Workplace Flexibility in a Search Model
DRAFT

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1 Introduction

Researchers have been trying to understand why there exists a positive relationship between wages and job amenities, like workplace flexibility (Mas and Pallais, 2020, Maestas et al., 2018). The theory of compensating wage differentials predicts that individuals with a valued amenity, like workplace flexibility, pay for this amenity through lower wages. Papers implementing field and discrete choice experiments find that workers value flexibility through higher application rates or through positive willingness to pay estimates (He et al., 2021, Mas and Pallais, 2017). On the firm side, a slow uptake of flexibility has been accredited to concerns of shirking and decreased productivity. However, a case study has shown that providing flexibility increased productivity and decreased firm costs (Bloom et al., 2015).

This paper utilizes a search model framework to understand the benefits (or costs) of workplace flexibility to both workers and firms. The model allows for flexibility to impact worker's utility and firm's productivity and costs to understand why there is a positive relationship between wages and workplace flexibility.

Search models have been applied to questions regarding compensating wage differentials in an attempt to understand why inconsistencies in the signs of amenities in hedonic wage equation estimation of differentials exist. The addition of search frictions can lead to an observed wage-amenity equilibrium that does not resemble worker preferences (Hwang et al., 1998). Indeed, search models have been successful in uncovering the expected sign of wage differentials due to worker preferences for amenities when there is unobserved heterogeneity (Bonhomme and Jolivet, 2009; Flabbi and Moro, 2012). To the best of my knowledge, this is the first paper to estimate the firm productivity and cost of non-pecuniary amenities in a search model. Previous search models with compensating wage differentials have focused on the utility or labor market equilibrium effects of amenities.

Using data from the American Time Use Survey 2017-18 Leave Module, the model can be applied to two types of flexibility: in work schedule and work location. Previous papers have been limited to one definition of flexibility due to data constraints.

The results suggest that the observed positive relationship between wages and flexibility are driving by productivity increases and cost savings of remote workers. Workers with access to flexibility are 23% to 38% more productive than their inflexible counterparts. Furthermore, firms experience significant cost savings when they have a flexible workforce.

The paper is structured as follows: the model is presented in Section 2 and identification is discussed in Section 3. Data is described in Section 4 prior to presentation of the results in Section 5. Section 7 concludes.

2 Model

This paper presents a search model in stationary, continuous time. There are two types of agents in the model: individuals, denoted i and firms, denoted j, who share a common discount factor ρ. Individuals i are employed with utility $u(w, k; \gamma) = w + \gamma f$ or unemployed with flow (dis)utility b. The utility weight of flexibility, γ, is any real number.

Firms are endowed with flexibility level $f \in F = \{0, 1, 2, ...F\}$ in which they offer employees flexibility f at cost $c(f)$ where the only assumption on the cost function is that $c(0) = 0$. The probability of a firm being type f is p_f where $p_f > 0 \; \forall f$ and $\sum_{f=0}^{F} p_f = 1$. Firms have a production function $y(x, f)$ of some numeraire good and maximize profits $\pi(x, f)$ subject to the cost of labor w and the cost of providing flexibility $c(f)$, thus $\pi(x, f) = y(x, f) - w - c(f)$. We assume $y(x, f) = \zeta^f x$, and ζ is any positive number.

The labor market is characterized by Poisson processes that model search frictions. Unemployed individuals meet firms following Poisson process with parameter λ. With probability p_f they have met with a firm of type f and draw match-specific productivity $x \sim G(x)$. After observing the match-specific productivity, the wage w is determined by Nash bargaining with parameter α. Employed workers face a termination shock following a Poisson process with parameter η.

The model allows for workplace flexibility to impact both workers and firms, but does not make any assumptions as to whether flexibility is a benefit or drawback. Workers experience some utility benefit or reduction from matching with a firm with some flexibility level. For simplicity, this utility parameter interacts with flexibility linearly.[1] Flexibility enters the firm problem in two places: the productivity effect and cost. If we were to allow firms to determine their optimal flexibility provision, where marginal benefit equals marginal cost, we would have infinitely many solutions without setting either the cost or the productivity gain. In order to estimate the productivity and cost of flexibility, we must introduce an exogenous process for the distribution of firm types.

2.1 Value Functions

Value of unemployed individuals is given by

$$U = b\Delta t + \frac{1}{1+\rho\Delta t}\left((1-\lambda\Delta t)U + \lambda\Delta t\sum_k p_f \int \max\{U, W\left(w(x,f),k\right)\}dG(x) + o\Delta t\right)$$

in discrete time and

$$U = \frac{1}{\rho+\lambda}\left(b + \lambda\sum_k p_f \int \max\{U, W\left(w(x,f),k\right)\}dG(x)\right) \tag{1}$$

in continuous time. The value of unemployment takes into account the flow (dis)utility of being unemployed b and the potential for meeting an employer with probability λ characterized by flexibility level f with probability p_f. When an employee and employer meet, the match-specific productivity x is drawn from the distribution G, wages are determined through Nash bargaining, and the employee decides whether to accept the offer and receive the value of employment $W(w(x,f))$ or to reject the offer and receive the value of unemployment U in the next period.

[1]Given estimation on binary flexibility, it would not be different to allow for some curvature; i.e. $u(w,k;\gamma) = w + k^\gamma$.

The value of employed workers is given by

$$W(w,f) = (w + \gamma f)\,\Delta t + \frac{1}{1+\rho\Delta t}\left((1-\eta\Delta t)W(w,f) + \eta\Delta t U + o\Delta t\right)$$

in discrete time and

$$W(w,f) = \frac{1}{\rho+\eta}\left(w + \gamma f + \eta U\right) \tag{2}$$

in continuous time. The value of employment is the sum of the flow linear utility in wage and the probability of termination η times the value of unemployment U scaled by the sum of the discount rate ρ and probability of termination η.

2.2 Wage

When employers and employees meet, the match-specific productivity x is drawn from distribution $G(x)$ and observed by both parties. The wages are determined by Nash bargaining; the wage maximizes the worker surplus and firm surplus of the match weighted by the bargaining parameter α.

$$\begin{aligned} w^* &= \arg\max_w \left(W(w,f) - U\right)^\alpha \left(y(x,f) - w - c(f)\right)^{1-\alpha} \\ \implies w^*(x,f) &= \alpha\left(y(x,f) - c(f)\right) + (1-\alpha)\left(\rho U - \gamma f\right) \\ &= \rho U - \gamma f + \alpha\left(y(x,f) - c(f) + \gamma f - \rho U\right) \end{aligned} \tag{3}$$

The relationship between wages w and flexibility f is ambiguous. Holding match-specific productivity constant, we see wages increasing in flexibility if the firm surplus of providing flexibility is greater than the worker surplus of having flexibility, which can happen in two ways: the productivity gain of flexibility ζ is very high relative to the marginal cost of providing flexibility or the utility gain from flexibility γ is very low or even negative. As we have seen that wages are increasing in flexibility, the question now is whether this is driven by productivity gains to the firm or flexibility being a disamenity to the worker.

2.3 Reservation Values

We can determine the reservation value of productivity x when firms and individuals meet by finding the productivity where individuals are indifferent on accepting the offer $(W(x,f) -$

$U = 0$) and firms satisfy the zero profit condition ($\pi(x, f) = 0$). This occurs at

$$\begin{aligned} y(x^R, f) &= c(f) + \rho U - \gamma f \\ x^R &= \frac{1}{\zeta^f}\left(c(f) + \rho U - \gamma f\right) \end{aligned} \tag{4}$$

Because there is a one-to-one relationship between wage w and match-specific productivity x, we can alternatively find the reservation wage w^* at

$$w^R(f; \rho U) = \rho U - \gamma f \tag{5}$$

If flexibility is valued ($\gamma > 0$), then we see the expected trade-off between wages and flexibility. However, if flexibility is not valued, ($\gamma < 0$), workers will have to be compensated in wages for a job with flexibility.

Rearranging to the wage equation (3), we see that the optimal wage schedule provides workers with their reservation value ($\rho U - \gamma f$) plus an α portion of the sum of the surplus to the firm ($y(x, f) - c(f)$) and the surplus to the worker ($\gamma f - \rho U$)

2.4 Equilibrium

By combining equations 1, 2, 3, we find that the value of unemployment is given by

$$U = \left(\rho + \lambda + \frac{\alpha\rho\lambda}{\rho + \eta}\right)^{-1}\left(b + \frac{\alpha\lambda}{\rho + \eta}\sum_{f=0}^{F} p_f \left(\int_{x^*} y(x, f) dG(x) - c(f)\right)\right) \tag{6}$$

If we let production function be $y(x, f) = \zeta^f x$, the value of unemployment becomes

$$U = \left(\rho + \lambda + \frac{\alpha\rho\lambda}{\rho + \eta}\right)^{-1}\left(b + \frac{\alpha\lambda}{\rho + \eta}\sum_{f=0}^{F} p_f \left(\int_{\frac{1}{\zeta^f}(c(f) + \rho U - \gamma f)} \zeta^f x dG(x) - c(f) + \gamma f\right)\right) \tag{7}$$

3 Identification

The identification of the model is discussed in this section, with the only data requirements of wage and flexibility status for employed individuals and unemployment duration for unemployed individuals.

Assume that $G(x)$ is log-normal with location parameter μ and scale parameter σ. The only restriction on the cost function is that there no cost if the firm does not provide flexibility,

$c(0) = 0$; thus, we will set the cost function to be linear, that is $c(f) = cf$. Following Flinn and Heckman, 1982, we set ρU to the minimum observed wage. Following the literature, we set bargaining parameter $\alpha = 0.5$.

One part of the contribution of employed individuals comes from the accepted wage distribution $\{w_i\}_{i \in E}$ which gives the distribution of wages conditional on a match being formed. Following Bayes' Rule, the conditional distribution can be written as the joint distribution of a wage and a match over the probability of a match (see the left-hand side of equation 8). Because the firm's production function is linear in x, $y(x, f) = \zeta^f x$, there is a bijection between wage w and productivity x.

$$\begin{aligned} w(x,f) &= \alpha\left(\zeta^f x - cf\right) + (1-\alpha)\left(\rho U - \gamma f\right) \\ \implies x(w,f) &= \frac{1}{\alpha\zeta^f}\left(w + \alpha cf - (1-\alpha)\left(\rho U - \gamma f\right)\right) \sim G(x) \end{aligned}$$

Given the distribution of match-specific productivity, $x \sim G(x)$, we know that the probability of a wage and match is given by the numerator of equation 8. The observed wages are conditional on a match being made; the equilibrium equation 7 tells us that the reservation productivity is $x_k^* = \frac{1}{k}\left(\rho U + c(f)\right)$, so the the denominator of equation 8 is the complement of the cumulative distribution function.

$$\Pr(wage|match) = \frac{\Pr(wage \cap match)}{\Pr(match)} = \frac{\frac{1}{\alpha\zeta^f} g\left(\frac{1}{\alpha\zeta^f}\left(w + \alpha cf - (1-\alpha)\left(\rho U - \gamma f\right)\right)\right)}{1 - G\left(\frac{1}{\zeta^f}\left(\rho U + cf - \gamma f\right)\right)} \tag{8}$$

The other contribution of employed individuals comes from the probability of being employed, which can be derived by the steady-state assumption. First, we want to find the Using the hazard out of employment, which is the joint probability of meeting with a firm and matching with the firm. Unemployed individuals meet with the firm at rate λ and match with a firm of type f if the match-specific productivity draw is greater than the reservation value $x_k^* = \frac{1}{\zeta^f}\left(\rho U + c(f) - \gamma f\right)$. The hazard rate is given by equation 9

$$\begin{aligned} h &= \Pr(meet) \times \Pr(match) \\ &= \lambda \times \sum_{f=0}^{F} p_f \left(1 - G\left(\frac{1}{\zeta^f}\left(\rho U + cf - \gamma f\right)\right)\right) \end{aligned} \tag{9}$$

we find the probability of being employed from the fact that the flow of hired workers minus the flow of fired workers equals zero.

$$\frac{\partial E}{\partial t} = 0$$
$$(1 - E)h - E\eta = 0$$
$$\Pr(employed) = E = \frac{h}{h + \eta}$$

Therefore, the contribution of the employed individuals is given by

$$\Pr(wage|match) \times \Pr(employed) = \frac{\frac{1}{\alpha\zeta^f} g\left(\frac{1}{\alpha\zeta^f}\left(w + \alpha cf - (1-\alpha)\left(\rho U - \gamma f\right)\right)\right)}{1 - G\left(\frac{1}{\zeta^f}\left(\rho U + cf - \gamma f\right)\right)} \times \frac{h}{h + \eta}$$

The contribution of the unemployed individuals is the product of the probability of observing the on-going unemployment duration t and the probability of being unemployed. We assume an exponential distribution of on-going unemployment duration data following Flabbi, 2010, therefore the probability of observing a given unemployment duration is given by he^{-ht}.

Following the logic for the probability of being employed, we find the probability of being unemployed from the fact that the flow of fired workers minus the flow of hired workers equals zero.

$$\frac{\partial U}{\partial t} = 0$$
$$(1 - U)\eta - Uh = 0$$
$$\Pr(unemployed) = U = \frac{\eta}{h + \eta}$$

Therefore, the contribution of an unemployed individual is given by

$$\Pr(duration) \times \Pr(unemployed) = he^{-ht} \times \frac{\eta}{h + \eta}$$

The likelihood function becomes

$$L = \left(\prod_{i \in E} \Pr(wage_i|match) \times \Pr(employed)\right) \times \left(\prod_{i \in U} \Pr(duration_i) \times \Pr(unemployed)\right) \tag{10}$$

3.1 Log-Likelihood

Estimate set of parameters $\Omega = \{\gamma, \zeta, c, \lambda, \eta, \mu, \sigma\}$ by minimizing the following log-likelihood function. The data requirements are the wage w_i and flexibility level f_i of employed individuals and the duration of unemployment t_i.

$$\log(L) = N \log\left(\frac{h}{h+\eta}\right) + N_U \log(\eta) - h \sum_{i \in U} t_i + \sum_{i \in E} \log\left(\frac{\frac{1}{\alpha\zeta^{f_i}} g\left(\frac{w_i + \alpha c f_i - (1-\alpha)(\rho U - \gamma f_i)}{\alpha \zeta^{f_i}}\right)}{1 - G\left(\frac{c f_i + \rho U - \gamma f_i}{\zeta^{f_i}}\right)}\right) \tag{11}$$

where

$$h = \lambda \sum_{f=0}^{F} p_f \left(1 - G\left(\frac{cf + \rho U - \gamma f}{\zeta^f}\right)\right) \tag{12}$$

3.2 Flexibility Parameters

The model is under-identified in the flexibility parameters: using one measure of flexibility, we need to estimate the utility weight of flexibility γ, and the scale of the total factor productivity of flexibility ζ, the cost of providing flexibility c. Therefore, the log-likelihood function is maximized three times for each sample: first to estimate the utility parameter, second to estimate the productivity parameter, and third to estimate the cost parameter. I will make some assumptions of the value of the remaining parameters following the literature.

The utility gain from flexibility, γ, uses estimates from He et al., 2021, in which the utility weight of flexibility is estimated using results from a field experiment of job postings. Job postings varied in type of flexibility (none, location, schedule, and both location and schedule) and salary ranges (low, medium, high). The ratio of flexibility and wage marginal effects from a fully specified probit model of applying can be interpreted as the marginal rate of substitution of wage for flexibility. In the context of this paper's model, the ratio of the marginal effect of wage over the marginal effect of flexibility provides the utility weight of flexibility analogous to parameter γ. The value of wage comes from the marginal effect of a high salary on the probability of applying, equal to 0.0016.[2] The value of flexibility

[2]The marginal effect of high salary was the only statistically significant wage effect on the probability of applying.

depends on the type of flexibility: the marginal effect of location flexibility on applying is 0.0010 and the marginal effect of schedule flexibility on applying is 0.0011. Therefore, the parameter for γ is set to 0.625 (= 0.0016/0.0010) for estimation of the model using location flexibility and 0.6875 (=0.0011/0.0016) for schedule flexibility. These parameter estimates assume that flexibility is a utility enhancing amenity.

The productivity impact of flexibility, ζ, comes from Bloom et al., 2015, in which the total factor productivity of flexibility is estimated with data from a case study that allowed teleworking. Workers at a call center in China were randomized into two groups: half of the employees stayed in the office and half worked from home. Total factor productivity was calculated using standard measures in the literature with both the common data (employee numbers and shift lengths) and detailed data (minutes worked per day by employee), and found that, compared to their office counterparts, the total factor productivity of the teleworking employees was increased by 21% to 28%. Using this information, the parameter for ζ is set to 1.25.

The measure of cost of providing flexibility, c, is also provided by Bloom et al., 2015. They estimate annual savings per remote worker of $1900, or $0.91 per worker-hour saved. Therefore, the parameter for c is set to -0.91.

4 Data

The model is estimated on data from the 2017-18 American Time Use Survey (ATUS) and the associated Leave and Jobs Flexibility Module. The ATUS is collected by the Bureau of Labor Statistics to provide nationally representative estimates of how, where, and with whom Americans spend their time. The ATUS samples from the pool of individuals who have completed all eight months of the Current Population Survey (CPS) and interviews them two- to five-months after their final CPS interview. The interview with ATUS updates work-related information since the final CPS interview and asks respondents to provide a time diary of the previous day in which activities, their start and end time, location, and other participants are recorded over a 24-hour period. In 2017-18, the U.S. Department of Labor Women's Bureau conducted the Leave and Jobs Flexibility Module as a part of ATUS (henceforth referred to as the Leave Module). The purpose of the Leave Module was to ask workers about their use and access to paid/unpaid leave and flexibility in their schedule. The Leave Module was restricted to ATUS respondents who were employed as a wage or salary worker and were willing to answer questions regarding leave and flexibility. Key topics in the Leave Module include: availability, use, and pay of leave; advance knowledge of and ability to change one's work schedule; and ability, frequency, and structure for working from home. The Leave Module is utilized to create two measures of job flexibility: schedule flexibility and location flexibility.

The Leave Module provides individualized responses to access and utilization of workplace flexibility.[3] Two measures of flexibility are considered: schedule flexibility and location flexibility. Schedule flexibility is determined by the response to the question "Do you have flexible work hours that allow you to vary or make changes in the times you begin and end work?" If the participant responds in the affirmative, we say that the participant has schedule flexibility; otherwise, they do not. Location flexibility is determined by the response to the question "As part of your (main) job, can you work from home?" Respondents are said to have location flexibility if they respond in the affirmative.[4]

For homogeneity, the sample is restricted to white individuals aged 25-55 with at least a college degree. The sample of employed was restricted to wage-earning or salaried (i.e. not self-employed) individuals working full-time who responded to the relevant Leave Module questions on workplace flexibility.

The unemployment duration was calculated for individuals who stated that they were unemployed in the ATUS interview by the measure of unemployment duration in the final CPS interview plus the number of weeks between the CPS and ATUS interview. Summary statistics of unemployment duration are presented in Table **??**.

ATUS asks individuals about their weekly earnings, so hourly wages were calculated by

[3] To avoid concerns of endogeneity in use of flexibility, this analysis is restricted to understanding access to flexibility.

[4] There is a question regarding whether this work is paid, but the question is only asked if the respondent states that they are able to work from home and have worked from home in the past. Therefore, we are concerned with endogenous selection into working from home and subsequent effects of utilization on wages that would impact the estimates.

Table 1: Summary Statistics for Duration of Unemployment

	n	Min.	Max.	Mean	Std. Dev.
Men	27	8.00	131.00	18.63	23.35
Women	28	8.00	129.00	17.75	22.51

Note: Duration of unemployment is calculated as the sum of weeks unemployed in CPS and weeks between CPS and ATUS interview.

the weekly earnings divided by 40. Estimated hourly wages are presented in 2018 dollars. Due to unfeasible low minimum values of wage, I have winsorized the minimum values to the first percentile by gender and flexibility type. Instead of dropping observations with wages less than the first percentile, these observations are recoded to be the first percentile value. This procedure allows me to keep observations and maintain distributional differences across flexibility type without significant changes to the the mean and standard deviations of the distribution of wages. The wage summary statistics are presented in Table 4. Kernel distributions of winsorized wages are presented in Appendix A.1.

5 Results

The model is estimated separately for men and women to conform to the homogeneity assumption for individuals in the model. Estimation results are presented in Table 5 for women and Table 5 for men. Columns (1), (2), and (3) define flexibility as schedule flexibility, or the ability to change the start and end times of work; Columns (4), (5), and (6) define flexibility as location flexibility, or the ability to work from home. Due to under identification, the estimation is run three times; in each procedure, two of the flexibility parameters are held fixed and one is optimized (see Section 3.2 for details). The bootstrapped standard errors are presented; after bootstrapping the sample 50 times, the standard error was calculated by the standard deviation of the estimated parameter divided by the square root of the number of samples.

Table 5 presents the estimation results on the sample of women. The labor market and

Table 2: Summary Statistics for Wages

		Raw Wage			Winsorized Wage		
	n	Min.	Mean	Std. Dev.	Min.	Mean	Std. Dev.
Men							
No Schedule Flexibility	351	0.01	36.21	18.35	7.62	36.25	18.28
Schedule Flexibility	926	1.04	45.72	18.95	9.51	45.75	18.89
No Location Flexibility	491	0.01	35.79	17.85	7.80	35.82	17.80
Location Flexibility	786	1.04	47.67	18.69	10.59	47.72	18.59
Women							
No Schedule Flexibility	505	0.02	29.33	15.19	4.77	29.36	15.15
Schedule Flexibility	739	0.05	37.10	17.72	7.76	37.12	17.67
No Location Flexibility	574	0.02	28.86	15.16	6.30	28.90	15.11
Location Flexibility	670	0.05	38.30	17.59	7.47	38.33	17.53

Note: Wages are in 2018 dollars. Winsorized wages have a lower bound at the first percentile as defined by gender and flexibility type.

productivity parameters are relatively constant across estimations: the arrival rates of offers (λ) and job terminations (η); the distributional parameters of match-specific productivity (μ, σ). The large standard error on the estimation of the utility parameter of flexibility, γ, prevents making a conclusion on the utility gain or loss of flexibility. This conclusion supports the argument that worker considerations are not the driving force in the relationship between wages and workplace flexibility. Both definitions of flexibility lead to a productivity gain: workers with schedule (location) flexibility are 23% (37%) more productive than their inflexible counterparts. Furthermore, the cost of flexibility is negative for both types of flexibility; flexibility is cost-saving to the firm. The firm benefits of flexibility coupled with the weak support of compensating differentials on the worker side imply that the positive relationship between wages and workplace flexibility seen by women are driven by the firm.

The results of the estimation on the sample of men are presented in Table 5. There is more variation in the labor market parameters (λ, η) for men, but all of the variables are feasible and have relatively small standard errors. The match-specific distribution parameters (μ, σ) do not change much across specifications of the model or definitions of flexibility. Men have a positive and significant utility parameter, γ, for schedule flexibility that is approximately double the estimate from the literature. However, the utility parameter in the estimation with flexibility defined as location flexibility has a large standard error, preventing us from confidently saying that men prefer flexibility more than women. The productivity gain of flexibility is approximately 29% for schedule flexibility and 38% for location flexibility. These values are close to the estimate in the literature, and the small standard errors suggest that we can be confident in the stability of these values across bootstrapped samples. Finally, the cost of flexibility are large negative numbers, suggesting that firms experience large savings when providing flexibility to workers. This is consistent with the finding in the literature that flexibility can reduce costs due to turnover or office spaces. Although the estimates for men suggest that there might be some utility-driven compensating wage differentials, the increase in productivity and large savings when providing flexibility are the likely reason for the positive relationship between wages and flexibility for men.

One reason that there may be weak evidence of the utility benefits of flexibility is that the definition hinges on access to flexible workplace policies; there is not any consideration

Table 3: Results for Sample of Women

	Schedule			Location		
	(1)	(2)	(3)	(4)	(5)	(6)
λ	0.0414	0.0417	0.0596	0.0424	0.0292	0.0571
	(0.0020)	(0.0039)	(0.0021)	(0.0018)	(0.0037)	(0.0025)
η	0.0013	0.0014	0.0014	0.0011	0.0009	0.0013
	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0001)
μ	3.8085	3.8222	3.8257	3.8026	3.7627	3.8257
	(0.0051)	(0.0041)	(0.0025)	(0.0039)	(0.0051)	(0.0026)
σ	0.6201	0.6148	0.6057	0.6179	0.6061	0.6009
	(0.0037)	(0.0018)	(0.0018)	(0.0026)	(0.0017)	(0.0017)
γ	0.4443			-0.3587		
	(0.3035)			(0.1734)		
ζ		1.2335			1.3788	
		(0.0074)			(0.0119)	
c			-2.7493			-2.3445
			(0.3257)			(0.4473)
Log Likelihood	5456.5470	5464.0042	5446.0714	5428.5828	5439.6839	5422.7983
	(5.3356)	(6.3475)	(5.0533)	(5.2294)	(5.9082)	(5.2418)
n	1272	1272	1272	1272	1272	1272

Note: Schedule flexibility is a binary measure defined by the ability to change start- and end-times of work. Location flexibility is a binary measure defined by the ability to work from home. Columns (2) and (3) hold γ constant at 0.6875 while columns (5) and (6) holds γ constant at 0.625. Columns (1), (3), (4), and (6) hold ζ constant at 1.25. Columns (1), (2), (4), and (5) hold c constant at -0.91. Bootstrapped standard errors from 50 samples shown in parentheses.

Table 4: Results for Sample of Men

	Schedule			Location		
	(1)	(2)	(3)	(4)	(5)	(6)
λ	0.0041	0.0205	0.0157	0.0079	0.0043	0.0214
	(0.0004)	(0.0026)	(0.0032)	(0.0016)	(0.0004)	(0.0038)
η	0.0001	0.0006	0.0010	0.0004	0.0001	0.0005
	(0.0000)	(0.0001)	(0.0003)	(0.0002)	(0.0000)	(0.0001)
μ	4.0335	4.0006	4.0392	4.0431	3.9844	4.0555
	(0.0037)	(0.0048)	(0.0023)	(0.0031)	(0.0043)	(0.0024)
σ	0.5874	0.5908	0.5832	0.5839	0.5786	0.5752
	(0.0030)	(0.0021)	(0.0020)	(0.0025)	(0.0020)	(0.0020)
γ	1.1614			0.3504		
	(0.1855)			(0.2023)		
ζ		1.2977			1.3832	
		(0.0069)			(0.0066)	
c			-7.5657			-11.7116
			(2.8603)			(3.7703)
Log Likelihood	5891.1919	5861.8156	5883.2189	5858.1354	5854.0102	5844.4270
	(5.4781)	(5.3095)	(5.6225)	(6.1230)	(5.0921)	(5.5678)
n	1304	1304	1304	1304	1304	1304

Note: Schedule flexibility is a binary measure defined by the ability to change start- and end-times of work. Location flexibility is a binary measure defined by the ability to work from home. Columns (2) and (3) hold γ constant at 0.6875 while columns (5) and (6) holds γ constant at 0.625. Columns (1), (3), (4), and (6) hold ζ constant at 1.25. Columns (1), (2), (4), and (5) hold c constant at -0.91. Bootstrapped standard errors from 50 samples shown in parentheses.

of utilization of these policies. A potential extension of this model would incorporate the individual's decision to utilize flexibility.

6 Policy Experiments

This section is forthcoming.

7 Conclusion

This paper presented a search model that allowed for flexibility to impact worker's utility, firm's productivity and firm's costs to decompose the benefits of workplace flexibility to firms and workers. In doing so, the paper finds that the positive relationship between wages and workplace flexibility is driven by increased productivity and decreased costs to the firm. By utilizing data on workplace flexibility policies regarding work schedule and location, two types of flexibility are explored with this model.

The model could be improved upon in a few ways. Firstly, the current structure assumes that workers are homogeneous in their preference for flexibility; implementing strategies from Flabbi and Moro, 2012 or Bonhomme and Jolivet, 2009 could improve the model by including worker heterogeneity. Secondly, the cross-sectional data prevents a deeper understanding of the impacts of flexibility on job transitions. However, panel data obscures the line between access to flexible workplace policies and utilization of thiose policies, which leads to concerns of selection into use and how that would impact labor market outcomes. Third, the reasons why workplaces that provide more flexibility are more productive cannot be explored in this model. One could focus on the question of which occupations and industries provide flexibility, and why, to gain insight into the productivity gains of flexibility. Finally, including the decision to utilize a flexible workplace policy could improve estimates of the utility gain of flexible workplace policies.

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A Appendix

A.1 Kernel Densities of Hourly Wage, by gender and flexibility

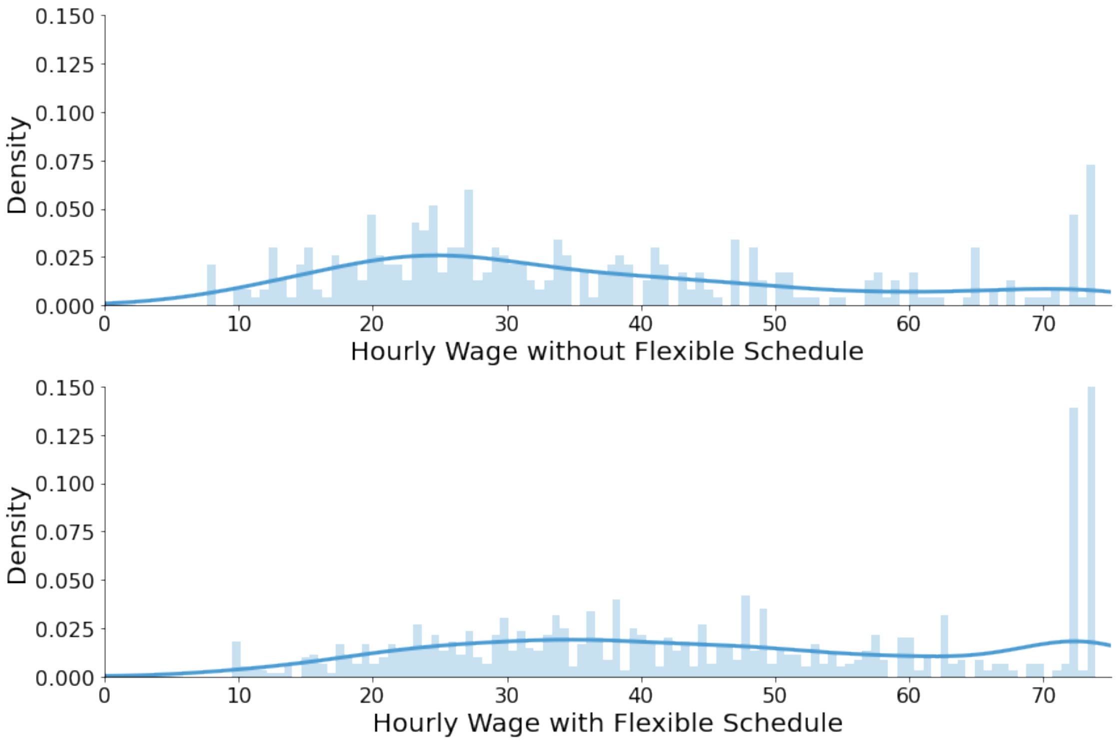

Figure 1: Men's Wages by Schedule Flexibility

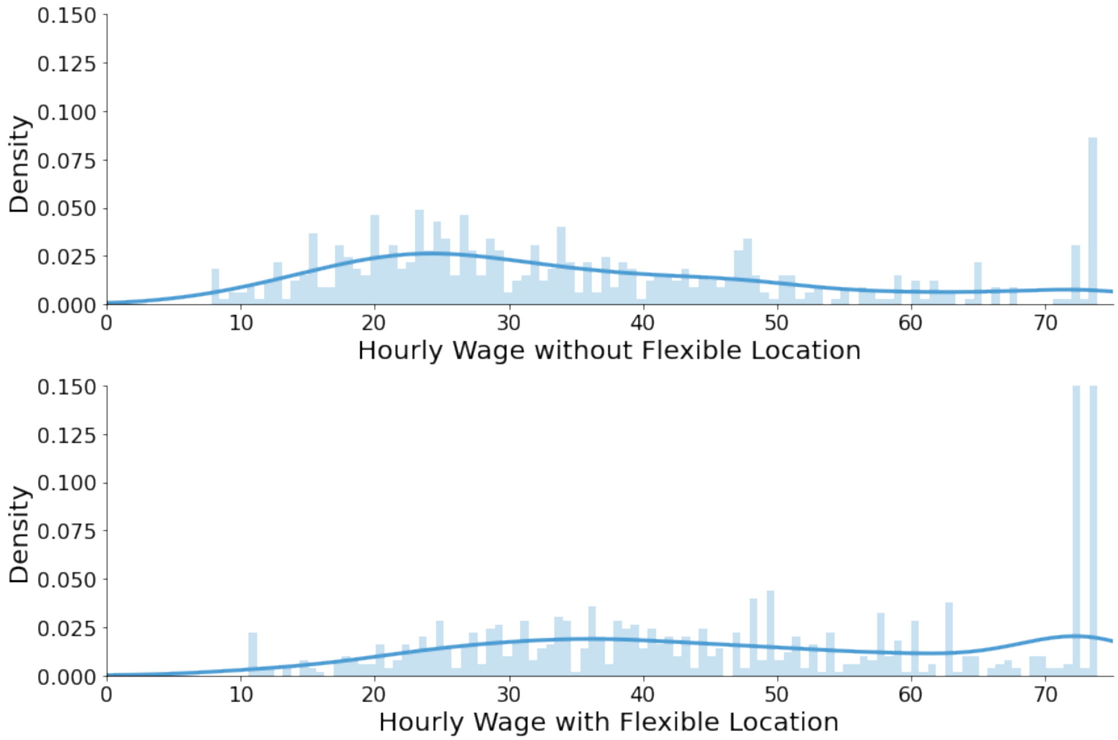

Figure 2: Men's Wages by Location Flexibility

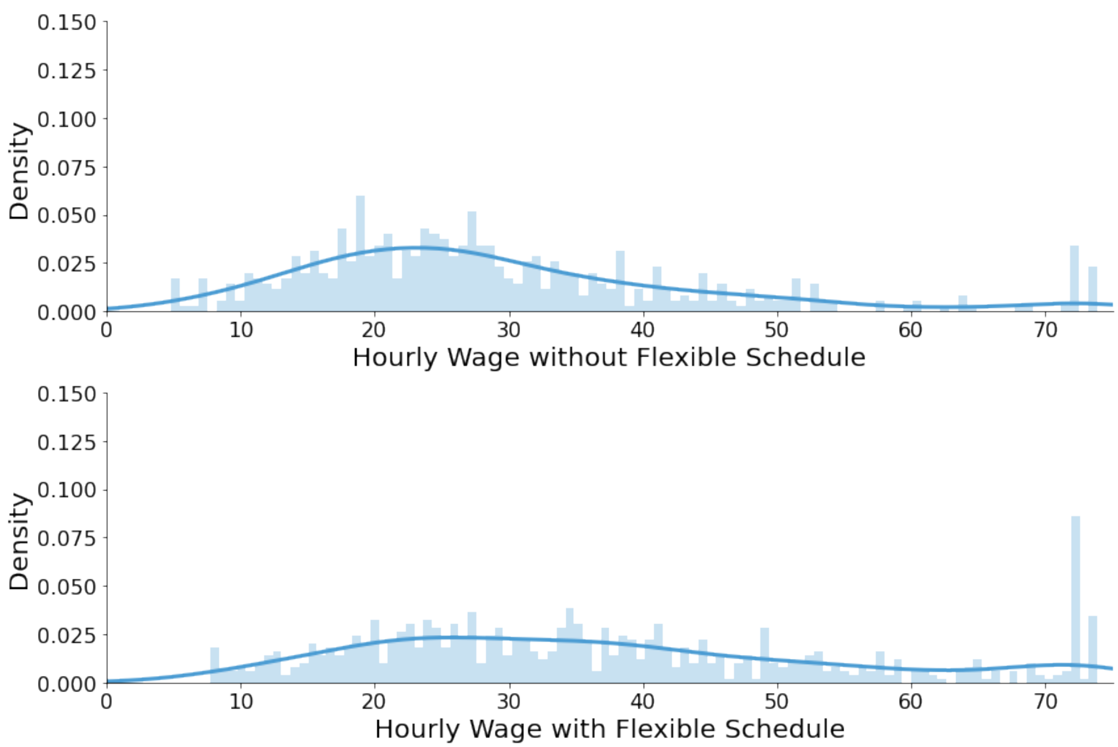

Figure 3: Women's Wages by Schedule Flexibility

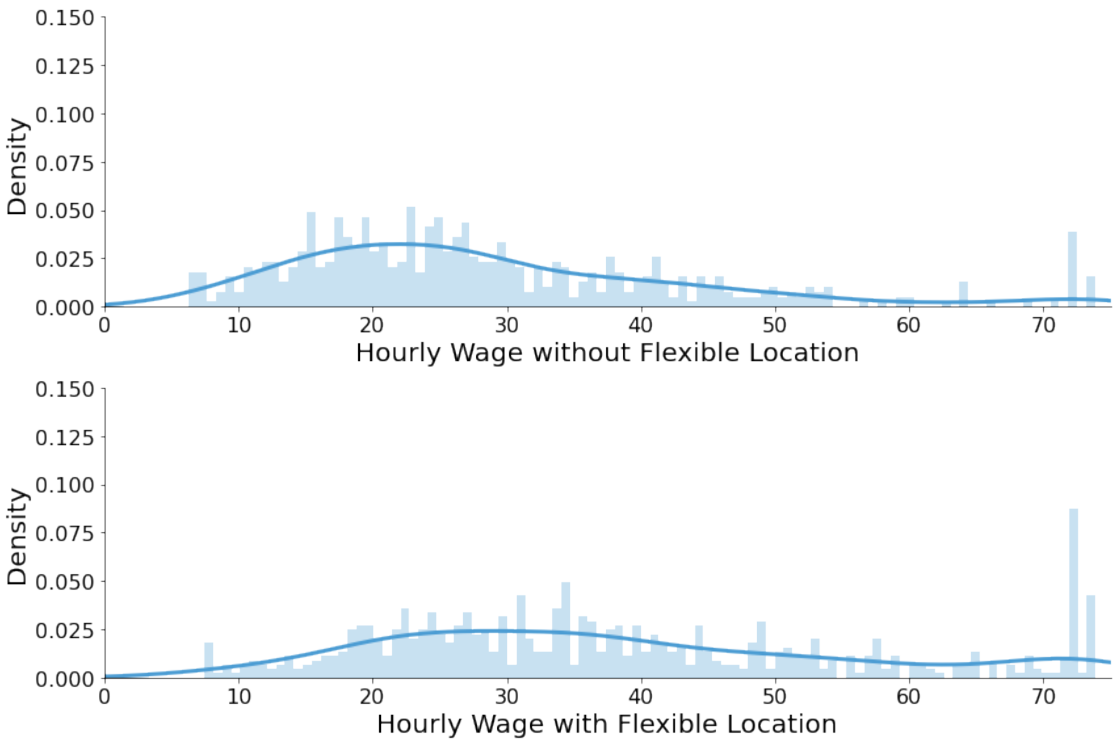

Figure 4: Women's Wages by Location Flexibility