Flexible Work, Occupational Constraints, and the Dynamics of Female Labor Supply*

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Abstract

Female labor market outcomes have improved dramatically over the past half century, yet a significant and persistent child penalty remains. A leading explanation is the prevalence of "greedy" jobs that reward long, inflexible hours—features incompatible with the unequal burden of child care on women (Goldin, 2014). We develop a dynamic life-cycle model with frictional occupational choice and endogenous human capital accumulation to quantify the role of workplace flexibility in mitigating gender gaps. We use the model to study how structural changes in work technology, specifically the post-2020 expansion of Work-from-Home (WFH), reshape the allocation of household time and, in turn, occupational sorting, human capital accumulation, and gender gaps over the life cycle. We find that while short-run adjustments are muted by switching frictions, the long-run general equilibrium effects are substantial. WFH induces younger cohorts of women to enter non-linear occupations, narrowing the gender gap in earnings and human capital over the life-cycle.

Keywords: Female labor supply, human capital, work from home, time use

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1 Introduction

Despite decades of progress in female educational attainment and labor force participation, a substantial earnings gap between men and women persists. This gap manifests most starkly as a large "child penalty" – a sharp decline in women's earnings following the birth of their first child (Adda, Dustmann, and Stevens, 2017; Cortés and Pan, 2023; Kleven, Landais, and Leite-Mariante, 2025). The prevailing hypothesis for the persistence of this penalty centers on the mismatch between occupational structures and household constraints. Many high-paying occupations exhibit nonlinear returns to hours worked, creating what Goldin (2014) terms "greedy jobs". These positions reward long, continuous, and inflexible work schedules, making them incompatible with childcare responsibilities that disproportionately fall on women. Being able to reconcile childcare responsibilities and work therefore comes at a cost in terms of lost wages and human capital. One can think of this as the *life-time cost of occupational flexibility*.

In this paper, we study how technological change that impacts the flexibility of work, such as the adoption of remote work, can reshape these occupational constraints. Further, we investigate the implications for the broader labor market, considering the impact on both male and female outcomes. Remote work has already led to large and permanent changes in the labor market and the structure of jobs. Data from the American Time Use Survey show that remote work has risen steadily over the past two decades and jumped sharply after 2020, with full-time workers and women more likely than men to work remotely. At the same time, we show that switching between occupation types is rare and even lower among women. The stability in occupational sorting, combined with the sudden rise in flexible work, suggests that WFH may have much larger effects in the long-run, but these effects will take time to emerge. We emphasize that the reallocation will operate through joint household decision-making, frictional occupational mobility, and dynamic human capital accumulation.

To investigate the expansion of remote work and its interaction with occupational choice, we develop a heterogeneous agent life-cycle model to quantify how occupational flexibility affects female labor market outcomes over both shorter and longer horizons. The key features of our model include heterogeneous occupations with distinct wage-hour schedules, human capital returns that vary with work intensity, household savings decisions, and market clearing in general equilibrium. In our setting occupations differ both in static and dynamic returns to hours. Couples jointly optimize consumption, savings and labor supply subject to occupational mobility frictions. Wages adjust in general equilibrium in response to changes in occupational labor supply.

We calibrate the model to match empirical patterns of remote work adoption, occupational characteristics, and gendered caregiving responsibilities in the United States. Our analysis emphasizes the long-run general equilibrium effects of increased work flexibility, using

expanded telework availability following the COVID-19 pandemic as a natural experiment. In the model, remote work reduces the effective cost of supplying long hours while caring for young children for the household. We model this as reduced complementarity between hours worked and childcare costs, consistent with empirical evidence from Barrero, Bloom, and Davis (2021), Bick, Blandin, and Mertens (2022), and gender-specific surveys on remote work preferences (Adams-Prassl et al., 2022). Our calibration targets the 2.3 percentage point increase in labor force participation among mothers with young children observed between 2019 and 2023–24, which we attribute to a 26.3 percent reduction in the effective utility cost of labor supply for households with children.

The results reveal that expanded work-from-home access significantly reduces the child penalty in the long run, primarily through new patterns of occupational sorting. As non-linear occupations become less costly to households and particularly women, women entering the labor market are more likely to choose these occupations at the beginning of the life-cycle. However, in the aggregate this reallocation occurs gradually due to fixed occupational choices and slow labor force turnover. The immediate effects on labor supply and earnings are modest. In fact in the short run the marginal women enters employment in the linear (non-greedy) occupation. In contrast, long-run impacts are substantial. Younger cohorts of women increasingly sort into non-linear occupations. The supply of labor in the non-linear sector increases, dampening the wage premium and thus inducing even more men to switch towards linear occupations. This structural shift leads to a substantial reduction in gender gaps in hours worked, earnings, and human capital accumulation.

This perspective aligns with a growing body of work arguing that persistent gender gaps in labor market outcomes reflect structural barriers to women's entry into certain professions and educational tracks, with significant allocative consequences for the economy (Hsieh et al., 2019; Ashraf et al., 2023). Lowering such barriers can generate sizable gains by enabling women to enter high-return occupations.

Using our calibrated model, we find that the post-2020 expansion of remote work reduces male incomes by 9.2 percent while increasing female incomes by 12.8 percent in the long run, leaving total household income largely unchanged. These effects operate primarily through occupational reallocation and an extensive margin employment effect, rather than hours adjustments. The share of women in non-linear occupations rises by 2.3 percentage points in general equilibrium, while the male share falls by 19.5 percentage points. Women supply 3.5 percent more hours, while the employment rate of women with young children rises by 5.4 percentage points. Perhaps most strikingly, the life-cycle pattern changes. In particular, women maintain higher hours during peak childcare years (ages 30–40), which prevents human capital depreciation.

The effects unfold gradually due to occupational switching frictions. After five years, female income rises by only 1.2 percent, but this grows to 12.8 percent in the long-run as

new cohorts enter the labor market and fully adjust their career choices. Crucially, we find that general equilibrium wage adjustments are quantitatively important. The influx of women into non-linear occupations depresses the wage premium in that sector by 1.6 percent, which dampens the occupational shift but reinforces the narrowing of gender income gaps. Ignoring these price effects overstates the occupational reallocation by 7.6 percentage points for women and understates male reallocation.

The mechanism in our model operates through three channels. First, reduced childcare costs allow younger women to enter and persist in non-linear occupations, with the female non-linear share starting higher at labor market entry and remaining elevated throughout the life cycle. Second, this increases labor supply in the non-linear sector, allowing females to accumulate more human capital on the job. Third, households increasingly sort into configurations where women specialize in non-linear occupations—a pattern that was much less common before the introduction of flexible work. Conversely men switch to working in the linear sector. These adjustments occur gradually: employment effects after five years are less than half the long-run magnitude, highlighting the importance of cohort turnover and occupational frictions.

This paper contributes to the literature in three ways. First, we provide a quantitative framework that integrates occupation-specific labor supply elasticities (with returns to hours ranging from linear to $\theta = 1.2 - 1.4$ as estimated in the data), endogenous human capital accumulation and consumption-savings decisions within a unified household decision-making model. Modeling the household allows us to capture within household subsitution and new patterns of specialization. Second, we present new empirical evidence on gendered patterns of occupational choice and remote work adoption using multiple U.S. microdata sources. Third, we analyze how technological changes that expand workplace flexibility can reshape labor market incentives across the family life-cycle. More broadly, the framework provides a lens to analyze forthcoming shocks, such as the diffusion of AI, that may alter the organization of work and the allocation of time within households. The novelty of our analysis lies in 1.) its focus on the general equilibrium, long-run adjustment of the labor market rather than the immediate impact of Covid and the short-run shift to work from home, and 2.) highlighting the importance of occupational sorting.

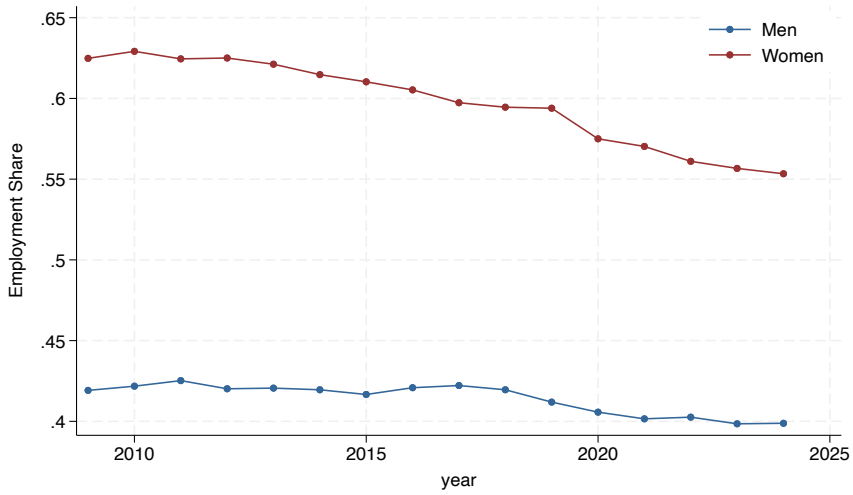
Our work extends a growing literature exploring the intersection of labor market structure, family dynamics, and technological change (Albanesi and Olivetti (2007), Albanesi and Olivetti (2009), Greenwood et al. (2016), Erosa et al. (2022), among many others). The findings suggest that workplace reorganization toward greater flexibility can reduce persistent gender disparities, but that this may entail a significant period of adjustment. We find policy interventions may be necessary to accelerate these gains and ensure equitable distribution across households.

2 Motivating empirical evidence

2.1 Occupational choices across gender

Figure 1 documents patterns of occupational sorting by gender. We classify occupations as "linear" (exhibiting linear returns to hours) or "non-linear" (exhibiting convex returns) based on the rank of average hours worked in the Current Population Survey (CPS). The data reveal a persistent gender gap: women are consistently more likely to be employed in linear occupations compared to men. This occupational disparity has remained remarkably stable over the last decades.

Figure 1: Employment shares in linear occupations by year and gender



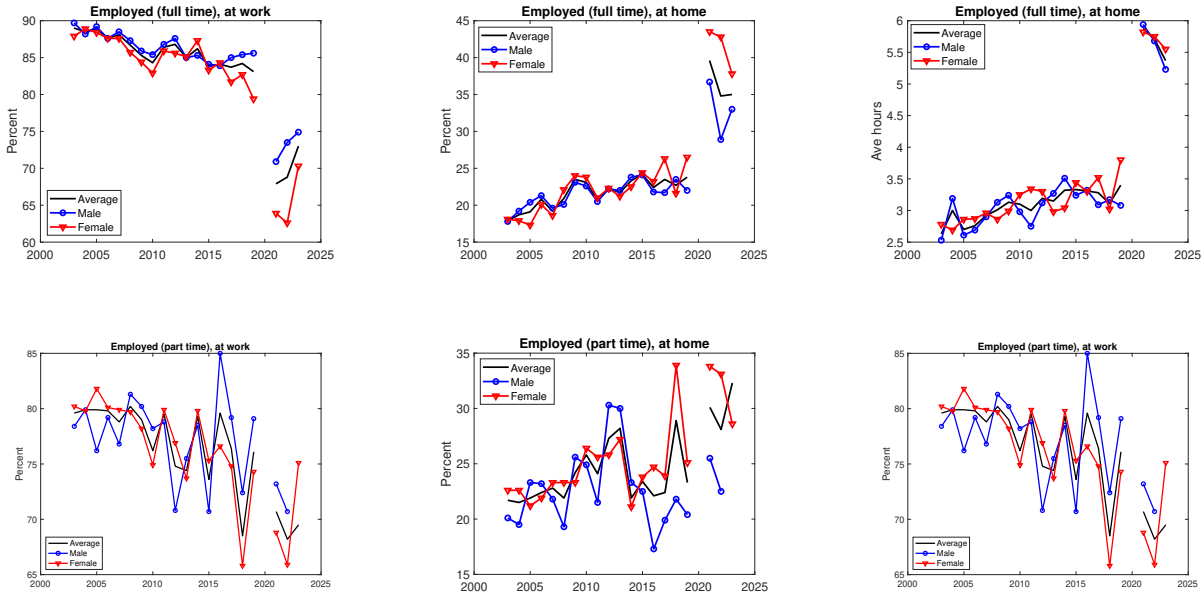
Note: Occupations (4-digit) ranked by average annual total hours for males in 2009 in the Current Population Survey and classified as linear if they fall below the median rank.

2.2 Aggregate work location and hours trends

Figure 2 presents aggregate trends in work location and hours using data from the American Time Use Survey (ATUS). The adoption of remote work has induced permanent structural changes in the labor market. The top row displays trends for full-time workers, while the bottom row corresponds to part-time employment.

Focusing on the middle panels, the share of individuals working from home has risen historically, with a discrete and persistent jump following the onset of the COVID-19 pandemic. Notably, this post-pandemic shift is more pronounced for women, who exhibit higher shares of remote work in both full-time and part-time capacities. However, examining the intensive margin in the right-most panels reveals that, conditional on working from home, the average hours worked by women are not higher than those of men. This suggests that while remote work facilitates labor force attachment, it does not automatically close the gender gap in hours worked within the remote setting.

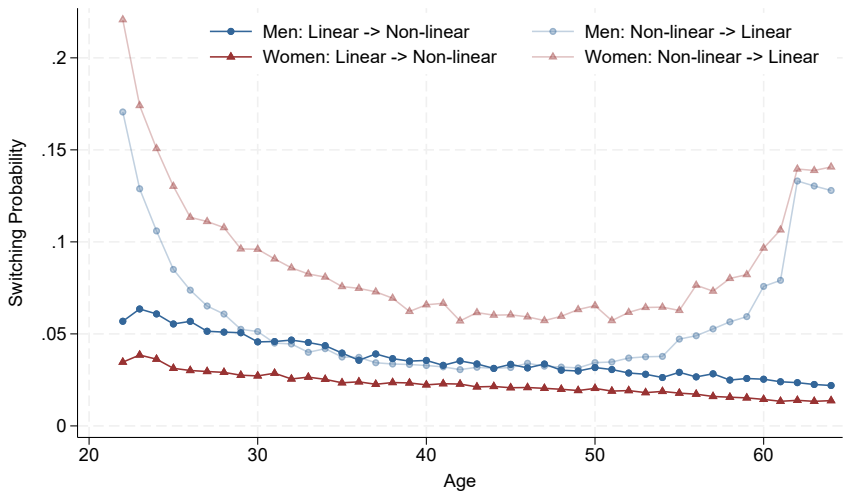
Figure 2: Aggregate work location and hours trends, American Time Use Survey. Top row: full-time employed; bottom row: part-time employed.



2.3 Low occupational switching across life cycle

We can also examine the dynamics of occupational mobility over the life cycle. Figure 3 plots the switching probabilities between linear and non-linear occupations. We observe that during the prime working ages (25–55), occupational mobility is limited. Specifically, women exhibit a low propensity to switch from linear to non-linear occupations. The annual probability of switching is approximately 3%. This suggests that initial career choices have persistent effects on life-cycle earnings.

Figure 3: Switches across occupation type across life cycle by gender



Note: Occupations (4-digit) ranked by average annual total hours for males in 2009 in the Current Population Survey and classified as linear if they fall below the median rank.

3 Life Cyle Model

We develop a dynamic life-cycle model of a unitary household to analyze the interaction between occupational choice, human capital accumulation, and female labor supply. The economy is populated by households consisting of a male (m) and a female (f) who make joint decisions on consumption, savings, and labor supply. A key feature of the model is the distinction between occupation types that differ in their wage-hours schedules and flexibility, capturing the "greedy" nature of certain jobs.

The life cycle is divided into three stages: an intial stage where individuals choose occupations and form couples, a working stage ($j = 1, \ldots, J^W$) and a retirement stage ($j = J^W + 1, \ldots, J^R$). Households maximize the expected discounted stream of utility, subject to budget constraints, human capital accumulation technologies, and frictional occupational mobility.

3.1 Working age

Household utility function Households act as a unitary entity and maximize a utility function that is additively separable in consumption and the labor supply of both spouses. The per-period utility function for a household of age j is given by:

$$U(c, h_m, h_f, k) = k\frac{(c/k)^{1-\alpha}}{1-\alpha} - \varphi\frac{h_m^{1+\nu}}{1+\nu} - \varphi\frac{h_f^{1+\nu}}{1+\nu} - \mathcal{C}(h_m, h_f, k) \tag{1}$$

where c denotes total household consumption, and h_m and h_f represent hours worked by the male and female, respectively. The parameter k represents the consumption equivalence scale, which depends on the presence and age of children. The parameter α is the coefficient of relative risk aversion, ν governs the Frisch elasticity of labor supply, and φ represents the disutility weight on work hours.

3.1.1 Labor supply and human capital

Individuals choose an occupation $o \in \mathcal{O} = \{\text{Linear}, \text{Non-Linear}\}$ at the start of the life cycle (age $j = 0$). Occupations differ in their returns to hours worked.

Earnings Function. The earnings of individual $i \in \{m, f\}$ in occupation o at age j are determined by a non-linear function of hours worked and accumulated human capital z. Specifically, earnings are given by:

$$y_o(z, h, j) = \omega_o \cdot l^o(j) \cdot h^{\theta_o} \cdot z \tag{2}$$

Here, ω_o is the occupation-specific wage rate per efficiency unit, and $l^o(j)$ captures deterministic life-cycle productivity growth specific to the occupation. The parameter θ_o governs the static return to hours: if $\theta_o = 1$, the occupation is **Linear** (returns are propor-

tional to hours). Instead, if $\theta_o > 1$, the occupation is **Non-Linear** ("Greedy"), offering a wage premium for long hours.

Human Capital Dynamics. Productivity (human capital) z evolves stochastically and endogenously based on labor supply, reflecting a learning-by-doing mechanism. The process follows an AR(1) specification with a drift that depends on hours worked:

$$z_i' = \rho z_i + f^o(h_i) + \epsilon_i \tag{3}$$

where ϵ_i is an idiosyncratic shock with variance σ_ϵ^2. The function $f^o(h)$ represents the dynamic returns to work experience, which may vary by occupation. This mechanism implies that reducing hours not only lowers current income via θ_o but also depresses future wage growth via z'.

3.1.2 Family Dynamics

Children. Households may enter the model with children or have children arrive stochastically. We denote family status by k. Children arrive with an age-dependent probability $\rho^k(j)$. Once a child arrives, they transition stochastically through developmental stages (young and old) before leaving the household. We simplify family size into three states: no children ($k = 2$), young child ($k = 2.25$), and older child ($k = 2.5$).

Childcare Costs. A central component of our analysis is the utility cost of childcare, $\mathcal{C}(\cdot)$, which depends on the hours worked by both parents and the age of the child. We assume this cost is asymmetric, weighing more heavily on mothers, and increasing in the intensity of work. This captures the complementarity between childcare and time off work. The cost function is defined as:

$$\mathcal{C}(h_m, h_f, k) = \Phi \left[\phi_m(k) h_m + \phi_f(k) h_f \right] \tag{4}$$

where $\phi_g(k)$ captures the gender-specific burden of childcare, with $\phi_f(k) > \phi_m(k)$ reflecting social norms or constraints placing a higher burden on women. The term Φ is a shift parameter representing the flexibility of the work environment. In our baseline, $\Phi = 1$. In counterfactuals, the adoption of Work-from-Home (WFH) technologies lowers $\Phi < 1$, reducing the effective cost of reconciling work and caregiving.

3.1.3 Recursive Formulation

In each period of the working life, the state vector is $S_j = (a, z_m, z_f, o_m, o_f, k)$. The household chooses consumption c, savings a', and labor supply h_m, h_f from a discrete set $\mathcal{H} = \{0, 0.5, 1, 1.25\}$ (non-employment, part-time, full-time, overtime).

Occupational switching is frictional. Opportunities to switch occupations arrive with probability $\lambda_o(j)$. If a switch is possible, the household may pay a utility cost to change o.

The household's problem in the working life can thus be written as:

$$V_j^{o_f,o_m}(a,z_f,z_m,k) = \max_{c,h_f,h_m} \Bigg\{ k\frac{(c/k)^{1-\alpha}}{1-\alpha} - \varphi\frac{(h_m)^{1+\nu}}{1+\nu} - \varphi\frac{(h_f)^{1+\nu}}{1+\nu} - \mathcal{C}(h_f,h_m,k) + \beta\, E_j \Bigg[\lambda_o(j) V_{j+1}^{o_f,o_m}(a',z_f',z_m',k') + (1-\lambda_o(j)) \max_{o_f',o_m'} \{ V_{j+1}^{o_f',o_m'}(a',z_f',z_m',k') - \delta \} \Bigg] \Bigg\} \tag{5}$$

subject to:

$$c + a' = a(1+r) + y^{o_f}(z_f,h_f,j) + y^{o_m}(z_m,h_m,j) - T(y_m+y_f) \tag{6}$$

$$z_f' = \rho z_f + f^{o_f}(h_f) + \epsilon \tag{7}$$

$$z_m' = \rho z_m + f^{o_m}(h_m) + \epsilon \tag{8}$$

$$a' > \underline{a} \tag{9}$$

where $\mathcal{C}(h_f,h_m,k)$ represents the utility cost of childcare, y^{o_i} is the occupation-specific earnings function, and ϵ captures idiosyncratic productivity shocks. The term $\lambda_o(j)$ denotes the probability of an occupational switching opportunity arriving, and δ represents the utility cost of switching occupations.

3.2 Initial Career Choice

We assume that individuals make an initial career choice at age $j = 0$, prior to forming a household and entering the labor market. This decision is based on the maximization of expected lifetime utility, taking into account the future value of marriage and labor market outcomes.

Let $o_x \in \mathcal{O}$ denote the occupation choice for gender $x \in \{m,f\}$. Individuals face occupation-specific entry costs, denoted by $\Omega(o_x)$, which capture barriers to entry such as educational requirements or training costs, and varies across occupations as well as genders. In addition to these structural costs, individuals are subject to idiosyncratic taste shocks for each occupation, distributed according to a Gumbel distribution.

The value of choosing occupation o_x is determined by the expected value of the household formed in the first period of the working life ($j = 1$). Since matching in the marriage market is assortative with respect to occupation, individuals form expectations over the occupation of their future spouse. Let $\Pr(o_{x'}|o_x)$ be the probability of matching with a spouse of occupation $o_{x'}$ conditional on one's own choice o_x. This probability distribution captures the degree of assortative mating observed in the data.

Formally, the problem for an individual of gender x at age $j = 0$ is:

$$V_{init}(o_x) = \max_{o_x \in \mathcal{O}} \left\{ \sum_{o_{x'}} \left[\hat{V}^{o_x, o_{x'}} - \Omega(o_x) \right] \Pr(o_{x'} | o_x) + \epsilon_{o_x} \right\} \tag{10}$$

where $\hat{V}^{o_x, o_{x'}}$ represents the expected value of a household with occupational composition $(o_x, o_{x'})$ at the start of the working life:

$$\hat{V}^{o_x, o_{x'}} = \int \int \int \int V_1(a_0, z_{m,0}, z_{f,0}, o_x, o_{x'}, k_0) \, dF(a_0, z_{m,0}, z_{f,0}, k_0) \tag{11}$$

The integral is taken over the initial distribution of assets a_0, productivities $(z_{m,0}, z_{f,0})$, and family status k_0. The term ϵ_{o_x} represents the taste shock.

3.3 Retirement

At age $J^W + 1$, both individuals retire simultaneously and live for a maximum of J^R periods. During this phase, households face a simplified consumption-savings problem subject to mortality risk. Labor income is replaced by a pension system that depends on the permanent income accumulated during the working life.

Let y denote the household's permanent income at the time of retirement. We assume a joint pension system with a replacement rate ζ. Households face individual mortality risk ξ_j, which is age-dependent but not gender-specific. The household state is augmented by a demographic variable $d \in \{1, 2\}$, indicating whether the household comprises a couple or a single survivor.

If one spouse dies, the household transitions to a single household ($d = 1$) and receives a survivor's pension equal to $\hat{\zeta}$ fraction of the joint pension. If the single member dies (or both members of a couple die simultaneously), the household dissolves and leaves a bequest, from which they derive utility via a "warm-glow" motive $B(a')$.

The value function for a retired household at age $j > J^W$ is given by:

$$\begin{aligned} W_j(a, y, d) = \max_{c, a'} \Bigg\{ & \frac{(c/d)^{1-\alpha}}{1-\alpha} + \beta \Big[\xi_j^d W_{j+1}(a', y, d) \\ & + \mathbb{I}[d = 2] 2\xi_j (1 - \xi_j) W_{j+1}(a', y, d-1) \\ & + (1 - \xi_j^d) B(a') \Big] \Bigg\} \end{aligned} \tag{12}$$

subject to the budget constraint:

$$c + a' = a(1 + r) + \left[\zeta \cdot \mathbb{I}[d = 2] + \hat{\zeta} \cdot \mathbb{I}[d = 1] \right] y \tag{13}$$

and the borrowing constraint $a' \geq \underline{a}$. The term ξ_j^d represents the probability that the household structure remains unchanged (both survive or the single survivor survives). The

second term in the expectation captures the transition from a couple to a single household due to the death of one spouse. The final term captures the utility from bequests in the event of the death of both individuals in the household, i.e. household dissolution.

3.4 Aggregate Production

Labor markets are competitive, and wages are determined by an aggregate production function that combines capital (K_t) with a labor aggregate (L_t). We assume a Constant Elasticity of Substitution (CES) technology:

$$Y_t = A_t \left(\Theta_K K_t^{\frac{\epsilon_K - 1}{\epsilon_K}} + (1 - \Theta_K) L_t^{\frac{\epsilon_K - 1}{\epsilon_K}} \right)^{\frac{\epsilon_K}{\epsilon_K - 1}} \tag{14}$$

where A_t represents total factor productivity, Θ_K is the share parameter for capital, and ϵ_K governs the elasticity of substitution between capital and labor.

The aggregate labor input L_t is itself a CES composite of labor services supplied in different occupations. Let $o \in \mathcal{O}$ index occupations. The labor aggregator is defined as:

$$L_t = \left(\sum_{o=1}^{O} \Theta_o \left\{ \int \left(y^o(l^m(s)) p^m e^m + y^o(l^f(s)) p^f e^f \right) d\lambda(s) \right\}^{\frac{\epsilon_L - 1}{\epsilon_L}} \right)^{\frac{\epsilon_L}{\epsilon_L - 1}} \tag{15}$$

Here, Θ_o represents the weight of occupation o in aggregate production, and ϵ_L is the elasticity of substitution between occupations. The term inside the integral represents the total efficiency units of labor supplied to occupation o by men and women, integrated over the distribution of households $\lambda(s)$. Within a given occupation, male and female labor are assumed to be perfect substitutes.

This production structure allows relative wages between occupations (e.g., linear vs. non-linear) to respond endogenously to changes in labor supply, capturing general equilibrium effects. For instance, a large inflow of workers into non-linear occupations will, ceteris paribus, depress the wage premium for that sector through the parameter ϵ_L.

4 Calibration

The model is solved and calibrated to match key features of labor supply, human capital accumulation, and occupational sorting observed in U.S. microdata, including the Current Population Survey (CPS), the American Time Use Survey (ATUS), and the Panel Study of Income Dynamics (PSID). Our calibration strategy proceeds in two steps. First, we fix a set of parameters based on standard values established in the macro-labor literature or estimated directly from empirical evidence independent of our model structure. Second, the remaining structural parameters, primarily those governing preferences and technology, are estimated using the **Method of Simulated Moments (MSM)**, targeting a set of key moments describing household labor supply and occupational sorting patterns.

4.1 Externally Calibrated Parameters

Table 1 summarizes the parameters set *a priori*. These parameters govern discount rates, risk aversion, the human capital accumulation process, and demographic profiles.

Preferences and Demographics: We set the time discount factor β to 0.96 and the inverse of the elasticity of intertemporal substitution (EIS), α, to 2, consistent with standard values used in heterogeneous agent models. The curvature of the disutility of hours worked, ν, is set to 0.5. The working life spans $J^W = 40$ periods (ages 25–64), and the retirement period $J^R = 25$ periods (ages 65–90). The interest rate R is fixed at 1.04. Mortality risk ξ_j is taken from Social Security actuarial life tables, and the joint pension replacement rate ζ is set to 0.4, with the single-survivor rate $\hat{\zeta}$ at 75% of the joint rate. Fertility probabilities, $\rho^k(j)$, are taken directly from the CPS fertility supplement to match the proportion of households with a child by age.

Human Capital and Production: The productivity process z is parameterized using evidence on wage dynamics. The persistence parameter ρ^z is set to 0.92, following Carter et al. (2025), and the variance σ_z is set to 0.2. The occupation-specific returns to hours worked, θ_j^o, are fixed at $\{1, 1.2 - 1.4\}$ to reflect the non-linear returns in the high-return occupation, based on Aaronson and French (2004). The process for human capital drift, $P(z', h)/\Delta$, which captures wage growth as a function of hours worked, is set to match PSID wage loss/return estimates for different labor supply choices. Finally, the elasticity of substitution between non-linear (NL) and linear (L) occupations, ϵ_L, is fixed at 1.6 based on the college premium (Autor, Katz, and Kearney, 2008).

4.2 Internal Calibration via Simulated Moments

The remaining structural parameters, which are central to the mechanism of occupational choice and the child penalty, are estimated using the Method of Simulated Moments (MSM). The estimated parameters include the non-pecuniary costs of hours worked (φ), the parameters of the childcare cost function (ϕ and Φ), the deterministic component of the

Table 1: Externally Calibrated Parameters

Parameter	Symbol	Value	Source
Preferences			
Discount factor	β	0.96	standard
1/EIS	α	2	standard
Hours utility curvature	ν	0.5	standard
Earnings and Occupations			
Non-linear pay parameter	θ_j^o	$\{1, 1.2 - 1.4\}$	Aaronson and French (2004)
Prod. persistence	ρ^z	0.92	Braxton et. al (2024)
Prod. variance	σ_z	0.2	standard
Prod. drift (no work)	$P(z', h = 0)/\Delta$	-0.025	PSID wage loss
Prod. drift (full time)	$P(z', h = 1.0)/\Delta$	0.03	PSID wage return
Elasticity of NL-L substitution	ϵ_L	1.6	Autor et al (2008)

life-cycle human capital profile ($l^o(j)$), and the cost-barriers to initial occupational choice ($\Omega(o_x)$).

Specifically, we target the following key moments.

Labor Supply Composition: The share of males and females in part-time (PT), full-time (FT), and overtime (OT) status. This helps identify the disutility of hours worked, φ.

Child Penalty: The difference in employment rates for mothers (fathers) with young children (< 45) versus those with older children. This identifies the parameters of the childcare cost function, $\phi^m_{\text{young}}, \phi^f_{\text{young}}, \phi^m_{\text{old}}, \phi^f_{\text{old}}$.

Human Capital Profiles: The wage growth profiles for men in both non-linear and linear occupations over the life cycle (ages 25–50), and the non-linear wage premium. This identifies the coefficients $\mu_o, \gamma^1_o, \gamma^2_o$ of the deterministic productivity component $l^o(j) = \mu_o + \gamma^1_o \text{age} + \gamma^2_o \text{age}^2$.

Occupational Sorting: The initial occupational distribution of men and women, which identifies the cost-barriers to occupational entry, $\Omega(o_x)$.

The effectiveness of WFH is captured by a reduction in the childcare cost scale, Φ. In our counterfactual analysis, the required reduction in childcare cost Φ_{WFH} is calibrated to match the observed **short-run increase** in maternal labor force participation following the pandemic, targeting the change in the motherhood penalty employment rate to capture the child penalty, following Harrington and Kahn (2025). This target suggests a reduction to $\Phi = 0.737$.

4.3 Targeted Moments and Model Fit

Table 2 presents the comparison between the targeted moments in the data and the corresponding moments generated by the calibrated model. The model generally achieves a good fit, particularly with respect to the relative differences across genders and family status.

Table 2: Targeted Moments: Data vs. Model

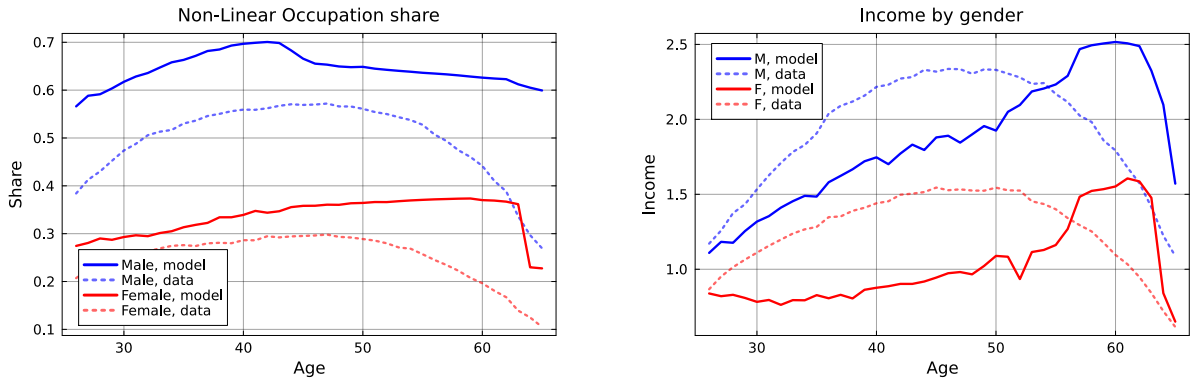
Calibration Moment	**Data (%)**	**Model (%)**
Male		
Part time	7.8	13.9
Full time	27.8	24.0
Over time	43.0	41.8
Emp. rate (<45) young child	11.8	7.6
Emp. rate (<45) old child	10.6	11.5
NL wage growth age 25 to 50	84.1	68.1
Linear wage growth age 25 to 50	33.5	40.0
Non-linear wage premium	40.0	24.1
Female		
Part time	15.4	26.8
Full time	32.9	17.2
Over time	15.0	12.6
Emp. rate (<45) young child	-20.5	-17.9
Emp. rate (<45) old child	-17.9	-11.3

While some moments show modest deviations, the crucial moments related to occupational sorting (wage growth/premium) and the child penalty (young/old child employment rates) are closely matched. The fit to life-cycle profiles for occupational sorting and income successfully replicates the substantial gap in non-linear occupation share and the lower level and slower income growth trajectory for women.

4.4 Model Fit

To assess the model's performance beyond the targeted moments reported in Table 2, we examine its ability to replicate the dynamic life-cycle profiles of occupational sorting and earnings. Figure 4 compares the model-simulated profiles (solid lines) against the data moments derived from the CPS (dashed lines).

Figure 4: Model fit



Occupational Sorting. The left panel of Figure 4 plots the share of the employed population working in non-linear ("greedy") occupations by age and gender. The model successfully reproduces the large and persistent gender gap observed in the data. Males: The model captures the hump-shaped profile of male participation in non-linear sectors, rising early in the career as human capital accumulates and declining as retirement approaches.

Females: Crucially, the model generates the significantly lower participation rate of women in non-linear jobs throughout the life cycle. The simulation captures the flattening of the female profile during prime child-rearing years, consistent with the hypothesis that family constraints deter women from entering or staying in high-intensity occupations.

Income Profiles. The right panel displays the life-cycle income profiles. While the model is parsimonious, it successfully replicates the qualitative divergence in earnings power between genders: The model generates a steep income growth trajectory for men, driven by the dynamic returns to hours worked (z') and the static premium (θ_o) in non-linear jobs. For women, the model reproduces the much flatter income profile. This stagnation results from a combination of lower hours worked (part-time penalties) and selection into linear occupations with lower wage growth potential.

5 Quantitative Results

We analyze the impact of increased workplace flexibility—modeled as a reduction in the childcare cost parameter Φ due to the prevalence of Work-from-Home (WFH)—on labor supply, occupational choice, and the gender wage gap. We distinguish between the short-run transition dynamics, where existing cohorts are largely locked into previous occupational choices, and the long-run equilibrium, where new cohorts can re-optimize their initial career paths.

Change in work from home: We calibrate the change in Φ by targeting the increase in the labor force participation rate of women with young children between 2019 and 2023-24. On average, females in this group increased their participation by 2.3 percentage points. In comparison, fathers with children showed no obvious change (Figure 5). In the model, we target the *change* in the difference in the employment rate conditional on age between females with and without a child. We target this in the first year of our short-to-medium run experiment. This implies a post-treatment WFH parameter of 0.737.

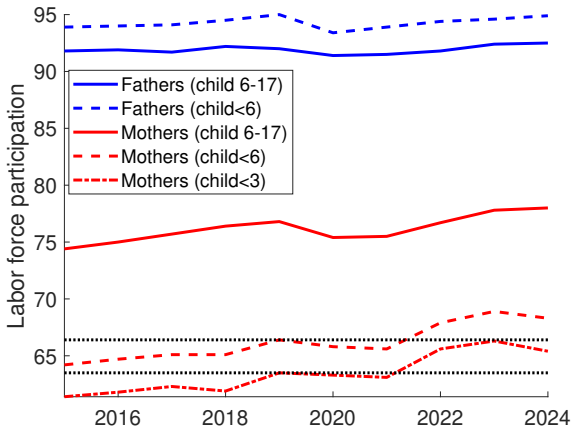
5.1 Short to Medium Run Transition Dynamics

First, we study the short- to medium-run impact of the WFH shock. To do this, we initialize the distribution of initial matches, occupational choices, and asset holdings at their baseline levels. In year one, the work-from-home parameter declines from 1 to 0.737. We solve

forward the choices of households for five years. The exercise is partial equilibrium with prices kept fixed at their steady-state level.

The frictional nature of occupational choice means that initially the response is modest. Agents can only switch occupations when an occupation-switching opportunity arrives, governed by $\lambda_o(j)$.[1]

Figure 5: Change in labor participation post 2020

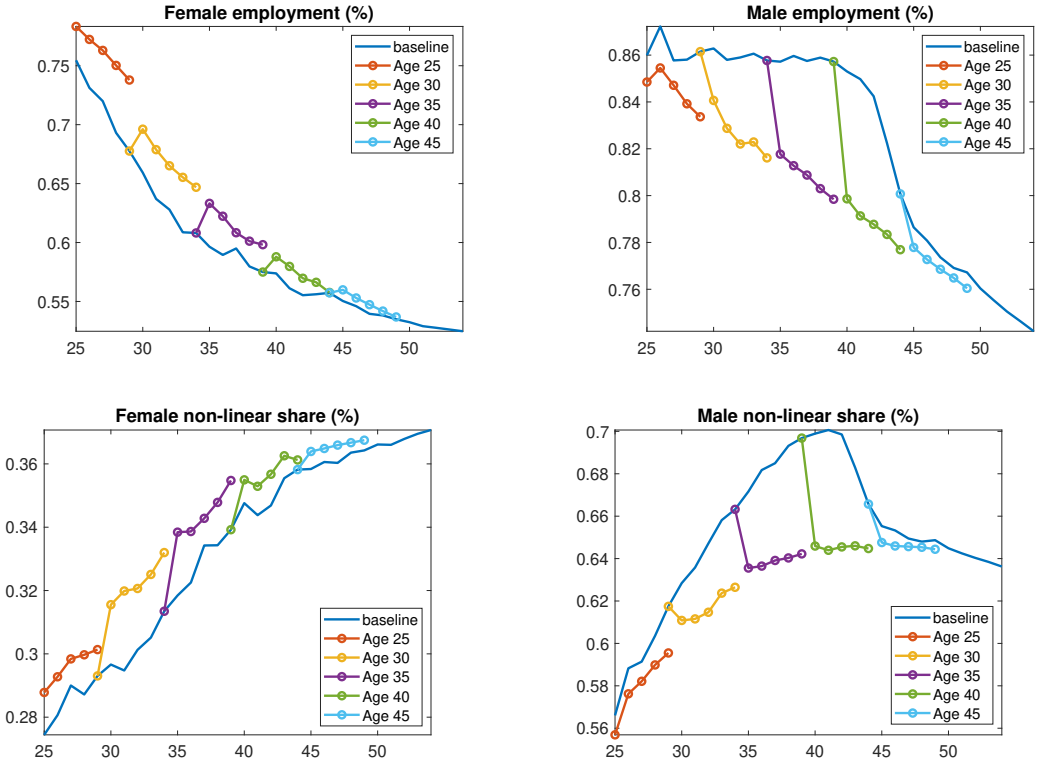


The response of male and female employment and the share of household members working in non-linear occupations is shown in Figure 6. On impact, female employment increases slightly and male employment declines. Due to the income effect, men choose to work less, particularly in high-female-productivity, low-male-productivity households.

We also observe a modest rise in the share of women working in non-linear ("greedy") occupations. The change in the respective employment rates increases the share of all women in non-linear jobs and lowers the share of all men in non-linear jobs. These changes occur at the extensive labor supply margin. Indeed, the magnitude of the change in the occupational shares approximately follows the change in employment. Conditional on employment, a different pattern emerges (see Appendix, Figure x). The female non-linear share declines while the male non-linear share is fairly constant (with a slight decline at later working ages). In the short run, most of the change in the occupation structure occurs through labor supply decisions. Females in linear occupations are the marginal workers with respect to the extensive labor supply margin. They increase their supply (participation decision) by more than non-linear women currently not participating. Thus, conditional on employment, females' non-linear occupational share actually falls in the short run. By contrast, men move out of employment fairly equally in proportion to the baseline occupation shares. It is also interesting to examine the life-cycle pattern of these changes. As shown in the cohort-specific responses for different age groups, the effect is larger for younger women (ages 25–35) who face the highest childcare burdens and have a longer horizon to reap the benefits of human capital accumulation. The stock of older

[1] In addition, households must incur a utility switching cost to change occupation.

Figure 6: Short-run response



workers remains largely in their pre-shock career paths, limiting the aggregate change in the gender gap. Men actually respond most strongly in mid-career. Due to the impact on reduced capital accumulation, this lowers the slope of the life-cycle profile of male employment and the non-linear share.

5.2 Long-Run Occupational Reallocation

In the long run, new cohorts enter the labor market, anticipating the higher flexibility provided by WFH. This allows for a full adjustment of initial career choices ($j = 0$), leading to substantial occupational reallocation and a much stronger overall response. In addition, the wages of linear and non-linear occupations adjust in response to the changed supply of labor.

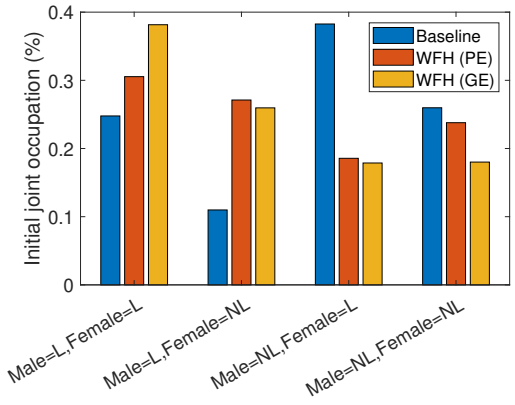
5.3 Occupational sorting

We find in the new equilibrium that there is a significant shift in the sorting patterns of households.

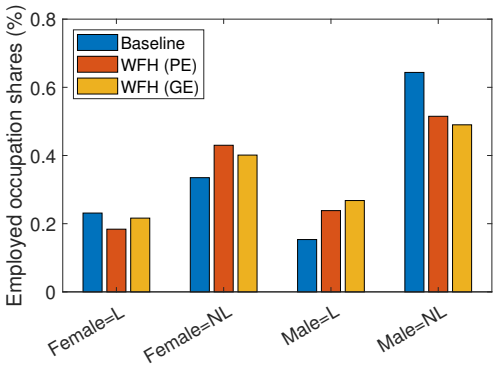
Initial sorting: In the baseline, a large proportion of households consist of men in non-linear occupations and women in linear occupations. In the WFH counterfactual, this pattern changes dramatically. Figure 7, Panel a, shows the initial joint occupational choices made by households before entering the labor market. Males and females make their decisions separately before matching in the marriage market. Not all of these households

Figure 7: Occupational sorting

(a) Initial sorting



(b) Life-cycle shares



will participate given their chosen occupation. We observe a marked increase in women choosing non-linear occupations. The reduction in the childcare penalty allows women to enter high-return careers that were previously incompatible with family responsibilities. Conversely, we observe a shift of men towards linear occupations. Overall, this leads to a significant increase in the proportion of households where the female specializes in the non-linear occupation and a decline in the share of households where men specialize in the linear occupation. Interestingly, we also notice an increase in households where *both* males and females choose the non-linear occupation and, perhaps more surprisingly, a decline in the share of households where both work in the greedy sector. This is due to the large decline in men choosing linear occupations. As childcare has effectively become less specialized, the household can select the family member with lower productivity to stay at home. New patterns of occupational sorting are further reinforced by the general equilibrium channel, which sees relative wages rise in the linear sector.

Life-cycle allocations: The initial pattern of sorting provides an incomplete picture of household sorting as members choose new occupations along the life cycle and not all agents choose to work. Panel b shows the life-cycle shares conditional on employment. Here we still see the fall in males choosing non-linear occupations and the increase in females choosing non-linear occupations. It is also clear that men largely substitute to linear occupations. Conversely, after taking into account the GE effect, the share of females in linear occupations is fairly constant. This implies that in contrast to the short-run effect, in the long run for women most of the action is from non-participation to employment in the non-linear sector. These shifts result in a substantial rise in the aggregate share of women employed in the "greedy" non-linear sector, narrowing the occupational segregation gap.

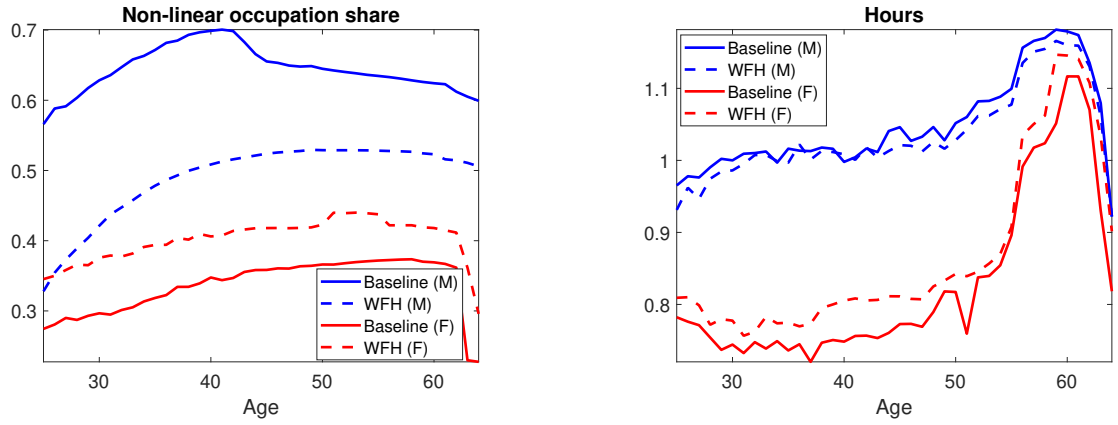
5.4 Life-cycle Implications

Occupational Persistence: Next, we consider the life-cycle implications of the long-run changes. The structural changes induced by WFH fundamentally alter the life-cycle

profiles of female labor supply (Figure 8). Mirroring the new pattern of occupational sorting, the share of women in non-linear occupations starts higher at labor market entry and remains higher throughout the life cycle. This contrasts with the baseline, where women continuously exit high-intensity careers as family demands grow. By contrast, men initially reallocate away from non-linear occupations. However, part of this is undone during the life cycle, with the male non-linear share increasing. This in part reflects that (a) men increasingly match in joint linear occupation households and that (b) females still have a comparative advantage in childcare.

Hours worked: After households have fully responded to the new work-from-home regime, females supply more hours. Total hours supplied by women rise by 3.5 percent (Table 3). In part, this is a response to the higher returns to working longer hours in the non-linear sector. Further, in the baseline, female hours exhibit a characteristic "dip" during the child-rearing years (ages 30–40). Under the WFH regime, this dip is significantly smoothed. Women maintain higher hours during the peak childcare years, preventing the depreciation of human capital that typically exacerbates the child penalty. Offsetting this is a decline in male labor supply. The size of this decline is smaller, and it occurs throughout the life cycle.

Figure 8: Long run response



5.5 General Equilibrium Effects

The large-scale entry of women into non-linear occupations generates general equilibrium (GE) effects on wages. The increased supply of labor in the non-linear sector exerts downward pressure on the non-linear wage (W_{NL}) and upward pressure on the linear wage (W_L). In relative terms, the wage of a unit of productivity supplied to the linear sector rises by 1.6 percent.

Table 3 presents aggregate responses for both the medium run and long run, with and without GE effects. Comparing the partial equilibrium results, where wages are held fixed, to the GE results reveals the importance of these price adjustments and indicates that the GE channel is crucial to incorporate to understand the long-run quantitative impact

of flexible work policies. The patterns also reveal the much larger changes that occur in the long run relative to the short run, when households can fully re-optimize their occupational decisions and human capital adjusts.

Table 3: Aggregate responses

Change	Male			Female		
	5-years	P.E.	G.E.	5-years	P.E.	G.E.
Income	-3.6	-8.0	-9.2	1.2	15.7	12.8
Employment (p.p.)	-1.9	-4.5	-3.3	2.0	5.0	5.7
Employment with young child (p.p.)	0.0	-9.9	-7.8	2.7	3.9	5.4
Hours	-1.1	-1.2	-1.7	-1.6	5.5	3.5
Wages	-1.4	-1.2	-3.1	-1.9	2.3	0.2
Non-linear share (p.p.)	-1.6	-13.2	-19.5	1.3	9.9	2.3

As a headline finding, we find that income of males falls by 9.2 percent while the income of females rises by 12.8 percent. Total household income actually remains fairly unchanged. The size of this change is much larger than the medium-run responses after 5 years (males: -3.6 percent, females: 1.4 percent). Male incomes fall by more in GE due to their reliance on non-linear occupations, and rise by less for women, with much of the gain coming from reallocation to the greedy sector.

Income rises due to a combination of changing employment, hours, and wages, with the employment margin being the largest contributor. A particularly large decline in the employment of men with young children is seen in the long run (-7.8 percent), but such an effect is absent after 5 years. Women supply more hours (3.5 percent) and men work less (-1.7 percent). The long-run effects are about double the medium-run impact. GE effects cause both men and women to supply fewer hours as wages fall in the occupation where longer work is rewarded.

As has already been emphasized, much of the response occurs via occupational reallocation. In partial equilibrium, the share of women in non-linear occupations rises by approximately 9.9 percentage points. The drop in (W_{NL}) makes greedy jobs less attractive. In general equilibrium, the falling non-linear wage dampens this incentive, resulting in a smaller but still significant increase of 2.3 percentage points. For men, the GE effects reinforce the exit from non-linear jobs, with a large 19.5 percentage point decline in the share working in the non-linear sector. Overall, the GE effects significantly narrow the gender gap in earnings and employment, although they mute the quantity adjustment seen in partial equilibrium. As a result of more flexible work, the "child penalty" in long-run earnings is significantly reduced, as women are able to sustain careers in high-return sectors during the critical early phase of family formation.

6 Conclusion

We develop a dynamic life-cycle model of household labor supply and occupational choice to quantify the role of workplace flexibility in determining the gender earnings gap. By modeling the trade-off between "greedy" occupations—which reward long hours but lack flexibility—and flexible "linear" occupations, we replicate the persistent sorting of women into lower-paying jobs and the resulting stagnation of female human capital.

Our counterfactual analysis of the post-pandemic rise in Work-from-Home (WFH) yields three key insights. First, labor market adjustments are sluggish. In the short run, existing cohorts are "locked in" to prior career choices, limiting aggregate changes in the gender gap mostly to intensive margin responses. Second, in the long run, the reduction in childcare costs drives a significant reallocation: new cohorts of women increasingly select into high-return, non-linear occupations, substantially narrowing the life-cycle gender gap in earnings and human capital. Third, general equilibrium effects are crucial; the influx of women into "greedy" jobs dampens the skill premium, which mitigates the pure quantity adjustment but reinforces the closing of the gender income gap.

These findings suggest that while remote work offers a pathway to reducing gender inequality, the full benefits will materialize slowly as new cohorts replace older ones. Future policy design should account for this inertia and the critical role of occupational sorting in sustaining the child penalty.

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