, the policy shifts the timing and composition of moves and the identity of the tied spouse. Turning to labor market outcomes, the counterfactual policy roughly halves the increase in the spousal wage ratio at the time of the move, conditional on both spouses working. Comparing lifetime spousal earnings ratios for movers and non-movers in the simulated sample, movers under the policy exhibit a much smaller gap in relative spousal income. Fewer moves are taken that harm women's employment or wages in exchange for men's gains.

Next, I examine how the policy alters the interaction between relocation, fertility, and children. Panel B shows moving rates by child presence: under lower childcare costs, moving rates fall for couples with young children, partially offset by increased moves among childless couples. Considering the joint value of moving as a function of the persistent fertility taste shock and the marginal value of the woman also receiving an offer (conditional on a male offer), differences in joint value across fertility states shrink, and the marginal value of the woman's offer rises relative to the baseline. Intuitively, with cheaper childcare, couples have weaker incentives to time relocations around childbirth and are more likely to move when good opportunities arise for both spouses, rather than waiting for a "low-cost window." Lastly, among moves that occur under counterfactual, a smaller share generates a negative expected value of moving for women, and the difference in expected gains between men and women declines. Moves therefore involve more equal gains for both spouses.

Overall, this exercise shows that family policies shape how couples evaluate relocation trade-offs and how these interact with fertility. By increasing the value of woman's work when childcare

Table 18: Policy Counterfactuals

Panel A

	Baseline	Lower Childcare
Moved Ever	23.7	22.2
Annual Average Moving Rate		
Move with Only Man Working	1.65	1.52
Move with Only Woman Working	1.11	1.11
Move with Both Working	1.58	1.67
Probability of Move, Conditional on $w_g^k > w_g^l$		
Only Man Got Positive Offer	4.00	3.43
Only Woman Got Positive Offer	0.93	1.06
Both Got Positive Offers	14.1	16.0
% Change in Wage Ratio Post-Move, Cond. Working	-3.18	-1.80
Lifetime Earning Ratio: Non-Movers - Movers	-0.049	-0.027

Panel B

	Baseline	Lower Childcare
Annual Average Moving Rate		
No Child	2.91	3.55
Pre-School Child	2.78	2.70
School Child	1.82	1.81
ΔV_t^C(move)		
Low η	2.81	2.84
High η	3.50	3.24
Marginal Value of Woman's Offer		
Low η	1.02	1.14
High η	0.95	1.01
% Moves with $\Delta V_t^{C,f} < 0$	22.4	15.9

costs are subsidized, the option value of accepting a single-offer move with expected or existing children falls, and such moves are more often reserved for cases in which both spouses benefit. As a result, moves are associated with more equal labor market outcomes and a more balanced division of surplus within couples. Even though childcare subsidies do not directly target geographic mobility, because relocation decisions are tightly linked to fertility and children, they can substantially alter moving patterns and whose careers those moves support.

Importance of Migration Margin on Effect of Family Policies The empirical findings and model estimates show that migration patterns and outcomes are closely tied to fertility and children: many relocation decisions that generate gendered gaps in employment and wages are concentrated around major fertility events. This implies that migration is an important margin for the effectiveness of family policies. Policies that aim to promote mothers' labor supply or offset childcare costs can interact with mobility decisions in ways that dampen or amplify their intended impact on mothers' labor market outcomes. The earlier counterfactuals show that family policies like childcare cost subsidies do change which moves are taken and when. Because migration often generates larger spousal gaps in wages and employment, it is crucial to ask whether these shifts in moving behavior create a "multiplicative" effect of policy on outcomes.

To explore this channel, I implement the family policies in a counterfactual scenario where no moves are allowed. Comparing their impact on women's labor market outcomes under the baseline economy with migration to a no-move economy isolates how policies interact with couples' migration choices. Table 19 reports the results on the percent change in each outcome when the reduced childcare policy is implemented, relative to the baseline with migration and the baseline without migration. I focus on the within-household gaps in lifetime earnings and hours, as well as the gender wage ratio at age 50, conditional on work. Under the baseline with migration, the reduced childcare policy lowers the spousal gaps in earnings and hours by 12.3% and 11.0%, respectively, and raises women's wages relative to their partners' by 2.44%. Under the no-move scenario, the corresponding effects are smaller across all measures. The percent differences indicate that, without migration, the policy's effect on the lifetime earnings ratio is about 10% lower, and its effects on lifetime hours and the wage ratio are 5.2% and 7% lower, respectively.

Table 19: Comparing Effect of Policy under Baseline vs. No-Move Economy

	Compared to Baseline	Compared to No-Move	% Difference
Lifetime Earnings Ratio	12.3%	11.2%	10.2%
Lifetime Hours Ratio	11.0%	10.4%	5.2%
Wage Ratio at Age 50	2.44%	2.28%	7.0%

These results show that migration is an important margin through which childcare subsidies affect women's labor market outcomes. Migration amplifies the policy's impact: the subsidy not only increases women's labor supply holding locations fixed, but also alters couples' relocation choices by reducing moves that would disproportionately harm women's careers. As a result,

the policy delivers larger improvements in women's relative outcomes when migration is allowed. Overall, because relocation decisions are tightly linked to fertility and children, understanding how family policies influence migration is essential for assessing their effectiveness in promoting mothers' labor market outcomes.

8 Conclusion

This paper studies how shifts in intra-household dynamics around fertility drive couples' geographic mobility and their gendered consequences for mobility, wages, and welfare. Empirically, I document three facts: (i) job-related moves cluster around the first birth; (ii) before children, either spouse's preferences predict relocation, but with a young child men's preferences dominate; and (iii) moves widen the gender wage gap in ways consistent with persistent costs for mothers.

To interpret these patterns, I develop and estimate a dynamic collective household model with endogenous fertility, joint job search, and bargaining under limited commitment. Motivated by the evidence, I model relocation as high-stakes decisions over which spouses bargain, with decision weights endogenously responding to each spouse's outside option. Relocation poses a distinct joint labor supply problem, rather than a simple reaction to a unilateral local wage shock: it delivers a bundle of opportunities that can raise joint surplus but may impose dynamic, spouse-specific costs. Two mechanisms organize the results. The specialization channel captures how young children raise the return to single-earner arrangements through childcare costs and the value of home production—making specialization, facilitating moves attractive. The bargaining channel captures how children asymmetrically weaken the mother's outside option, reducing her ability to veto privately costly moves or secure a larger share of the gains.

The model's predictions are validated with a quasi-experimental analysis of Australia's 2015 Family Tax Benefit Part B reform. By tightening eligibility for a subsidy rewarding single-earner families with direct payment to the primary-carer, the reform reduced the payoff to specialization and, for low-earning wives, removed a transfer that increased their bargaining position. Consistent with the framework, the reform decreased husband-led moves among families with young children, weakening the specialization incentive, while increasing them among families with low-earning wives, where the bargaining channel dominated.

The estimated model shows that fertility decisions are pivotal for relocation: anticipating a birth raises the option value of single-offer moves as children increase specialization gains, and couples often time moves around birth to maximize joint surplus. At the same time, bargaining frictions associated with children impose inefficiencies and distort mobility, disproportionately harming women's wages and welfare. Policy simulations underscore the practical importance. Broad moving subsidies boost mobility but exacerbate gender inequality by amplifying bargaining frictions, whereas targeted family policies that address the core mechanisms, such as childcare subsidies, promote more equitable outcomes without materially reducing mobility and can increase jointly efficient moves. Finally, by comparing economies with and without migration, I find that location responses explain substantial amount of the reduction in the spousal earnings gap generated by childcare subsidies, underscoring migration as an important channel through which family policies operate. In conclusion, this paper shows that the internal dynamics of household decision-making, bargaining, and fertility are critical mechanisms shaping households' labor supply and mobility choices and perpetuating gender inequality. Recognizing this interplay is therefore essential for designing effective policies that advance mobility and gender equality.

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Appendix A Supplementary Figures and Tables

A.1 Descriptive Statistics

Table below reports the summary statistics of the panel sample.

Table A.1: Summary Statistics: Sample

	Mean	SD
Men - Age	39.52	7.98
Women - Age	37.79	7.78
Men - BA+	0.35	0.48
Women - BA+	0.43	0.49
Men - Weekly Wage, Cond. Working	1603	1031
Women - Weekly Wage, Cond. Working	979	670
Men - Hourly Wage, Cond. Working	36.2	22.8
Women - Hourly Wage, Cond. Working	31.5	24.6
Men - Employed	0.95	0.22
Women - Full Time (35+ Hours)	0.39	0.49
Women - Part Time (10-34 Hours)	0.31	0.46
Number of Children	1.72	1.25
Has Pre-School Child	0.33	0.47
N	33,087	

A.2 More Details on Moves in HILDA

I begin by documenting that relocations play a very different role for couples compared to singles. While both single men and women primarily move for work-related reasons, among couples—particularly those with children—work-related moves disproportionately center around the male partner. I also document gender asymmetries in tied mover behavior within work-related moves among couples.

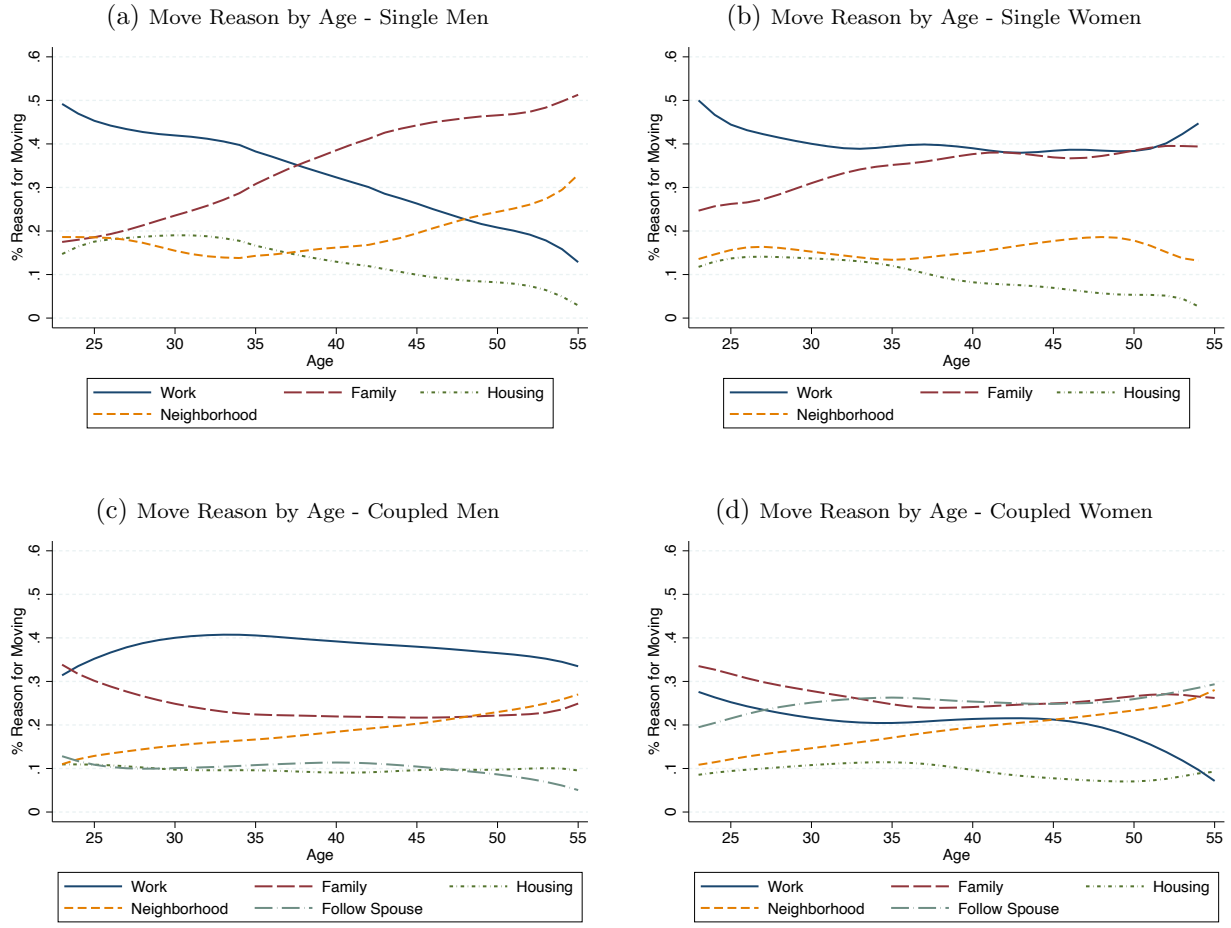
For this analysis (and all those that follow), I leverage a unique set of variables in the HILDA survey, in which each individual in a household is asked to report their main reason for moving. As previously mentioned, these responses can be broadly categorized into work-related, family-related, housing-related, neighborhood-related, or "following spouse." This approach allows for more accurate identification of job-driven relocations and mitigates potential biases that might arise when inferring motivations solely from subsequent labor market outcomes. In particular, I focus on work-related moves and identify the trailing spouse (or tied mover) in migration—someone who moves for their partner's job.

I begin by reporting the stated reasons for moving for all individuals in Figure A.1, disaggregated by gender and marital status. Several patterns emerge. First, housing- and neighborhood-related reasons account for a relatively small proportion of moves overall. While housing is a more common reason for short-distance moves, it is less prevalent in long-distance relocations, which are more likely to be driven by work and family considerations. Among singles, both men and women move primarily for work, especially at younger ages (with about half of moves being work-related), while family reasons become more common with age. This suggests that mobility is closely tied to career advancement for single individuals. However, patterns diverge for cohabiting individuals, and a gender gap becomes apparent. Panels A.1c and A.1d show that coupled men continue to move primarily for their own work—-a dominant reason throughout the life cycle. In contrast, work-related moves decline significantly among coupled women, with family- and spouse-following reasons becoming predominant. For single individuals, relocation often advances careers regardless of gender; for partnered women—especially mothers—this is no longer the case.

Since my focus is on work-related moves and tied migration, I next examine the joint reasons reported by couples in these moves. Specifically, I investigate how often work-related moves involve a trailing spouse—defined as someone who relocates for their partner's job without experiencing career gains themselves. (I use "trailing spouse" and "tied mover" interchangeably throughout this paper.) Figure A.2 reports the reasons provided by an individual spouse, conditional on their partner citing work as the reason for moving. When the wife reports moving for work, about 48% of their husbands also report work-related reasons, while approximately 25% report following their spouse. This suggests that even in moves driven by the woman's career, a smaller share of husbands take on the role of trailing spouse. In contrast, among cases where the husband reports moving for work, only about 28% of wives report moving for their own work, while the majority report following their spouse. This asymmetry reveals a striking dynamic: not only are work-related moves among couples more likely to center on the husband's job (as shown earlier), but women are also significantly more likely to be tied movers.

These descriptive statistics illustrate broad gender patterns in migration and how gender asymmetries emerge in work-related moves especially among couples with children. In the following section, I explore more directly how the presence of children shapes these gendered relocation dynamics.

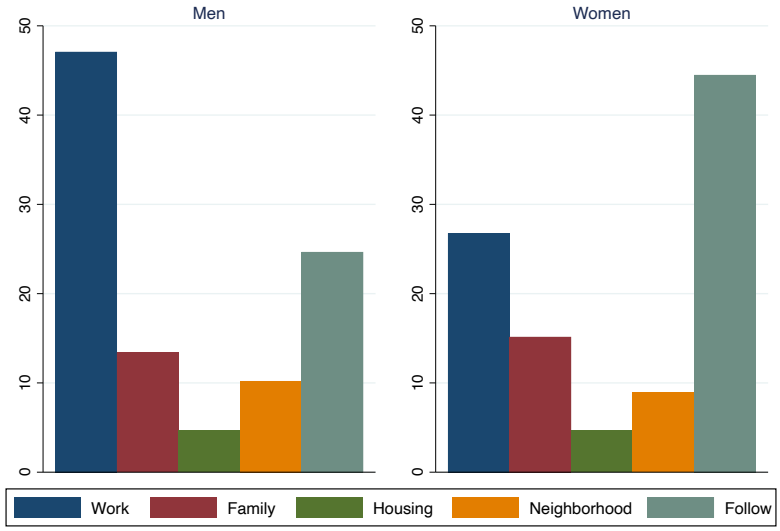
Figure A.1: Move Reasons by Marital Status



Note: These figures show the percentage of stated reasons for moving, by age. Percentages are smoothed to illustrate general trends and do not represent exact values at each age. The sample for single individuals includes those aged 23 to 55 who have never married and have no children. The sample for coupled individuals includes those aged 23 to 55 who are partnered in both the current and previous periods.

I show that long-distance moves, in general, are associated with increases in men's employment and wages, with negative or minimal effects on women's outcomes. Figure D.2 present the event study using the full sample of couples. These figures illustrate that while men experience a slight dip in employment during the year of the move, their employment rises consistently in the years that follow. In contrast, women face a substantial decline in employment that does not recover until three to four years post-move. With respect to wages, men see persistent gains after the move, while women experience an immediate decline with no comparable wage growth.

Figure A.2: Move Reasons Conditional on Partner's Work-Related Move

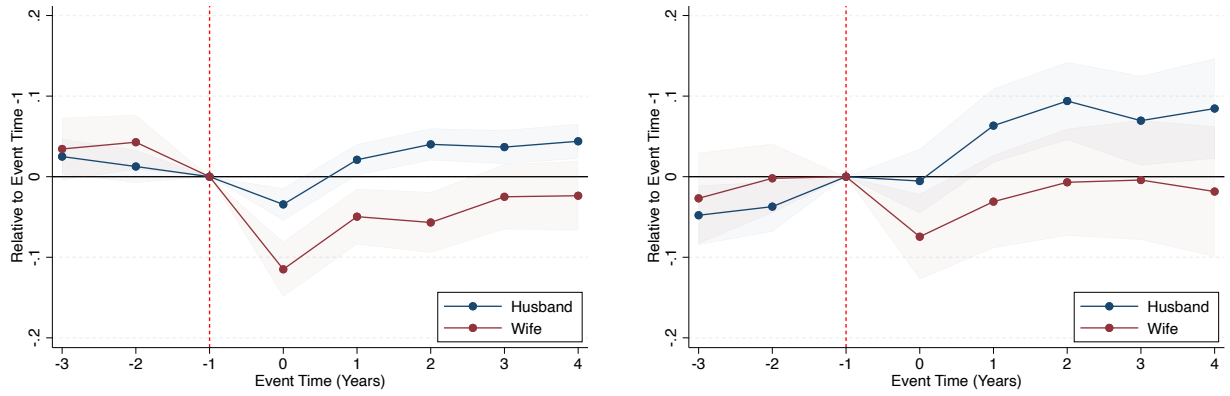


Note: This figure shows the distribution of move reasons reported by each spouse, conditional on their partner's stated reason for moving being work-related. For example, the left panel displays responses from male movers, given that their wife cited work as the reason for moving.

Figure A.3: Post-Move Labor Market Outcomes

(a) Labor Attachment

(b) Wage



Note: These figures depict the event study coefficients derived from equation 1. They illustrate the percentage change (depicted as decimals) in outcome variables relative to one year before the move. In Panel A, the outcome variable is labor market participation, while in Panel B, it pertains to wages, including zero. Blue corresponds to coefficients for the husband sample, and red represents coefficients for the wives sample.

Appendix B Moving Preferences: Supplemental Tables

Below are supplemental regressions results for empirical findings with moving preferences.

Table B.1: Moving Preferences Distribution

Distribution of Moving Preferences

	All	No Child	Child 0-4
Both Leave	5.00%	4.84%	5.52%
He Leave/She Stay	5.55%	6.63%	5.24%
He Stay/She Leave	4.63%	5.84%	4.71%
Both Stay	84.82%	82.69%	84.52%

% Prefer to Leave, by Gender and Child Presence

	All	No Child	Child 0-4
Men	9.61%	10.84%	9.93%
Women	9.84%	11.59%	9.82%
T-test	0.385	0.180	0.875

Note: This table reports the distribution of moving preferences, and the % of individuals reported preference to leave by child samples. T-Test reports the test for difference in means by gender. $* \ p < 0.10$, $* * \ p < 0.05$, $* * * \ p < 0.01$

Reported Life Satisfaction after a Disagreed Move

To show that disagreement in preferences matters, I examine whether moves with ex-ante disagreement impact individual satisfaction and utility. I utilize the HILDA survey's satisfaction data, where each individual is asked annually about their satisfaction level on various aspects of life. Along the responses, I focus on satisfaction that is more tied to the place which they live. These include satisfaction regarding local employment opportunities, neighborhood, community, and home. Using these measure, I examine if the individual's satisfaction related to the place they live decreases if they move despite an ex-ante preference to stay. To test this, I run the following regression:

$$\begin{aligned} \text{Satisfaction}_{i,t} - \text{Satisfaction}_{i,t-1} = &\beta_0 + \beta_1 \text{Moved}_{h,t} \cdot \mathbf{Disagreement}_{h,t-1} \\ &+ \beta_2 \text{Moved}_{h,t} + \beta_3 \text{Disagreement}_{h,t-1} + X_{h,t-1} + \varepsilon_h \end{aligned} \tag{B.1}$$

A negative coefficient β_1 will tell us if the couple moved despite the individual spouse's disagreement (wanted to stay, while their partner wanted to move), the individual who wanted to stay will indeed be relatively less satisfied with the new location. For this regression, covariates $X_{h,t}$ include individual's age, annual income, and joint employment status. I run this regression separately for work-related location satisfaction (local employment opportunities) and non-work related satisfaction (neighborhood, community, and home), in which I average the scores. Table

Table B.2: Change in Location Satisfaction

	Change in Avg. Satisfaction Local Employment Opp.		Change in Avg. Satisfaction Non-Work Related	
	Men	Women	Men	Women
Moved	0.400*	0.478*	0.441***	0.483***
	(0.233)	(0.245)	(0.134)	(0.132)
Moved * Disagreed	-0.578**	-0.758***	-0.473***	-0.475***
	(0.255)	(0.270)	(0.147)	(0.145)
Constant	-0.164	-0.119	0.105	-0.010
	(0.204)	(0.216)	(0.105)	(0.107)
N	10058	10058	10058	10058

Note: This table reports results from equation B.1. Covariates include individual's age, annual income, and joint employment status. "Disagreed" indicates that prior to the move, the individual i's stated moving preference was to stay, while their partner's preference was to move. Each column reports the change in location satisfaction for individual i given i's ex-ante stated preference to stay.

B.2 below reports the regression results.

First, it is reassuring to see in the constants that these measures do not change if the couple does not move, meaning that these satisfaction values are indeed tied to the location in which they live. Then, I examine if moving changes these values and if ex-ante disagreement changes these measures further. The results show that for both men and women, while moves without disagreement does increase their satisfaction level, moving despite their disagreement indeed decrease their location satisfaction. It is interesting to also note that the relative change in satisfaction from disagreement is similar across genders, meaning that moves, and the "unwanted" moves, lead to similar change in satisfaction, regardless of gender. Overall, these results suggest that ex-ante moving preference is a credible factor in moving decisions. More importantly, it indicates that having less decision-making power over a move matters in terms of individual life satisfaction and utility.

Table B.3: Spousal Moving Preferences on Probability of Move: Additional Specifications

Additional Specifications: Covariates and FE

	All	No Child	Young Child	All	No Child	Young Child
She Stay/He Leave (β_m)	0.034***	0.037*	0.080***	0.028***	0.005	0.053***
	(0.009)	(0.023)	(0.024)	(0.009)	(0.027)	(0.019)
She Leave/He Stay (β_f)	0.035***	0.042**	0.026	0.043***	0.044*	0.001
	(0.009)	(0.020)	(0.019)	(0.009)	(0.024)	(0.020)
Both Leave (β_a)	0.115***	0.150***	0.094***	0.101***	0.133***	0.087***
	(0.014)	(0.030)	(0.027)	(0.010)	(0.027)	(0.020)
Constant	0.026***	0.036***	0.027***	0.035***	0.058***	0.036***
	(0.003)	(0.010)	(0.006)	(0.002)	(0.005)	(0.004)
Covariates	yes	yes	yes	yes	yes	yes
Ind. FE				yes	yes	yes
N	15935	3609	3211	15935	3609	3211
$\beta_m = \beta_f$	0.93	0.86	0.07	0.24	0.26	0.05
$\beta_f = \beta_a$	0.00	0.00	0.04	0.00	0.01	0.00
$\beta_m = \beta_a$	0.00	0.00	0.70	0.00	0.00	0.19
$\beta_m + \beta_f = \beta_a$	0.02	0.09	0.77	0.04	0.05	0.30

Note: This table reports the coefficients $\beta_f, \beta_m, \beta_a$ from Equation 2. Each column represents a linear regression of a binary variable indicating whether the couple has moved in period t. Lower panel includes null hypothesis tests for the coefficients in the regressions. First three columns include covariates both spouses' age dummies, annual income, and joint employment status (all at the time of stated preference). Last three columns are results using individual fixed effects with the covariates. All standard errors are clustered on couple level. $*\ p < 0.10$, $**\ p < 0.05$, $***\ p < 0.01$

Additional Specifications: Omit "Unsure" Category

	All	No Child	Young Child
She Stay/He Leave (β_m)	0.020*	0.027	0.075***
	(0.011)	(0.027)	(0.020)
She Leave/He Stay (β_f)	0.030**	0.046*	0.027
	(0.012)	(0.028)	(0.021)
Both Leave (β_a)	0.107***	0.124***	0.091***
	(0.014)	(0.027)	(0.017)
Constant	0.039***	0.062***	0.058**
	(0.002)	(0.004)	(0.028)
N	12478	2873	2457
$\beta_m = \beta_f$	0.52	0.62	0.09
$\beta_f = \beta_a$	0.00	0.04	0.02
$\beta_m = \beta_a$	0.00	0.01	0.55
$\beta_m + \beta_f = \beta_a$	0.01	0.27	0.73

Note: This table reports the coefficients $\beta_f, \beta_m, \beta_a$ from Equation 2, with "unsure" category for each spouse omitted. Each column represents a linear regression of a binary variable indicating whether the couple has moved in period t. Lower panel includes null hypothesis tests for the coefficients in the regressions. First three columns include covariates both spouses' age dummies, annual income, and joint employment status (all at the time of stated preference). Last three columns are results using individual fixed effects with the covariates. All standard errors are clustered on couple level.
$*\ p < 0.10$, $**\ p < 0.05$, $***\ p < 0.01$

Appendix C Discussion of Mechanisms - Formal Derivations

C.0.1 Collective Labor Supply under Joint-Job Search Framework

Children reshape the trade-offs couples face regarding relocation decisions. With young children, overlapping market hours create paid childcare in the budget constraint, and the marginal utility/productivity of parental time at home rises. Both forces tilt the efficient allocation toward (temporary) specialization. Formally, the cooperative intra-period solution for any fixed hours (h^m, h^f) has the standard log-share form:[24]

$$U^\star = S \log Y^{\text{net}} + C_m \log(T - h^m) + C_f \log(T - h^f) + \text{const},$$

where $S = \bar{\psi}_C + \bar{\psi}_Q \tilde{\delta}_m$, $C_m = \alpha\psi_L + \bar{\psi}_Q \tilde{\delta}_d^m$, $C_f = (1-\alpha)\psi_L + \bar{\psi}_Q\, \tilde{\delta}_d^f$,

and the (simplified) budget is

$$Y^{\text{net}}(h^m, h^f, n) = w^m h^m + w^f h^f - \rho_c(a_n) \min\{h^m, h^f\} \mathbf{1}[n > 0]$$

These mechanisms also operate in a classic collective labor-supply problem without relocation: a one-price wage shock to one spouse can make it optimal to reduce the other spouse's hours when the value of home time is high. What distinguishes relocation is that it presents a *bundle*—simultaneous changes in (w^m, w^f), location tastes, and (crucially) the future job-search environment (arrival rates, wage growth). Those dynamic components are what make moving on a single offer with specialization potentially optimal even for couples who would remain dual-earner locally.

Local benchmark. Fix a baseline with equal local wages $w^m = w^f = w$ and both working full time $h^m = h^f = 40$. Consider a *local* male-only raise to $w_{\text{L}}^m = r\, w$ with $r > 1$ and w^f unchanged. Holding $h^m = 40$, the wife's discrete hour choice is $h^f \in \{40, 25, 0\}$. Define the local gain from

[24] I exclude time subscript t for simplification for these derivations.

moving the wife from full-time to $d \in \{25, 0\}$:

$$\Delta U^{\mathrm{L}}_{40\to d}(r) = S \log \frac{40rw + wd - \rho_c(a_n)\min\{40, d\}}{40rw + 40w - 40\rho_c(a_n)} \; + \; C_f\big[\log(T-d) - \log(T-40)\big]. \tag{C.2}$$

The first term is strictly increasing in r and the second term is a positive constant for $d < 40$. Hence there exist finite thresholds $r^{\mathrm{L}}_{40\to 25}$ and $r^{\mathrm{L}}_{40\to 0}$ such that the wife *reduces hours* under the local raise iff $r \geq \min\{r^{\mathrm{L}}_{40\to 25}, r^{\mathrm{L}}_{40\to 0}\}$ (Case L1). Otherwise she remains full time (Case L2).

Relocation as a bundle and the specialization threshold. Relocation changes the problem because the *non-local bundle* often looks like $(w^m_K, w^f_K) = (r\,w, \phi w)$ with $\phi \in [0, 1)$ ($\phi = 0$ as "no offer"). Assume that $\bar{\psi}_Q(a_n)$ and $\tilde{\delta}^f_d(a_n)$ are increasing in n and, conditional on $n > 0$, decreasing in a_n. Consider a candidate specialization corner at the destination, with $h^{f'} = 0$ so that the wife devotes all of her time to non-market activities (ℓ^f, d^f). Given the Cobb–Douglas home technology and intraperiod structure in Appendix E, the intraperiod first-order condition for the wife's within-period allocation implies

$$\frac{d^f}{\ell^f} = \frac{\bar{\psi}_Q(a_n)\,\tilde{\delta}^f_d(a_n)}{\psi_L(a_n)}, \tag{C.3}$$

so (ℓ^f, d^f) in what follows are understood to be these *corner-optimal* non-market allocations at $h^{f'} = 0$. To derive the specialization threshold, compare the marginal utility of increasing the wife's hours above zero at location K. At $h^{f'} = 0$, the cooperative marginal utility of an increase in $h^{f'}$ has two components: a consumption gain from additional earnings net of childcare, and a loss from reducing the wife's non-market time. Using the intraperiod structure, this marginal condition can be written as

$$\left.\frac{\partial U^\star_t}{\partial h^{f'}}\right|_{h^{f'}=0} = S\,\frac{w^f_K - \rho_c(a_n)}{Y^{\mathrm{net}}_t} - \left(\frac{\psi_L}{\ell^f} + \frac{\bar{\psi}_Q\,\tilde{\delta}^f_d(a_n)}{d^f}\right), \tag{C.4}$$

where the first term captures the effect of $h^{f'}$ on the cooperative budget and the second term is the marginal utility cost of reducing the wife's optimized home/leisure bundle, evaluated at the corner solution (ℓ^f, d^f) that satisfies (C.3). Specialization at K is optimal when this derivative is weakly negative.

Evaluating Y^{net}_t at the symmetric local benchmark with $w^m = w^f = w$ and $(h^m, h^f) = (40, 40)$

and rearranging (C.4) yields a simple ratio test in terms of the non-local wage bundle:

$$\frac{w_K^m}{w_K^f} = \frac{r}{\phi} \;\geq\; r^\star_{\text{child}} \equiv \frac{S}{40} \cdot \frac{w - \rho_c(a_n)}{w} \cdot \left(\frac{\psi_L}{\ell^f} + \frac{\bar{\psi}_Q \, \tilde{\delta}_d^f(a_n)}{d^f} \right)^{-1}. \tag{C.5}$$

Thus $r^\star_{\text{child}}$ is the child-specific specialization threshold: it compares the husband's relative non-local wage gain r/ϕ to the marginal value of the wife's effective net wage (net of childcare) at the specialization corner. Thus, specialization upon move can be efficient even when a comparable local raise in the husband's wage would not trigger specialization. Second, once the couple specializes, they no longer pay the childcare cost $\rho_c(a_n)$ in Y^{net}, and the wife's time is reallocated into (ℓ_f, d_f) with positive utility weight C_f, generating an additional strictly positive term in the move's surplus.

Move with switch to specialization. Compare the best *local* option for Case L2 (stay and take the same male raise r, wife remains full time) to the best *non-local* option. If the household's optimal choice is to *specialize* upon move—which occurs whenever $\phi \leq r/r^\star_{\text{child}}$—the cooperative value gain is

$$U_K^\star - U_L^\star = \underbrace{S \log\Big(\frac{r}{r + 1 - \rho_c(a_n)/w} \Big)}_{\text{consumption \& purchased inputs}} + \underbrace{C_f \big[\log T - \log(T - 40) \big]}_{\equiv\; \Delta_{\text{time}} > 0}$$

Assume one-time moving cost $\zeta > 0$, and define weighted net change in location preferences as:

$$\Delta\Gamma \equiv \alpha(\gamma_k^m - \gamma_j^m) + (1 - \alpha)(\gamma_k^f - \gamma_j^f),$$

which shifts the level of the comparison. Then, to move, the condition is

$$\zeta \leq \; S \log\Big(\frac{r}{r + 1 - \rho_c(a_n)/w} \Big) + \Delta_{\text{time}} + \Delta\Gamma. \tag{C.6}$$

Note that ϕ drops out of (C.6) because at the specialization as the optimal choice $h^{f'} = 0$ the wife's earnings no longer enter Y^{net}; ϕ matters indirectly by determining whether the ratio condition $\frac{r}{\phi} \geq r^\star_{\text{child}}$ puts the destination in the specialization regime.

Move with both spouses working. If $\phi > r/r^{\star}_{\text{child}}$, the couple remains two-earner upon move and ϕ enters directly. For $d \in \{40, 25\}$,

$$\Delta U^{K}_{(d)}(r,\phi) = S\log\frac{40rw + \phi wd - \rho_c(a_n)\min\{40,d\}}{40(r+1)w - 40\rho_c(a_n)} + C_f\big[\log(T-d) - \log(T-40)\big],$$

and the acceptance condition $\Delta U^{(d)}_{K}(r,\phi) \geq 0$ is equivalent to the explicit ϕ-threshold

$$\phi \;\geq\; \phi^{(d)}_{\min}(r) = \frac{40(r+1)w - 40\rho_c(a_n)}{wd}\,\exp\Big(\tfrac{C_f[\log(T-d)-\log(T-40)]}{S}\Big) \;-\; \frac{40rw - \rho_c(a_n)\min\{40,d\}}{wd}. \tag{C.7}$$

Because $\log(T-25) - \log(T-40) > 0$, the 25-hour option yields a weakly lower threshold than full-time: $\phi^{(25)}_{\min}(r) \leq \phi^{(40)}_{\min}(r)$.

Implications for other cases. Start from the strict case $w^m = w^f$ and both full-time, and pick r in the *Case L2 range* so that a local raise would *not* change the wife's hours. A non-local bundle with $\phi \leq r/r^{\star}_{\text{child}}$ then makes specialization efficient and—whenever (C.6) holds—*jointly optimal* to accept the move with only the man's offer. From there, the thresholds become *less strict* the further they get from the strict case: if the wife would already reduce hours under a local raise (Case L1), the relocation acceptance set expands; if she is not working currently, accepting "one-offer" is even more likely. The key comparative static is that with children the specialization threshold $r^{\star}_{\text{child}}$ is *lower* than the childless case because $\rho_c(a_n) > 0$ and the home-time/value parameters are larger; the threshold for moving also becomes easier to satisfy because both the consumption log term and the time-reallocation term Δ_{time} rise in the presence of childcare and higher home-time value. In short, children make it easier to move without both spouses having wage gains—precisely because the bundle of non-local wages can push the couple into an efficient specialization that a local, one-price shock would not create.

Importance of Dynamic Joint Search and Fertility. Relocation in this framework is not a static comparison of two wage levels, but a dynamic choice made in a joint-search environment with stochastic offers and endogenous fertility. This has two implications. First, the decision to move on a *single* non-local offer reflects an option value trade-off: by moving now, the couple forgoes the possibility of waiting for a rare state in which both spouses receive favorable offers in the same location. Second, because children affect both the intra-period value of specialization and

the evolution of spouses' outside options, the fertility margin directly modifies this option value and hence the reservation rule for accepting non-local offers. This subsection formalizes these points using the job-search structure from Section 3.1 and the intra-period specialization derivations in Section 3.2.

To fix ideas, consider the cooperative problem in a period t in which the couple resides in location j and faces the usual state Ω_t, with status-quo Pareto weight α_{t-1} inherited from the previous period. As in Section 3.2, conditional on the realized offers and child shocks, the cooperative value at t is

$$V_t^C(\Omega_t, j; \alpha_{t-1}) = \max_{a_t^C} \Big\{ \alpha_{t-1}\big(U_t^m + \beta E_t[V_{t+1}^{C,m}]\big) + (1-\alpha_{t-1})\big(U_t^f + \beta E_t[V_{t+1}^{C,f}]\big) \Big\},$$

subject to the budget constraint, time constraints, the fertility choice, and the constraints on hours. For the discussion in this subsection, it is convenient to collapse the weighted sum into a joint cooperative value $V_t^C(\cdot)$ and to treat α_{t-1} as fixed. Now suppose that in period t a single non-local job offer arrives for the husband in destination k, characterized by a wage bundle

$$(w_k^m, w_k^f) = (r w_j^m, \phi w_j^f), \quad r > 1, \quad \phi \in [0, 1),$$

while the wife has a non-local offer below her current wage. The couple must decide whether to accept the bundle and relocate to k, or to reject and remain in j. Let $U_t^k(r)$ and U_t^j denote, respectively, the intra-period cooperative utilities under the optimal allocation in k and j, for the current fertility state $(n_t, a_{n,t})$, for given α_{t-1}.[25] The dynamic acceptance rule can be written as

$$\Delta V_t(r) \equiv \underbrace{U_t^k(r) - U_t^j}_{\text{current-period surplus}} + \beta \underbrace{\Big(E_t[V_{t+1}^C(\Omega_{t+1}, k) \mid \text{accept}] - E_t[V_{t+1}^C(\Omega_{t+1}, j) \mid \text{reject}] \Big)}_{\Delta V_{t+1}} \gtrless 0, \tag{C.8}$$

where ΔV_{t+1} is the difference in expected continuation values across locations. Because intra-period utility is strictly increasing and concave in consumption, and $w_k^m = r w_j^m$ with $r > 1$, the term $U_t^k(r) - U_t^j$ is strictly increasing in r. This guarantees a well-defined dynamic reservation rule

[25] Intra-period utility takes the log-share form in equation (6), with Y^{net} incorporating childcare costs and the marginal utilities of leisure and home production summarized by C_m and C_f. The specialization threshold in equation (7) implies that, with young children and high childcare costs $\rho_c(a_n)$, the move to (w_k^m, w_k^f) frequently induces a switch from dual-earner to single-earner arrangements even when a local raise of the same magnitude would not.

in the offer ratio:

$$\frac{w_k^m}{w_k^f} = \frac{r}{\phi} \geq r^{\star}_{\text{dyn}}(\Omega_t),$$

where $r^{\star}_{\text{dyn}}(\Omega_t)$ is the unique value of r/ϕ that solves $\Delta V_t(r) = 0$ for given state Ω_t.

The joint-search environment enters through ΔV_{t+1}. Given location $l \in \{j, k\}$, each spouse receives non-local offers with arrival rate λ^g and idiosyncratic job- and location-match shocks, as described in Section 3.2.2. Let $V_{t+1}^{q,l}$ denote the expected joint cooperative value at $t+1$ in location l, conditional on having $q \in \{0, 1, 2\}$ employed spouses after job search and hour choices have been made, and conditional on the state $(n_{t+1}, a_{n,t+1})$.[26] For simplicity, suppose that offer-arrival rates are symmetric across spouses, $\lambda^m = \lambda^f = \lambda$. Then, given on moves always involving at least one offer by assumption, the expected continuation value in location l without conditioning on fertility can be written as

$$E_t[V_{t+1}^C(\Omega_{t+1}, l)] = (1-\lambda)^2 V_{t+1}^{0,l} + 2\lambda(1-\lambda)E[V_{t+1}^{1,l}] + \lambda^2 E[V_{t+1}^{2,l}],$$

where expectations on the right-hand side are taken over the offer distribution and next-period shocks given l. Hence the continuation advantage of moving, ΔV_{t+1} in equation (C.8), can be decomposed into differences in the value of being in k versus j in each joint-employment, weighted by the joint distribution of offers. In particular, the term multiplying λ^2 captures the option value of "waiting for two offers," a central component of joint-search frictions.

Fertility enters this dynamic comparison because the arrival and presence of a child reshapes the relative value of the dual- versus single-earner outcomes, and does so differentially across locations. Let n_{t+1} denote next period's number of children and let $p_t = \Pr(n_{t+1} = n_t + 1 \mid b_t = 1)$ be the birth hazard conditional on the couple choosing to try for a child in period t (equivalently, driven by the taste shock for children). For any location l, define

$$V_{t+1}^{q,l,0} \equiv E_t[V_{t+1}^{q,l} \mid n_{t+1} = n_t], \qquad V_{t+1}^{q,l,1} \equiv E_t[V_{t+1}^{q,l} \mid n_{t+1} = n_t + 1],$$

[26] For example, $V_{t+1}^{2,l}$ is the expected value when both spouses are employed (dual-earner), $V_{t+1}^{1,l}$ when only one spouse is employed (single-earner), and $V_{t+1}^{0,l}$ when both are non-employed. These objects integrate over job- and location-match shocks using the offer distribution in that location.

for $q \in \{0, 1, 2\}$. Then the continuation surplus of moving can be written as

$$\Delta V_{t+1} = (1 - p_t)\,\Delta V^0_{t+1} + p_t\,\Delta V^1_{t+1}, \quad \text{where} \tag{C.9}$$

$$\Delta V^s_{t+1} \equiv E_t[V^C_{t+1}(\Omega_{t+1}, k) \mid n_{t+1} = n_t + s] - E_t[V^C_{t+1}(\Omega_{t+1}, j) \mid n_{t+1} = n_t + s], \quad s \in \{0, 1\}. \tag{C.10}$$

Thus, the dynamic gain from accepting a unilateral offer is a convex combination of the continuation gains in the "no additional child" and "new child" states. The key object for the fertility comparative static is the difference

$$\Delta V^1_{t+1} - \Delta V^0_{t+1},$$

which measures how much more valuable location k is relative to j when a new child arrives.

The intra-period specialization analysis in equation (7) implies that, with a young child, specialization becomes efficient over a wider region of (w^m_l, w^f_l) and that the static surplus from moving on a male offer is larger than in the childless case. Formally, denote by $r^\star_{\text{child}}(n, a_n)$ the specialization threshold in equation (7) and by $r^\star_{\text{no child}}$ the analogous threshold when $n = 0$ and $\rho_c(a_n) = 0$. Under the maintained assumptions that (i) childcare costs satisfy $\rho_c(a_n) > 0$ for $n > 0$, (ii) the marginal utility/productivity of the wife's non-market time (through $\bar{\psi}_Q(a_n)$ and $\tilde{\delta}^f_d$) is higher when $n > 0$ and a_n is small, and (iii) utility is strictly concave in consumption and leisure, one can show that

$$r^\star_{\text{child}}(n, a_n) < r^\star_{\text{no child}},$$

and that, for any fixed $r > 1$,

$$\left[U^k_t(r) - U^j_t\right]_{\text{with child}} > \left[U^k_t(r) - U^j_t\right]_{\text{no child}}.$$

Intuitively, when a child is present, the reallocation of the wife's time away from market work and toward childcare and home production generates a larger marginal gain in utility, and the move to k facilitates such specialization by bundling a wage increase for the husband with a potential job loss or wage drop for the wife.

The same logic extends to the dynamic term. In the child state $n_{t+1} = n_t + 1$, for a range of offers the efficient arrangement is to specialize for a spell, so the relevant continuation value is closer to $V^{1,l,1}_{t+1}$ than to $V^{2,l,1}_{t+1}$; the marginal value of coordinating two positive offers in the same

location shrinks. Formally, for each location l, the incremental value of the wife's future offer,

$$M_l^s \equiv E_t\left[V_{t+1}^{2,l,s} - V_{t+1}^{1,l,s}\right], \quad s \in \{0,1\},$$

is strictly smaller when $s = 1$ than when $s = 0$, because (a) with a young child, the wife's hours are more likely to be at or near the corner $h^f = 0$ or $h^f < 40$, and (b) the net gain from an extra job—after subtracting market childcare costs and the loss of valuable home time—is lower. Therefore $M_l^1 < M_l^0$ for $l = j, k$, which implies that the option value of waiting for a second offer is smaller when a child is present. Combining this with the fact that the static mover surplus $U_t^k(r) - U_t^j$ is larger when $n_{t+1} = n_t + 1$, it follows that $\Delta V_{t+1}^1 > \Delta V_{t+1}^0$ for a range of states in which specialization is efficient in at least one location. Substituting (C.9) into (C.8), the acceptance condition becomes

$$\left[U_t^k(r) - U_t^j\right] + \beta\Big[(1-p_t)\Delta V_{t+1}^0 + p_t \Delta V_{t+1}^1\Big] \gtrless 0. \tag{C.11}$$

Differentiating the right-hand side with respect to p_t yields

$$\frac{\partial}{\partial p_t}\Big\{\left[U_t^k(r) - U_t^j\right] + \beta\big[(1-p_t)\Delta V_{t+1}^0 + p_t\Delta V_{t+1}^1\big]\Big\} = \beta\big(\Delta V_{t+1}^1 - \Delta V_{t+1}^0\big) > 0,$$

whenever the inequality $\Delta V_{t+1}^1 > \Delta V_{t+1}^0$ holds. Since $\Delta V_t(r)$ is strictly increasing in r by the properties of intra-period utility and the wage bundle (w_k^m, w_k^f), the Implicit Function Theorem implies that the dynamic reservation ratio $r_{\text{dyn}}^\star(\Omega_t)$ is strictly decreasing in the birth hazard p_t:

$$\frac{\partial r_{\text{dyn}}^\star(\Omega_t)}{\partial p_t} < 0.$$

In words, a higher probability of having a (young) child in the near future reduces the option value of waiting for two favorable offers, because the efficient path in the child state is already tilted toward specialization. This raises the dynamic net gain from accepting a male-only offer today. As a result, couples with high fertility taste shocks or who anticipate a birth are willing to accept smaller male wage ratios r when deciding whether to move on a single non-local offer. This formalizes the idea that the fertility margin interacts with joint search: children and anticipated births expand the acceptance region for bundle moves and bring forward relocation relative to a model with exogenous fertility or individual search. Conversely, in counterfactual environments with reduced joint-search frictions—for instance, when non-local offers are perfectly correlated across spouses and

locations, as in Section 7.1—the difference $\Delta V^1_{t+1} - \Delta V^0_{t+1}$ shrinks, the derivative with respect to p_t becomes small, and the timing of fertility has little effect on relocation. This is why abstracting from endogenous fertility and its interaction with search frictions would miss a key force behind the clustering of male-led moves around childbirth documented in the data.

C.0.2 Bargaining and Outside Options.

The cooperative problem in Section 3.3 shows how, conditional on a Pareto weight α_t, the household efficiently trades off consumption, leisure, and home production, and how relocation and specialization choices respond to wages and childcare costs. Under limited commitment, however, cooperative allocations must respect each spouse's non-cooperative outside option, which depends on how childcare and home production enter the individual problem and on the dynamic evolution of human capital. This subsection formalizes the non-cooperative problem, highlights how children asymmetrically decrease the primary caregiver's outside option, and then links these outside options to the evolution of Pareto weights under limited commitment.

Non-cooperative problem and individual contribution of childcare. Under non-cooperation, each spouse $g \in \{m, f\}$ chooses own consumption and time allocations $a_t^{NC,g} = \{h_t^g, d_t^g, m_{Q,t}^g\}$ to maximize

$$u_t^g(c_t^g, \ell_t^g, Q_t; n_t, a_{n,t}) = \psi_C^g(a_{n,t}) \log c_t^g + \psi_L(a_{n,t}) \log \ell_t^g + \psi_Q^g(a_{n,t}) \log Q_t + \gamma_t^{g,\ell} + \sum_{i=1}^{3} \phi_{N,i} \mathbf{1}[n_t \geq i],$$

subject to individual budget and time constraints, and the common home-production technology:

$$c_t^g = w_t^g h_t^g - m_{Q,t}^g + T_t^g(n_t, a_{n,t}) - \frac{1}{2}\Big[\rho_c(a_{n,t})\chi_t + \kappa(n_t)\Big], \tag{C.12}$$

$$T = h_t^g + d_t^g + \ell_t^g,$$

$$Q_t = (d_t^m)^{\tilde{\delta}_d^m} (d_t^f)^{\tilde{\delta}_d^f} (m_{Q,t}^m + m_{Q,t}^f)^{\tilde{\delta}_m} \tag{C.13}$$

Here, χ_t collects the age- and schedule-dependent childcare term (e.g. $\min\{h_t^m, h_t^f\}$ or $\max\{\min\{h_t^m, h_t^f\} - 30, 0\}$ when $a_{n,t} \geq 5$). Monetary child costs are split equally, while Q_t remains a public good in both spouses' utility. Let $V_t^{NC,g}(\Omega_t, j)$ denote the resulting dynamic non-cooperative continuation value for spouse g.

Time burden and home production under non-cooperation. To isolate the intraperiod mechanism, fix labor supply (h_t^m, h_t^f) and fertility $(n_t, a_{n,t})$. Under cooperation in Section 3.3, the couple solves a single planning problem with Pareto weight α_t on the husband and $1-\alpha_t$ on the wife, yielding closed-form intra-period allocations. In particular, for given (h_t^m, h_t^f), the cooperative home-time choices satisfy

$$d_t^{C,g} = (T - h_t^g)\,\frac{\bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_d^g}{\alpha_g \psi_L(a_{n,t}) + \bar{\psi}_Q(a_{n,t})\,\tilde{\delta}_d^g}, \qquad \ell_t^{C,g} = T - h_t^g - d_t^{C,g}, \tag{C.14}$$

where $\alpha_m = \alpha_t$, $\alpha_f = 1-\alpha_t$, and $\bar{\psi}_Q(a_{n,t}) = \alpha_t \psi_Q^m(a_{n,t}) + (1-\alpha_t)\psi_Q^f(a_{n,t})$ is the Pareto-weighted marginal utility from home production. The purchased input $m_{Q,t}^C$ is determined analogously from the joint budget constraint and $\bar{\psi}_Q(a_{n,t})$.

In the non-cooperative problem, each spouse internalizes only their own valuation $\psi_Q^g(a_{n,t})$ and takes the partner's contribution to Q_t as given. With log utility and Cobb–Douglas Q_t, the best response in home time has the same functional form as in (C.14), but with $\bar{\psi}_Q$ replaced by ψ_Q^g and without Pareto weights in front of ψ_L:

$$d_t^{NC,g} = (T - h_t^g)\,\frac{\psi_Q^g(a_{n,t})\,\tilde{\delta}_d^g}{\psi_L(a_{n,t}) + \psi_Q^g(a_{n,t})\,\tilde{\delta}_d^g}, \qquad \ell_t^{NC,g} = T - h_t^g - d_t^{NC,g}. \tag{C.15}$$

Assume that with children the wife is the primary caregiver in the sense that, for $n_t > 0$, $\psi_Q^f(a_{n,t}) > \psi_Q^m(a_{n,t})$, $\tilde{\delta}_d^f > \tilde{\delta}_d^m$. Since $\bar{\psi}_Q(a_{n,t})$ is a convex combination of $\psi_Q^m(a_{n,t})$ and $\psi_Q^f(a_{n,t})$, we have $\bar{\psi}_Q(a_{n,t}) < \psi_Q^f(a_{n,t})$. Comparing (C.14) and (C.15) then implies that, for any given $(h_t^f, n_t, a_{n,t})$ and any $\alpha_t \in (0,1)$, $d_t^{NC,f} > d_t^{C,f}$, $\ell_t^{NC,f} < \ell_t^{C,f}$. In the outside option, the mother voluntarily devotes more time to home production and enjoys less leisure than under the cooperative allocation, even though monetary childcare costs are evenly split.

Under-provision of home production. These intraperiod time choices are embedded in a standard public-good problem. Under cooperation, the intra-period allocation of $(d_t^m, d_t^f, m_{Q,t})$ equates weighted marginal rates of substitution to a weighted marginal rate of transformation, using the Pareto-weighted utilities $\bar{\psi}_Q(a_{n,t})$ and $\bar{\psi}_C(a_{n,t}) = \alpha_t \psi_C^m(a_{n,t}) + (1-\alpha_t)\psi_C^f(a_{n,t})$. The

cooperative market input satisfies

$$m_{Q,t}^{C} = \frac{\bar{\psi}_Q(a_{n,t})\tilde{\delta}_m}{\bar{\psi}_C(a_{n,t}) + \bar{\psi}_Q(a_{n,t})\tilde{\delta}_m}\, Y_t^{\text{net}},$$

and analogous expressions hold for $d_t^{C,m}$ and $d_t^{C,f}$.

In the non-cooperative game, each spouse chooses $m_{Q,t}^{NC,g}$ so that the marginal gain from Q_t equals their own marginal utility of consumption. With log utility, the best response has the form

$$m_{Q,t}^{NC,m} + m_{Q,t}^{NC,f} = \theta_g(a_{n,t})\, c_t^g, \qquad \theta_g(a_{n,t}) = \frac{\psi_Q^g(a_{n,t})}{\psi_C^g(a_{n,t})}\tilde{\delta}_m,$$

and at any interior Nash equilibrium the aggregate contribution $m_{Q,t}^{Q,\Sigma,NC}$ is strictly below the cooperative level unless $\theta_m = \theta_f = \bar{\theta}$. Standard public-good arguments then imply $Q_t^{NC} < Q_t^C$ generically. For a small reduction $\Delta Q_t < 0$, the induced change in the non-cooperative value for spouse g is approximately

$$\Delta V_t^{NC,g} \approx \psi_Q^g(a_{n,t})\frac{\Delta Q_t}{Q_t},$$

so if $\psi_Q^f(a_{n,t}) > \psi_Q^m(a_{n,t})$ and the percentage change $\Delta Q_t/Q_t$ is the same for both, the loss in $V_t^{NC,f}$ exceeds that in $V_t^{NC,m}$ in absolute value. Combined with the larger time burden $d_t^{NC,f}$ from (C.15), this means that the presence of young children asymmetrically depresses the mother's outside option relative to the father's, even though monetary childcare costs and the technology for Q_t are symmetric across spouses. These factors lower $V_t^{NC,f}(\Omega_t, j)$ relative to her cooperative continuation value.

Additionally, the gap between cooperative and non-cooperative utilities for spouse g is captured by the cooperation surplus

$$S_t^g(\Omega_t, j; \alpha_t) \equiv V_t^{C,g}(\Omega_t, j; \alpha_t) - V_t^{NC,g}(\Omega_t, j).$$

Under the log–Cobb–Douglas structure, S_t^g is increasing in $\psi_Q^g(a_{n,t})$ and $\tilde{\delta}_d^g$: the spouse who values and produces the household public good more suffers a larger loss in the outside option when Q_t is supplied inefficiently and when they must supply more of it using their own time.

Dynamic human capital and wages. Children also affect outside options through the dynamics of human capital and wages. Let x_t^g denote human capital, evolving according to

$$x_{t+1}^g = \begin{cases} (1-\delta)x_t^g, & \text{if } h_t^g = 0, \\ (1-\delta)x_t^g + \dfrac{h_t^g}{40}, & \text{if } h_t^g > 0, \end{cases}$$

with $\delta \in (0,1)$ and wage offers w_{t+1}^g increasing in x_{t+1}^g. When young children are present, the primary caregiver is more likely to reduce or pause market work, so that

$$\Pr(h_{t+1}^f = 0 \mid n_t > 0, a_{n,t} \leq 4) > \Pr(h_{t+1}^m = 0 \mid n_t > 0, a_{n,t} \leq 4)$$

while pre-birth hazard rates are more symmetric. Conditional on $x_t^m = x_t^f$ at childbirth, this implies

$$E[x_{t+1}^f \mid n_t > 0, a_{n,t} \leq \bar{a}] < E[x_{t+1}^m \mid n_t > 0, a_{n,t} \leq \bar{a}],$$

and therefore

$$E[w_{t+1}^f \mid n_t > 0, a_{n,t} \leq \bar{a}] < E[w_{t+1}^m \mid n_t > 0, a_{n,t} \leq \bar{a}].$$

Because $V_t^{NC,g}$ is increasing in expected earnings and strictly concave in consumption, the expected future outside options satisfy

$$E[V_{t+1}^{NC,f} \mid n_t > 0, a_{n,t} \leq \bar{a}] < E[V_{t+1}^{NC,m} \mid n_t > 0, a_{n,t} \leq \bar{a}],$$

so the expected outside-option gap widens over time as specialization persists. This dynamic channel reinforces the static home-production channels: childbirth lowers the caregiver's outside option immediately and also steepens the decline in relative outside options going forward.

Cooperation surplus and the evolution of bargaining weights. Under limited commitment, the cooperative allocation and bargaining weight α_t must satisfy the participation constraints

$$S_t^g(\Omega_t, j; \alpha_t) \equiv V_t^{C,g}(\Omega_t, j; \alpha_t) - V_t^{NC,g}(\Omega_t, j) \geq 0, \qquad g \in \{m, f\},$$

and joint surplus must be strictly positive for any cooperative decision, including relocation. Which constraint binds, and hence which spouse has leverage to renegotiate α_t, depends on the relative

cooperation surpluses S_t^f and S_t^m. In the simulated model, the arrival of a first child reduces $V_t^{NC,f}$ sharply—through the mechanisms above. As a result, S_t^f rises relative to S_t^m around childbirth, making the wife's participation constraint less likely to bind and reducing her ability to demand a higher Pareto weight.

Locally, when the wife's participation constraint binds in location ℓ, the Pareto weight α_t is pinned down by

$$V_t^{C,f}(\Omega_t, \ell; \alpha_t) = V_t^{NC,f}(\Omega_t, \ell).$$

Define

$$F(\alpha_t, V_t^{NC,f}) \equiv V_t^{C,f}(\Omega_t, \ell; \alpha_t) - V_t^{NC,f}(\Omega_t, \ell) = 0.$$

Under the assumptions above, $V_t^{C,f}(\Omega_t, \ell; \alpha)$ is strictly decreasing in α, so $\partial F/\partial \alpha_t = \partial V_t^{C,f}/\partial \alpha_t < 0$ and $\partial F/\partial V_t^{NC,f} = -1$. By the implicit function theorem,

$$\frac{\partial \alpha_t}{\partial V_t^{NC,f}} = -\frac{\partial F/\partial V_t^{NC,f}}{\partial F/\partial \alpha_t} = -\frac{-1}{\partial V_t^{C,f}/\partial \alpha_t} = \frac{1}{\partial V_t^{C,f}/\partial \alpha_t} < 0.$$

Thus, in states where the wife's constraint binds, an increase in her outside option $V_t^{NC,f}$ reduces the husband's Pareto weight α_t, shifting bargaining power toward her; conversely, a fall in $V_t^{NC,f}$ raises α_t and shifts bargaining power toward the husband.

In regions of the state space where neither participation constraint binds, small changes in $V_t^{NC,f}$ need not affect α_t; the weight then evolves according to the bargaining rule and past α_{t-1}. In equilibrium, childbirth and subsequent specialization move many couples from regions where the wife's constraint can bind into regions where her cooperation surplus S_t^f is large and her constraint rarely binds, generating an upward drift in α_t after childbirth. At the same time, even in the absence of a relocation choice in a given period, the framework implies that the Pareto weight is renegotiated whenever shocks or shifts to outside options occur: after observing wages, employment realizations, and fertility shocks, the couple adjusts α_t so that both spouses' participation constraints are satisfied at the chosen cooperative allocation. These renegotiations can shift the Pareto weight before any relocation opportunity arises, and because joint surplus is evaluated as the Pareto–weighted sum of spouses' continuation utilities (with α_t as the weight, as in Equation 6), an unequal "status–quo" weight at the time a move is considered, α_{t-1}, tilts the relocation decision toward the preferences of the better–positioned spouse. In this sense, the effects of fertility and children on non-cooperative

outside options accumulate over time into persistent shifts in decision power, which then shape both the level and direction of job-related moves observed in the data.

Appendix D FTB-B Details

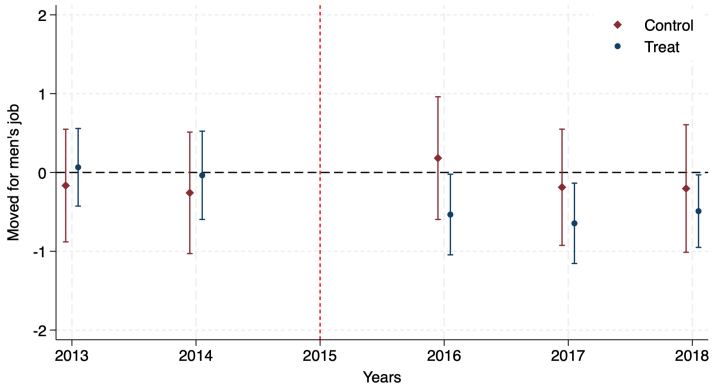
Below are supplemental tables and figures on the FTB-B reform results.

Table D.1: Balance Table

	Control		Treat		
	Mean	SD	Mean	SD	Diff
Men - Age	41.25	8.17	42.05	7.62	0.79***
Women - Age	38.94	7.16	39.88	6.78	0.94***
Men - Employed	0.98	0.14	0.98	0.14	0.00
Women - Employed	0.80	0.40	0.81	0.39	0.02
Primary Earner's Income	87111	7282	111577	7300	24465***
Secondary Earner's Income	38946	27252	43664	31797	4717***
Income Ratio	0.27	0.16	0.25	0.15	-0.02**
Man is Primary Earner	0.81	0.39	0.84	0.37	0.028*
Number of Children	2.01	0.82	2.07	0.84	0.067*
Has Pre-school Child	0.51	0.50	0.49	0.50	-0.03
No/Low Wife Income	0.33	0.47	0.31	0.46	-0.02
N	2118		1442		

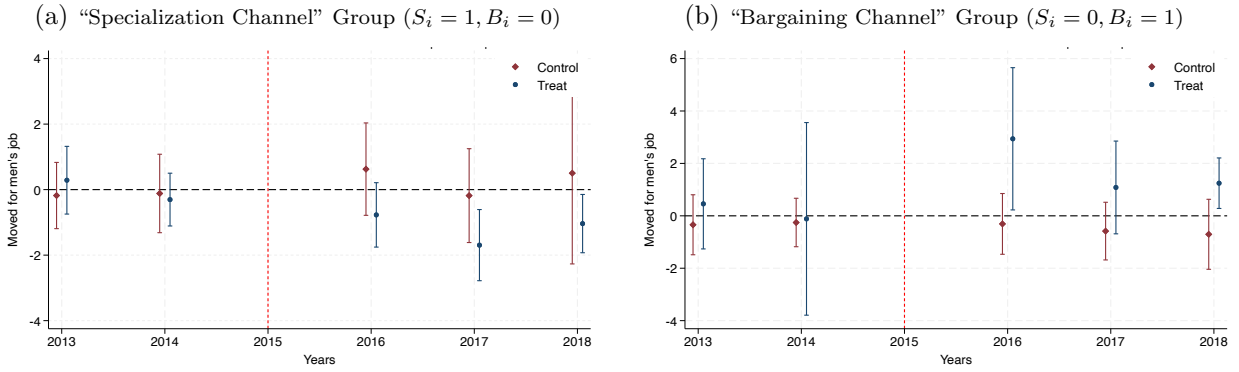
Note: This table reports characteristics of control and treatment groups, where treatment status is assigned using the average primary-earner income over 2013–2015. Means and standard deviations are shown for each group, together with the raw difference in means (Treat – Control) in the final column. "Has Pre-school Child" equals one if the youngest child is aged 0–5 at the time of the reform. "No/Low Wife Income" equals one if the wife's average pre-reform earnings place the household within the range eligible for a positive FTB-B payment. All variables are measured in the pre-reform period. Stars on the difference column indicate significance levels from two-sided t-tests of equality of means between treatment and control groups. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Figure D.1: FTB-B Event Study - Move for Men's Job



Note: These figures depict move rates relative to one year before the reform in 2015, and these coefficients are from a pooled regression, using the same sample as the main analysis with same co-variates and couple, state FE. A joint F-test of the pre-reform event-study coefficients fails to reject the null of equal pre-trends (F = 0.60; p = 0.5468).

Figure D.2: FTB-B Event Study - Move for Men's Job - Sub-samples



Note: These figures depict the event study coefficients derived from equation 1 for treated and control couples within each (S_i, B_i) subgroups. Despite some sampling noise—unsurprising in these smaller sub-samples, treated and control groups track each other closely in all pre-reform years. A joint F-test of the pre-reform event-study coefficients for Panel A is $F = 1.47; p = 0.2307$, and for Panel B is $F = 1.18; p = 0.3072$.

D.1 Mapping the FTB-B Reform to Model Mechanisms and Moving Decisions

This section maps the 2015 tightening of Family Tax Benefit Part B (FTB-B) into the two mechanisms characterized in Section 3.4—specialization and bargaining—and shows how these changes affect the implementation of job-related moves in the model.

FTB-B in the Model: Earnings-Based Two-Part Test For couples, FTB-B is a family-level transfer determined by two conditions: (i) *primary-earner income test*: eligibility only if the higher earner's annual income is below a cap $\overline{y}^H$; and conditional on (i), the payment is reduced at rate $\tau = 0.2$ for each dollar of the lower earner's income above an income-free threshold $y_0(a)$ (which depends on the age of the youngest child), until the payment reaches zero.

Let w_t^g be the hourly wage and h_t^g annual hours of spouse $g \in \{m, f\}$ in period t. Model-period earnings are $y_t^g = w_t^g h_t^g$. Define the higher and lower earner as $y_t^H = \max\{y_t^m, y_t^f\}$, and $y_t^L = \min\{y_t^m, y_t^f\}$. For a couple with youngest child of age $a_{n,t}$, FTB-B can be written as

$$B(y_t^H, y_t^L, a_{n,t}) = \mathbf{1}\{y_t^H \le \overline{y}^H\} \cdot \max\{0,\ \bar{B}(a_{n,t}) - \tau\big(y_t^L - y_0(a_{n,t})\big)_+\}, \quad \tau = 0.2 \tag{D.16}$$

where $\bar{B}(a_{n,t})$ is the maximum annual benefit for age $a_{n,t}$ and $(x)_+ = \max\{x, 0\}$. Thus, conditional on being below the primary-earner cap, the payment is flat up to $y_0(a_{n,t})$, tapers linearly at rate τ, and reaches zero at a finite lower-earner income.

Table D.2: FTB-B: Robustness - Alternative Income Bins

Panel A: Alternative Bin 70k-130k

Panel A.1

	Move for Men's Job	Move for Women's Job	Move for Family	Move for Location
T × Post	-0.0097**	0.0011	-0.0032	-0.0003
	(0.0042)	(0.0035)	(0.0023)	(0.0031)
N	4376	4376	4376	4376

Panel A.2

	Move for Men's Job		ATT
Treat × Post	-0.0087	$\Delta_{S=0,B=0}$	-0.008
	(0.0068)		(0.007)
Treat × Post × S	-0.0485***	$\Delta_{S=1,B=0}$	-0.0571
	(0.0187)		(0.0190)
Treat × Post × B	0.0289**	$\Delta_{S=0,B=1}$	0.0203
	(0.0116)		(0.009)
Treat × Post × S × B	0.0223	$\Delta_{S=1,B=1}$	-0.006
	(0.0231)		(0.0102)
N	4376		

Panel B: Alternative Bin 80k-120k

Panel B.1

	Move for Men's Job	Move for Women's Job	Move for Family	Move for Location
T × Post	-0.0089*	-0.0009	-0.0016	-0.0028
	(0.0050)	(0.0045)	(0.0027)	(0.0042)
N	2797	2797	2797	2797

Panel B.2

	Move for Men's Job		ATT
Treat × Post	-0.0017	$\Delta_{S=0,B=0}$	-0.002
	(0.0083)		(0.008)
Treat × Post × S	-0.0614***	$\Delta_{S=1,B=0}$	-0.0631
	(0.0213)		(0.0213)
Treat × Post × B	0.0255*	$\Delta_{S=0,B=1}$	0.0237
	(0.0143)		(0.0113)
Treat × Post × S × B	0.0339	$\Delta_{S=1,B=1}$	-0.004
	(0.0267)		(0.0109)
N	2797		

Note: This table reports robustness checks for the main and decomposed DiD specifications. Panels A and B repeat the analyses of Table 4 using alternative income bandwidths around the primary-earner FTB-B eligibility cap. Panel A restricts the sample to couples whose pre-reform average primary-earner income lies between $70,000 and $130,000; Panel B restricts the sample to couples in the $80,000 and $120,000 range. Within each bandwidth, treatment and control groups are defined analogously to the main specification: the treatment indicator T_i equals one for couples whose pre-reform average primary-earner income lies between $100,000 and $125,000 and zero for those between $75,000 and $100,000, with couples outside the indicated range excluded from the sample. Panels A.1 and B.1 re-estimate the baseline DiD in equation 11 for all four move outcomes. Panels A.2 and B.2 re-estimate the saturated specification in equation 12, which interacts $T_i \times Post_t$ with indicators for baseline specialization pressure and bargaining exposure. $S_i = 1$ indicates that the youngest child is aged 0–5 at the time of the reform (high specialization pressure), and $B_i = 1$ indicates that the wife's average pre-reform earnings imply positive FTB-B entitlement (high bargaining exposure). The coefficients on $T_i \times Post_t$ and its interactions with S_i and B_i come from a single pooled regression. The columns labeled $\Delta_{S,B}$ report the implied cell-specific average treatment effects for each (S, B) combination, computed as the appropriate linear combinations of the estimated coefficients. All specifications include couple fixed effects, statexyear fixed effects, and the baseline controls used in Table 4. Standard errors, in parentheses, are clustered at the couple level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table D.3: FTB-B: Robustness - Placebo Tests

Panel A: Placebo Groups (100k-125k vs 125k-150k)		Panel B: Couples with No Eligible Children	
	Move for Men's Job		Move for Men's Job
Placebo T × Post	-0.0122	T × Post	-0.0016
	(0.0356)		(0.0094)
Placebo T × Post × S	0.0206		
	(0.0500)		
Placebo T × Post × B	-0.0066		
	(0.0426)		
Placebo T × Post × S × B	-0.0420		
	(0.0600)		
N	1055	N	2417

Note: This table reports placebo versions of the FTB-B DiD design. The outcome is an indicator for a long-distance move undertaken for the male partner's job. Panel A uses a placebo income threshold among higher-income couples who are not differentially affected by the 2015 FTB-B cap change: the sample consists of couples with pre-reform average primary-earner income between \$100,000 and \$150,000, and *Placebo Treat* equals one for couples in the \$125,000–\$150,000 range and zero for those in the \$100,000–\$125,000 range. Panel B applies the main treatment definition to couples with no FTB-B eligible children, for whom the reform does not change FTB-B payments. In Panel A, S_i denotes high specialization pressure (youngest child aged 0–5 at the time of the reform) and B_i denotes high bargaining exposure (the wife's average pre-reform earnings imply positive FTB-B entitlement); the interactions of *Placebo Treat* × *Post* with S_i and B_i come from a single pooled regression. All regressions include couple fixed effects, state-by-year fixed effects, and the same controls as in Table 4. Standard errors, reported in parentheses, are clustered at the couple level. None of the placebo specifications show statistically significant treatment effects, consistent with the validity of the main design. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

The July 1, 2015 reform lowers the primary-earner cap $\overline{y}^H$ from 150,000 to 100,000 (for couples), leaving the secondary-earner taper τ and income-free area $y_0(a)$ unchanged. In the model, this object enters: (i) the cooperative budget constraint through the total transfer $T_t = T_t^{\text{other}} + B(y_t^H, y_t^L, a_{n,t})$; and (ii) the wife's non-cooperative outside option, as FTB-B is assigned to the primary carer. All effects operate through earnings $y_t^g = w_t^g h_t^g$; there is no separate hours test.

Specialization Channel: Effect of the Reform on Move Acceptances Under cooperation, the per-period resource constraint is

$$Y_t^{\text{net}} = w_t^m h_t^m + w_t^f h_t^f - \rho_c(a_{n,t}), \min\{h_t^m, h_t^f\} - \kappa(n_t) + B(y_t^H, y_t^L, a_{n,t}) + T_t^{\text{other}}, \tag{D.17}$$

with intraperiod utility given by the log-share aggregator

$$U_t^\star = S \log Y_t^{\text{net}} + C_m \log(T - h_t^m) + C_f \log(T - h_t^f). \tag{D.18}$$

Consider a household with a pre-school child, and suppose $h_t^f \leq h_t^m$ so that paid childcare is

proportional to h_t^f. In the FTB-B taper region (eligible and $y_t^L > y_0(a_{n,t})$), we have

$$\frac{\partial B}{\partial h_t^f} = -\tau w_t^f,$$

so the marginal contribution of the wife's hours to the cooperative budget is

$$\frac{\partial Y_t^{\text{net}}}{\partial h_t^f} = w_t^f - \rho_c(a_{n,t}) - \tau w_t^f = (1-\tau)w_t^f - \rho_c(a_{n,t}). \tag{D.19}$$

Define the *effective* cooperative wage $w_t^{f,\text{eff}} \equiv (1-\tau)w_t^f$. When the couple is eligible for FTB-B and the wife is in the taper region, $w_t^{f,\text{eff}} < w_t^f$, which both raises the value of low secondary earnings (via B) and reduces the marginal return to her work, thereby tilting the cooperative solution toward specialization.

(a) Specialization threshold under relocation. Let j be the current location and k a potential destination with a job offer for the husband. As shown in Section 3.4, the condition for switching to a specialized allocation at k (with the wife not working) can be summarized as a threshold on the relative gains,

$$\frac{r}{\phi} \geq r^\star_{\text{child}}(\tau), \tag{D.20}$$

where r and ϕ collect relative wage and productivity terms, and

$$r^\star_{\text{child}}(\tau) \propto \frac{w_t^{f,\text{eff}} - \rho_c(a_{n,t})}{w_t^{f,\text{eff}}} = \frac{(1-\tau)w_t^f - \rho_c(a_{n,t})}{(1-\tau)w_t^f}, \tag{D.21}$$

with $w_t^{f,\text{eff}} \equiv (1-\tau)w_t^f$ denoting the wife's effective net wage when the taper applies.

Pre-reform, for treated couples with $y_t^H \leq 150{,}000$ and a low-earning wife, the taper applies so $\tau > 0$ and $w_t^{f,\text{eff}} < w_t^f$, which implies a relatively low $r^\star_{\text{child}}(\tau)$: a husband-job move that induces specialization is easier to rationalize. The 2015 reform lowers the cap to \$100,000. For couples with $y_t^H \in (100{,}000, 150{,}000]$, eligibility is lost and (D.16) implies $B = 0$ at all $(y_t^L, a_{n,t})$. In these states τ no longer applies, so $w_t^{f,\text{eff}} \uparrow w_t^f$ and $r^\star_{\text{child}}(\tau)$ increases. The region of husband-job offers for which "move-and-specialize" is optimal therefore strictly shrinks.

(b) Move acceptance with switch to specialization. For a husband-job move from j to k that induces specialization at k, the acceptance condition in Section 3.4 can be written as

$$\zeta \leq S \log\left(\frac{Y_k^{\text{net}}}{Y_j^{\text{net}}}\right) + C_f\big[\log(T - h_k^f) - \log(T - h_j^f)\big] + \Delta\Gamma(\alpha_t), \tag{D.22}$$

where ζ is the moving cost and $\Delta\Gamma(\alpha_t)$ collects the location preference terms weighted by the Pareto weight α_t. Pre-reform, for near-cap treated couples with young children: (i) at k with specialization (low y_t^L), FTB-B is typically at or near its maximum, so B_k is high; and (ii) at j with two earners in the taper region, $B_j < B_k$. Thus

$$\log\left(\frac{Y_k^{\text{net}}}{Y_j^{\text{net}}}\right) = \log\left(\frac{Y_k^{\text{base}}}{Y_j^{\text{base}}}\right) + \log\left(\frac{1 + B_k/Y_k^{\text{base}}}{1 + B_j/Y_j^{\text{base}}}\right),$$

where Y_ℓ^{base} denotes pre-transfer resources at location ℓ. The second term is positive and creates an additional wedge in favor of husband-job moves that are accompanied by specialization.

After the reform, affected couples in (100,000, 150,000] lose eligibility entirely, so $B_k = B_j = 0$ and this positive wedge disappears. The right-hand side of (D.22) falls, and some husband-job moves that were previously acceptable (due to FTB-B induced specialization gains) are no longer implemented. This effect is strongest for households with pre-school children, for whom $\rho_c(a_{n,t})$ and $\bar{B}(a_{n,t})$ are largest, and whose primary earner lies near the cap.

Bargaining Channel: Outside Options, Pareto Weights, and Job-Related Moves FTB-B also affects the relative outside options that determine the Pareto weight α_t under limited commitment. In the non-cooperative problem, the wife receives FTB-B as the primary carer, whereas the husband does not. Let

$$B_t \equiv B(y_t^H, y_t^L, a_{n,t})$$

denote the contemporaneous FTB-B payment implied by the schedule in (D.16). The wife's non-cooperative value can then be written as

$$V_t^{NC,f} = \widetilde{V}_t^{NC,f} + \Lambda_t\big(B_t\big), \qquad V_t^{NC,m} = \widetilde{V}_t^{NC,m}, \tag{D.23}$$

where $\widetilde{V}_t^{NC,f}$ collects the components of her non-cooperative value that do *not* depend on FTB-B, and $\Lambda_t(\cdot)$ is the (discounted) contribution of the benefit to her outside option. Because FTB-B is an additional transfer to her private consumption each period and preferences are monotone, $\Lambda_t(B)$ is strictly increasing in B (and, under log utility, strictly concave). The outside-option gap is then

$$\Delta_t^{NC} \equiv V_t^{NC,m} - V_t^{NC,f} = \big(\widetilde{V}_t^{NC,m} - \widetilde{V}_t^{NC,f}\big) - \Lambda_t\big(B_t\big), \tag{D.24}$$

so Δ_t^{NC} is strictly decreasing in B_t.

For affected couples, the reform reduces B_t to zero at given $(y_t^H, y_t^L, a_{n,t})$. Since $\Lambda_t(0) = 0 < \Lambda_t(B_t^{\text{pre}})$, this implies

$$V_t^{NC,f,\text{post}} < V_t^{NC,f,\text{pre}}, \qquad \Delta_t^{NC,\text{post}} > \Delta_t^{NC,\text{pre}}.$$

Under limited commitment, the Pareto weight α_t is determined each period by the binding participation constraint(s). When the wife's constraint binds in location ℓ, it satisfies

$$V_t^{C,f}(\ell;\alpha_t) = V_t^{NC,f}(\ell),$$

where $V_t^{C,f}(\ell;\alpha)$ is strictly decreasing in α. By the implicit function theorem,

$$\frac{\partial \alpha_t}{\partial V_t^{NC,f}} > 0.$$

Hence, a reduction in $V_t^{NC,f}$ due to the loss of FTB-B implies an increase in α_t: bargaining power shifts toward the husband.

The bargaining channel is particularly strong in the subset of states where the wife has low own earnings and qualifies for FTB-B, because in those states the payment is quantitatively important for her non-cooperative outside option. Under non-cooperation each spouse solves a problem with their individual consumption and time allocation, with common costs split and government benefits assigned to the relevant recipient. Let c_t^0 denote the wife's private consumption in non-cooperation *absent* FTB-B, abstracting from home production and other arguments of period utility. Given the assumptions in Section 3.3, FTB-B simply augments her private budget, so with the benefit her

consumption becomes

$$c_t^{NC,f} = c_t^0 + B_t. \tag{D.25}$$

If her consumption utility is $u(c) = \log c$, the per-period gain in utility from FTB-B is

$$\Delta u(B_t; c_t^0) = u(c_t^0 + B_t) - u(c_t^0) = \log(c_t^0 + B_t) - \log(c_t^0) = \log\left(1 + \frac{B_t}{c_t^0}\right).$$

For fixed $B_t > 0$, this gain is strictly decreasing in c_t^0:

$$\frac{\partial \Delta u(B_t; c_t^0)}{\partial c_t^0} = -\frac{B_t}{c_t^0(c_t^0 + B_t)} < 0.$$

Equivalently, the marginal effect of the transfer at $B_t = 0$ is $u'(c_t^0) = 1/c_t^0$, which is larger when c_t^0 is small. Aggregated over time, these period gains generate the increasing and concave $\Lambda_t(B_t)$ term in (D.23). Thus FTB-B has the largest impact on the wife's outside option precisely in states where her own earnings—and hence her individual non-cooperative budget c_t^0—are low and she is eligible for the payment. In those states, tightening the cap and removing FTB-B both (i) widens the outside-option gap Δ_t^{NC} and (ii) shifts the Pareto weight α_t toward the husband, making job-related moves more strongly reflect his preferences.

Appendix E Estimation Details

Appendix: Formal Identification

This appendix proves identification of each parameter block in the dynamic collective model.

A. Intraperiod preference parameters and home technology

Fix a discrete labor-supply profile (h_m, h_f) and a youngest-child bin $a \in \{0, 1, 2, 3\}$, where 0 denotes no children, 1 a newborn, 2 pre-school age, and 3 school age. Let $\ell_g = T - h_g - d_g$ denote leisure and $s_g(a) \equiv d_g/(T - h_g)$ the share of non-market time spent in home production. The intraperiod FOCs with Cobb–Douglas home production imply

$$\frac{\ell_g}{d_g} = \frac{\alpha_g \, \psi_L(a)}{\bar{\psi}_Q(a) \, \tilde{\delta}_d^g(a)}, \qquad \alpha_m = \alpha_t, \ \alpha_f = 1 - \alpha_t, \quad \bar{\psi}_Q(a) \equiv \alpha_t \psi_Q^m(a) + (1 - \alpha_t)\psi_Q^f(a), \tag{A.1}$$

and equivalently

$$s_g(a) = \frac{\bar{\psi}_Q(a) \, \tilde{\delta}_d^g(a)}{\alpha_g \psi_L(a) + \bar{\psi}_Q(a) \, \tilde{\delta}_d^g(a)}. \tag{A.2}$$

In estimation I match, for each a and for observed labor supply bin (h_m, h_f), the sample means of $s_g(a)$ and ℓ_g/d_g for $g \in \{m, f\}$ constructed from time-use data and labor supply choice by child bin.

Identification proceeds in two steps, holding fixed the PC-recovered α_t defined in the next section. First, within $a = 0$, equation (A.2) with the normalization $\psi_Q^f(0) = 1$ and a common $\psi_L(0)$ identifies the baseline technology shares $\tilde{\delta}_d^g(0)$ from $\{s_m(0), s_f(0)\}$ evaluated at the recovered α_t. Second, across $a \in \{1, 2, 3\}$, changes in $\{s_g(a)\}$ for the same observed labor supply bin identify the deviations $\tilde{\delta}_d^g(a) - \tilde{\delta}_d^g(0)$, and thus recover $\{\delta_d, \delta_d^g(a), \delta_m\}$.Then, with $\tilde{\delta}_d^g(a)$, equation (A.2) identifies $\psi_L(a)/\bar{\psi}_Q(a)$ in each child bin a, and combining this with $\bar{\psi}_Q(a) = \alpha_t \psi_Q^m(a) + (1 - \alpha_t)\psi_Q^f(a)$ and the normalization at $a = 0$ identifies the levels $\{\psi_L(a), \psi_Q^g(a)\}$ across bins.

I do not treat α_t as a primitive parameter, and it is but recovered from participation constraints tied to other states, wages, and mobility behavior. In each period t, given the state Ω_t (child bin a, location, wage offers, permanent types, and other observables) and the set of parameters Θ, define the cooperative values $V_g^{\mathrm{C}}(\Omega_t; \alpha_t)$ and non-cooperative outside options $V_g^{\mathrm{NC}}(\Omega_t)$. As discussed

previously, limited commitment imposes the participation constraints:

$$V_g^{\mathrm{C}}(\Omega_t, \alpha_t) \geq V_g^{\mathrm{NC}}(\Omega_t), \qquad g \in \{m, f\} \tag{B.1}$$

Because $V_m^{\mathrm{C}}(\Omega_t, \alpha_t)$ is strictly increasing and $V_f^{\mathrm{C}}(\Omega_t, \alpha_t)$ strictly decreasing in α (continuously), the feasible set $\mathcal{A}(\Omega_t; \Theta) = \{\alpha \in [0,1] : (B.1) \text{ holds}\}$ is a closed interval, and the selection α_t is unique due to the negotiation rule outlined above. I fix $\alpha_{i,0} = 0.5$ at the first observation of each couple i and then recover the entire path $\{\alpha_{i,t}\}$ by iterating (B.2) during solution and simulation. No extra free parameter governs α_t; it is fully determined by wages, offers, mobility costs, and the intraperiod primitives through (B.1). Therefore, the time-use moments do not conflate $\{\psi, \tilde{\delta}\}$ with α_t.

B. Fertility preferences and taste process

The parity-by-age and the distribution of birth spacing identify the levels and age profile of ϕ_N, the persistence π of the fertility taste process η_t, the variance σ_η, and the birth spacing shifter $\tilde{\eta}_0$ via within-household contrasts between youngest-child age 0 and 1–2.

C. Mobility costs and non-pecuniary location taste dispersion

The level and slope differences in move rates across youngest-child bins identify $\zeta_0, \zeta_1, \zeta_2$: higher ζ tightens the surplus threshold and lowers moves; the age profile (newborn, preschool, school-age) separates $\zeta_0, \zeta_1, \zeta_2$. The dispersion of location tastes σ_γ^g is disciplined by (i) the mass of moves with small/negative pecuniary gains and (ii) the dispersion of move decisions among observably similar households conditional on wages.

D. Wage Process from Accepted-Wage Moments

For spouse $g \in \{m, f\}$, the (log) accepted wage is

$$\log w_{i,t}^g \;=\; \beta_{1g} \;+\; \beta_{2g}\, x_{i,t}^g \;+\; \theta_i^g \;+\; \omega_{i,t}^g \;+\; \omega_{i,t}^{\ell\, g},$$

where $x_{i,t}^g$ is human capital, θ_i^g is the permanent type (two-support points by gender), $\omega_{i,t}^g$ is a job-match component that is constant within a job spell and refreshes at a same-location job switch, and $\omega_{i,t}^{\ell g}$ is a location-match component that is constant within a location spell and refreshes at a long-distance move. Human capital evolves as

$$x_{t+1}^g \;=\; \left[(1-\delta)\, x_t^g + h_t^g/40\right] \cdot \varepsilon_{t+1}^g, \quad \varepsilon_{t+1}^g \text{ i.i.d. lognormal(mean 1)},$$

so transitory noise lives in x (not directly in log wages).

Define three mutually exclusive samples by mover/switcher status between $t-1$ and t: non-mover non-switchers $S_0^g = \{M = 0, S^g = 0\}$, non-mover switchers $S_1^g = \{M = 0, S^g = 1\}$, and movers $M = \{M = 1\}$. Let

$$\Delta \log w_t^g \equiv \log w_t^g - \log w_{t-1}^g.$$

All identification relies on moments of *accepted* $\Delta \log w_t^g$ computed after residualizing on year, cohort, and occupation×industry fixed effects, and on the corresponding hazards (job-switch rate among non-movers; move rate).

For S_0^g (same job, same location), $\Delta\omega_t^g = \Delta\omega_t^{\ell g} = 0$, hence

$$\Delta \log w_t^g \;=\; \beta_{2g}\, \Delta x_t^g.$$

The variance $v_0^g \equiv (\Delta \log w_t^g \mid S_0^g)$ identifies the dispersion of *accepted* within-spell human-capital growth, i.e. the composite $(\beta_{2g})^2(\Delta x_t^g)$ induced by hours choices and the i.i.d. shock in x_{t+1}^g. Because the same Δx_t^g channel loads in every subsample, v_0^g is the baseline to which we compare the variance of switchers and movers.

For S_1^g (new job, same location),

$$\Delta \log w_t^g \;=\; \beta_{2g}\, \Delta x_t^g \;+\; \Delta\omega_t^g, \qquad \Delta\omega_t^g \equiv \omega_t^{g\prime} - \omega_{t-1}^g.$$

The variance increment $v_1^g - v_0^g$ identifies the dispersion of *accepted* job-match changes, which is a monotone function of the latent job-match variance $\sigma_{\omega,g}^2$ under the model's acceptance threshold. To separately identify the offer-arrival rate λ_g, use in addition (i) the job-switch hazard among non-movers, $P(S_1^g{=}1 \mid M{=}0)$, and (ii) the sign-conditional means $[\Delta \log w_t^g \mid \Delta \log w_t^g > 0,\, S_1^g]$ and

$[\Delta \log w_t^g \mid \Delta \log w_t^g < 0,\, S_1^g]$. Intuitively, λ_g scales the frequency of opportunities (the switch rate) with limited impact on conditional gains, whereas $\sigma^2_{\omega,g}$ primarily changes the magnitude and dispersion of realized (accepted) gains. The triple $\{v_1^g - v_0^g,\ P(S_1^g{=}1 \mid M{=}0),\ \text{sign-conditional means}\}$ therefore point-identifies $(\sigma^2_{\omega,g}, \lambda_g)$ once the structural selection rule is reproduced in simulation.

Movers are long-distance relocators and by construction job switchers. For M,

$$\Delta \log w_t^g \;=\; \beta_{2g}\, \Delta x_t^g \;+\; \Delta\omega_t^g \;+\; \Delta\omega_t^{\ell\, g}.$$

The variance increment $v_m^g - v_1^g$ identifies the dispersion of *accepted* location-match changes, mapping to the latent $\sigma^2_{\omega^\ell,g}$ after correcting for move-selection truncation. Two sets of moments pin down that truncation: (i) the move rate by youngest-child bin and (ii) the prevalence of small/negative pecuniary-gain moves (and related mover selection diagnostics). Cross-spouse dependence is identified by the jump in the covariance of residualized wage changes across spouses between stayers and movers:

$$c_{\text{stay}} \approx 0, \qquad c_{\text{move}} = Cov\big(\Delta \log w_t^m, \Delta \log w_t^f \mid M\big) > 0,$$

which inverts to the correlation of spouses' *location* matches ρ_{ω^ℓ} once the joint (bivariate normal) draw of $(\omega_m^{\ell\prime}, \omega_f^{\ell\prime})$ is respected at the move threshold.

Finally, let the residualized individual wage be

$$r_{i,t}^g \equiv \log w_{i,t}^g - \beta_{1g} - \beta_{2g} x_{i,t}^g = \theta_i^g + \omega_{i,t}^g + \omega_{i,t}^{\ell\, g}.$$

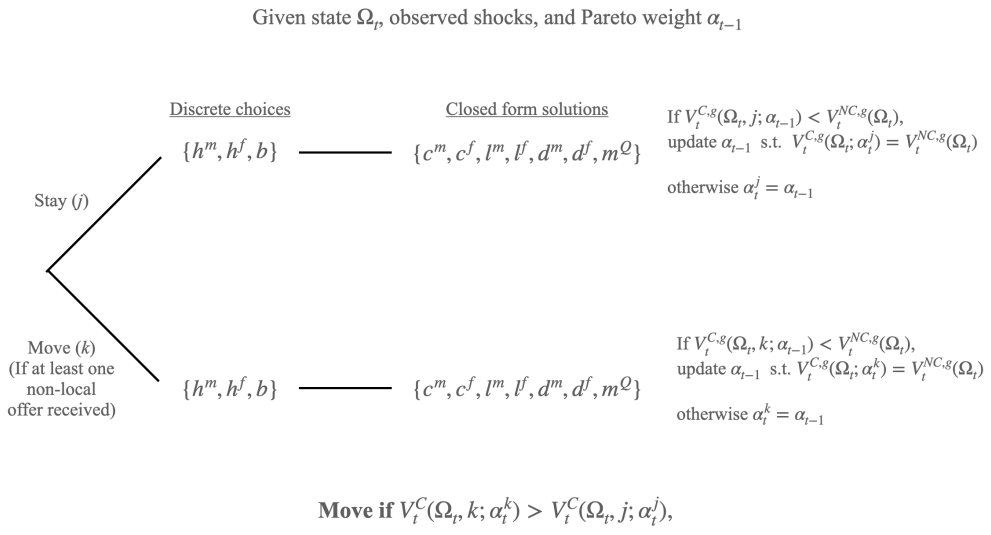
For each worker, define the person-mean $\bar{r}_i^g = \frac{1}{T_i}\sum_t r_{i,t}^g$ over accepted-wage observations. Under the maintained mean-zero stationarity of the match components and their refresh at switches/moves, $Var(\bar{r}_i^g)$ concentrates on (θ^g) as T_i grows (the contribution of match terms shrinks at rate $1/T_i$). In finite samples, I recover the gender-specific two-point mixture for θ^g via a latent-class mixed model on $\{r_{i,t}^g\}$ with a two-class latent-class model for log wages with controls for age, calendar year, state, occupation/industry, while class-membership probabilities are modeled as a function of education, yielding a posterior probability of belonging to the low- or high-wage type. The posterior class probabilities deliver the mixture weights and support points, and—when multiplied across spouses—imply the joint distribution over (θ_m, θ_f) used in the initial state. Because all

moments and simulated panels are constructed on accepted wages (censoring rejected offers in the simulation exactly as in the data construction), selection does not bias these type moments.

E.1 Numerical Implementation

Model timing. At the beginning of period t, the couple observes all the shocks, ξ_t, which includes: the choice set (local/non-local offers, layoff/separation), the qualities of any realized offers (local and non-local), current matches $(\omega_t^g, \omega_t^{\ell,g})$, and, if applicable, the fertility taste shocks η_t, and childbirth conditional on choosing $b_{t-1} = 1$ in the last period and the birth probability p_t^f. If no non-local offer arrives, the couple only solves a "*stay*" branch, with no choice of relocation, and if a non-local offer arrives, they solve both "*stay*" and "*move*" branches, and ultimately deciding on relocation. In either branch, for each $b \in \{0, 1\}$ they choose optimal (h^m, h^f) given b. I assume that there is a $i.i.d.$ Type I extreme value preference shock related fertility choice with scale normalized to one. This is to induce dispersion in fertility timing across sample and ages and persistent taste shock, and also account for non-perfect control over fertility. Note that fertility choice $b = 1$ only exists while the woman is of her fertile age. If the woman is not in her fertile age, then choice set b collapses to $b \in \{0\}$, and analogous solution is derived.

Figure E.1: Model Timing



Model Solution. Given the model's finite horizon, the couple's problem is solved using backward recursion, starting from the last period, denoted as $T = 30$. Given last period with $\mathbb{E}[V_{g,T+1}^C(\Omega_{T+1})] = 0$, in period T, the couple possesses full information about all realizations that will affect their utility. Then, it becomes possible to compute alternative-specific value functions for every element of the state space in period T, and determine the maximum value for each element in the state space.

For each period $t < T$, I solve the couples' problem on a grid of state points taking the continuation values in $t{+}1$ as given. I first solve the non-cooperative problems for each spouse to obtain outside-option continuation values. I then solve the cooperative problem taking these outside options as inputs when checking participation constraints. In periods $t > 13$, there is no fertility decision ($b \in \{0, 1\}$) as the woman is past the fertile age, so η does not enter and the couple simply chooses among the remaining activities with full information on the contemporaneous shocks. Starting at the last fertile age (e.g. $t{=}13$), η_t becomes part of the state and fertility is a choice.

At time $t < T$, conditioning on the observed ξ_t, define for each branch $l \in \{l, k\}$ (as in, $\{\text{stay}, \text{move}\}$) the fertility-specific value:[27]

$$W_l(b \mid \Omega_t, \xi_t) \;=\; \max_{(h_m, h_f) \in \mathcal{H}_b} u_t\big(l, b, h_m, h_f;\, \Omega_t, \xi_t\big) + \beta\, \mathbb{E}_{(\varepsilon^K_{m,t+1}, \varepsilon^K_{f,t+1})}\big[V_{t+1}\big(\Omega_{t+1}(l, b, h_m, h_f;\; \Omega_t, \xi_t, \varepsilon^K)\big)\big]$$

Here, the couples choose labor supply choice within the fertility choice node b, and I use $K = 3$ Gauss-Hermite quadrature nodes (see Judd (1998)) to approximate the numerical integral taken over the distribution of the wage-related shocks. With Type I EV at the fertility node, the branch's inclusive value is

$$\mathrm{IV}_l(\Omega_t, \xi_t) = \log\Big(\sum_{b \in \{0,1\}} \exp\{W_l(b \mid \Omega_t, \xi_t)\} \Big).$$

Then, finally, the period's value is

$$V_t(\Omega_t, \xi_t) = \max_{l \in \mathcal{A}(\xi_t)} \mathrm{IV}_l(\Omega_t, \xi_t),$$

where $\mathcal{A}(\xi_t) = \{\text{stay}\}$ if no non-local offer arrives in ξ_t, and $\{\text{stay}, \text{move}\}$ otherwise. Then, at $t{-}1$:

$$V_{t-1}(\Omega_{t-1}) = \max_{a_{t-1} \in \mathcal{A}} \Big\{ u_{t-1}(\Omega_{t-1}, a_{t-1}) + \beta\, \mathbb{E}_{\Omega_t \mid \Omega_{t-1}, a_{t-1}} \mathbb{E}_{\xi_t \mid \Omega_t}\big[\, V_t(\Omega_t, \xi_t)\,\big] \Big\}.$$

where the expectation is taken over all the possible shocks, given each state and choice set at $t{-}1$. In practice, I estimate the expectations using Monte Carlo simulations, drawing r=30 combinations of shocks and taking the average continuation value over those draws. This process continues recursively back to period 1.

[27] Again, if the woman is not in her fertile age, they do not have fertility choice, but the following solution remains the same with just $b \in \{0\}$

Computational Details and Approximations In the model, current match qualities are payoff-relevant and persistent within spells, so the Markov state includes observed location- and job-specific matches:

$$\Omega_t = \{x_{m,t}, x_{f,t}, n_t, a_{n,t}, \eta_t, \gamma_t^m, \gamma_t^f, \theta^m, \theta^f,\ \omega_t^m, \omega_t^f,\ \omega_t^{\ell,m}, \omega_t^{\ell,f}\}.$$

Computationally, to avoid large state space I exploit the log-linear wage structure and compress matches into re-indexed human capital:

$$x_{g,t}^{\text{eff}} \ \equiv\ x_{g,t} + \frac{\theta^g + \omega_t^g + \omega_t^{\ell,g}}{\beta_g^1}, \qquad g \in \{m, f\}.$$

I therefore solve baseline value arrays only on the grid state:

$$\Omega_t^{\text{grid}} = \{x_{m,t}^{\text{eff}}, x_{f,t}^{\text{eff}}, n_t, a_{n,t}, \eta_t, \gamma_t^m, \gamma_t^f\},$$

and evaluate them at $(x_{m,t}^{\text{eff}}, x_{f,t}^{\text{eff}})$ when matches are realized. Under the maintained conditions that (1) human capital affects utility only through wages; (2) budgets depend on wages, not matches; (3) human capital-dynamics and offer/separation hazards do not depend on matches; (4) location tastes are separable, this re-indexing preserves optimality and the continuation-value comparisons used in acceptance and relocation decisions.[28] That is, in solving for continuation values, the matches and skill types are put into the re-indexed human capital, but under simulation, agents can observe their $\{\theta^m, \theta^f,\ \omega_t^m, \omega_t^f,\ \omega_t^{\ell,m}, \omega_t^{\ell,f}\}$ as state, can make decisions given the continuation value of accepting certain offer or moving, that's reflected through their human capital and thus wages.

Additionally, state variables η, γ_l^g, θ^g are discretized to facilitate computation, using the method proposed by Kennan & Walker (2011), which suggests that the best discrete approximation of a distribution $F(x)$ has n equally-weighted support points $x_i \in \{x_1, ..., x_n\}$ where $F(x_i) = \frac{2i-1}{2n}$. I assume two support points for both η and θ^g, and three support points for γ_l^g. Lastly, human capital $x_{g,t}^{\text{eff}}$ is continuous. Here, the objective is to evaluate the $EV_t := Emax_t$ at each point in the state space. To reduce computational burden, I evaluate choice-specific continuation values on a sparse subset of experience points: $\tilde{x}_{i,t} = \{3, 8, 15, 25, 35\}$, and approximate along the full (x_m, x_f)

[28] Intuitively, for any (θ_m, θ_f), $V_\bullet^{\theta_m,\theta_f}(s, x_m, x_f) = V_\bullet^{0,0}(s, x_m + \theta_m/\beta_m^1, x_f + \theta_f/\beta_f^1)$.

using a polynomial regression of the third order, following Keane & Wolpin (1994, 1997, 2001) and Keane et al. (2011).

E.2 State Space and Initial Conditions

At $t = 1$ (woman age 25), the couple enters the model with initial labor force participation states $(e_{m,0}, e_{f,0})$, starting human capital $(x_{m,0}, x_{f,0})$, number of children and the youngest age of the child $(n_0, a_{n,0})$, permanent skill types (θ^m, θ^f), location- and job-match components (if working) $(\omega_0^m, \omega_0^f, \omega_0^{l,m}, \omega_0^{l,f})$, location-preference (γ_0^m, γ_0^f), and initial Pareto weight α_0. These initial conditions are assumed exogenous, and are derived and set given the empirical joint distribution of the state variables for couples in the sample at age 25-26 observed in the HILDA data.

First, because I discretize permanent wage heterogeneity into two types, I estimate, separately by gender, a two-class latent-class model for log wages with controls for age, calendar year, state, occupation/industry, while class-membership probabilities are modeled as a function of education, yielding a posterior probability of belonging to the low- or high-wage type. For each couple, I form the joint distribution over (θ^m, θ^f) by multiplying the spouses' posteriors and sample from these joint weights. Then, given these types, I derive the initial distribution of number of children (n_0) and the distribution of youngest child's age $(a_{n,0})$, conditional on initial number of children. Tables E.1, E.2 reports the initial distribution of these state variables. The initial distribution of human capital is calibrated based on the spousal joint distribution of previous work experience by each type. These are self-reported values of total years an individual has worked in their life-time. Because this is a measure that does not take depreciation into account, I scale these measures with 0.5 when calculating initial human capital, following Jakobsen et al. (2022).

I derive initial distribution of joint employment status, by child presence. E.3 show the initial distributions used for the model. Moreover, each spouse start with job-specific match components $(\omega_{g,0})$, which I randomly assign to individuals given the corresponding distributions, as well as location-specific match $\omega_{g,0}^l$, which is drawn from their corresponding distributions with couple-level correlation ρ_{ω^l}. Each spouse's location-preference (γ_0^m, γ_0^f) is also randomly assigned. Additionally, the couple has an initial fertility desire η which is randomly drawn from its distribution. Finally, assume the initial Pareto at $\alpha_0 = 0.5$.

In periods $t > 1$, an individual's state space evolves based on the couple's choices, deterministic values, and stochastic processes. The labor supply decision in the previous period updates the employment status for the next period. Human capital increase endogenously based on the previous period's labor supply choice. Individual-specific job components also update based on received and accepted wage offers in the previous period. Child presence updates by the couple's decisions, while the youngest child's age updates deterministically as the couple progresses to the next period. The fertility desire is updated stochastically with the Markov process. Specifically, state space is: $\Omega_t = \{x_{m,t}, x_{f,t}, n_t, a_{n,t}, \eta_t, \gamma_t^m, \gamma_t^f, \theta^m, \theta^f,\ \omega_t^m, \omega_t^f,\ \omega_t^{\ell,m}, \omega_t^{\ell,f}\}$.

Figure E.2: Initial Joint Distribution of Work Experience, by household skill types

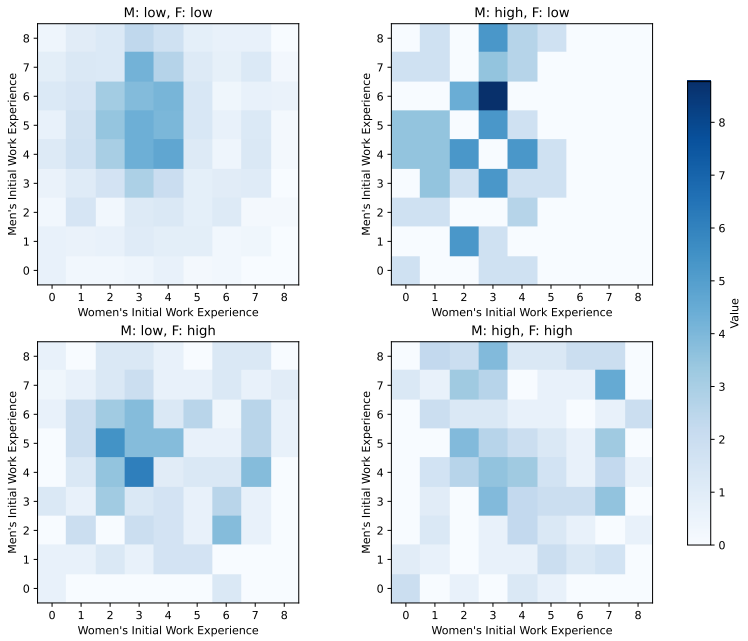


Table E.1: Initial Distribution of Number of Children, by Joint Couple Skill Type

Type	$n_0 = 0$	$n_0 = 1$	$n_0 = 2$
M: low, F: low	60.03	21.47	18.50
M: high, F: low	86.52	12.06	1.42
M: low, F: high	85.92	12.90	1.17
M: high, F: high	92.86	5.43	1.71

Table E.2: Initial Distribution of Youngest Child's Age, by Initial Number of Children

	$a_{n,0} = 0$	$a_{n,0} = 1$	$a_{n,0} = 2$	$a_{n,0} = 3$
$n_0 = 1$	0.494	0.241	0.086	0.080
$n_0 = 2$	0.490	0.238	0.161	0.084

Table E.3: Initial Joint Employment Status, by Child Presence

$n_0 = 0$	$e_{f,0} = 1$	$e_{f,0} = 0$
$e_{m,0} = 1$	91.22	3.68
$e_{m,0} = 0$	5.1	0

$n_0 > 0$	$e_{f,0} = 1$	$e_{f,0} = 0$
$e_{m,0} = 1$	59.66	38.41
$e_{m,0} = 0$	1.93	0

Fecundity by Age Below reports the biological fecundity by age calibrated based on medical literature (Khatamee and Rosenthal, 2002), which is reported in Appendix Table E.4. These measures have been used in the literature, including Adda et al. (2017). These measures are the probability of conceiving in one year given the attempt to become pregnant.

Table E.4: Biological Fecundity by Age

Age	25	26	27	28	29	30	31	32	33	34	35	36	37	38
p_t^f	0.8	0.78	0.76	0.74	0.72	0.69	0.65	0.6	0.58	0.56	0.54	0.52	0.5	0.47

E.3 Estimated Parameters

Below lists details of the parameters estimated in the model.

Table E.5: Description of Variables and Estimated Parameters

Notation	Description
	Model Notations
State Variables	
x_g	Individual's human capital, by gender
$e_g \in \{E, N\}$	Individual's employment status, by gender
$n \in \{0, 1, 2, 3\}$	Number of children
$a_n \in \{0, 1, ..., 5\}$	Age of youngest child
η	Persistent taste shock to fertility
ω_g	Individual's job-specific wage component, by gender
ω_g^l	Individual's location-specific wage component, by gender
θ^g	Permanent skill types, by gender
γ^g	Non-pecuniary location preference, by gender
Household Discrete Choices	
$l \in \{j, k\}$	Locations, local and non-local (stay or move)
$h^m \in \{0, 40\}$	Man's labor supply choice
$h^f \in \{0, 25, 40\}$	Woman's labor supply choice
$b \in \{0, 1\}$	Fertility choice
	External Parameters
β	Discount factor
$\rho_c(a_{n,t})$	Market-based childcare cost, by child's age
$\kappa_1, \kappa_2, \kappa_3$	Per-child fixed monetary cost of children, by number of children
$T^g(n_t, a_{n,t})$	Total government transfers and subsidies
λ^0	Probability of job separation
δ	Human capital depreciation rate
p_t^f	Biological fecundity by age
	Internally Calibrated Parameters
Preferences	
$\psi_{L,1}\psi_{L,2}\psi_{L,3}$	Marginal utility from leisure, by age of youngest child
σ_γ^g	Variance of location preference
Home Production	
$\psi_{Q,1}^g\psi_{Q,2}^g\psi_{Q,3}^g$	Marginal utility from home production, by age of youngest child and gender
δ_d	Baseline relative productivity on time input
$\delta_n^{g,1}$, $\delta_n^{g,2}$, $\delta_n^{g,3}$	Additional relative productivity on time input by age of youngest child and gender
Moving Parameters	
$\zeta^0, \zeta^1, \zeta^2$	One-time moving cost with no children, young children, school children
σ^γ	Variance in non-pecuniary location preference
Fertility and Children	
$\phi_{N,i}$	Utility of having at least i child
$\phi_{N,1}^2$	Utility of having first child, quadratic by age
σ_η	Variance of the fertility taste shock
π	Persistence of the fertility desire
$\tilde{\eta}^0$	(Dis)-utility of conception with currently a child aged 0
Offer Probabilities	
λ^g	Probability of receiving an offer, by gender
Wage Parameterization	
$\beta_{g,s}^1$	Constant, by gender
$\beta_{g,s}^2$	Coefficient on human capital, by gender
σ_g^ω	Variance of job-specific wage component, by gender
$\sigma_g^{\omega^l}$	Variance of location-specific wage component, by gender
σ_g^θ	Variance of permanent type, by gender
σ^ε	Variance of transitory wage shock

Note: See text for definition of all variables.

Table E.6: Calibrated Parameters

Preferences	
$\psi_{L,1}$	1.537
$\psi_{L,2}$	1.233
$\psi_{L,3}$	1.424

	Men	Women
$\psi^g_{Q,1}$	0.527	1
$\psi^g_{Q,2}$	0.750	1.115
$\psi^g_{Q,3}$	0.783	1.349

Home Production	
δ_d	0.316

	Men	Women
$\delta^{g,1}_n$	0.159	0.750
$\delta^{g,2}_n$	0.158	0.366
$\delta^{g,3}_n$	0.032	0.125

Moving & Location	
ζ^0	0.630
ζ^1	0.023
ζ^2	0.010
σ^γ	0.578

Wages and Offers	Men	Women
λ^g	0.704	0.640
β^1_g	3.000	2.987
β^2_g	0.036	0.019
σ^ω_g	0.165	0.158
$\sigma^{\omega,l}_g$	0.175	0.155
σ^ε	0.105	0.110
σ^θ	0.251	0.236
ρ_{ω^l}	0.19	

Fertility	
$\phi_{N,1}$	0.459
$\phi^2_{N,1}$	0.014
$\phi_{N,2}$	0.432
$\phi_{N,3}$	0.268
π	0.620
σ^η	0.324
$\tilde{\eta}^0$	0.318

Appendix F Model Fit

Figure F.1: Model Fit - Employment Rates by Age

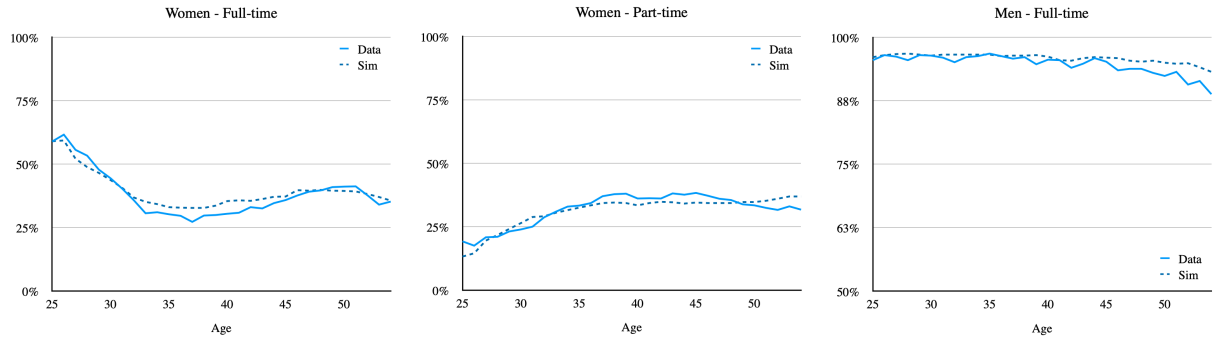
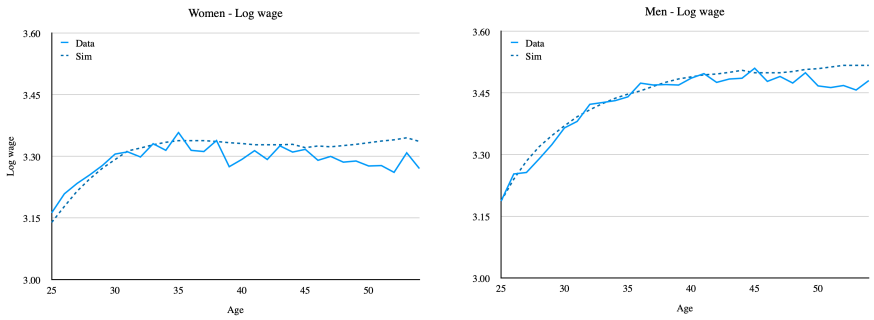


Figure F.2: Model Fit - Wages by Age



Note: These figures plot simulated data moments and the HILDA data moments used to calibrate the utility parameters.

Figure F.3: Model Fit - Moving Rates



Note: These figures plot simulated data moments and the HILDA data moments used to calibrate the utility parameters.

Table F.1: Time Allocation

Women		Data	Sim
No child	All	16.0	15.6
	Non-work	23.9	21.2
	Part-time	18.4	18.1
	Full-time	13.6	15.7
Newborn	All	76.0	73.1
	Non-work	82.8	81.3
	Part-time	67.8	65.9
	Full-time	61.6	58.8
Pre-School	All	60.5	60.2
	Non-work	73.5	72.5
	Part-time	57.3	57.2
	Full-time	41.5	45.9
School-Aged	All	40.6	42.6
	Non-work	51.0	52.9
	Part-time	41.6	43.8
	Full-time	32.1	35.6
Men		Data	Sim
No Child		13.1	12.6
Newborn		29.5	29.3
Pre-School		29.5	28.3
School-Aged		22.6	22.3

Table F.2: Joint Employment

		Non-Movers		Movers	
		Data	Sim	Data	Sim
No child	M: E, F: E	0.820	0.833	0.757	0.726
	M: E, F: U	0.138	0.120	0.198	0.233
	M: U, F: E	0.042	0.037	0.045	0.041
Newborn	M: E, F: E	0.383	0.368	0.275	0.242
	M: E, F: U	0.602	0.587	0.725	0.732
	M: U, F: E	0.016	0.044	0.000	0.026
Pre-School	M: E, F: E	0.590	0.571	0.386	0.351
	M: E, F: U	0.384	0.378	0.571	0.553
	M: U, F: E	0.026	0.040	0.043	0.096
School	M: E, F: E	0.731	0.749	0.608	0.570
	M: E, F: U	0.243	0.217	0.322	0.343
	M: U, F: E	0.026	0.034	0.071	0.087

Table F.3: Employment by Child's Age and Mover Status, Moving Rate by Child's Age

Panel A: Employment by Child Age and Mover Status

			Non-Mover		Mover	
			Data	Sim	Data	Sim
Women	Full-time	No Child	0.728	0.744	0.612	0.621
		Newborn	0.150	0.142	0.095	0.112
		Child 1-4	0.200	0.238	0.174	0.202
		Child 5	0.357	0.408	0.341	0.317
	Part-time	No Child	0.136	0.164	0.153	0.177
		Newborn	0.235	0.261	0.173	0.209
		Child 1-4	0.402	0.434	0.241	0.242
		Child 5	0.399	0.372	0.329	0.305
Men	Employed	No Child	0.934	0.960	0.916	0.925
		Newborn	0.953	0.952	0.934	0.935
		Child 1-4	0.951	0.947	0.912	0.892
		Child 5	0.968	0.946	0.886	0.896

Panel B: Per-Period Average Move Rate

	Data	Sim
No Child	0.039	0.036
Newborn	0.036	0.040
Child 1-4	0.024	0.025
Child 5	0.010	0.015

Table F.4: Wages

		Data	Sim
Overall Wage Variance	Men	0.235	0.255
	Women	0.171	0.200
Wage growth - Non-switcher	Men	0.045	0.050
	Women	0.026	0.027

		Non-Mover		Mover	
		Data	Sim	Data	Sim
$\mathbb{E}[\Delta \log w_g \vert \Delta \log w_g > 0]$	Men	0.197	0.220	0.335	0.340
	Women	0.192	0.213	0.232	0.230
$\mathbb{E}[\Delta \log w_g \vert \Delta \log w_g < 0]$	Men	-0.149	-0.153	-0.168	-0.165
	Women	-0.152	-0.149	-0.184	-0.176

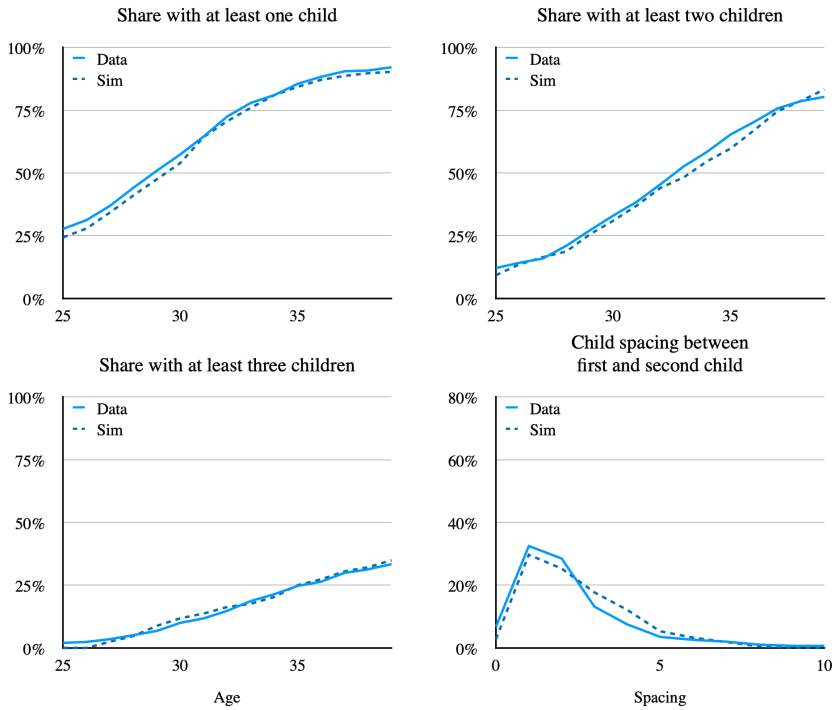
Table F.5: Wages for Movers

		Data	Sim
No Child	$\mathbb{1}[\Delta \log w_m \leq 0, \Delta \log w_f \leq 0]$	0.244	0.218
	$\mathbb{1}[\Delta \log w_m \leq 0, \Delta \log w_f > 0]$	0.249	0.254
	$\mathbb{1}[\Delta \log w_m > 0, \Delta \log w_f \leq 0]$	0.245	0.276
	$\mathbb{1}[\Delta \log w_m > 0, \Delta \log w_f > 0]$	0.262	0.252
Pre-School	$\mathbb{1}[\Delta \log w_m \leq 0, \Delta \log w_f \leq 0]$	0.255	0.219
	$\mathbb{1}[\Delta \log w_m \leq 0, \Delta \log w_f > 0]$	0.160	0.177
	$\mathbb{1}[\Delta \log w_m > 0, \Delta \log w_f \leq 0]$	0.444	0.452
	$\mathbb{1}[\Delta \log w_m > 0, \Delta \log w_f > 0]$	0.141	0.152
School	$\mathbb{1}[\Delta \log w_m \leq 0, \Delta \log w_f \leq 0]$	0.255	0.228
	$\mathbb{1}[\Delta \log w_m \leq 0, \Delta \log w_f > 0]$	0.131	0.165
	$\mathbb{1}[\Delta \log w_m > 0, \Delta \log w_f \leq 0]$	0.394	0.401
	$\mathbb{1}[\Delta \log w_m > 0, \Delta \log w_f > 0]$	0.220	0.205

Table F.6: Non-Targeted Moment - Women's Employment Status by Child and Couple Skill Type

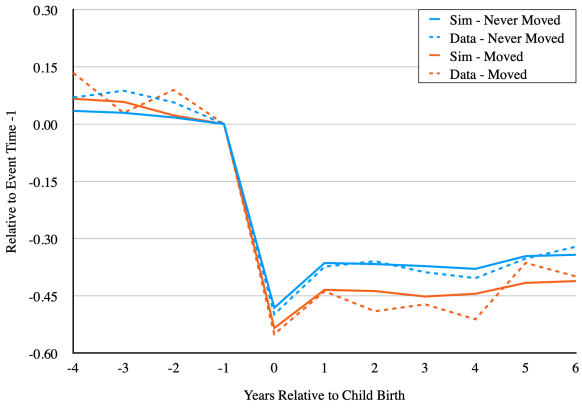
	No Child		Pre-School 0-4		School Aged 5+	
	Data	Sim	Data	Sim	Data	Sim
Low, Low	0.854	0.883	0.656	0.620	0.817	0.775
High, Low	0.857	0.815	0.644	0.603	0.807	0.756
Low, High	0.945	0.966	0.792	0.831	0.912	0.963
High, High	0.946	0.906	0.784	0.785	0.899	0.893

Figure F.4: Model Fit - Children



Note: These figures plot simulated data moments and the HILDA data moments used to calibrate the utility parameters.

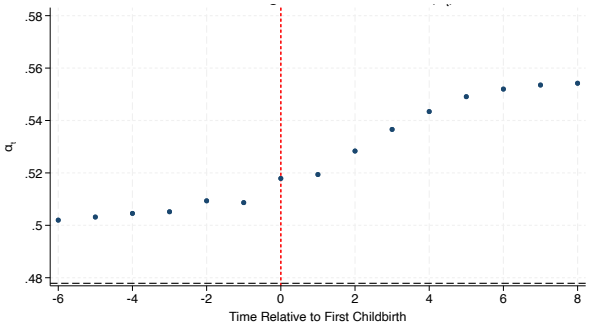
Figure F.5: Non-Targeted Moment - Child Penalty for Movers vs Non-Movers



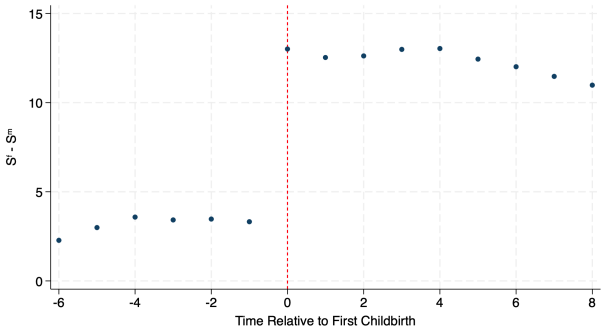
Note: These figures plot the non-targeted HILDA data moments and simulated data moments, using Equation 13.

Figure F.6: Simulated Pareto Weights and Relative Cooperation Surplus

(a) Pareto Weight on the Husband (α_t)



(b) Relative Cooperation Surplus ($S_t^f - S_t^m$)



Note: Panel A plots the average implemented Pareto weights, denoted by α_t across all couples, and Panel B plots the average spousal difference in cooperation surplus $S_t^f - S_t^m$ where $S_t^g = V_t^{C,g} - V_t^{NC,g}$. Both figures plot the average by time relative to first childbirth.