

# Job Flexibility and Household Labor Supply: Understanding Gender Gaps and the Child Wage Penalty

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## Abstract

This paper studies how occupational flexibility shapes married couples' labor supply and the gender pay gap around childbirth. I estimate a dynamic discrete choice model of couples' joint labor supply and occupational choices using NLSY79 data combined with Goldin's (2014) measure of time flexibility. A key implication is that spousal flexibility matters more than own flexibility for married women's labor market outcomes: switching a husband's occupation from low to high flexibility increases his wife's labor participation by 10 percentage points after childbirth, compared to 4 percentage points from switching her own occupation. Policies targeting women reduce the long-run gender pay gap, whereas extending benefits to both spouses weakens these gains and can expand the gap.

**Keywords:** Occupational flexibility, gender pay gap, household labor supply, child penalty, occupational choice.

**JEL codes:** J16, J22, J24, J31.

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# 1 Introduction

The gender pay gap between married men and women is large and expands over the life cycle.<sup>1</sup> A substantial body of evidence documents that career disruptions after childbirth explain a significant portion of this gap ([Angelov et al., 2016](#); [Kleven et al., 2019b, 2025](#)). The need to provide childcare leads households to specialize, and women are typically the ones who reduce labor supply. What are the effects of workplace flexibility on household labor supply around childbirth and the gender pay gap? If jobs offered more flexible work arrangements, would we see less gender divergence after childbirth?

A growing literature has examined how job flexibility affects the gender pay gap, documenting that occupations with less flexibility exhibit larger gender wage differences ([Goldin, 2014](#); [Cortés and Pan, 2019](#)). However, these studies typically focus on women, examining how mothers' own occupational characteristics shape their labor market outcomes. The father's side is largely unexplored. Yet if households make joint decisions about labor supply and childcare, the husband's occupational flexibility may matter as much as the wife's own flexibility for her labor market outcomes.

The main contribution of this paper is to show that spousal flexibility matters more than own flexibility for married women's labor market outcomes around childbirth. When one spouse faces rigid time constraints, the other must absorb more of the household's childcare burden. I develop a joint household framework that captures these interdependencies and quantifies the relative importance of own versus spousal flexibility.

My model is motivated by two empirical observations. First, I find strong inter-

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<sup>1</sup>See [Blau and Kahn \(2017\)](#) and [Cortés and Pan \(2023\)](#) for recent surveys.

dependencies between husband's occupational flexibility at the time of birth and wife's labor market adjustments using an event study specification. I use the National Longitudinal Survey of Youth 1979 (NLSY79) combined with [Goldin \(2014\)](#)'s measure of time flexibility constructed from O\*NET databases. Specifically, wives with husbands in low-flexibility occupations reduce labor supply more at both the extensive and intensive margins after childbirth, even controlling for the wife's own occupational flexibility.

The second observation is a clear trade-off between flexibility and compensation. Less flexible occupations offer higher wages on average and exhibit steeper returns to additional hours.<sup>2</sup> This creates a challenge for interpreting the event-study estimates as causal. Wives with husbands in low-flexibility occupations may reduce labor supply because of their husbands' inflexibility, or because their husbands' higher earnings generate income effects. Disentangling these channels requires a structural model.

I develop a dynamic discrete choice model of couples' joint labor supply and occupational choices. Households maximize a joint utility by choosing occupations and labor supply for both spouses each period. Fertility is treated as exogenous, with birth probabilities depending on the wife's age and education. Occupations differ in both wages and flexibility, where flexibility operates through two channels: occupation-specific part-time wage penalties, which make reducing hours costly, and non-pecuniary benefits that increase in value when young children are present. Both channels vary by gender and occupation, allowing husbands and wives to face different part-time penalties and amenity values within the same occupation. Occupational switching is costly, and human capital accumulates through work experience.

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<sup>2</sup>This reiterates [Goldin \(2014\)](#)'s description on earnings convexity.

The model provides several advantages for studying flexibility and household labor supply. The unitary framework offers a parsimonious way to capture the core mechanism, namely that spouses' labor supply decisions are interdependent, without requiring data on intra-household allocations.<sup>3</sup> The structural approach allows me to disentangle the effects of flexibility from income effects by varying flexibility while holding baseline wages fixed. The life cycle component captures anticipation effects. Households may sort into flexible occupations before childbirth in expectation of child arrival, and such move may entail early career disruptions generating persistent effects through foregone human capital accumulation.

I estimate the model using the method of simulated moments, matching distributions of labor supply and occupational choices around childbirth, wage dynamics, and transition rates. The estimates reveal substantial gender asymmetries. Part-time wage penalties are larger in low-flexibility occupations, particularly for men. The gap in non-pecuniary benefits between high- and low-flexibility occupations is larger for husbands than wives, rationalizing why many husbands remain in high-flexibility occupations despite lower wages. Occupational switching costs are higher for women. These asymmetries imply that husbands tend to work in occupations with less flexibility than wives, which explains why improving husbands' occupational flexibility generates larger spillovers onto wives' labor supply than relaxing wives' own flexibility.

Using the estimated model, I first quantify the *ceteris paribus* effects of flexibility by exogenously varying part-time wage penalties and non-pecuniary benefits while holding baseline wages fixed. This isolates the effect of flexibility from income effects. Switching a husband's occupation from low to high flexibility increases his wife's labor participation by 10 percentage points after childbirth, sub-

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<sup>3</sup>See [Chiappori and Mazzocco \(2017\)](#) for a survey of alternative household models.

stantially larger than the 4 percentage point effect from switching her own occupation. The larger effect of spousal flexibility reflects the stricter inflexibility faced by husbands in the baseline.

I also evaluate policies that temporarily increase workplace flexibility for two years after childbirth. The “Equal Pay” policy removes part-time wage penalties, while the “Equal Benefit” policy provides flexible work amenities (non-pecuniary benefits in the model) to workers in low-flexibility occupations. These policies differ from paid parental leave in that they promote continued labor market attachment rather than temporary withdrawal.

The policy simulations yield an insightful finding about targeting. When policies target women only, both policies increase female labor supply and reduce the long-run gender pay gap by 6 to 8 percent. The effects operate through two channels. First, the policies incentivize wives who would otherwise exit the labor market to remain in part-time positions, allowing them to accumulate human capital during the critical post-birth years. Second, the policies induce more women to sort into higher-paying low-flexibility occupations at the onset of their career, even those who have not yet experienced childbirth but anticipate doing so, because the flexibility disadvantage of these occupations is reduced.

However, when policies extend to both spouses, holding other features fixed including wages, the effects on female labor supply weaken and the gender pay gap can expand. Because husbands typically work in less flexible occupations, they respond more strongly to flexibility policies by moving into higher-paying low-flexibility occupations, generating income effects that reduce wives’ labor supply and leading households to specialize more rather than less. This finding provides useful insight for designing gender-neutral policies.

This paper contributes to several literatures. First, it advances recent work on

joint household models of occupational choice (Erosa et al., 2022; Guner et al., 2024). The closest to this paper is Erosa et al. (2022). Erosa et al. (2022) study a joint household framework and find that household interactions propagate gender differences in occupational sorting, hours worked, and wages. My work differs in two critical dimensions. First, I explicitly model occupational flexibility as the key dimension of occupational heterogeneity, focusing on how occupational inflexibility transmits across spouses. Second, I focus on dynamic life-cycle effect in the context of child-bearing. The life-cycle effects of flexibility get amplified when households specialize early, as early career choices reinforce comparative advantages in market and non-market work.

Second, this paper contributes to the literature on workplace flexibility, amenities, and gender gaps (Goldin, 2014; Goldin and Katz, 2016; Cortés and Pan, 2019; Mas and Pallais, 2020; Wiswall and Zafar, 2018; Flabbi and Moro, 2012). This literature documents that occupations with less flexibility exhibit larger gender wage gaps, that women have higher willingness to pay for flexibility, and that flexibility affects women's labor market outcomes through both pecuniary and non-pecuniary channels. However, these studies focus on individual women's preferences or outcomes, treating spousal characteristics as exogenous. I provide a joint household framework that explicitly models how flexibility transmits across spouses and shows that spousal flexibility can matter more than own flexibility.

Third, this paper relates to the literature on gender differences in sorting into occupations and workplaces (Felfe, 2012; Adda et al., 2017; Hotz et al., 2017; Cortés and Pan, 2018). Adda et al. (2017) develop a dynamic life-cycle model of women with fertility and occupational choice to quantify the career cost of children, finding that women sort into occupations with child-friendly amenities based on expected fertility. Felfe (2012) shows that women adjust their working hours, work

shifts, and the level of stress after childbirth. These studies take a single-agent framework treating the spouse’s characteristics as exogenous. The joint household framework here enables examination of how spousal occupational characteristics affect women’s sorting decisions.

Fourth, this paper relies on the structural literature on household labor supply and human capital accumulation (Van der Klaauw, 1996; Francesconi, 2002; Blundell et al., 2016; Gayle and Golan, 2012; Gayle et al., 2015). This literature has developed dynamic models of married couples’ labor supply decisions, emphasizing how human capital accumulation and household interactions shape labor market outcomes over the life cycle. My work builds upon this tradition by adding occupational flexibility as a key dimension of job heterogeneity and by studying how occupational inflexibility transmits across spouses within the household.

Finally, this paper adds to the literature evaluating family-friendly policies (Rossin-Slater et al., 2013; Bailey et al., 2019; Kleven et al., 2024). Recent evidence finds limited long-run effects of paid parental leave on female labor supply and the gender pay gap. I consider an alternative policy tool that directly affects workplace flexibility, promoting continued labor market attachment rather than temporary withdrawal. The finding that policy effects may depend on targeting, and that gender-neutral policies can potentially generate non-intended consequences, provides new insights for policy design.

The rest of the paper is organized as follows. Section 2 discusses the data and construction of the flexibility measure. Section 3 presents descriptive evidence on flexibility and labor adjustment around childbirth. Section 4 develops the joint household model. Section 5 discusses estimation and reports parameter estimates. Section 6 presents the counterfactual policy analysis. Section 7 concludes.

## 2 Data and Measure of Flexibility

### 2.1 Household Panel: NLSY79

To study how husband and wife jointly decide their occupations and time allocations around childbirth, I need to observe both spouses' labor supply and occupations in the pre- and post-birth periods. Also, to see whether the labor adjustments around childbirth have long-term consequences on earnings and wages, I need to follow them for a long period after the birth. The National Longitudinal Survey of Youth 1979 (NLSY79) is one of the few US data sources that allow tracking both spouses' labor market characteristics over an extended period.<sup>4</sup> The NLSY79 has followed a nationally representative sample of youth since 1979, and most individuals in the sample had their first childbirth observed during the sample period. For married respondents, the survey also collects detailed information on their spouses, including occupations, labor supply, and wages.

From this data, I select the sample to include married couples where the wife is between ages 19 and 45 for high school graduates and those with some college, or between ages 24 and 45 for college graduates or above. I exclude periods when either spouse is enrolled in school or after divorce occurs. I also exclude households with any self-employment income observed throughout the sample period, as hours and earnings are difficult to measure reliably for the self-employed. The remaining sample contains 89,837 household-year observations from 5,642 unique households. On average, each household is observed for 15 years. Additional sample restrictions are elaborated in Appendix A.1.

Table A1 reports relevant summary statistics of the sample. The sample consists

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<sup>4</sup>The Panel Study of Income Dynamics is an alternative but requires pooling multiple cohorts for adequate sample size. The NLSY97 does not provide spouses' occupations.



of married couples whose first births are predominantly concentrated in the mid-1980s to early 1990s.<sup>5</sup> The average number of children is 2.26, and the average age at first birth is 27 for wives and 29 for husbands. The labor supply patterns reflect traditional breadwinner household arrangements. Nearly 90 percent of husbands maintain continuous employment, working over 2,100 hours annually on average. In contrast, almost 30 percent of wives are not working at any given time, and those who work average only 1,500 to 1,700 hours annually. This gendered division of labor supply intensifies over the life cycle: by age 45, husbands have accumulated approximately 22 years of experience compared to 16 years for wives, contributing to a substantial gender wage gap (\$24.70 versus \$16.03 per hour in 1999 dollars).

## 2.2 Measure of Occupational Time Flexibility

To construct a measure of job flexibility, I closely follow [Goldin \(2014\)](#) and use the same measure used in her paper. The measure is the average of five standardized O\*NET characteristics, using responses collected from incumbent workers. These characteristics are “Time pressure,” “Contact with others,” “Establishing and maintaining interpersonal relationships,” “Structured vs. unstructured work,” and “Freedom to make decisions.”<sup>6</sup> One important distinction from the original measure in [Goldin \(2014\)](#) is that I use a much larger set of occupations, including lower-paying occupations. Indeed, the measure extrapolates well and captures the flexibility of occupations not considered in the original paper. Details on the construction and data sources are provided in Appendix [A.2](#).

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<sup>5</sup>Over 70 percent of first births in the sample occurred between 1982 and 1992, with the modal years being 1988 to 1990.

<sup>6</sup>See [Goldin \(2014\)](#) for an explanation of how each characteristic is related to time flexibility. For robustness checks, I add/remove some other characteristics that are closely related to time flexibility, but most of the results are robust to these variations.

The flexibility measure is merged to each spouse’s occupation in the NLSY79 sample using a crosswalk between the Standard Occupational Classification (SOC) system and Census occupational codes. Based on this measure, I divide occupations into two equal-sized groups: high flexibility and low flexibility. Examples of occupations in each category are provided in Appendix Table A5. To validate that the flexibility measure captures meaningful differences in actual time use, I examine time allocation patterns using the American Time Use Survey (ATUS). Workers in high-flexibility occupations work fewer total hours, are more likely to work outside typical 9-to-5 hours, and, conditional on having any work-from-home arrangement, work a larger share of hours from home. These patterns confirm that the measure captures multiple dimensions of workplace flexibility relevant for accommodating childcare needs. Details are provided in Appendix A.4.1.

As I observe the occupational flexibility of both spouses over the period of their marriage, I can examine the joint distribution of flexibility and how it evolves over time. At the time of marriage, there is positive assortative matching on flexibility: approximately 63 percent of couples have both spouses in the same flexibility category. Fertility outcomes vary modestly with occupational flexibility, with differences in timing driven largely by educational composition rather than flexibility itself (see Appendix A.3 for details). In the structural model developed in Section 4, I take this initial sorting as given and allow households to jointly choose their subsequent occupations along with labor supply throughout their marital periods.<sup>7</sup>

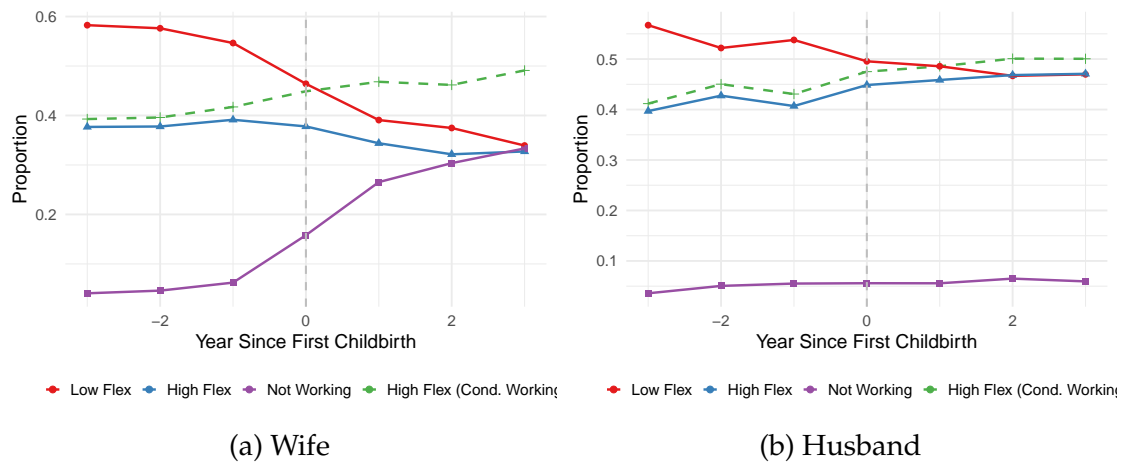
Figure 1 illustrates how spouses’ occupational choices evolve around childbirth. Panel (a) shows wives’ patterns. In the years before birth, wives are disproportionately employed in low-flexibility occupations, with nearly 60 percent

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<sup>7</sup>This abstracts from marriage market equilibrium, where sorting patterns are endogenous (Chiappori et al., 2017). Extending the model to endogenize initial matching is left for future work.

working in low-flexibility jobs. Around the time of first birth, there is a sharp increase in non-employment, rising from approximately 6 percent to over 30 percent. Notably, this increase is driven primarily by wives who worked in low-flexibility occupations prior to birth. Among wives who remain employed, there is a shift toward high-flexibility occupations: the share in high-flexibility jobs conditional on working increases from about 40 percent before birth to nearly 50 percent afterward. Husbands exhibit a similar, though more muted, shift in occupational composition, while their non-employment rate remains stable throughout (Panel b). This asymmetric adjustment, with wives bearing the bulk of labor force exits and occupational transitions, motivates the joint household framework developed in Section 4.

Figure 1: Occupational Choice Around First Childbirth



NOTE: This figure shows the evolution of occupational choices around the first childbirth for wives (Panel a) and husbands (Panel b). “Low Flex” and “High Flex” show the unconditional proportions in each occupational category. “High Flex (Cond. Working)” shows the proportion in high-flexibility occupations among those working. “Not Working” shows the proportion not employed. The sample is restricted to individuals observed at least 2 years before and 4 years after their first childbirth.

## 2.3 Flexibility and the Wage Structure

The flexibility measure captures meaningful differences in compensation across occupations. I estimate how earnings and hourly wages vary with hours worked, controlling for experience, year fixed effects, and education levels. I focus on married men because wives' earnings and wages are more vulnerable to selection issues.<sup>8</sup>

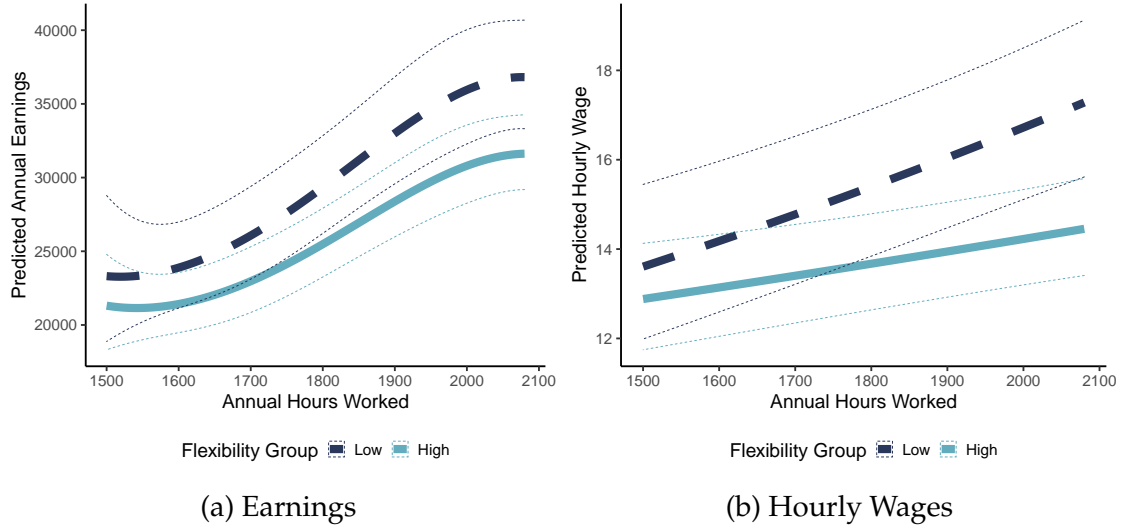
Figure 2 reveals a clear trade-off between flexibility and earnings. First, workers in less flexible occupations have higher earnings and wages on average, even conditional on experience and education level. This pattern is consistent with a compensating differential framework: workplaces offering less flexibility compensate workers with higher pay. Second, the returns to additional hours are higher in less flexible occupations, as shown by the difference in the slopes of the hourly wage curves. This replicates the findings of Goldin (2014) and Gicheva (2013), here extended to a broader set of occupations.

These patterns have important implications for household labor supply. When husbands work in less flexible occupations, higher earnings create an income effect that may lead wives to exit the labor force. Beyond this income effect, inflexibility operates through the household's joint labor supply decision. If one spouse faces large penalties for reducing hours, the other spouse must absorb more of the household's adjustment to childcare needs. When husbands work in inflexible occupations where part-time work is heavily penalized, wives bear a disproportionate share of labor supply adjustment—even if their own occupations are relatively flexible. Conversely, wives in inflexible occupations may exit entirely rather than switch to costly part-time positions. This trade-off between flexibility and

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<sup>8</sup>The structural model in Section 4 addresses selection for both spouses.

Figure 2: Trade-off between Flexibility and Earnings



NOTE: Panel (a) plots the predicted annual earnings of married men, which are fitted on the total annual working hours using cubic splines. Panel (b) plots the predicted hourly wages of married men, which are fitted on the total annual working hours using a linear regression. Both models control for years of experience, year fixed effects, and education levels. The sample is restricted to married men who are working at least 1500 hours per year. The solid line represents married men working in high flexibility occupations, and the dashed line represents married men working in low flexibility occupations.

wages, both in levels and in the returns to hours, creates identification challenges for reduced-form analyses, as the effects of flexibility are confounded with income effects. I document these patterns in Section 3 and return to the identification challenges in Section 3.3.

### 3 Flexibility and Labor Adjustment: Descriptive Evidence

How does occupational flexibility shape couples' labor adjustment around childbirth? Using an event-study design, I document two key patterns. First, wives with husbands in low-flexibility occupations reduce their labor supply signifi-

cantly more than those whose husbands hold flexible jobs, highlighting an important interdependency in spousal labor supply decisions. Second, this differential adjustment translates into persistent child wage penalties. These patterns, combined with the flexibility-wage trade-off documented in Section 2.3, motivate the structural model developed in Section 4.

### 3.1 Event Study Design

I use an event-study specification following Kleven et al. (2019b). For household  $i$ , spouse  $j$ , flexibility group  $o$ , and event time  $t$  indexed relative to one year before first birth, I estimate:

$$y_{ijot} = \sum_{\tau \neq -1} \alpha_{jo\tau} \mathbb{I}(\tau = t) + f(z_{ijot}) + v_{ijot}.$$

The coefficients  $\alpha_{jo\tau}$  capture changes in outcome  $y$  at event time  $\tau$  *relative to the year before birth*, separately by spouse  $j$  and flexibility group  $o$ . Flexibility is assigned based on occupation one year before birth and held fixed, so group composition does not change over time. However, those individuals may drop from the labor force, reduce their working hours significantly, or switch to different occupations after birth. Thus, any difference in effects across different occupational flexibilities should be interpreted as an outcome of all the subsequent behavioral changes that households have made conditional on their occupational flexibility in the pre-birth period.

Controls  $z_{ijot}$  include age and year indicators, both spouses' education levels and their interactions, and pre-birth average earnings. The age indicators control for the life-cycle trends, and the calendar year indicators control for time trends. These additional controls account for the couple's pre-birth specialization based

on education levels and earnings differences. The sample is restricted to couples with both spouses working one year before birth.<sup>9</sup>

### 3.2 Spousal Flexibility and the Child Penalty

A wife's own occupational flexibility affects her labor adjustment around childbirth. Wives in high-flexibility occupations restore their pre-birth hours within two years, while those in low-flexibility occupations experience persistent reductions. However, there is no significant difference in extensive-margin adjustment by own flexibility.<sup>10</sup>

The role of spousal flexibility is particularly striking. Figure 3 shows that wives with husbands in low-flexibility occupations reduce their labor supply more at both margins. Panel (a) shows that hours worked conditional on working drop more sharply in the year of birth when the husband holds a low-flexibility job. Panel (b) reveals a more persistent pattern: wives with husbands in low-flexibility occupations are significantly more likely to exit the labor force, and this gap persists for years after birth. This documents an important interdependency in spousal labor adjustment. When husbands face stricter time constraints, wives adjust their labor supply further to accommodate childcare needs.<sup>11</sup>

These differential labor adjustments translate into persistent wage penalties. Figure 4 shows the child penalty on earnings and wages by husband's flexibility. Panel (a) shows that wives with husbands in low-flexibility occupations experience a 44 percent earnings penalty on average in the post-birth period, compared

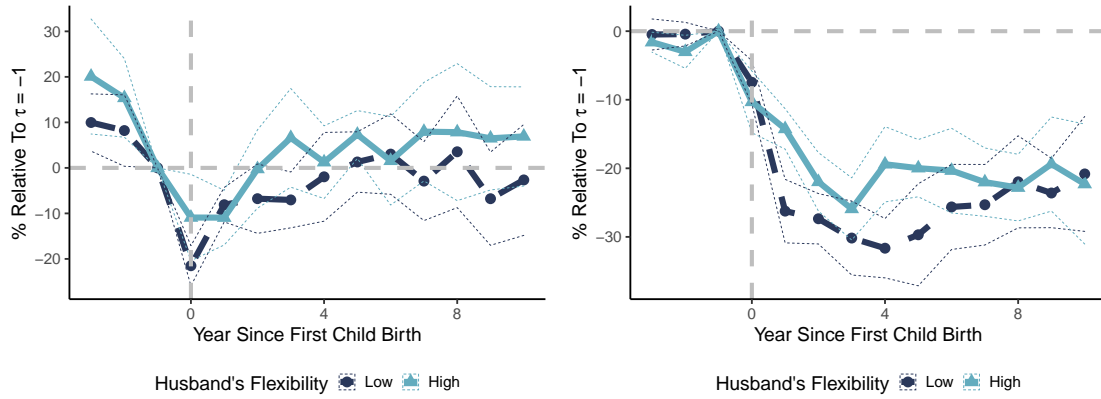
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<sup>9</sup>I do not restrict the sample to be a balanced panel due to the limited number of observations in the data. However, I restrict the sample to be observed at least 2 years before their first childbirth and at least 4 years after the birth.

<sup>10</sup>See Appendix B for details on the effects of own flexibility.

<sup>11</sup>Husbands' own labor adjustment also differs slightly by flexibility; see Appendix B.

Figure 3: Wife's Labor Adjustment By Husband's Flexibility



(a) Hours Worked Conditional on Working

(b) Labor Participation

NOTE: Panel (a) plots the percentage change in wives' hours worked conditional on working relative to one year before first childbirth ( $\tau = -1$ ). Panel (b) plots the percentage change in labor participation. The sample is restricted to households with both spouses working one year before birth. The solid line represents wives with husbands in high-flexibility occupations; the dashed line represents those with husbands in low-flexibility occupations. Controls include both spouses' age, year fixed effects, education levels and interactions, wife's own flexibility, and pre-birth average earnings.

to 32 percent for those whose husbands hold high-flexibility jobs. Panel (b) restricts to working wives and shows an even more striking pattern. The hourly wage penalty diverges substantially by husband's flexibility, with wives of low-flexibility husbands receiving much lower wages in the long run.<sup>12</sup> Two mechanisms may explain this. First, these wives may switch to more flexible occupations that offer lower wages. Second, greater labor supply reductions lead to less human capital accumulation, which depresses future wages.

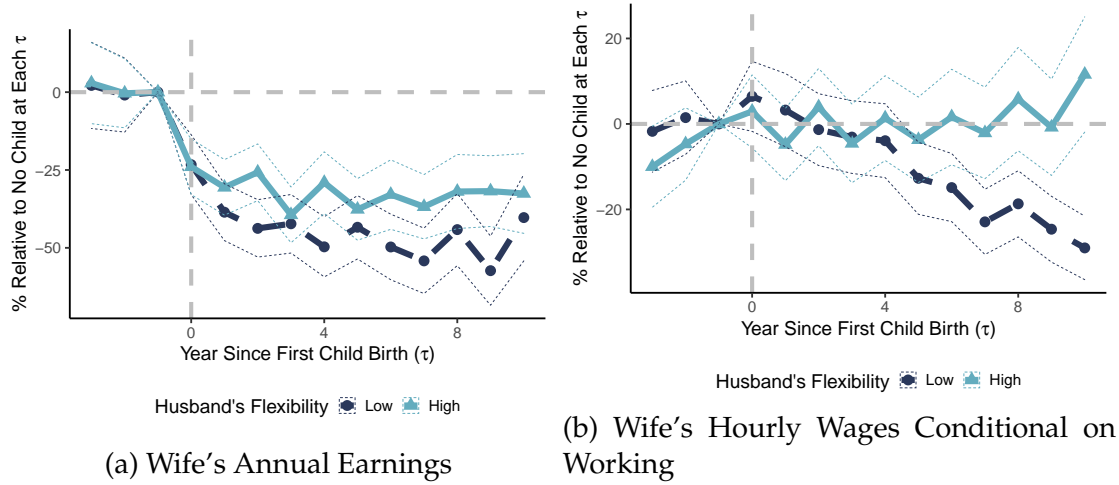
### 3.3 Discussion: Toward a Structural Model

These patterns highlight the importance of spousal flexibility in shaping the child penalty, but the event-study estimates face several identification challenges. First,

<sup>12</sup>The magnitudes are consistent with previous findings on long-run child wage penalties, such as Kleven et al. (2019a) using PSID data.



Figure 4: Child Wage and Earnings Penalty by Husband's Flexibility



NOTE: Panel (a) plots the percentage loss of average earnings (including zeros) relative to predicted earnings without childbirth. Panel (b) plots the percentage loss of hourly wages for working wives. The sample is restricted to households with both spouses working one year before birth. The solid line represents wives with husbands in high-flexibility occupations; the dashed line represents those with husbands in low-flexibility occupations. Controls include both spouses' age, year fixed effects, education levels and interactions, wife's own flexibility, and pre-birth average earnings.

couples sort into occupations based on expected fertility, so flexibility at childbirth is not exogenous. Second, flexibility and wages are jointly determined: as shown in Section 2.3, less flexible occupations pay higher wages, so the effects of flexibility are confounded by income effects. For example, when husbands work in low-flexibility occupations, their higher earnings may independently lead wives to reduce labor supply. Third, the event study examines each spouse's adjustment separately, conditioning on the other spouse's flexibility and labor supply. In practice, these decisions are made jointly within the household. Disentangling these channels requires a structural model that accounts for joint household decision-making over occupations and labor supply throughout the life cycle. I develop such a model in the next section.

## 4 A Dynamic Model of Household Labor Supply and Occupational Choice

I develop a dynamic model in which married couples jointly choose occupations and labor supply over the life cycle. Occupations differ in wages and flexibility, creating a tradeoff that shapes household specialization around childbirth. Flexibility operates through two channels: occupation-specific part-time wage penalties, which govern the cost of reducing hours, and occupation-specific non-pecuniary benefits that may increase in value when young children are present.<sup>13</sup> Childbirth raises the value of time at home, and the household's optimal response depends on the flexibility constraints faced by each spouse. Because occupational switching is costly, households may sort into flexible occupations before birth in anticipation of future needs. Both spouses accumulate human capital through work experience, so early career disruptions for either spouse have persistent effects on wages and household earnings.

### 4.1 Environment

Time is discrete and finite, indexed by the wife's age  $t$ , with a terminal period at age 45. In each period, a household jointly chooses labor supply and occupations for both spouses. There are two occupations, corresponding to high and low flexibility levels, and  $M$  discrete labor supply options for each spouse.<sup>14</sup> When a spouse switches occupations, the new occupation begins the following period, and

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<sup>13</sup>This term may capture flexibility-related amenities such as control over work schedules or location, as well as other occupational characteristics that correlate with flexibility but are not separately identified in the model.

<sup>14</sup>I use  $M = 4$  in estimation: not working, part-time low, part-time high, and full-time. Appendix A.5 describes how continuous hours are mapped to these categories.

the household incurs a utility cost  $s_j$  that varies by gender. I assume that households choose next-period occupations before observing the current wage shock, which isolates the effect of wage shocks on hours decisions within a period. There is no involuntary separation; temporary leave and non-employment are treated identically.

Wages depend on occupation, education, and accumulated human capital. For spouse  $j$  in occupation  $o$  working full-time, the log wage is

$$\log(\tilde{w}_{ijot}) = \beta_{0jo} + \beta_{1jo}e_{ij} + \beta_{2jo}x_{ijt} + \beta_{3jo}x_{ijt}^2 + \eta_{ijt},$$

where  $e_{ij}$  is an indicator for college completion,  $x_{ijt}$  is human capital, and  $\eta_{ijt}$  is an idiosyncratic shock drawn from a bivariate normal distribution with variance-covariance matrix  $\Sigma$ . Different occupations offer different baseline wages, college premiums, and returns to human capital, capturing the level differences documented in Section 2.3.

Occupational flexibility is modeled through two channels. The first channel captures flexibility in adjusting hours. Workers who reduce hours below full-time receive a discounted wage  $w_{ijot} = g_{jo}(h_{ijt}) \cdot \tilde{w}_{ijot}$ , where the discount function  $g_{jo}(h)$  varies by gender and occupation. Less flexible occupations may impose larger penalties for part-time work, making it costly to reduce hours without exiting entirely. The second channel captures non-pecuniary differences across occupations. I model these as a benefit  $\alpha_j(n_{it})$  from holding a high-flexibility job, where the benefit may depend on whether a young child is present in the household. I normalize the non-pecuniary benefit of low-flexibility occupations to zero, so  $\alpha_j(n_{it})$  represents the utility gain from working in a high-flexibility occupation relative to a low-flexibility occupation. This allows the value of flexibility to in-

crease when childcare needs are most acute.

Human capital is general and accumulates based on hours worked. For spouse  $j$ , next-period human capital evolves as

$$x_{ijt+1} = x_{ijt} + \left( \frac{h_{ijt}}{h_M} \right)^{\rho_j},$$

where  $h_M$  denotes full-time hours and  $\rho_j > 0$  governs the returns to part-time work. When  $\rho_j > 1$ , part-time work accumulates human capital at a lower rate than proportional hours would suggest. I assume no depreciation during non-employment.

Fertility is exogenous and stochastic, with birth probabilities depending on the wife's age and both spouses' education levels. This assumption is supported empirically. Conditional on education, fertility timing does not vary significantly with occupational flexibility (see Appendix A.3). Endogenizing fertility would require modeling the timing and quantity of children jointly with occupational choice, a natural extension that I leave for future work.<sup>15</sup> When a young child is present (age less than 5), the value of non-working hours changes for both spouses. Households also pay childcare costs  $k(n_{it}, h_{imt}, h_{iwt})$  that depend on both spouses' labor supply, estimated separately using PSID data. Non-labor income  $a_{it}$  varies by education and is taken as given.

## 4.2 Preferences and Household Problem

I adopt a unitary household framework in which spouses maximize a joint utility function. This assumption captures the key feature that labor supply and oc-

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<sup>15</sup>The direction of potential bias is ambiguous. Greater flexibility could encourage fertility by reducing career costs, or it could delay fertility by increasing labor market attachment.

occupational choices are made jointly, allowing one spouse's inflexibility to affect the other's labor market outcomes. The parsimonious unitary framework is well suited here because the model's primary goal is to quantify how flexibility interacts across spouses, not to study intra-household bargaining per se.<sup>16</sup>

Flow utility consists of three components: utility from consumption and non-working hours, non-pecuniary benefits from flexibility, and occupation switching costs. I assume log utility for consumption  $c_{it}$  and for each spouse's non-working hours  $l_{ijt} = \bar{H} - h_{ijt}$ , where  $\bar{H}$  is the total time endowment. The marginal utility of non-working hours may vary with the presence of young children:

$$\gamma_j(n_{it}) = \begin{cases} \gamma_j + \bar{\gamma}_j & \text{if } 0 \leq n_{it} < 5 \\ \gamma_j & \text{if } n_{it} \geq 5 \text{ or no child} \end{cases},$$

where  $n_{it}$  denotes the age of the youngest child. If  $\bar{\gamma}_j > 0$ , households place greater value on time at home when young children are present.

The flow utility at period  $t$  is

$$\begin{aligned} u(\Omega_{it}, \vec{h}_{it}, \vec{o}_{it+1}) &= \gamma_c \log(c_{it}) + \sum_{j=m,w} \gamma_j(n_{it}) \log(l_{ijt}) \\ &+ \sum_{j=m,w} \alpha_j(n_{it}) \mathbb{I}(o_{ijt} = o_h) \mathbb{I}(h_{ijt} > 0) \\ &- \sum_{j=m,w} s_j \mathbb{I}(o_{ijt+1} \neq o_{ijt}) + \varepsilon_{it}(\vec{o}_{it+1}, \vec{h}_{it}), \end{aligned}$$

where  $\alpha_j(n_{it})$  is the non-pecuniary benefit of working in a high-flexibility occupation relative to a low-flexibility occupation,  $s_j$  is the switching cost, and  $\varepsilon_{it}$  is a

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<sup>16</sup>Collective models would allow for heterogeneous preferences and endogenous bargaining power, but require data on private consumption or distribution factors not available in the NLSY79. See [Chiappori and Mazzocco \(2017\)](#) for a review.

choice-specific preference shock drawn from a Type-I extreme value distribution with scale normalized to one.

The household chooses labor supply and next-period occupations to maximize the expected present value of lifetime utility. Given state variables

$\Omega_{it} = \{\vec{o}_{it}, \vec{e}_i, \vec{x}_{it}, \vec{\eta}_{it}, \vec{\varepsilon}_{it}, n_{it}\}$ , the value function satisfies

$$V_t(\Omega_{it}) = \max_{\vec{h}_{it}, \vec{o}_{it+1}} \left\{ u(\Omega_{it}, \vec{h}_{it}, \vec{o}_{it+1}) + \beta \mathbb{E} \left[ V_{t+1}(\Omega_{it+1}) | \Omega_{it}, \vec{h}_{it}, \vec{o}_{it+1} \right] \right\},$$

subject to the budget constraint

$$c_{it} + k(n_{it}, \vec{h}_{it}) = \sum_{j=m,w} h_{ijt} w_{ijot}(\Omega_{it}) + a_{it}(\vec{e}_i).$$

Expectations are taken over future wage shocks and fertility realizations. Table 1 summarizes the notation.<sup>17</sup>

### 4.3 Key Mechanisms

The joint household framework generates interdependence between spouses' labor market outcomes. When one spouse's occupation imposes large penalties for part-time work or offers low non-pecuniary benefits, the household's optimal response to childbirth shifts more adjustment onto the other spouse. This mechanism implies that a husband's occupational flexibility can affect his wife's labor supply response to childbirth, not just her own flexibility. The model allows me to quantify these cross-spouse effects and to separate them from income effects that arise because less flexible occupations pay higher wages.

The dynamic structure of the model generates two additional features. First,

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<sup>17</sup>I set the annual discount factor  $\beta = 0.96$ , consistent with related studies.

Table 1: Notations in the Model

Notation	Explanation	Notation	Explanation
$\vec{h}_{it} = [h_{imt}, h_{iwt}]$	Hours worked	$\vec{o}_{it} = [o_{imt}, o_{iwt}]$	Occupations
$\vec{e}_i = [e_{im}, e_{iw}]$	Education levels	$\vec{x}_{it} = [x_{imt}, x_{iwt}]$	Human capitals
$\vec{\eta}_{it} = [\eta_{imt}, \eta_{iwt}]$	Wage shocks	$\vec{\epsilon}_{it}$	Choice-specific preference shocks
$n_{it}$	Age of the youngest child	$k(\cdot)$	Childcare cost
$a_{it}(\cdot)$	non-labor income	$g_{jo}(\cdot)$	Part-time wage discount

NOTE: This table summarizes the notations with descriptions of the key variables and functions in the model.

because switching occupations is costly, households may sort into flexible occupations before childbirth in anticipation of the increased value of flexibility when children are present. Second, labor supply decisions have persistent effects through human capital accumulation, so early career disruptions compound over time. These dynamics are central to the counterfactual policy analysis in Section 6.

## 4.4 Computation

The model has a finite horizon, so I solve it by backward induction starting from the terminal period. At each period, the household's problem involves choosing from all combinations of occupations and labor supply for both spouses.<sup>18</sup> The state space includes both discrete variables (occupations, education, presence of children) and continuous variables (human capital for each spouse, wage shocks). To reduce computational burden, I evaluate the value function on a grid of human capital levels and use polynomial interpolation following [Keane and Wolpin \(1994\)](#).<sup>19</sup> For the wage shocks, I use sparse grid integration as described in [Heiss and Winschel \(2008\)](#).

<sup>18</sup>With two occupations and four labor supply options per spouse, this yields 64 mutually exclusive alternatives.

<sup>19</sup>I use grid points  $\tilde{X}_{ijt} = \{5, 7, 10, 13, 15, 20, 25, 35, 50\}$  for experience levels and a third-order polynomial for interpolation. The  $R$ -squared exceeds 0.99 in all periods.

## 5 Estimation

I estimate most parameters using the method of simulated moments (McFadden, 1989). Childcare costs, fertility rates, and non-labor income are estimated outside of the model. The annual discount factor  $\beta$  is set to 0.96, consistent with related studies.<sup>20</sup>

### 5.1 Estimation Strategy

Table 2 summarizes the moments used in estimation and the parameters that each set of moments is most informative about. Although all parameters are jointly estimated, this mapping provides intuition for how different features of the data discipline different aspects of the model.

The distributions of hours worked by observable characteristics are informative about preferences for consumption and leisure ( $\gamma_c, \gamma_m, \gamma_w$ ). The distributions of working hours conditional on the spouse's working status capture the relative division of labor within households. Changes in labor supply around childbirth are informative about how the value of non-working hours shifts when young children are present.

Parameters related to occupational choice are informed by a similar logic. Given wage differentials across occupations, the proportion of workers in high flexibility occupations helps pin down the value of non-pecuniary benefits. Differential drop-out rates at the time of birth across occupations inform how these benefits change with children, and transition rates across occupations are closely related to switching costs.

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<sup>20</sup> Adda et al. (2017) estimate a discount factor within the model, and the estimated value is 0.96.



Table 2: Moments and Related Parameters

Categories	Moments	Related Parameters
Consumption, labor supply	<ul style="list-style-type: none"> <li>• Proportions of working hour options by gender</li> <li>• Proportions of working hour options by gender, year since first birth</li> <li>• Proportions of working hour options by gender, spouse's working options</li> <li>• Transition rates between working hour options by gender</li> <li>• Transition rates between working hour options by gender, in the year of the first childbirth</li> </ul>	$\gamma_c, \gamma_j, \tilde{\gamma}_j$
Occupational Choice	<ul style="list-style-type: none"> <li>• Proportions of occupations by gender</li> <li>• Proportions of occupations by gender, working options</li> <li>• Proportions of occupations by gender, year since first birth</li> <li>• Proportions of occupations by gender, spouse's occupations</li> <li>• Transition rates between occupations by gender</li> <li>• Transition rates between occupations by gender, in the year of the first childbirth</li> </ul>	$\alpha_j(n), s_j$
Human capital process	<ul style="list-style-type: none"> <li>• Correlation between current hours and future wages conditional on current observable characteristics</li> <li>• Average level of experience at final period by gender</li> </ul>	$\rho_j$
Occupation-specific full-time wages	<ul style="list-style-type: none"> <li>• OLS regression of log wages on education and occupation, by gender, full-time only</li> <li>• OLS regression of log wages on experience and occupation, by gender, full-time only</li> </ul>	$\beta_{0jo}, \beta_{1jo}$ $\beta_{2jo}, \beta_{3jo}$
Part-time wage discount rates	<ul style="list-style-type: none"> <li>• Ratio between predicted part-time wages and predicted full-time wages conditional on education, occupation, and gender</li> <li>• Average accepted wages by occupation and working hour options</li> </ul>	$g_{jo}(h)$
Var-Cov of wage shocks	<ul style="list-style-type: none"> <li>• Variance of residual wages after running OLS regression of log wages on education, experience, and occupation, by gender</li> </ul>	$\Sigma$

NOTE: This table displays the moments used in estimation with the parameters most informed by each set of moments. There are 240 moments used to estimate 39 parameters. Childcare costs and non-labor income are estimated outside of the model. The annual discount factor  $\beta$  is set to 0.96.

The human capital accumulation parameters  $(\rho_m, \rho_w)$  are informed by the relationship between current hours and future wages, conditional on observable characteristics. Occupation-specific wage equations are estimated using indirect inference, matching OLS coefficients from regressions of log wages on experience and occupation in both simulated and actual data. Part-time wage discounts are similarly identified by matching the ratio of predicted part-time to full-time wages across data and simulations. The variance of wage shocks is informed by the residual variance after controlling for education, experience, and occupation.

I simulate 20,000 households and minimize the sum of squared percentage deviations between data and simulated moments. Standard errors are computed following the smoothing procedure in [Lise and Robin \(2017\)](#). Details on simulation, optimization, and standard error computation are provided in [Appendix C](#).

## 5.2 Parameter Estimates

[Table 3](#) reports the parameter estimates. Several findings are worth highlighting.

**Preferences for leisure.** The coefficients on log leisure for husbands and wives without children are statistically indistinguishable, implying that households value each spouse’s time at home similarly in the absence of children. However, once a young child is present, the coefficient for wives increases substantially more than for husbands. This asymmetry in how households value parental time contributes to specialization after childbirth.<sup>21</sup>

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<sup>21</sup>This parameter is a reduced-form composite that may reflect biological factors, social norms, and other constraints on mothers’ labor supply that the model does not separately identify.

Table 3: Parameter Estimates

Param	Descriptions	Spouse	Value (S.E.)	
$\gamma_c$	coefficient on log consumption		1.95 (0.08)	
$\gamma_m$	coefficient on log hours at home	Husband	0.94 (0.13)	
$\gamma_w$	coefficient on log hours at home	Wife	0.85 (0.11)	
$\bar{\gamma}_m$	change in $\gamma_m$ with child	Husband	1.82 (0.12)	
$\bar{\gamma}_w$	change in $\gamma_w$ with child	Wife	3.28 (0.12)	
$s_m$	occupation switching cost	Husband	2.10 (0.22)	
$s_w$	occupation switching cost	Wife	5.49 (0.38)	
$\rho_m$	human capital accum. rates	Husband	1.20 (0.12)	
$\rho_w$	human capital accum. rates	Wife	5.51 (0.77)	
			High Flex	Low Flex
$\beta_{0m}$	intercepts in FT wage	Husband	1.80 (0.11)	2.13 (0.07)
$\beta_{1m}$	college premiums in FT wage	Husband	0.19 (0.09)	0.21 (0.04)
$\beta_{2m}$	returns to expr in FT wage	Husband	0.15 (0.02)	0.18 (0.01)
$\beta_{3m}$	returns to expr squared/100	Husband	-0.72 (0.06)	-0.67 (0.04)
$\beta_{0w}$	intercepts in FT wage	Wife	1.42 (0.09)	1.60 (0.04)
$\beta_{1w}$	college premiums in FT wage	Wife	0.26 (0.08)	0.30 (0.03)
$\beta_{2w}$	returns to expr in FT wage	Wife	0.12 (0.02)	0.18 (0.01)
$\beta_{3w}$	returns to expr squared/100	Wife	-0.51 (0.11)	-0.57 (0.04)
$\sigma_m$	s.d. of wage shocks	Husband	0.0049 (0.0083)	
$\sigma_w$	s.d. of wage shocks	Wife	0.0043 (0.0094)	
			High Flex	Low Flex
$g_m(h_2)$	wage penalty for <b>PT low</b>	Husband	0.31 (0.02)	0.72 (0.02)
$g_m(h_3)$	wage penalty for <b>PT high</b>	Husband	0.01 (0.01)	0.30 (0.01)
$g_w(h_2)$	wage penalty for <b>PT low</b>	Wife	0.30 (0.07)	0.61 (0.07)
$g_w(h_3)$	wage penalty for <b>PT high</b>	Wife	0.13 (0.04)	0.43 (0.04)
			No Child	Child
$\alpha_m(n)$	non-pecuniary benefit	Husband	0.42 (0.04)	0.77 (0.08)
$\alpha_w(n)$	non-pecuniary benefit	Wife	0.12 (0.04)	0.22 (0.05)

NOTE: This table reports the parameter estimates with estimated standard errors in parentheses. For the wage and flexibility parameters, results are shown separately for high and low flexibility occupations.

**Switching costs.** Both spouses face substantial costs of changing occupations. The cost for wives ( $S_w = 5.49$ ) is more than twice that for husbands ( $S_m = 2.10$ ), suggesting that women face greater barriers to occupational mobility. These costs create incentives for precautionary sorting into flexible occupations before childbirth.

**Human capital accumulation.** The estimates of  $\rho_m$  and  $\rho_w$  exceed one, indicating that part-time work accumulates human capital at a lower rate than proportional hours would suggest. Working half-time yields less than half the human capital gain of full-time work.

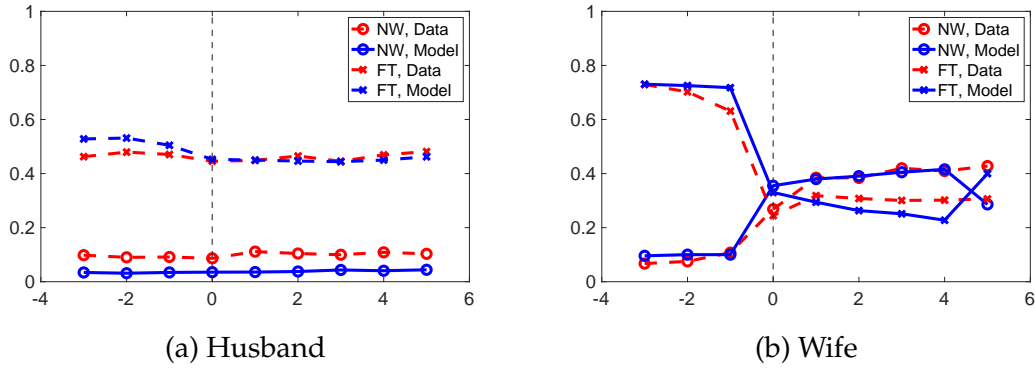
**Flexibility channels.** The model captures occupational flexibility through two channels. First, part-time wage penalties are larger in low flexibility occupations for both spouses, but the gap across occupations is particularly pronounced for husbands. For husbands working in the lowest part-time category, the penalty in low flexibility occupations reaches 70%. Second, the non-pecuniary benefit of high flexibility jobs (relative to low flexibility) is positive and increases when young children are present. This benefit gap is substantially larger for husbands ( $\alpha_m = 0.42$  without children,  $0.77$  with children) than for wives ( $\alpha_w = 0.12$  and  $0.22$ ). The model rationalizes the substantial share of husbands in high flexibility jobs, despite wage gaps across occupations, through these higher amenity values.

### 5.3 Model Fit

The model fits the key patterns in the data well. Figure 5 shows that the model replicates the dynamics of labor supply around childbirth, capturing both the sharp decline in wives' employment at birth and the stability of husbands' labor supply.

The model also matches the cross-sectional distributions of hours worked and occupational choices for each spouse, as well as the joint distributions that capture assortative matching on flexibility and specialization in labor supply. Additional fit statistics are reported in Appendix D.

Figure 5: Model Fit: Labor Supply Around Childbirth



NOTE: This figure plots simulated and observed proportions of not working (NW) and full-time work (FT) around first childbirth. Blue lines show model predictions; red lines show data.

## 6 Counterfactual Analysis

I use the estimated model to conduct two sets of counterfactual exercises. First, I quantify the ceteris paribus effects of flexibility on household labor supply, disentangling flexibility from the income effects that confound the reduced-form estimates. Second, I evaluate policies that temporarily increase workplace flexibility after childbirth and examine how their effects depend on whether they target women only or both spouses.

## 6.1 Disentangling Flexibility from Income Effects

The event-study estimates in Section 3.1 show that wives with husbands in low-flexibility occupations reduce their labor supply more after childbirth. However, these estimates confound flexibility effects with income effects, since less flexible occupations pay higher wages. To isolate the effect of flexibility, I select workers in low-flexibility occupations and counterfactually assign them the part-time wage penalties and non-pecuniary benefits of high-flexibility occupations, holding baseline full-time wages fixed.<sup>22</sup>

Table 4 reports the effects of own flexibility on labor adjustment at childbirth. Switching a wife's occupation from low to high flexibility increases her labor force participation by 4 percentage points. For husbands, the effects on labor adjustment are also positive, though few husbands adjust in the baseline. Notably, the signs differ from the reduced-form patterns: in the data, husbands in less flexible occupations increase their labor supply after childbirth (see Figure A3 in Appendix B). Once income effects are removed, high flexibility leads to more adjustment, not less.<sup>23</sup>

Table 5 shows the effects of spousal flexibility. Switching a husband's occupation from low to high flexibility increases the wife's labor force participation by 10 percentage points and her hours worked by 7 percentage points. These effects are substantially larger than the effects of a wife's own flexibility. The model rationalizes this asymmetry through the larger flexibility constraints faced by husbands. Because husbands face steeper part-time wage penalties and value flex-

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<sup>22</sup>This exercise removes income differences associated with full-time wage levels but does not fully eliminate income effects, as the smaller part-time wage penalties in high-flexibility occupations imply higher earnings for workers who reduce hours.

<sup>23</sup>The reduced-form pattern reflects a form of added worker effect: when wives of low-flexibility husbands exit the labor force, husbands increase hours to compensate for lost household income.

Table 4: Effects of Own Flexibility on Labor Adjustment at Childbirth

<b>Wife</b>	Baseline (Low Flex)	Counterfactual (Switched to High)	Difference
Changes in participation	-41%	-37%	+4 pp
Changes in hours of work	-13%	-13%	+0 pp
<b>Husband</b>	Baseline (Low Flex)	Counterfactual (Switched to High)	Difference
Changes in participation	-5%	-1%	+4 pp
Changes in hours of work	+2%	+6%	+4 pp

*NOTE:* This table reports the ceteris paribus effects of own flexibility on labor adjustments at first childbirth. Column 1 reports outcomes when working in a low flexibility occupation in the baseline. Column 2 reports counterfactual outcomes when flexibility is exogenously switched to high while holding average offered wages constant. Column 3 reports the difference.

Table 5: Effects of Spousal Flexibility on Wife's Labor Adjustment at Childbirth

<b>Wife</b>	Baseline (Husband in Low Flex)	Counterfactual (Husband Switched to High)	Difference
Changes in participation	-32%	-22%	+10 pp
Changes in hours of work	-17%	-10%	+7 pp

*NOTE:* This table reports the ceteris paribus effects of husband's flexibility on wife's labor adjustments at first childbirth. Column 1 reports outcomes when the husband works in a low flexibility occupation in the baseline. Column 2 reports counterfactual outcomes when husband's flexibility is exogenously switched to high while holding average offered wages constant. Column 3 reports the difference.

ibility amenities more, relaxing their constraints generates larger spillovers onto wives' labor supply.

These findings highlight the importance of spousal interactions. Having a husband in a flexible occupation substantially reduces the wife's labor supply adjustment at childbirth. However, translating this insight into policy requires care, as I show in the next subsection.

## 6.2 Policy Simulations

I evaluate two policies that temporarily increase workplace flexibility for two years following any childbirth. The “Equal Pay” policy removes the part-time wage penalty, allowing workers to reduce hours without a reduction in hourly wages. The “Equal Benefit” policy equalizes the non-pecuniary benefit across occupations, effectively giving workers in low-flexibility occupations the same amenities as those in high-flexibility jobs. In practice, this could be implemented through telework arrangements or flexible scheduling policies. I examine how the effects differ when policies target women only versus both spouses.

### 6.2.1 Policies Targeting Women

Table 6 reports the short-run and long-run effects when policies target women only. In the short run, both policies substantially increase wives’ labor force participation (9% for Equal Pay, 12% for Equal Benefit) and induce more wives to work in part-time positions rather than exiting entirely. Both policies also lead more women to sort into low-flexibility occupations, which become more attractive when their flexibility disadvantages are reduced.

The long-run effects are substantial. Ten years after first childbirth, wives’ hourly wages are 8% higher under Equal Pay and 6% higher under Equal Benefit. Two forces drive these gains. First, the policies keep more women attached to the labor market during the critical post-birth years, allowing them to accumulate human capital rather than experiencing career interruptions. Second, the policies induce women to sort into higher-paying low-flexibility occupations, both before and after birth.

Table 7 shows that the policies affect women even before childbirth. In the



Table 6: Effects on Wife's Labor Market Outcomes: Policies Targeting Women

	(a) A year after birth			(b) 10 years after birth		
	Baseline	CF1 Equal Pay	CF2 Equal Benefit	Baseline	CF1 Equal Pay	CF2 Equal Benefit
Participation	0.62	0.67 (8.91%)	0.69 (11.86%)	0.75	0.76 (1.83%)	0.76 (1.65%)
Hours of work cond. working	1475.43	1445.28 (-2.04%)	1501.30 (1.75%)	1620.45	1629.23 (0.54%)	1631.98 (0.71%)
Hourly wage cond. working	6.34	8.42 (32.81%)	6.66 (5.07%)	9.67	10.44 (7.91%)	10.29 (6.43%)
Prop of low flex	0.44	0.50 (14.11%)	0.55 (25.14%)	0.50	0.56 (11.65%)	0.58 (15.65%)

NOTE: This table reports the effects of policies targeting women only. Panel (a) reports short-run effects one year after first birth; panel (b) reports long-run effects 10 years after first birth. Percentage changes from baseline in parentheses.

baseline, women sort into high-flexibility occupations partly for precautionary reasons: switching occupations is costly, so women anticipate future childcare needs by choosing flexible jobs in advance. When policies reduce the flexibility disadvantage of low-flexibility occupations, these precautionary motives weaken. The proportion of women in low-flexibility occupations increases by 8% (Equal Pay) to 11% (Equal Benefit) in the year before birth, translating into 2-3% higher pre-birth wages.

Because fertility is stochastic in the model, these anticipatory effects extend to all women who might have children, including those who ultimately remain childless. The policy-induced sorting into higher-paying occupations, combined with greater human capital accumulation after birth, reduces the gender pay gap by 8% (Equal Pay) or 6% (Equal Benefit) ten years after first childbirth.

Table 7: Pre-birth Effects on Wife's Labor Market Outcomes: Policies Targeting Women

	A year before birth		
	Baseline	CF 1 Equal Pay	CF 2 Equal Benefit
Hours of work cond. working	1899.92	1922.99 (1.21%)	1906.25 (0.33%)
Hourly wage cond. working	7.59	7.83 (3.16%)	7.76 (2.24%)
Prop of low flex	0.49	0.53 (8.30%)	0.54 (11.02%)

NOTE: This table reports pre-birth effects of policies targeting women only, measured one year before first childbirth. Percentage changes from baseline in parentheses.

### 6.2.2 Policies Targeting Both Spouses

The finding that spousal flexibility matters for wives' outcomes might suggest that extending flexibility policies to husbands would amplify the benefits. The model predicts the opposite. When policies target both spouses, the positive effects on female labor supply are substantially weakened, and the gender pay gap can expand in the long run.

Tables 8 and 9 report the results. In the short run, wives' labor force participation still increases, though by less than when policies target women only. In the long run, however, wives' participation and hours worked decline relative to baseline. Most strikingly, the gender pay gap expands by 1% (Equal Pay) to 9% (Equal Benefit) ten years after first childbirth, reversing the gains from women-targeted policies.

The mechanism behind this reversal operates through occupational sorting of husbands. When flexibility policies apply to husbands, they make low-flexibility occupations more attractive to men. Because husbands face steeper part-time wage

Table 8: Effects on Wife's Labor Market Outcomes: Policies Targeting Both Spouses

	(a) A year after birth			(b) 10 years after birth		
	Baseline	CF1 Equal Pay	CF2 Equal Benefit	Baseline	CF1 Equal Pay	CF2 Equal Benefit
Participation	0.62	0.66 (7.42%)	0.67 (8.15%)	0.75	0.75 (0.04%)	0.74 (-1.10%)
Hours of work cond. working	1475.43	1416.95 (-3.96%)	1447.71 (-1.88%)	1620.45	1610.64 (-0.61%)	1590.87 (-1.83%)
Hourly wage cond. working	6.34	8.32 (31.31%)	6.37 (0.57%)	9.67	10.14 (4.85%)	9.66 (-0.08%)
Prop of low flex	0.44	0.49 (10.85%)	0.51 (17.21%)	0.50	0.54 (6.88%)	0.53 (5.23%)

NOTE: This table reports the effects of policies targeting both spouses on women's outcomes. Panel (a) reports short-run effects one year after first birth; panel (b) reports long-run effects 10 years after first birth. Percentage changes from baseline in parentheses.

Table 9: Effects on Husband's Labor Market Outcomes: Policies Targeting Both Spouses

	(a) A year before birth			(b) A year after birth		
	Baseline	CF 1 Equal Pay	CF 2 Equal Benefit	Baseline	CF 1 Equal Pay	CF 2 Equal Benefit
Participation	0.98	0.98 (0.12%)	0.98 (0.41%)	0.97	0.98 (1.25%)	0.98 (1.72%)
Hours of work cond. working	2279.85	2288.34 (0.37%)	2317.46 (1.65%)	2201.92	1950.15 (-11.43%)	2257.35 (2.52%)
Prop of low flex	0.47	0.54 (13.55%)	0.67 (40.93%)	0.44	0.52 (17.12%)	0.69 (55.63%)

NOTE: This table reports the effects of policies targeting both spouses on men's outcomes. Panel (a) reports pre-birth effects; panel (b) reports post-birth effects one year after first birth. Percentage changes from baseline in parentheses.

penalties and a larger non-pecuniary gap between high- and low-flexibility occupations, they respond more strongly to these incentives. The proportion of husbands in low-flexibility occupations increases by 7 to 25 percentage points depending on the policy and timing. This re-sorting increases household income, reducing wives' labor supply. The effect compounds over time as reduced work experience depresses wives' market wages, reinforcing their comparative advantage in home production.

These findings highlight that policy design matters for outcomes. Within the current framework, gender-neutral flexibility policies can have unintended consequences through differential sorting responses. Policies aimed at reducing gender gaps may be more effective when they account for asymmetries in how men and women respond to flexibility incentives.<sup>24</sup>

## 7 Conclusion

This paper investigates how occupational flexibility shapes married couples' labor supply decisions around childbirth and the resulting gender pay gap. The primary contribution is documenting and quantifying cross-spouse spillover effects in a dynamic lifecycle framework. Using a model of joint household decision-making, I show that a husband's occupational flexibility has larger effects on his wife's labor adjustment after childbirth than her own flexibility. This asymmetry arises because husbands face larger part-time wage penalties and a larger non-pecuniary gap between high- and low-flexibility occupations. When husbands cannot easily adjust their work hours or schedules, wives bear more of the household's child-

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<sup>24</sup>This conclusion is subject to the model's partial equilibrium assumptions. If policies affected firms' wage-setting behavior or household fertility decisions, the implications could differ.

care burden, leading to greater labor market detachment and larger child wage penalties. The lifecycle structure reveals that these effects are amplified through two channels: precautionary sorting into flexible occupations before childbirth because switching is costly, and foregone human capital accumulation during career interruptions that compounds over time. These dynamics imply that early-career choices set households on trajectories that reinforce gender gaps throughout the lifecycle.

Several extensions would enrich the analysis. The model takes wages as exogenous, abstracting from how flexibility policies might affect firms' compensation decisions and hiring practices. Fertility is treated as exogenous, though flexibility policies could affect childbearing through multiple channels. The unitary household framework, while parsimonious for capturing joint decision-making, cannot address how flexibility might affect intra-household bargaining power; a collective model could explore whether policies that increase wives' labor market attachment also shift household resource allocation.

The policy analysis highlights that design details matter substantially for outcomes. Policies temporarily increasing workplace flexibility after childbirth can significantly increase female labor supply and reduce the gender pay gap, but only when appropriately targeted. When flexibility benefits are extended to both spouses, men respond more strongly by moving into higher-paying, less-flexible occupations, generating income effects that reduce wives' labor supply and can expand rather than narrow gender gaps. This result suggests that well-intentioned gender-neutral policies can have unintended consequences when men and women differ in their baseline constraints. More broadly, the findings imply that the binding constraints often lie with fathers' occupations rather than mothers', suggesting that policies targeting fathers' workplace flexibility may be as effective at reducing

gender gaps as policies targeting mothers directly. The paper illustrates the value of modeling joint household decisions, as many factors that appear to affect only one spouse can propagate through the household to affect both spouses' careers.

## **A Appendix - Data**

### **A.1 Sample Selection**

I construct the sample from the NLSY79 (1979–2016) as follows. I restrict attention to married couples where the wife is between ages 19 and 45 for high school graduates and those with some college, or between ages 24 and 45 for college graduates or above. I exclude periods when either spouse is enrolled in school, as these individuals face different labor supply constraints. I also exclude high school dropouts, who exhibit substantially different child-bearing patterns and labor market outcomes compared to the rest of the sample. Observations after divorce are excluded. That is, I assume the divorce is a random shock and households who would experience divorces in the future behave similarly to households who do not experience divorce. Also, I exclude households with any self-employment income observed throughout the sample period as the flexibility in self-employment jobs can be conceptually different from the flexibility in employer-employed jobs as the self-employed businesses naturally give much more autonomy in deciding flexibility, in terms of working hours and locations. The resulting sample contains 89,837 household-year observations from 5,642 unique households. On average, each household is observed for 15 years, though these years are not necessarily continuous since the NLSY79 switched from annual to biennial interviews beginning in 1994.

### **A.2 A Measure for Occupational Flexibility**

In this paper, I measure occupational flexibility following [Goldin \(2014\)](#) using the ONET database. The ONET database provides detailed occupational information,

Table A1: Summary statistics

	Wife		Husband	
	Mean	Std	Mean	Std
<b>Marriage and fertility</b>				
Total number of children	2.26	(1.06)		
Age at first marriage	22.92	(4.88)	25.17	(5.14)
Age at first childbirth	27.07	(4.87)	28.95	(5.41)
Age at last childbirth	30.24	(5.23)	32.42	(5.90)
<b>Education</b>				
High school graduate	0.42	(0.49)	0.45	(0.50)
Some college	0.09	(0.29)	0.09	(0.28)
College graduate	0.36	(0.48)	0.34	(0.47)
Postgraduate	0.13	(0.34)	0.12	(0.33)
<b>Prop not working, by age</b>				
Age 25	0.28	(0.44)	0.12	(0.33)
Age 35	0.28	(0.45)	0.09	(0.28)
Age 45	0.27	(0.44)	0.13	(0.34)
<b>Hours worked cond. on working, by age</b>				
Age 25	1564.16	(683.61)	2121.87	(545.79)
Age 35	1646.34	(670.18)	2263.65	(501.82)
Age 45	1764.90	(619.79)	2264.66	(545.37)
<b>Years of experience, by age</b>				
Age 25	4.52	(2.11)	6.08	(2.32)
Age 35	10.08	(4.12)	13.77	(3.82)
Age 45	15.90	(6.33)	22.10	(5.33)
<b>Hourly wages (in 1999 dollars) cond. on working, by age</b>				
Age 25	10.59	(7.31)	13.49	(6.56)
Age 35	13.86	(9.29)	19.38	(11.79)
Age 45	16.03	(10.53)	24.70	(17.57)

NOTE: This table reports descriptive statistics of the household sample constructed from NLSY79 (1979-2016). The sample consists of married couples with wife's age between 19 and 45 (24 and 45) for high school graduates or some college (for college graduates or above). All individuals in the sample completed their schooling, and never experienced self-employment. The periods after any divorce are excluded. The sample has 5,642 unique household observations, and 89,837 household-year observations.



including work activities and work context, which are relevant to understanding occupational flexibility. I use responses from a statistically random sample of workers who worked in the targeted occupations, rather than occupational analyst ratings. This choice reflects my interest in how flexibility is actually practiced in the workplace and the larger coverage and sample size from the incumbent responses. I use multiple vintages of the O\*NET database (versions 5.0–25.0) to capture changes in occupational characteristics over time for occupations surveyed in multiple waves.

The flexibility measure is merged with NLSY79 and ATUS using a crosswalk between the Standard Occupational Classification (SOC) system and Census occupational codes. When a Census occupation matches to multiple O\*NET SOC codes, I use the average flexibility score across all matched codes. For consistency across different vintages of Census occupational codes, I use the harmonized occupation classification developed by [Autor and Dorn \(2013\)](#).

Although I use the same variables available in the O\*NET as [Goldin \(2014\)](#) does, there are a few differences to point out. First, I combine multiple vintages of O\*NET database to capture the changes in the flexibility of a given occupation over time. As I am using longitudinal data from NLSY79, capturing any time trend of a given occupation is essential. Second, I normalize each of the five O\*NET characteristics using a different set of occupations from [Goldin \(2014\)](#). In [Goldin \(2014\)](#), each characteristic is normalized to have a mean of zero and a standard deviation of one using a set of occupations held by the sample of college graduates in the American Community Survey (ACS). In this paper, I expand the sample of occupations to be all the occupations held by the sample of individuals in NLSY79 who are at least high school graduates, and the normalization is taken with this bigger set of occupations. Third, the match process between NLSY79 and O\*NET is

different from the match process between ACS and O\*NET. The occupational codes available in NLSY79 and ACS, although they both use the Census Occupational Code system, are slightly different, and this makes minor differences in terms of merging each data with O\*NET.

Table A2 shows a list of occupations sorted by the flexibility measure. Occupations such as chief executives and financial managers are among the least “flexible” occupations, whereas computer programmers and musicians are among the most “flexible” occupations. Although Goldin (2014) focuses on the flexibility of highly-educated workers, the measure also applies to lower-educated workers. Occupations held by highly-educated workers are generally less flexible; there is a fair amount of heterogeneity in flexibility conditional on education level.

Table A2: Occupations by the flexibility measure

(1) Low Flexibility	(2) High Flexibility
Chief executives	Biological scientists
Producers and directors	IT consultants
Financial managers	Musicians
Licensed practical and licensed vocational nurses	Teachers and instructors
Physicians and surgeons	Computer programmers
Medical and health services managers	Childcare workers
First-line supervisors of non-retail sales workers	Telephone operators
Meeting, convention, and event planners	Production workers
Credit counselors and loan officers	Postal service mail carriers
Advertising sales agents	Database administrators

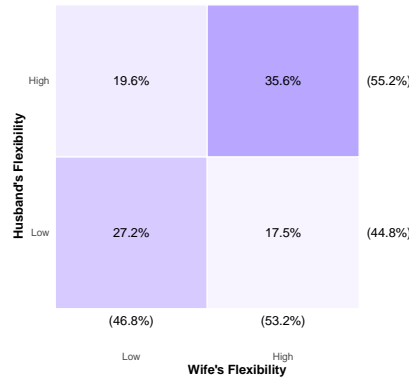
NOTE: This table lists occupations based on the flexibility score constructed from O\*NET databases. Occupations are from the NLSY79 sample. In column (1), occupations with relatively low flexibility are listed, and in column (2), occupations with relatively high flexibility are listed.

### A.3 Assortative Matching and Fertility by Flexibility

This appendix provides additional details on the joint distribution of occupational flexibility at marriage and the relationship between flexibility and fertility outcomes.

**Assortative Matching on Flexibility.** Figure A1 shows the joint distribution of occupational flexibility for husbands and wives at the time of marriage. There is positive assortative matching on flexibility: approximately 63 percent of couples have both spouses in the same flexibility category. Specifically, 27 percent of couples have both spouses in low-flexibility occupations and 36 percent have both in high-flexibility occupations.

Figure A1: Assortative Matching on Flexibility at Marriage



*NOTE:* This figure shows the joint distribution of occupational flexibility for husbands and wives at the time of marriage. Flexibility is measured based on the occupation held at marriage. Occupations are divided into two equal-sized groups based on the flexibility score.

**Fertility by Flexibility.** Table A3 reports fertility outcomes by flexibility group. The total number of children does not differ significantly across flexibility groups

(Panel A). Unconditionally, couples where both spouses hold high-flexibility occupations have their first child earlier than couples where both hold low-flexibility occupations. However, this relationship is driven largely by educational composition: among college-educated couples, the difference in age at first birth across flexibility groups is less than one year and not statistically significant (Panel B). Among non-college couples, a significant difference of approximately 3 years remains. The structural model accounts for this by conditioning fertility probabilities on wife's age and education, which captures the primary source of variation in fertility timing for the majority of the sample.

Table A3: Fertility by Flexibility Group

Husband Flexibility	Wife Flexibility	Total Births	SD
<b>Panel A: Total Births</b>			
Low	Low	2.27	(1.01)
Low	High	2.13	(0.94)
High	Low	2.21	(0.95)
High	High	2.27	(1.10)
<b>Panel B: Age at First Birth by Education</b>			
		Non-College	College
Low	Low	25.92 (0.67)	28.16 (0.34)
Low	High	24.77 (0.50)	27.41 (0.63)
High	Low	23.35 (0.47)	28.09 (0.56)
High	High	22.61 (0.36)	27.66 (0.51)

*NOTE:* Panel A reports total number of children by the occupational flexibility of both spouses at the time of marriage. Panel B reports estimated marginal means of wife's age at first birth from a regression on flexibility group interacted with wife's education. Standard errors in parentheses.

## A.4 Supplemental Data: American Time Use Survey

American Time Use Survey consists of a nationally representative sample of individuals and provides information on individual's time use within a day together with a contextual information. Relevant information includes how much hours worked during the day, what time of the day they work, and the location of work. Consistent with the main NLSY79 sample, I restrict the sample to individuals who are at least high school graduates, and age between 19 to 45 for high school graduates and 24 to 45 for college graduates. The sample period includes years from 2003 to 2010.

### A.4.1 Validating the Flexibility Measure with ATUS

To better understand which time flexibility dimensions are captured in the flexibility measure, I investigate if individuals with high flexibility scores utilize their time differently. In particular, I select individuals with a child age less than 5 years from the American Time Use Survey (ATUS) to see if the following are different for people working in more flexible occupations: 1) total working hours, 2) hours shifts within a day, and 3) working locations<sup>25</sup>. Table 3 summarizes the results. After controlling for various individual characteristics including age, education, race, and gender, individuals with a young child and with more “flexibility” in their occupation based on the flexibility measure tend to:

1. Work fewer hours per week (*ability to change working hours*).
2. Be more likely to work during hours that not in typical working hours (*ability to shift working hours within a day*).
3. Be more likely to work from home in the intensive margin (*ability to change their work location*).

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<sup>25</sup>Appendix A.4 provides description of the ATUS data and the sample selection criteria.

In column (1), I show that the one standard deviation increase in the flexibility score is associated with about 1.7 hours lower working hours per week. In column (2), the same standard deviation increase in flexibility gives a 6.5 percentage point increase in the proportion of working hours, not in typical 9-to-6 working hours. As work shift typically depends on the total working hours, I also control for the total working hours per week. The last two columns present the relationship between flexibility and work-from-home (WFH) utilization. In column (4), I restrict the sample to individuals working in occupations with any work done at home and estimate the relationship between the flexibility and the intensive margin utilization of the work-from-home option. At the intensive margin, one standard deviation increase in flexibility score gives about 8.8 percentage point increase in the proportion of hours worked from home.<sup>26</sup>

The result shows that the flexibility measure is significantly correlated with multiple dimensions of flexibility. Although the measure's construction does not take into account actual time usage at all, it captures different ways of utilizing flexibility reasonably well<sup>27</sup>. Time flexibility captured through reducing hours or shifting hours is consistent with flexibility concepts described in [Mas and Pallais \(2020\)](#) and [Felfe \(2012\)](#). The option of working from home is also highlighted in some recent papers about COVID-19 including [Dingel and Neiman \(2020\)](#) and [Bick et al. \(2023\)](#). In Section 4, I incorporate these multiple dimensions of flexibility captured in the flexibility measure in the model.

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<sup>26</sup>In column (3), the relationship is not significant. This is because, for some occupations, the work-from-home arrangement is not actually an option. For example, for biological scientists, although the occupation may give flexible arrangements in terms of their time allocations, most of their tasks cannot be done at home.

<sup>27</sup>[Goldin \(2014\)](#) associates the flexibility with a greater degree of substitutability among workers, and her choice of O\*NET characteristics reflect this notion of flexibility.

Table A4: Different Dimensions of Flexibility in Flexibility Measure

	Working Hours (1)	Prop of Hours Not 9-to-6 (2)	Prop of Hours Work-From-Home (3)	Prop of Hours Work-From-Home (4)
Flexibility Score	-1.717*** (0.351)	0.065*** (0.007)	0.002 (0.008)	0.088*** (0.026)
Ind. Char.	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Daily Working Hours		YES	YES	YES
Any WFH				YES
Observations	3,415	3,415	3,415	785

NOTE: The sample is constructed from ATUS (2003-2010) and includes individuals who are at least high school graduates, and age between 19 to 45 for high school graduates and 24 to 45 for college graduates. Individual characteristics include age, gender, race, and education levels.

## A.5 Discretization of Labor Supply and Occupational Choices

In the estimation, all the occupations in the NLSY79 sample are divided into two equal-size groups (“high” and “low”) based on the flexibility scores. Also, I use four options of hours worked: 1) not working, 2) “part-time low”, 3) “part-time high”, and 4) “full-time.” As the distributions of working hours significantly differ by gender, I use different criteria for men and women to discretize continuous working hours. For men, I treat working less than 900 hours per year as non-working status, working more than or equal to 900 and less than 1700 as “part-time low”, working more than or equal to 1700 and less than 2080 as “part-time high”, and working more than or equal to 2080 as “full-time”. For women, the threshold for the non-working status is 300 hours per year. The part-time low status refers to working more than or equal to 300 and less than 1000 hours, the part-time high status is working more than or equal to 1000 and less than 1800, and the full-time status is working more than or equal to 1800 hours per year.

Table A5: Occupations by the Flexibility Measure

Low Flexibility	High Flexibility
Chief executives	Biological scientists
Financial managers	IT consultants
Physicians and surgeons	Computer programmers
Medical and health services managers	Teachers and instructors
Licensed practical nurses	Childcare workers

*NOTE:* This table lists selected occupations by flexibility category. Occupations are divided into two equal-sized groups based on the flexibility score constructed from O\*NET databases.

## B Additional Evidence on Labor Adjustment

### B.1 Effects of Own Flexibility

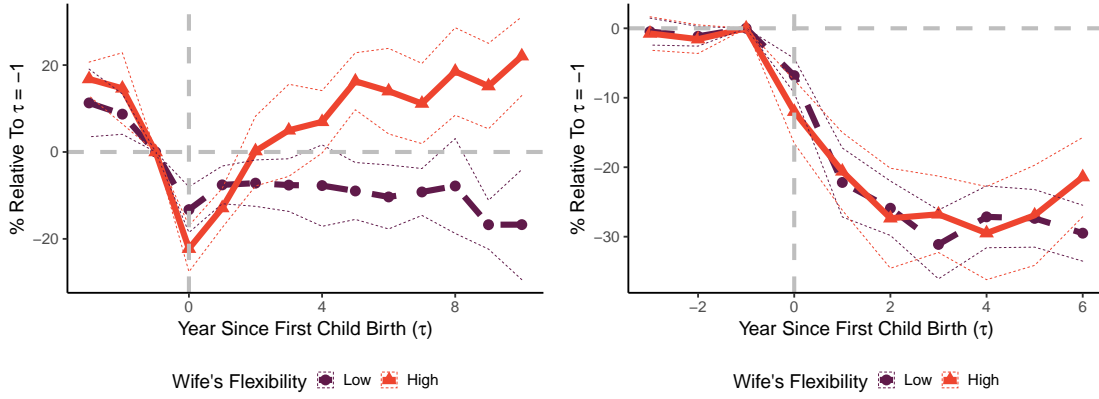
This appendix provides additional evidence on the effects of own occupational flexibility on labor adjustment around childbirth.

**Wife's Own Flexibility.** Figure A2 shows how wives' labor adjustment differs by their own occupational flexibility. Panel (a) shows significant differences at the intensive margin: wives in high-flexibility occupations adjust their hours more in the birth year but restore pre-birth hours within two years. In contrast, wives in low-flexibility occupations experience persistent reductions of about 10 percent. Panel (b) shows no significant difference in extensive-margin adjustment by own flexibility.

**Husband's Own Flexibility.** Figure A3 shows how husbands' labor adjustment differs by their own flexibility. Husbands in low-flexibility occupations increase their hours by about 4 percent in the birth year, while those in high-flexibility occupations show no change. This pattern may appear counterintuitive but reflects confounding income effects. When husbands work in low-flexibility occupations,



Figure A2: Wife's Labor Adjustment By Wife's Flexibility



(a) Hours Worked Conditional on Working

(b) Labor Participation

NOTE: Panel (a) plots the percentage change in wives' hours worked conditional on working relative to one year before first childbirth ( $\tau = 0$ ). Panel (b) plots the percentage change in labor participation. The sample is restricted to households with both spouses working one year before birth. The solid line represents wives in high-flexibility occupations; the dashed line represents those in low-flexibility occupations. Controls include both spouses' age, year fixed effects, education levels and interactions, husband's flexibility, and pre-birth average earnings.

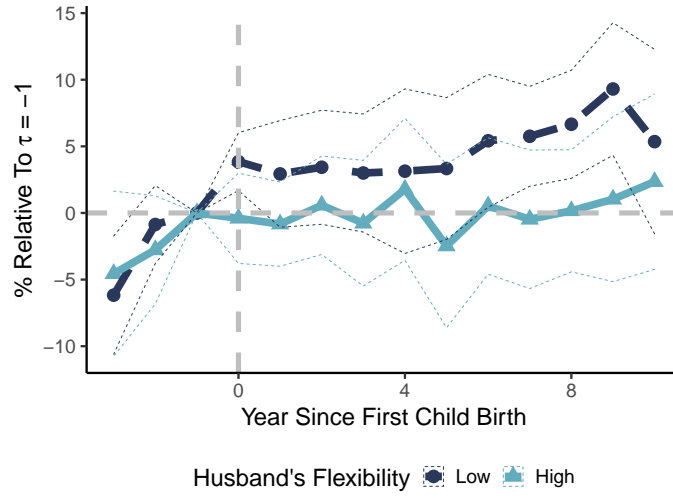
their higher earnings create an income effect that leads wives to exit the labor force. Husbands then increase hours to compensate for lost household income. This "subtracted worker effect" confounds the relationship between flexibility and labor adjustment in the reduced-form estimates, motivating the structural model in Section 4.

## B.2 Child Penalty Definition

Following Kleven et al. (2019b), the child penalty  $P_{jo\tau}$  is defined as the percentage loss of average earnings or wages at event time  $\tau$  for flexibility group  $o$  of spouse  $j$ , relative to predicted earnings or wages without the effect of childbirth:

$$P_{jo\tau} = \frac{\alpha_{jo\tau}}{\mathbb{E}(\tilde{y}_{ij\tau}|\tau)},$$

Figure A3: Husband's Labor Adjustment By Husband's Flexibility



NOTE: This figure plots the percentage change in husbands' hours worked (including zeros) relative to one year before first childbirth ( $\tau = 0$ ). The sample is restricted to households with both spouses working one year before birth. The solid line represents husbands in high-flexibility occupations; the dashed line represents those in low-flexibility occupations. Controls include both spouses' age, year fixed effects, education levels and interactions, wife's flexibility, and pre-birth average earnings.

where  $\mathbb{E}(\tilde{y}_{ij0\tau}|\tau)$  is predicted earnings or wages without the contribution from event time dummies.

## C Estimation Details

This appendix provides additional details on the simulation, optimization, and standard error computation.

### C.1 Simulation

Given a parameter vector  $\theta$ , the model produces simulated moments  $m(\theta)$ . I simulate 20,000 households. Initial conditions for the state variables are drawn from the empirical distributions in NLSY79 at wife's age 19 for high school graduates and at wife's age 24 for college graduates.

### C.2 Objective Function and Optimization

The parameters are estimated by minimizing the sum of squared percentage deviations between data moments  $\hat{m}$  and simulated moments  $m(\theta)$ :

$$\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \sum_{i=1}^{240} \left( \frac{\hat{m}_i - m_i(\theta)}{\hat{m}_i} \right)^2.$$

This normalization accounts for differences in the scale of moments without requiring estimation of a weighting matrix. The objective function uses 240 moments to estimate 39 parameters.<sup>28</sup>

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<sup>28</sup>I do not use a weighting matrix based on the inverse of the variance-covariance matrix of the moments. This is mainly due to noisy estimates of some standard deviations. Almost all parameters are estimated with reasonably small standard errors even without an optimal weighting matrix.

### C.3 Standard Error Computation

Standard errors are computed using the GMM formula. However, as noted by [Lise and Robin \(2017\)](#), simulated moments are not necessarily smooth functions of parameters due to simulation error. Numerical differentiation around estimated values can therefore be imprecise.

I follow the smoothing procedure in [Lise and Robin \(2017\)](#). For each parameter  $\theta_k$ , I evaluate each moment at equally-spaced grid points around the estimated value, holding all other parameters fixed. I then fit each moment as a polynomial of degree 5 in the grid points and take the derivative of this polynomial at the estimated value. This provides smoothed estimates of the partial derivatives needed for the standard error formula.

## D Additional Model Fit Statistics

This appendix presents additional statistics on model fit.

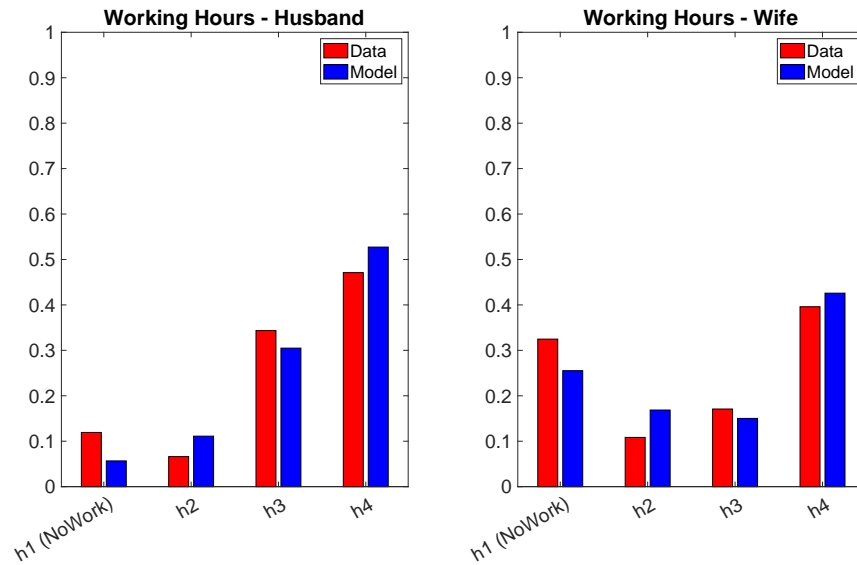
### D.1 Marginal Distributions of Hours Worked

Figure [A4](#) shows that the model matches the marginal distributions of discretized hours worked for both husbands and wives. The model captures the concentration of husbands in full-time work and the more dispersed distribution for wives.

### D.2 Joint Distributions

Tables [A6](#) and [A7](#) present the joint distributions of labor supply and occupational choices. The model captures several important features of the data. For labor supply, the model replicates the pattern that when husbands work full-time, wives

Figure A4: Model Fit: Distribution of Hours Worked



NOTE: This figure plots simulated (blue bars) and observed (red bars) distributions of working hours. Panel (a) shows husbands; panel (b) shows wives. Categories are not working (h1), part-time low (h2), part-time high (h3), and full-time (h4).

are more likely to work part-time or not at all. For occupational choice, the model matches the positive assortative matching on flexibility observed in the data.

Table A6: Joint Distribution of Labor Supply

(a) Model					(b) Data				
Husband	Wife				Husband	Wife			
	NoWork	PT Low	PT High	FT		NoWork	PT Low	PT High	FT
NoWork	0.00	0.01	0.04	0.01	NoWork	0.04	0.02	0.03	0.01
PT Low	0.02	0.02	0.06	0.02	PT Low	0.02	0.01	0.02	0.01
PT High	0.11	0.08	0.10	0.05	PT High	0.10	0.09	0.18	0.05
FT	0.18	0.13	0.12	0.06	FT	0.12	0.09	0.15	0.06

NOTE: This table reports the joint distribution of hours worked from simulated data (panel a) and NLSY79 (panel b). Rows show husband's hours; columns show wife's hours.

Table A7: Joint Distribution of Occupational Flexibility

(a) Model			(b) Data		
	Wife			Wife	
Husband	Low	High	Husband	Low	High
Low	0.23	0.16	Low	0.25	0.18
High	0.22	0.39	High	0.24	0.33

*NOTE:* This table reports the joint distribution of occupational flexibility from simulated data (panel a) and NLSY79 (panel b). Rows show husband's flexibility; columns show wife's flexibility.

## References

- ADDA, J., C. DUSTMANN, AND K. STEVENS (2017): "The Career Costs of Children," *Journal of Political Economy*, 125, 293–337.
- ANGELOV, N., P. JOHANSSON, AND E. LINDAHL (2016): "Parenthood and the Gender Gap in Pay," *Journal of Labor Economics*, 34, 545–579.
- AUTOR, D. AND D. DORN (2013): "The Growth of Low Skill Service Jobs and the Polarization of the U.S. Labor Market," *American Economic Review*, 103, 1553–1597.
- BAILEY, M. J., T. S. BYKER, E. PATEL, AND S. RAMNATH (2019): "The Long-Term Effects of California's 2004 Paid Family Leave Act on Women's Careers: Evidence from U.S. Tax Data," *American Economic Review*, 109, 1714–1748.
- BICK, A., A. BLANDIN, AND K. MERTENS (2023): "Work from Home before and after the COVID-19 Outbreak," *American Economic Journal: Macroeconomics*, 15, 1–39.
- BLAU, F. D. AND L. M. KAHN (2017): "The Gender Wage Gap: Extent, Trends, and Explanations," *Journal of Economic Literature*, 55, 789–865.
- BLUNDELL, R., M. COSTA DIAS, C. MEGHIR, AND J. SHAW (2016): "Female Labor Supply, Human Capital, and Welfare Reform," *Econometrica*, 84, 1705–1753.
- CHIAPPORI, P.-A. AND M. MAZZOCCO (2017): "Static and Intertemporal Household Decisions," *Journal of Economic Literature*, 55, 985–1045.
- CHIAPPORI, P.-A., B. SALANIÉ, AND Y. WEISS (2017): "Partner Choice, Invest-

- ment in Children, and the Marital College Premium,” *American Economic Review*, 107, 2109–2167.
- CORTÉS, P. AND J. PAN (2018): “Occupation and Gender,” in *The Oxford Handbook of Women and the Economy*, ed. by S. L. Averett, L. M. Argys, and S. D. Hoffman, Oxford University Press, chap. 12, 424–452.
- CORTÉS, P. AND J. PAN (2023): “Children and the Remaining Gender Gaps in the Labor Market,” *Journal of Economic Literature*, 61, 1359–1409.
- CORTÉS, P. AND J. PAN (2019): “When Time Binds: Substitutes for Household Production, Returns to Working Long Hours, and the Skilled Gender Wage Gap,” *Journal of Labor Economics*, 37, 351–398.
- DINGEL, J. I. AND B. NEIMAN (2020): “How many jobs can be done at home?” *Journal of Public Economics*, 189, 104235.
- EROSA, A., L. FUSTER, G. KAMBOUROV, AND R. ROGERSON (2022): “Hours, Occupations, and Gender Differences in Labor Market Outcomes,” *American Economic Journal: Macroeconomics*, 14, 543–590.
- FELFE, C. (2012): “The motherhood wage gap: What about job amenities?” *Labour Economics*, 19, 59–67.
- FLABBI, L. AND A. MORO (2012): “The Effect of Job Flexibility on Female Labor Market Outcomes: Estimates from a Search and Bargaining Model,” *Journal of Econometrics*, 168, 81–95.
- FRANCESCONI, M. (2002): “A Joint Dynamic Model of Fertility and Work of Married Women,” *Journal of Labor Economics*, 20, 336–380.



- GAYLE, G.-L. AND L. GOLAN (2012): "Estimating a Dynamic Adverse-Selection Model: Labour-Force Experience and the Changing Gender Earnings Gap 1968–1997," *The Review of Economic Studies*, 79, 227–267.
- GAYLE, G.-L., L. GOLAN, AND R. A. MILLER (2015): "Identifying and Testing Models of Managerial Compensation," *The Review of Economic Studies*, 82, 1074–1118.
- GICHEVA, D. (2013): "Working Long Hours and Early Career Outcomes in the High-End Labor Market," *Journal of Labor Economics*, 31, 785–824, publisher: [The University of Chicago Press, Society of Labor Economists, NORC at the University of Chicago].
- GOLDIN, C. (2014): "A Grand Gender Convergence: Its Last Chapter," *American Economic Review*, 104, 1091–1119.
- GOLDIN, C. AND L. F. KATZ (2016): "A Most Egalitarian Profession: Pharmacy and the Evolution of a Family-Friendly Occupation," *Journal of Labor Economics*, 34, 705–746.
- GUNER, N., E. KAYA, AND V. SÁNCHEZ-MARCOS (2024): "Labor Market Institutions and Fertility," *International Economic Review*, 65, 1551–1587.
- HEISS, F. AND V. WINSCHERL (2008): "Likelihood approximation by numerical integration on sparse grids," *Journal of Econometrics*, 144, 62–80.
- HOTZ, V. J., P. JOHANSSON, AND A. KARIMI (2017): "Parenthood, Family Friendly Workplaces, and the Gender Gaps in Early Work Careers," Working Paper 24173, National Bureau of Economic Research.

- KEANE, M. P. AND K. I. WOLPIN (1994): "The Solution and Estimation of Discrete Choice Dynamic Programming Models by Simulation and Interpolation: Monte Carlo Evidence," *The Review of Economics and Statistics*, 76, 648–672.
- KLEVEN, H., C. LANDAIS, AND G. LEITE-MARIANTE (2025): "The Child Penalty Atlas," *Review of Economic Studies*, 92, 3174–3207.
- KLEVEN, H., C. LANDAIS, J. POSCH, A. STEINHAUER, AND J. ZWEIMÜLLER (2024): "Do Family Policies Reduce Gender Inequality? Evidence from 60 Years of Policy Experimentation," *American Economic Journal: Economic Policy*, 16, 110–149.
- KLEVEN, H., C. LANDAIS, J. POSCH, A. STEINHAUER, AND J. ZWEIMÜLLER (2019a): "Child Penalties across Countries: Evidence and Explanations," *AEA Papers and Proceedings*, 109, 122–126.
- KLEVEN, H., C. LANDAIS, AND J. E. SØGAARD (2019b): "Children and Gender Inequality: Evidence from Denmark," *American Economic Journal: Applied Economics*, 11, 181–209.
- LISE, J. AND J.-M. ROBIN (2017): "The Macrodynamics of Sorting between Workers and Firms," *American Economic Review*, 107, 1104–1135.
- MAS, A. AND A. PALLAIS (2020): "Alternative Work Arrangements," *Annual Review of Economics*, 12, 631–658.
- MCFADDEN, D. (1989): "A Method of Simulated Moments for Estimation of Discrete Response Models Without Numerical Integration," *Econometrica*, 57, 995–1026.

- ROSSIN-SLATER, M., C. J. RUHM, AND J. WALDFOGEL (2013): "The Effects of California's Paid Family Leave Program on Mothers' Leave-Taking and Subsequent Labor Market Outcomes," *Journal of Policy Analysis and Management*, 32, 224–245.
- VAN DER KLAUW, W. (1996): "Female Labour Supply and Marital Status Decisions: A Life-Cycle Model," *The Review of Economic Studies*, 63, 199–235.
- WISWALL, M. AND B. ZAFAR (2018): "Preference for the Workplace, Investment in Human Capital, and Gender," *Quarterly Journal of Economics*, 133, 457–507.