Valuing Alternative Work Arrangements[†]

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We employ a discrete choice experiment in the employment process for a national call center to estimate the willingness to pay distribution for alternative work arrangements relative to traditional office positions. Most workers are not willing to pay for scheduling flexibility, though a tail of workers with high valuations allows for sizable compensating differentials. The average worker is willing to give up 20 percent of wages to avoid a schedule set by an employer on short notice, and 8 percent for the option to work from home. We also document that many job-seekers are inattentive, and we account for this in estimation. (*JEL* J22, J31, J80, L84)

Alternative work arrangements, such as flexible scheduling, working from home, and part-time work are a common and by some measures a growing feature of the US labor market.[1] While these arrangements may facilitate work-life balance, they are not necessarily worker-friendly. Many jobs have irregular schedules, whereby workers cannot anticipate their work schedule from one week to the next; many workers are on-call or work during evenings, nights, and weekends. The emergent gig economy, while still small (Ferrell and Greig 2016), has put these trade-offs into

focus. Workplace flexibility has been touted as both one of the benefits and costs of the fragmentation (or "Uberization") of the workplace.[2]

There is a policy debate as to whether and how government should encourage alternative work arrangements that promote work-life balance (Council of Economic Advisers 2010). This debate extends to regulation of overtime in the Fair Labor Standards Act, flexibility options in the Family Medical Leave Act, and initiatives to promote telecommuting. Scheduling policy is a key decision for employers. There is a well-established belief among human resource consultants that workplace flexibility policies (broadly defined) help attract and retain employees.[3] Recently, prominent companies have announced moves away from irregular scheduling. In 2016, Walmart shifted from giving managers discretion on shift scheduling to offering some workers predictable fixed shifts and the ability to make their own schedules.[4] Starbucks announced that it was revising its policies to end irregular schedules to promote "stability and consistency" in scheduling.[5] These changes came during increasing legal scrutiny of irregular scheduling work practices.[6]

Despite this active debate on how alternative work arrangements should be promoted and regulated, very little is known about how workers actually value different arrangements. Efficient public and corporate policies on alternative work arrangements require an understanding of these valuations. One approach is estimating compensating wage differentials on workplace amenities, building on the theoretical framework for hedonic pricing in Rosen (1974, 1986). An enormous literature has sought to do this using cross-sectional and longitudinal data, but it is well known that estimates from these approaches are unstable to adding person or workplace controls, and are often wrong-signed.[7] This fragility of compensating differentials estimates may be due to the presence of unmeasured worker and firm characteristics, measurement error, or the presence of search frictions in the labor market (Hwang, Mortensen, and Reed 1998; Lang and Majumdar 2004; Bonhomme and Jolivet 2009). Additionally, in standard models of equalizing differences, such as Rosen (1986), compensating wage differentials are set to equate the utility of marginal workers in jobs with and without an amenity, providing only limited information on valuations for other workers.

Table 1 shows the difficulty of estimating compensating differentials for the work arrangements we study. Using data from the Current Population Survey (CPS) Work Schedules Supplement, we regress weekly wages separately on indicators for having a given work arrangement. We control for a variety of worker (and some job) characteristics. Throughout, more pleasant work arrangements are correlated with higher wages. For example, workers who have control over when they start and

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[2] For example, see Farhad Manjoo, "Uber's Business Model Could Change Your Work," *New York Times*, January 28, 2015.

[3] See, for example, Haugen (2013).

[4] Lydia DePillis, "Walmart Is Rolling Out Big Changes to Worker Schedules This Year," *Washington Post*, February 17, 2016.

[5] Jodi Kantor, "Starbucks to Revise Policies to End Irregular Schedules for Its 130,000 Baristas," *New York Times*, August 14, 2014.

[6] Lauren Weber, "Retailers Are under Fire for Work Schedules," *Wall Street Journal*, April 12, 2015.

[7] Papers in this literature include those that estimate the value of statistical life, summarized in Viscusi and Aldy (2003) and studies reviewed in Smith (1979), Brown (1980), Goddeeris (1988), Kostiuk (1990), Lanfranchi, Ohlsson, and Skalli (2002), and Oettinger (2011). Hall and Mueller (forthcoming), Sorkin (2015), and Taber and Vejlin (2016) use worker flows to infer the importance of non-wage amenities.

Table 1—Estimating Compensating Differentials from Observational Data Using Weekly Earnings: CPS Work Schedules Supplement

	All		Phone occupations		All hourly workers	
	No industry fixed effects	Industry fixed effects	No industry fixed effects	Industry fixed effects	No industry fixed effects	Industry fixed effects
Schedule flexibility						
Can vary the times at which workday starts or ends	0.063 (0.010)	0.064 (0.010)	0.051 (0.058)	−0.109 (0.078)	0.046 (0.012)	0.054 (0.012)
Work from home						
Does any work from home	0.080 (0.014)	0.101 (0.013)	0.322 (0.137)	0.234 (0.145)	0.107 (0.023)	0.098 (0.023)
Formal work from home arrangement	0.100 (0.026)	0.071 (0.025)	0.030 (0.199)	0.316 (0.170)	0.145 (0.037)	0.124 (0.036)
Irregular schedule						
Works an irregular schedule	−0.070 (0.011)	−0.029 (0.012)	−0.111 (0.074)	−0.131 (0.081)	−0.020 (0.012)	0.019 (0.012)
Works an irregular but consistent schedule	−0.053 (0.012)	−0.019 (0.012)	−0.100 (0.095)	−0.212 (0.110)	−0.010 (0.013)	0.021 (0.013)
Works an irregular, inconsistent schedule	−0.079 (0.019)	−0.034 (0.019)	−0.090 (0.100)	0.024 (0.121)	−0.030 (0.020)	0.005 (0.019)
Observations	27,030	27,030	306	306	16,446	16,446

Notes: Data come from the 2001 and 2004 CPS work schedules supplement. Each cell shows the result of a separate regression of log weekly earnings on the work arrangement indicated by the row, with controls for hours worked per week in a respondent's main job, an indicator for working part-time, race/ethnicity, gender, educational attainment, marital status, geographic region, age, self-employment, and an indicator for being born outside the United States, and, where indicated by the column, three-digit industry. Phone occupations include telemarketers, bill and account collectors, customer service representatives, and interviewers (except eligibility and loan). Respondents are considered to work irregular but consistent schedules if they work regular evening shifts, regular night shifts, or split shifts. They are considered to work irregular, inconsistent schedules if they report working a rotating shift, an "irregular schedule arranged by [their] employer," or some other type of schedule. They are considered to work an "irregular schedule" if they work either an irregular but consistent schedule or an irregular, inconsistent schedule. The number of observations reported indicates the number of employed respondents with nonmissing earnings in each survey and group. Robust standard errors are in parentheses.

end work earn 6 percent more than workers who do not, while workers who have formal work-from-home arrangements earn about 10 percent more.[8] On the other hand, workers with irregular schedules that change from week to week earn about 8 percent lower wages.

In this paper we report estimates of worker valuations over alternative work arrangements from a field experiment with national scope. The experiment elicits preferences on work arrangements by building a simple discrete choice experiment into the application process for a national call center. In this way we employ a method that can flexibly back out a willingness to pay (WTP) distribution from close to real market transactions.[9] We consider a number of commonly discussed arrangements, including flexible scheduling, working from home, and irregular schedules.

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[8] Gariety and Shaffer (2001, 2007) similarly find that both flextime and working from home are associated with higher wages using data from the CPS Work Schedules Supplement.

[9] Discrete choice experiments are an extension of the contingent valuation literature whereby rather than directly asking people for valuations over an attribute (the stated preference method), people are given the choice of two or more scenarios and are asked to choose their preferred option. These scenarios usually vary the attributes and

We carried out a large-scale recruitment drive to staff a national call center. The purpose of the call center was to implement telephone surveys, unrelated to this project. We posted job ads on a major electronic job board in 68 metro areas for telephone interviewer positions. The ads described the position and several required qualifications, but did not include any additional information about the nature of the job such as the schedule or whether the job was on-site. During the application process, we asked applicants their preference between two positions: a baseline position offering a traditional 40-hour, 9 AM–5 PM Monday–Friday on-site work arrangement (in the applicant's local area) and a randomly chosen alternative arrangement. The alternatives included flexible scheduling, working from home, and positions that gave the employer discretion over scheduling. We also randomly varied the wage difference between these two options. In the experimental portion of the application we were silent on whether these were actual positions; we simply asked applicants to tell us their preference over two job descriptions. This gave us latitude to vary the parameters of the position descriptions. However, the positions were fully consistent with the type of job we advertised, thereby approximating a market choice.[10] We elicited preferences from approximately 7,000 applicants, allowing us to estimate the WTP distribution for a number of common alternative work arrangements using a simple discrete choice framework.[11]

There are several challenges to the approach that require addressing. First, prior to running the experiment we hypothesized that some applicants would not pay close attention to the position descriptions. We implemented several placebo tests which confirmed that approximately 25 percent of applicants are inattentive. By estimating the inattention rate, we can account for misclassification in the econometric model and recover the unbiased WTP distribution.[12]

Second, we elicit preferences only from job-seekers who respond to this position, and thus our WTP estimates are directly relevant only for this group. However, several analyses instill confidence that these estimates may be applicable to a wider slice of the population. First, we show that work arrangements in this occupation are similar to those in the economy more generally, so that these applicants are not necessarily selected based on their value for workplace flexibility. Second, weighting the estimates by observed worker characteristics to match a nationally representative sample of workers does not change our estimates substantially. Finally, we

the prices and WTP can be estimated using random utility models (McFadden 1973; Manski 1977). Choice experiments have been shown to have better properties relative to stated preference valuation methods (Hanley, Wright, and Adamowicz 1998). A question is whether these experiments, which are usually survey-based, correspond to actual market behavior. This is something we can overcome by embedding the choice in a real market setting. Diamond and Hausman (1994), who critique stated preference valuation methods, hypothesize that the problem with the approach is not methodological but due to "an absence of preferences" over the attributes they are being asked to value. This is far less of a concern here since we are asking people to make choices over realistic work arrangements.

[10] The actual jobs combined the highest wage that the applicant viewed, scheduling flexibility, and the ability to work remotely.

[11] The applicant figure refers to the number of job-seekers who initiated the application process and chose one of the two jobs presented. Of these, 77 percent completed the application and applied for the job. At present, we have contacted 150 applicants to offer them jobs, subject to their passing a required criminal background check.

[12] It is an interesting question whether this type of inattention should be taken into account when estimating the WTP for these positions. This type of inattention may represent a real friction in the labor market. By adjusting the estimates, our framework allows us to estimate the welfare costs of inattention.

designed a module in the nationally representative Understanding America Study (UAS) that elicited preferences over scheduling flexibility, working from home, and employer discretion using a choice framework similar to the one described above. Valuations from the survey are very similar to our experimental results. This result is noteworthy by itself in that it shows that survey-based choice experiments with vignettes, when designed properly, elicit responses that are close to market choices. The survey has additional advantages that it has information on worker characteristics that are not possible to obtain from applicants, such as the presence of children, and that there is no potential for responses to the survey to act as a signal to potential employers.

Our first, surprising, finding is that the great majority of workers do not value scheduling flexibility: either the ability to set their own days and times of work at a fixed number of hours, or the ability to choose the number of hours they work. This is true both among job applicants and survey respondents in the UAS. While the average WTP for jobs with flexible schedules is low, there is a long right tail in the WTP distribution for these arrangements, reflecting people who are relatively inelastic to the price of flexibility. Thus, there remains considerable potential for reasonably large market compensating wage differentials for flexible scheduling. We find evidence of heterogeneity in valuations in all of the job attributes we consider; mean WTP estimates may differ substantially from marginal WTP estimates. Caution is therefore warranted when interpreting cost-benefit analyses that are based on average valuations alone.

One reason workers do not value flexibility in the number of hours they work is that most want to work 40 hours per week. When given a choice between a 20 hour-per-week job and a 40 hour-per-week job, the average worker was willing to take a $6 per hour pay cut for the 40-hour position. Most workers also require a wage premium to work overtime. When given a choice between a 50-hour job in which the last 10 hours were paid at time-and-a-half and a 40-hour job paying the same base wage, 55 percent chose the 50 hour-per-week job. The Fair Labor Standards Act's overtime requirements—which make employers pay most hourly workers 1.5 times wages for hours over 40 hours per week—makes the average worker close to indifferent to working overtime in our setting.

Second, of the employee-friendly alternatives we consider, working from home is the most valued. On average, job applicants are willing to take 8 percent lower wages for the option of working from home. The fact that working from home is still relatively uncommon—even in the industry in which we are hiring—while there is a substantial share of workers willing to take wage cuts for these jobs, suggests that it may be costly for employers to offer this arrangement. Taking our estimates of the WTP distribution at face value, the share of hourly workers with work-from-home arrangements (10 percent) implies that it would cost at least 21 percent of wages for employers to switch to work-at-home positions.

Third, job applicants and UAS respondents have a strong aversion to jobs that permit employer discretion in scheduling: the average applicant is willing to take a 20 percent wage cut to avoid these jobs, and almost 40 percent of applicants would not take this job even if it paid 25 percent more than a M–F 9 AM–5 PM position. The distaste for jobs with employer discretion is due to aversion to working nonstandard hours, rather than unpredictability in scheduling. For most workers, a traditional

M–F 9 AM–5 PM schedule works well: workers are not willing to take lower wages to set their schedules on top of this, but they are willing to take substantial wage cuts to avoid evening and weekend work.

The paper also contributes to our understanding of how men and women differentially value workplace amenities and how this translates into the observed gender wage gap. A large literature has examined gender differences in work arrangements and asked to what extent these differences can explain gender wage gaps.[13] We find that women are more likely to select flexible work arrangements than are men. While, on average, women do not tend to value flexible schedules, they do place a higher value on working from home and avoiding irregular work schedules than do men. This is particularly true for women with young children. Despite this, women are only slightly more likely to be in work-from-home jobs and slightly less likely to be in jobs with irregular schedules. The differences in observed work arrangements are not large enough to lead to significant gender gaps even with substantial compensating wage differentials. While there are gender differences in the propensity to select into alternative work arrangements, there is no detectable relationship between workers' education or score on a cognitive test we administered and their choices.

Relative to the previous literature, our study is closely related to Eriksson and Kristensen (2014) and Wiswall and Zafar (2016). Eriksson and Kristensen (2014) use a vignette method to elicit WTP for various job amenities and fringe benefits in an internet sample of Dutch respondents. One of the amenities they consider is scheduling flexibility. Our UAS survey module also uses use a vignette method to elicit preferences for flexibility and other arrangements. Wiswall and Zafar (2016) use a stated preference approach to understand how a sample of undergraduate students values job characteristics in hypothetical future jobs, including the availability of part-time work, which is one measure of work flexibility. The advantage of these approaches is that they provide considerable scope for quantifying a large range of job characteristics and, in the Eriksson and Kristensen (2014) case, in a sample that is close to representative of the population in which they are interested. The disadvantage to the approach is that it is unclear to what extent responses to hypothetical questions are accurate and approximate behavior in a market setting. This concern has led to a large literature probing hypothetical bias in the context of contingent valuation surveys (see, e.g., List and Shogren 1998).

In terms of our field methodology, our approach is related to Stern (2004); Hedegaard and Tyran (forthcoming); and Flory, Leibbrandt, and List (2015). Hedegaard and Tyran (forthcoming) and Flory, Leibbrandt, and List (2015) use data collected in the application phase of a real job to learn about job seekers' preferences. Flory, Leibbrandt, and List (2015) randomize job applicants into different compensation packages and measure gender differences in the probability of applying as a function of the compensation scheme presented. This approach is informative about the direction of preferences, but does not yield WTP measures. Hedegaard and Tyran (forthcoming) focus on preferences about coworkers' ethnic backgrounds. In a novel approach to estimating market compensating differentials,

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[13] Studies include Filer (1985); Goldin and Katz (2011, 2016); Goldin (2014); Flory, Leibbrandt, and List (2015); and Wiswall and Zafar (2016).

Stern (2004) uses multiple job offers for PhD job candidates in biology to estimate the trade-off between starting pay and the opportunity to conduct research. Our paper estimates preferences both in the field and via the vignette method to get both the benefits of the flexibility and external validity of the vignette method and the more realistic environment from the natural field experiment.

We begin by discussing our experimental design (Section I) and conceptual and econometric framework (Section II). From there, we present our main estimates of workers' valuations for alternative work arrangements (Section III) and show external validity through the nationally representative UAS (Section IV). We examine heterogeneity of WTP by subgroup in Section V and discuss the implications of our findings for compensating differentials in Section VI.

I. Experimental Design

Our experiment is structured around the hiring process for a national call center that we staffed to implement a labor market survey, unrelated to this project, during calendar year 2016. The experiment takes place during the application process for these positions.

We posted advertisements for telephone interviewer positions on a national US job search platform. The platform has separate portals for most regions and we posted a customized ad in 68 large metro areas. The ads were modeled off of existing ads on the site; the text of these ads is presented in online Appendix Figure 1. They mentioned the necessary skills for the job, emphasized that the position did not include sales or telemarketing, and included information about the job's wage range.[14] We provided no information about the job's schedule, location, or duration. The ad had a link to our website where interested job-seekers could apply for a position.

We ran the labor market survey and conducted all hiring under the auspices of a center responsible for the hiring. We did not disguise the center's mission (the study of labor markets) or its personnel. However, the center did not specify an affiliation with any university or this particular project. The center website is professionally designed, and the feedback we received from applicants we spoke to is that the ad and the website looked like those of a regular employer.

Once applicants followed the link to our site, they could apply by creating an account which required them to enter their contact information, year of birth, and zip code. The next step in the application was a voluntary self-identification page where applicants could provide their race/ethnicity and gender. The page prominently stated that this information was optional and that the questions could be skipped, though the vast majority of applicants responded.[15] We did not feel that it would be appropriate to ask about marital or parental status.

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[14] The necessary skills specified were "good communication skills," "ability to work with others," and "used to basic computer and/or mobile applications." The platform has a field for the compensation range. We filled this in to be consistent with the site's typical practices as well as to encourage applications from interested participants and prevent applicants uninterested in jobs at these wages from wasting their time. The wage range corresponded to the lowest and highest wage in the discrete choice experiment. We hired at the highest wage in the range.

[15] Ninety-five percent of applicants provided their gender and 93 percent provided their race.

The third step of the application was the discrete choice experiment. Applicants were shown two descriptions of job positions. The two positions differed in their characteristics (e.g., schedule or the ability to work from home) and their hourly wages. The characteristics and wages were assigned to applicants at random. While we could have shown each applicant multiple job descriptions with varying wages and amenities, to minimize cognitive load, we limited the comparison to two options, a baseline and an alternative. In fact, we show that even with just two simple choices there is a substantial amount of inattention that we have to account for. Additionally, in our judgment, more than two choices would have made the research intent of this section too obvious. Implementing a between-subject design also allows us to avoid carry-over effects. In Section IA we describe the positions and randomization in more detail.

We told applicants that the type of work in both jobs was the same and asked them which job they would choose if both were available. We assured applicants that we would not look at their choices before making hiring decisions.[16] The position descriptions were crafted to match the general description of the telephone interviewer position advertised, but we did not tell applicants that these were the actual positions available. Without specifying them, we indicated that there were other positions they could be hired for ("… regardless of your choice you will be considered for all open positions"). This approach allowed us to use position descriptions that deviated from the real jobs, while maximizing realism by describing positions that were like the ones advertised.[17]

This step of the application process produces the key data for our analysis. The remainder of the application asked about applicants' background, including their educational attainment. We asked workers six quantitative questions from the ACT WorkKeys, ranging from simple multiplication to basic algebra, which we use as a measure of cognitive ability. Most (77 percent) workers who made a job choice completed the application. Our main analysis uses all choices made, but we show in an online Appendix table that the results are similar if we restrict attention to workers who ultimately applied for the jobs.

A. *Job Description and Wages*

As described above, applicants were shown two position descriptions that differed in their work arrangements and wages. In all of the main comparisons we use the same baseline job description: a traditional 40 hour-per-week, Monday–Friday

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[16] A potential concern is that applicants might not have believed us and disguised their desire for amenities to be more appealing applicants. In Section IV we discuss why we do not think this is the case. First, workers reported similarly low valuations for flexibility in a survey which had no effect on their employment outcomes. Second, applicants' willingness to avoid the employer discretion job suggests they were not simply making the choice employers would find most appealing.

[17] The real job offered workers the maximum of the hourly wages shown in the position descriptions, plus additional compensation for using their own phones and devices, flexible schedules (within the constraint of work hours being appropriate times to conduct telephone surveys), and remote work. The duration of the job was either one or two months and either 20 or 40 hours per week, depending on when they applied and the surveys we were running. This information was conveyed to all applicants who were selected for the position at the time the job offer was first extended. At this time, we have contacted 150 applicants to offer them jobs, subject to their passing a required criminal background check.

9 AM–5 PM position physically located near downtown of the city we advertised in. This job description reads:

> *The position is 40 hours per week.*
> *This is a M–F 9 AM–5 PM position. The work is exclusively on-site in down-town [city]. This position pays [wage] dollars per hour.*

Here [city] is the city of the job ad (sometimes we used "center city" or a variant of this instead of "downtown" to conform to local terminology), and [wage] is a randomly selected wage. We compare this baseline position to five alternatives: (i) "flexible schedule": a 40 hour-per-week position that allows the worker to make his or her own work schedule; (ii) "flexible number of hours": a position that gives the worker the choice of how many hours to work per week up to 40; (iii) "work from home": a 40 hour-per-week M–F 9 AM–5 PM position that gives the worker the option of working at home; (iv) "combined flexible": a position that allows workers to make their own schedule, choose the number of hours they work, and work from home; and (v) "employer discretion": a 40 hour-per-week position that lets the employer select the workers' schedule (including weekends and evenings) with one week's notice. The exact wording of each of the descriptions is listed in Table 2.

We randomize which jobs that workers are presented with and the wages in these jobs. For each metro area, we randomly selected a maximum hourly wage of $16 or $19. In a given metro area, all applicants observed one position that offered this maximum hourly wage.[18] For the second option, we displayed a wage that was a randomly selected increment lower than the maximum wage. The increments ($0, $0.25, $0.50, $0.75, $1.00, $1.25, $1.50, $1.75, $2.00, $2.25, $2.50, $2.75, $3.00, $4.00, and $5.00) were selected to allow us to capture both very small and very large WTP. Each increment had a uniform probability of selection. The baseline position was sometimes (randomly) assigned the higher wage and sometimes assigned the lower wage, so that we have approximate symmetry in the relative wages offered between the two positions. We also randomized which job was presented first.

Online Appendix Figure 2 provides an example of the page with the job descriptions. This page was designed with several goals in mind. First, we wanted to ensure that only the parameters of the job would affect worker's choice. Thus, we referred to jobs by number (not name) to minimize the extent to which job titles would affect workers' choices.[19] We also made the wording of the job descriptions as similar as possible. To maximize the fraction of applicants who read both job applications carefully, we forced applicants to physically click on each position to see the job description. We also required applicants to manually type the number of the job they preferred, to lessen the tendency to simply click through to the next page.

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[18] We select whether a city has a maximum wage of $16 or $19 at random.

[19] These numbers were randomly assigned to jobs. The numbers were also balanced within comparisons, so if some individuals were given a choice between Position #78 which was inflexible and Position #81 which was flexible, other participants were faced with a choice between Position #81 which was inflexible and Position #78 which was flexible.

TABLE 2—DESCRIPTION OF MAIN TREATMENTS

Treatment name	Position description	Sample size
Flexible schedule	The position is 40 hours per week.	640
	You can make your own schedule. This can be a M–F 9 AM–5 PM schedule or other days and times. The work is exclusively on-site in downtown [city]. This position pays [wage] dollars per hour.	
Flexible number of hours	In this position you can choose the number of hours you work, up to and including 40 hours each week.	663
	The position has a M–F daytime schedule. The work is exclusively on-site in downtown [city]. This position pays [wage] dollars per hour.	
Work from home	The position is 40 hours per week.	608
	This is a M–F 9 AM–5 PM position. You have the option of working from home as well as on-site in downtown [city]. This position pays [wage] dollars per hour.	
Combined flexible	You can choose the number of hours you work, up to and including 40 hours each week. You can make your own schedule. This can be a M–F 9 AM–5 PM schedule or other days and times.	694
	You have the option of working from home as well as on-site in downtown [city].	
	This position pays [wage] dollars per hour.	
Employer discretion	The position is 40 hours per week.	640
	The hours in this position vary from week to week. You will be given your work schedule one week in advance. The hours can be morning through evening, weekdays and weekends, but not nights.	
	The work is exclusively on-site in downtown [city]. This position pays [wage] dollars per hour.	

B. *Measuring Inattention*

A challenge for any experiment that manipulates information is accounting for the presence of people who do not fully process the information. There is evidence in many contexts that agents are prone to inattention (DellaVigna 2009). Most of the available evidence on inattention involves consumers (e.g., Chetty, Looney, and Kroft 2009), and it has been shown that inattention can lead to significant optimization errors (Abaluck and Gruber 2011). Given this evidence, we hypothesized that inattention might also be a feature of the labor market and implemented a number of mechanisms to measure the inattention rate. We find direct evidence of such frictions in our experiment.

First, we presented some applicants with two positions that were identical except that one of them stated at the end, "This position is currently unavailable, please select the other position."[20] The fraction of workers who choose the unavailable position is an indicator of the fraction of inattentive workers. Second, on the page after the job choice, we asked workers whether the position they selected had "a fixed M–F, 9 AM to 5 PM schedule" or whether the position they selected had "an alternative schedule."[21] The fraction of workers answering incorrectly (i.e.,

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[20] Both positions used the language from the baseline position.

[21] We did not specify what the alternative schedule might be; workers in all of our main treatments saw the same wording of this question.

responding that they chose a fixed M–F 9 AM–5 PM schedule when they chose an alternative schedule or vice versa) is another inattention measure. Finally, the measure we utilize in the estimation approach, which is described in more detail in the next section, is the estimated share of applicants who choose a dominated position when this position paid $5 per hour less than the alternative. This approach is attractive because it allows us to calculate inattention rates that are specific to each comparison and demographic group. We estimate that, on average, 14.5 percent of individuals chose the dominated position when it paid $5 less than the alternative. In comparison, 13.3 percent of individuals answered which position they chose incorrectly and 13.0 percent chose the "unavailable" position. If inattentive applicants made their choices randomly, the estimates imply that just over one-quarter of the applicants were inattentive.

Because estimates of quantiles and higher order moments of the WTP distribution will be influenced by inattention, we explicitly incorporate inattention into the maximum likelihood estimator.[22] The methodology is similar to those in studies that incorporate external measures of the misclassification of binary variables, such as Card (1996). It has long been recognized in the literature on contingent valuation and discrete choice experiments that inattention is a cause for concern (Johnson et al. 2013). However, we are unaware of studies in this literature that explicitly incorporate inattention error rates into the econometric models to estimate the WTP distribution. This may be due to the fact that most studies in this literature are focused on mean valuations, where misclassification will lead to relatively little bias. Our findings highlight the importance of accounting for inattention in even simple discrete choice experiments, particularly when the analyst is interested in higher moments of the distribution.

II. Conceptual and Econometric Framework

In this section, we describe the econometric framework that we use to estimate the distribution of willingness to pay for alternative work arrangements in Section III. We use workers' choices over positions to estimate these distributions.

Building on Rosen (1986), we assume that an individual chooses between two jobs which are equivalent except for the presence of an amenity (e.g., the ability to work from home, a traditional schedule) and the wage. Our experimental design fits this framework by limiting the differences between the positions to these two characteristics. Job $A = 1$ has the amenity, while job $A = 0$ does not. The difference in wages between the two jobs is $\Delta w = w_1 - w_0$. In the experiments $\Delta w \in [-5, 5]$. Each individual i has a willingness to pay WTP_i for the amenity: μ is the population mean willingness to pay, while σ is the population standard deviation. If the individual is fully attentive, she prefers the job with the amenity if her willingness to pay for the amenity (WTP_i) exceeds the price of the amenity $-\Delta w$:

$$P_{\Delta w} \equiv \Pr(WTP_i > -\Delta w).$$

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[22] We show in the online Appendix tables that our results are robust to using any of the alternative methods of measuring the inattention rate.

Inattentive individuals are equally likely to select either job. If 2α of individuals are inattentive, in expectation one-half of them (α) will choose the dominated option by chance. Therefore, the probability that an individual chooses the job with the amenity is

$$(1) \qquad \Pr(A_i = 1 | \Delta w) = P_{\Delta w}(1 - \alpha) + (1 - P_{\Delta w})\alpha$$

$$= F(b\Delta w + c; \mu, \sigma)(1 - 2\alpha) + \alpha.$$

Equation (1) is a mixture model that can be estimated by maximum likelihood (ML) given a parametric assumption about the CDF of WTP_i: $F(\cdot)$. We assume WTP_i follows a logistic distribution, though a normality assumption works just as well. Under the logistic assumption, with estimates of b and c we can fully characterize the WTP distribution: $\hat{\mu} = -1 \times \hat{c}/\hat{b}$ and $\hat{\sigma} = 1/0.55\hat{b}$.[23] The qth quantile of the WTP distribution can be computed by inverting the CDF: $\Delta\hat{w}_q = F^{-1}(q; \hat{\mu}, \hat{\sigma})$. Standard errors are bootstrapped.[24]

While the parameter α is identified in equation (1), we use our knowledge of which position is dominated to first estimate this value, and then to fix this estimated value before estimating the maximum likelihood model. Specifically, our estimate of α is the share of applicants who chose the dominated position (the position without the amenity) when it paid \$5 less per hour, that is, $\hat{\alpha} = 1 - \hat{E}[Y | \Delta w = 5]$. (We assume that no attentive applicants choose the dominated position.) We estimate $\hat{E}[Y | \Delta w = 5]$ by estimating the linear regression $Y_{\Delta w} = \gamma + \beta\Delta w + \zeta_{\Delta w}$ for values of Δw ranging from 2 to 5 and calculating $\hat{\alpha} = 1 - (\hat{\gamma} + 5\hat{\beta})$. We estimate α separately by treatment and (when applicable) subgroup. We present estimates without the inattention correction as well. In practice, this correction will affect estimates at the tails of the WTP distribution, but not estimates of the mean or median.[25]

An advantage of our design is that we can plot our estimates of $P_{\Delta w}$ nonparametrically to assess distributional assumptions. For a given Δw, the share of individuals in the sample who choose $A = 1$ is

$$Y_{\Delta w} = P_{\Delta w}(1 - 2\alpha) + \alpha + \epsilon_{\Delta w},$$

where $\epsilon_{\Delta w}$ represents sampling error. We use an estimate of α to transform this share so that it is an unbiased estimate of the share of job-seekers whose willingness to pay for a job attribute exceeds $-\Delta w$:

$$\tilde{Y}_{\Delta w} \equiv \frac{Y_{\Delta w} - \hat{\alpha}}{1 - 2\hat{\alpha}} = P_{\Delta w} + \tilde{\epsilon}_{\Delta w}.$$

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[23] The 0.55 parameter in the denominator corrects for the scale parameter.

[24] We bootstrap standard errors to take into account variability in the estimation of the inattention rate.

[25] We have also estimated WTP allowing α to be estimated internally within the model, as in Hausman, Abrevaya, and Scott-Morton (1998). The resulting WTP estimates are presented in an online Appendix table and very close to those from the approach that uses the dominated choice.

We plot $\tilde{Y}_{\Delta w}$ against Δw to visually assess fit.

For most treatments the logistic specification provides a good description of the data, but in some cases we can observe that the symmetry assumption seems to be violated. In particular, the logistic CDF does not capture the extreme nonlinearity in $\tilde{Y}$ at $\Delta w = 0$ we observe for some comparisons. In these cases $E[\tilde{Y}\,|\Delta w]$ is approximately 1 for most positive values of Δw and shifts downward close to $\Delta w = 0$. This close-to-discontinuous shift suggests that there may be mass points in the CDFs of WTP that the logistic distribution cannot accommodate. To account for this, we estimate a "breakpoint" model that nests a mass point:

$$E[\tilde{Y}\,|\Delta w] = \begin{cases} 1 & \text{if } \Delta w > w^* \\ F(b\Delta w_i + c; \mu, \sigma)(1 - 2\alpha) + \alpha & \text{if } \Delta w \le w^*, \end{cases}$$

where w^* is a breakpoint. We impose the constraint $b \le 0$ to ensure that predicted values can be interpreted as a CDF. Rather than assume a value of w^*, we estimate a structural break model where we vary w^* from $w^* = -2$ through $w^* = 5$ (the no mass point case) and select the value of w^* that minimizes the root mean square error of the model.

To calculate the mean and variance of WTP in the breakpoint model we use the integration by parts expression for computing a mean and variance of a distribution from a CDF:

$$\hat{\mu} = \int_{-\infty}^{0} \left(1 - \hat{\tilde{Y}}\right) d\Delta w - \int_{0}^{\infty} \hat{\tilde{Y}}\, d\Delta w,$$

$$\hat{\sigma}^2 = 2\int_{0}^{\infty} \Delta w \left(1 - \hat{\tilde{Y}}\right) d\Delta w - 2\int_{-\infty}^{0} \Delta w \hat{\tilde{Y}}\, d\Delta w - \hat{\mu}^2.$$

The integrals are computed numerically, the quantiles are calculated by inverting the CDF, and the standard errors are bootstrapped.

III. Willingness to Pay for Alternative Work Arrangements

A. *Descriptive Statistics and Randomization Assessment*

Our experimental sample comprises people who applied to call center jobs. Before examining our specific sample, we describe who works in call center jobs, what their work arrangements are, and how these occupations compare to the workforce as a whole. Columns 2 and 5 of Table 3 compare workers in "telephone occupations"—which we define as telemarketers, bill and account collectors, customer service representatives, and interviewers (except eligibility and loan)—to the overall workforce in the March 2016 CPS. Phone workers are more likely to be female (66 percent versus 52 percent of all workers), are younger, and are more likely to be Black and Hispanic. They are both less likely to have less than a high school degree and to have more than a college degree.

TABLE 3—DESCRIPTIVE STATISTICS EXPERIMENT, UAS, AND COMPARISON SAMPLES (*Percent*)

	Panel A. Experiment			Panel B. UAS	
	Experiment main treatments (1)	CPS phone occupations (2)	CPS phone occupations, in cities (3)	UAS (4)	CPS all (5)
Female	75	66	65	47	52
Currently employed	39	100	100	92	95
Full-time	16	81	82	76	77
Part-time	23	19	18	16	18
Unemployed	61	0	0	8	5
Age					
Average age (years)	33.0	38.9	38.8	42.9	44.4
< 30 years old	49	32	32	18	24
30–40 years old	28	25	27	29	18
> 40 years old	23	43	42	52	58
Education					
Less than high school	2	6	6	7	15
High School	28	31	29	29	28
Some college	46	28	28	19	18
College degree	22	31	32	33	28
Advanced degree	2	4	4	12	11
Race					
White	43	58	53	64	64
Black	34	17	18	11	12
Hispanic	14	18	21	17	16
Other	9	7	8	8	8
Observations	3,245	1,038	735	1,950	100,400

Notes: The first column of each panel presents descriptive statistics on the sample of workers in our five main experimental treatments (panel A) and the Understanding America Study sample (panel B). The remaining columns present descriptive statistics on comparison samples. CPS data are from March 2016. Phone occupations include telemarketers, bill and account collectors, customer service representatives, and interviewers (except eligibility and loan). Column 3 is limited to respondents who live in a metropolitan area (either inside or outside the central city).

Work arrangements in these occupations are relatively similar to those in the rest of the economy (online Appendix Table 1).[26] About one-quarter of workers (23 percent overall and 25 percent of telephone workers) work part-time, while both groups average just under 40 hours per week (39 and 37, respectively). Seventeen percent of both samples work an irregular (non-daytime) schedule and the vast majority (81 percent and 90 percent, respectively) knows their schedule two weeks in advance. About one-quarter of workers (27 percent and 25 percent, respectively) can make their own schedule. Phone workers are actually slightly less likely to work from home than the average worker (33 percent of all workers do versus 27 percent of phone workers), but they are more likely to have a formal work-from-home arrangement (22 percent of phone workers do versus 15 percent of all workers).

Panel A of Table 3 shows the characteristics of workers in the five main treatments and a representative sample of workers in telephone occupations from the

[26] Online Appendix Table 1 uses data from the 2016 CPS, the 2001 and 2004 CPS Work Schedule Supplements, and the UAS to compare the work arrangements in telephone occupations and the rest of the economy.

Table 4—Randomization Assessment: *p*-Values from Regressions of Covariates on Wage Gap Dummies

	Flexible schedule	Flexible number of hours	Work from home	Combined flexible	Employer discretion
Age	0.750	0.271	0.875	0.720	0.200
Female	0.677	0.573	0.065	0.630	0.734
White	0.327	0.829	0.313	0.583	0.811
Black	0.372	0.083	0.328	0.437	0.983
Hispanic	0.039	0.292	0.035	0.764	0.293
Other race	0.101	0.302	0.328	0.967	0.133

Notes: Each cell reports the *p*-value of an *F*-statistic from a separate regression of the demographic characteristic indicated by the row on dummies for the difference in offered wages between the baseline M–F 9 AM–5 PM job and the position indicated by the column. This table includes all applicants who were presented with the choice, regardless of whether they made a choice. There are 711 applicants in the flexible schedule treatment, 724 in the flexible number of hours treatment, 695 in the work from home treatment, 739 in the combined flexible treatment, and 763 in the employer discretion treatment.

CPS. Like workers in telephone occupations in general, our sample is disproportionately female. Applicants average 33 years old. Approximately one-half of our sample has some college but no degree, while the rest of the sample is split between people with a high school degree and those with a college degree. Our sample is also racially diverse—more so than workers in telephone occupations in general. This is only in part because our experiment is focused within metro areas. Panel B of Table 3 shows that the UAS sample comes close to matching the CPS sample.

Table 4 shows that the randomization was balanced. For each of the five different treatments, we regress six applicant characteristics on indicators for each wage gap (Δw) the applicant was randomly assigned in the application process. If the randomization was implemented correctly the wage gap indicators should not be jointly significant. We only include the variables that were collected before the jobs were presented: gender, race, and age. The table reports the *p*-value for each of the 30 regressions, corresponding to six demographic characteristics and five alternative work arrangements. The wage gap indicators are jointly significant for predicting the demographic characteristic in only two of these combinations (work from home and Hispanic and flexible scheduling and Hispanic), a number we may expect to see by chance given the number of tests. Online Appendix Table 2 replicates this table, limiting the sample to workers who chose one of the two job options presented (and thus did not stop the job application before making a choice). It shows that observable characteristics look balanced along this dimension as well. Online Appendix Figures 3 and 4 show that neither the probability of making a choice nor the probability of entering the subsequent demographic information is related to the wage gap. Online Appendix Table 3 shows that, consistent with random assignment, workers in the different treatments have similar demographic characteristics.

B. *Main Treatments*

We begin with visual nonparametric and parametric summaries of the data. We show binned scatterplots of the inattention-corrected fraction of applicants who chose the arrangement with the amenity, against the wage gap (Δw) between this job and the job without the amenity. We overlay the scatterplot with the ML and breakpoint model fits, which can be interpreted as CDFs of the WTP distribution

TABLE 5—WILLINGNESS TO PAY FOR ALTERNATIVE WORK ARRANGEMENTS

| | Mean | SD | Quantiles | | | Observations |
			25th	50th	75th	
Panel A. Willingness to pay for worker flexibility						
Flexible schedule	$0.48	$2.15	−$0.82	$0.48	$1.79	640
	(0.24)	(1.12)	(0.57)	(0.24)	(0.85)	
Flexible number of hours	−$0.22	$2.24	−$1.58	−$0.22	$1.14	663
	(0.22)	(0.94)	(0.54)	(0.22)	(0.68)	
Work from home	$1.33	$1.86	$0.20	$1.33	$2.45	608
	(0.29)	(0.85)	(0.50)	(0.29)	(0.68)	
Combined flexible	$1.17	$2.33	−$0.25	$1.17	$2.58	694
	(0.32)	(0.76)	(0.46)	(0.32)	(0.65)	
Panel B. Willingness to pay to avoid employer discretion						
Employer discretion	$3.41	$2.95	$1.63	$3.41	$5.20	640
	(0.47)	(0.90)	(0.50)	(0.47)	(0.88)	

Notes: All treatments are compared to the baseline Monday–Friday, 9 AM–5 PM position. Estimates are generated using an inattention-corrected maximum likelihood logit model using data from the experiment. Bootstrapped standard errors based on 500 samples are in parentheses.
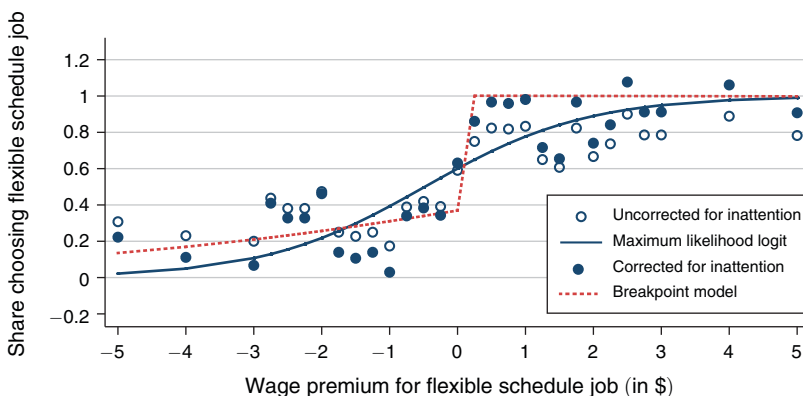

FIGURE 1. WTP FOR FLEXIBLE SCHEDULE

Notes: Applicants chose between a job with a traditional M–F 9 AM–5 PM schedule and one in which they could make their own schedule (still working 40 hours per week). The open circles show the fraction of applicants who chose the flexible schedule job at each wage premium. The wage premium is the wage in the flexible schedule job minus the wage in the M–F 9 AM–5 PM job. The filled circles show these fractions corrected for applicant inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

since they are monotonic and bounded between 0 and 1. We also report statistics from the WTP distribution using the ML model in Table 5 and the breakpoint model in online Appendix Table 4. Statistics from the ML inattention-uncorrected estimates are presented in online Appendix Table 5 and scatterplots with the uncorrected data are presented primarily in online Appendix figures. We discuss the estimates for each of the main alternatives sequentially below.

Flexible Scheduling.—The open circles in Figure 1 plot the raw fraction of workers choosing the flexible-schedule job at each wage gap, without the inattention

correction. There is a strong positive relationship between the premium for the flexible alternative (Δw) and the probability that an applicant chose the flexible job. Reading from this figure where these points intersect the y-axis at 0.5 and multiplying by -1, the median WTP for flexible scheduling is positive but less than $1 per hour.[27] Only 60 percent of applicants chose the flexible alternative when $\Delta w = 0$, suggesting that a large fraction of applicants place no value on this arrangement. In the figure we can see that when $\Delta w = \$5$, that is, when the flexible position pays $5 per hour more than the baseline position, approximately 20 percent of applicants still choose the fixed position. This gap is expected if there is inattention. As we discussed above, we fit a line over the range of points between $\Delta w = 2$ and $\Delta w = 5$ to estimate the share of applicants who choose the dominated position (the baseline position) when it pays $5 per hour less than the more-flexible position. We do not interpret the share of applicants choosing the flexible position when Δw is large and negative (that is, when flexibility is more expensive) as reflecting inattention because there might be applicants who have a strong preference for flexibility.

After estimating the inattention rate using the procedure described above, we calculate the inattention-corrected shares $\tilde{Y}$.[28] These shares are plotted in the filled circles in Figure 1 along with the estimated implied CDFs using the ML and breakpoint models. The inattention correction shifts shares that are greater than 0.5 toward 1 and shares that are less than 0.5 toward 0, making the implied CDFs steeper. This changes the tails of the WTP distribution (where the y-axis meets the lower and upper quantiles) but not the median. Inspecting this figure we can see that after correcting for inattention almost everyone prefers the flexible alternative when it pays more, modulo sampling error. This is effectively mechanical at $\Delta w = \$5$, but not at other values of Δw. There is a "cliff" in the CDF at $\Delta w = 0$, indicating a mass point in the WTP distribution at this point; approximately 60 percent of workers do not value being able to make their own schedule at all. The ML model cannot capture this extreme nonlinearity while the breakpoint model does. In both models most individuals do not value the ability to make their own schedule and the median WTP for flexible scheduling is 0 or close to 0. However, there is a tail of individuals who place a high value on this option: the top 25 percent of workers—those workers with a WTP in the top 25 percent of the WTP distribution—are willing to give up at least 10 percent of their wages to be able to make their own schedule (Table 5 and online Appendix Table 4).[29] This quantitatively and qualitatively important heterogeneity in valuations is something that we observe across all arrangements we consider. We see a very similar pattern of estimates in the nationally representative UAS discussed below.

One potential concern is that at 40 hours per week there may be limited latitude to adjust schedules. To investigate this possibility, we conducted a supplementary study where we gave workers a choice between a baseline job and one of our five

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[27] The x-axis of this graph shows the wage premium for the job with the higher amenity. Multiplying this by -1 gives the cost of the amenity. The cost that 50 percent of workers is willing to pay is the median WTP.

[28] Technically these are not shares because they can be greater than 1 or less than 0, but we use this term for convenience.

[29] In the tables we report WTP in levels, as in the experimental variation. We divide our estimates by $17, the approximate average wage presented to workers (and the approximate average wage selected) to convert the levels into percentages.

alternatives, but all jobs were 20 hours per week rather than 40 hours per week.[30] These estimates are reported in online Appendix Table 6. The median WTP remains very low in this part-time alternative: we estimate it at \$0.55 (SE = \$0.50).

The participants in our experiment are a selected sample of workers who responded to our job advertisement. We can construct WTP estimates that match the demographic and education characteristics of the hourly workforce by reweighting the sample. We construct WTP estimates that weight our sample to match a nationally representative sample of hourly workers (those in the 2016 March CPS) using DiNardo, Fortin, and Lemieux (1996) weights. We create two sets of weights: the first uses only the characteristics collected before participants saw their job options (age, race, and gender) and the second adds educational attainment categories.[31] Descriptive statistics from the March 2016 CPS, our experimental sample, and our experimental sample reweighted with both sets of weights are in online Appendix Table 7. Online Appendix Table 8 presents willingness to pay estimates using the reweighting. The results are very similar to the estimates using the unweighted data, suggesting that our estimates appear representative of a wider population. This similarity between the weighted and unweighted estimates is also observed for the other arrangements we examine. This is largely because as discussed below, aside from by gender, there are not large differences in WTP by worker characteristics. We provide additional evidence that the estimates are representative in Section IV where we report WTP estimates from a discrete choice experiment embedded into a nationally representative survey.

The online Appendix shows the robustness of these results to several different estimation strategies. Online Appendix Tables 9 and 10 show the results using different estimates of inattention and estimates of inattention that are internally estimated in equation (1), respectively.[32] Online Appendix Table 11 limits the sample to (i) workers who completed the job application, (ii) unemployed workers, and (iii) workers who were not employed part-time.

Flexible Number of Hours.—For the remaining treatments, we show the inattention-corrected figures in the text; the uncorrected versions are in online Appendix Figures 5–8. The low valuation for flexibility, on average, is even more striking for the ability to choose the number of hours worked, as shown in Figure 2. Here the more parsimonious ML model provides a reasonable fit to the data. The figure shows that the median worker actually slightly prefers the M–F 9 am–5 pm job over the ability to choose the number of hours worked. While the median worker does not value being able to choose the number of hours she works, the top 25 percent of workers are willing to give up about 7 percent of their wages for this flexibility.

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[30] The flexible number of hours job allows workers to choose the number of hours they work up to 20 hours per week.

[31] To create the first set of weights, we use race dummies, a female indicator, age, age interacted with race dummies, age interacted with the female dummy, and the female dummy interacted with race dummies. We add educational attainment indicators to create the second set of weights.

[32] When α is estimated internally, it averages 15.8 percent across treatments (when allowed to vary only by treatment) and 17.0 percent (when allowed to vary by gender and education within treatment), as compared to 14.5 percent when using the dominated position approach that we employ for the main results.
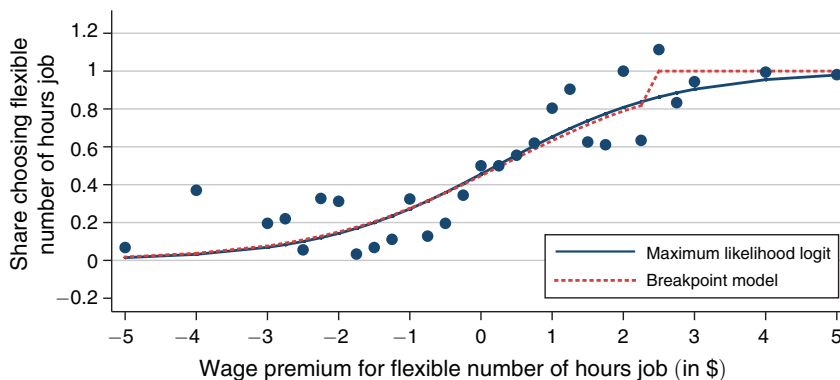
FIGURE 2. WTP FOR FLEXIBLE NUMBER OF HOURS (*Corrected for Inattention*)

Notes: Applicants chose between a job with a traditional M–F 9 AM–5 PM schedule and one in which they could choose the number of hours (up to 40) of work each week. The points show the fraction of applicants who chose the job with the flexible number of hours at each wage premium. The wage premium is the wage in the flexible number of hours job minus the wage in the M–F 9 AM–5 PM job. These points have been corrected for applicant inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

We again explore the sensitivity of the estimates to changing the jobs to 20 hour-per-week positions. This is particularly important for the flexible number of hours comparison because of the possibility that applicants dislike the flexible option because they believe that the position is less likely to come with benefits. We eliminate this potential concern by limiting the positions to a maximum of 20 hours. In this 20-hour version, we see a somewhat higher mean valuation for this alternative (online Appendix Table 6), but it remains small and the median WTP is both insignificantly different from 0 and from the estimate in the 40-hour version.

Because the negative valuation of the flexible hours arrangement by a subset of applicants is somewhat puzzling, we created a focus group on Mechanical Turk to help us understand why some people might prefer less hours flexibility. We gave Mechanical Turk workers the choice between the baseline and flexible hours position at the same wage and asked them to explain their choice. By virtue of being on Mechanical Turk, the workers in this survey were much more likely to prefer the flexible number of hours option. However, the ones who preferred the M–F 9 AM–5 PM job typically mentioned that they liked having someone else set the schedule and tell them how many hours they should work. They expressed concern that if they could choose it would be difficult to force themselves to work their desired number of hours.[33] This qualitative evidence suggests that, as previously suggested in Kaur,

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[33] These are a sample of the responses conditional on choosing the baseline job: "Although being able to choose my hours would be nice, I would kind of have to force myself to work the 40 hours a week"; "I like that the hours and pay are fixed… [with the flexible hours job] I might be tempted to work less hours at the start of [the week] then work longer hours later to compensate or make enough for that week which would be tiring and stressful"; "I would prefer to have a set schedule every week. A routine is better for me personally"; "[the fixed schedule] suits me better. I like it when someone tells me how long I should work. That way there's an expectation that I can live up to. If I were to choose the hours that I would like to work, it would make me feel uncomfortable and I wouldn't be sure how the employer would feel about that"; "I prefer to have set hours so I will know for sure what my schedule will be. This makes it much easier for me to plan other activities and know the expectations."

TABLE 6—WILLINGNESS TO PAY FOR A 40 HOUR-PER-WEEK JOB

	WTP for 40 hour-per-week job	Shadow value of time	Observations
20 hour-per-week job	$6.00	$4.01	728
	(1.30)	(2.61)	
50 hour-per-week job	$0.88	$20.41	751
	(0.73)	(3.66)	

Notes: The table provides workers' mean willingness to pay for a 40 hour-per-week job relative to a 20 and a 50 hour-per-week job. Estimates are based on an inattention-corrected maximum likelihood logit model using data from the experiment. The table also displays workers' average shadow value of time from 20 to 40 hours of work and from 40 to 50 hours of work, calculated from the mean WTPs as described in the text. Standard errors calculated using the delta method are in parentheses.

Kremer, and Mullainathan (2015), there may be psychological, not just economic, factors that enter into the decision over work arrangements.[34]

The flexible number of hours arrangement offers job-seekers two benefits. It allows workers to make adjustments if they need to work more or fewer hours in a given week and it allows them to optimize the number of hours worked if they typically prefer to work fewer than 40 hours. To disentangle these two possible benefits, and to better understand job-seekers' labor supply behavior, we designed an auxiliary study that elicited workers' preferences over the number of hours of work. We gave applicants choices between jobs with different wage and hour combinations. We elicited preferences over a 20 versus 40 hour-per-week position, as before, randomly varying the wage gap between the two jobs such that either wage could be up to $+/-$ $5 per hour from the other. The higher-paying job paid $16 per hour. Using the framework above, we can estimate WTP for the 40 hour-per-week job relative to the 20 hour-per-week job. For this exercise, we specify an inattention rate of $\alpha = 0.145$ (the mean in our data) rather than estimating it from the share choosing a dominated position since there is no obvious dominated position for these comparisons.

Inattention-corrected WTP estimates are shown in Table 6 and uncorrected estimates are in online Appendix Table 12. At the wages we offer, most workers prefer the 40-hour job: the median worker is willing to take a $6 per hour pay cut for a 40-hour job relative to a 20-hour job. This implies a median value of time of $4 per hour between 20 and 40 hours of work.[35] Even at the top of the distribution, workers' value of time is fairly low. The seventy-fifth percentile value of time is approximately $11, well below the predicted market hourly wage of $16 for the applicant pool.[36] In the standard labor supply model, the decision to work part-time when a worker is unconstrained is due to a high shadow value of time and/or a low wage. Our estimates suggest that job-seekers by and large prefer working 40 hours, even

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[34] While not mentioned in our focus group, another potential explanation for some workers actually disliking this type of flexibility is that it could lead to more work-family conflict or higher expectations from family members for home production (e.g., Schieman and Young 2010).

[35] This value of time is calculated as the amount the worker has to earn per hour in hours 20 through 40 to be indifferent between the 20 and 40 hour-per-week jobs: $\frac{40 \times (16 - \widehat{WTP}) - 20 \times 16}{20}$.

[36] The seventy-fifth percentile value of time is calculated using the twenty-fifth percentile of the WTP distribution ($2.54 per hour). To calculate applicants' predicted market wage, we estimate the average hourly wage in 2016 for hourly workers with the education, race, and gender composition of workers in our sample using CPS data.

at wages substantially lower than the one we offered. This may explain the very low valuation for hours flexibility since one of its primary benefits (lower regular hours) appears to be of low value to most job-seekers.

This finding is also relevant for understanding the prevalence of part-time work. In 2016, 23 percent of workers worked less than 35 hours per week, and 19 percent of workers reported working fewer than 35 hours per week by choice (Flood et al. 2015). With the usual caveats about generalizing, our estimates suggest that most workers would prefer full-time jobs, with a relatively small fraction preferring part-time work at the same hourly wage. While this may seem obvious given the distribution of hours, one might have hypothesized that 40 hour-per-week work hour blocks exceed the preferred hours of many workers due to technological or organizational constraints. Our experimental evidence suggests this is not the case.

We also investigated preferences for working overtime. Estimating how workers value overtime is particularly important in the context of the Fair Labor Standards Act (FLSA), which requires employers to pay most hourly workers time-and-a-half for work over 40 hours per week. To our knowledge, it is not known how this legislated wage premium compares to workers' WTP to avoid working these additional hours. Overtime pay complicates estimating WTP for positions over 40 hours per week. If we presented a 40- versus 50-hours choice without mentioning overtime pay, it would be unclear what applicants assume about overtime pay. To circumvent this problem, we gave some applicants a choice between a 40 hour-per-week job and a 50 hour-per-week job which both paid the same base wage ($16 per hour). We randomly varied the overtime premium so that workers would either earn $1.5\times$ or $2\times$ wages for hours over 40 hours per week. Using the fraction of applicants who chose the 50-hour position at the two overtime premia and assuming a logistic distribution for WTP, we can recover estimates of the WTP distribution.

We have to pay most workers a premium to work over 40 hours: 40 hours appears close to the bliss point at workers' predicted market wage. Fifty-five percent of job-seekers accept overtime at $1.5\times$ wages and 66 percent accept overtime at $2\times$ wages: the FLSA overtime requirements make the median job-seeker in our applicant group close to indifferent toward working overtime.[37] When assuming a logistic distribution, these rates imply a WTP to work 40 hours per week of $0.88 in terms of the overall wage (not just for hours over 40). Workers' average value of time between 40 and 50 hours of work is over $20 per hour, substantially higher than their predicted market wage and their value of time before 40 hours of work.

Working from Home.—While we see that workers largely do not value choosing the number of hours they work or choosing which hours these are, applicants do value working from home. The CDF of WTP for this alternative relative to the baseline job is shown in Figure 3. The average worker is willing to give up about 8 percent of wages for this option.[38] Twenty-five percent of applicants are willing to pay at least $2.45 per hour, or about 14 percent of wages, to work from home. Yet, approximately 20 percent of applicants choose to work exclusively on-site even when there is no wage penalty for doing so ($\Delta w = 0$). Bloom et al. (2015) also find

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[37] Both of these rates are inattention-corrected using the average inattention rate in the experiment.
[38] Estimated mean WTP is about 5 percent for the 20 hour-per-week version (online Appendix Table 6).
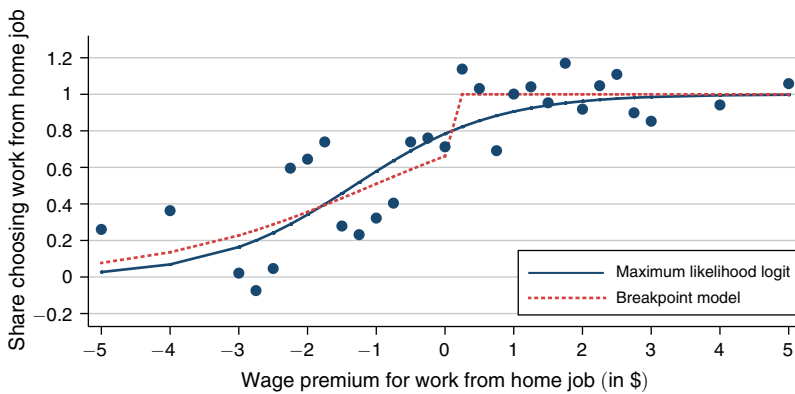
FIGURE 3. WTP TO WORK FROM HOME (*Corrected for Inattention*)

Notes: Applicants chose between an on-site job and one with the option to work from home. The scatter points show the fraction of applicants who chose the job with the option to work from home at each wage premium. The wage premium is the wage in the work from home job minus the wage in the on-site job. These points have been corrected for applicant inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

that many workers (50 percent in the company they study) prefer working on-site, all else equal.[39] However, the estimates suggest that almost no workers are willing to accept a lower wage for the on-site option.

Combined Flexible Option.—The distribution of WTP for the option that combines flexible scheduling, flexible number of hours, and working from home is shown in Figure 4. If these types of flexibility are complements, workers could value the sum of the components more than the parts. We don't see evidence supporting this: the mean valuation of this combined option ($1.17) is close to the sum of its components ($1.59). This approximate equivalence does, however, provide some reassurance that we are not subjected to the embedding bias of Kahneman and Knetsch (1992).[40] Overall, the combined flexible option looks very similar to the work from home option, the only worker-friendly alternative that workers seem to value.

Employer Discretion.—While most workers seem content to work a regular M–F 9 AM–5 PM job with a fixed schedule and a set number of hours, they are quite averse to arrangements where the employer has discretion over the work schedule. As a reminder, we gave workers a choice of a 40 hour-per-week, M–F 9 AM–5 PM job and a 40 hour-per-week job where the employer sets the schedule—which can include evenings and weekends, but not nights—one week in advance.[41] Figure 5

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[39] The choice we study is slightly different from the one in Bloom et al. (2015) in that our choice provided workers the option of working from home, not a potential requirement to do so.

[40] The embedding bias occurs when individuals are estimated to have a higher WTP for a good when the good is evaluated on its own rather than when it is presented as part of a larger, composite good.

[41] In a pilot, we told workers we would give them this schedule two weeks in advance and the results were similar.
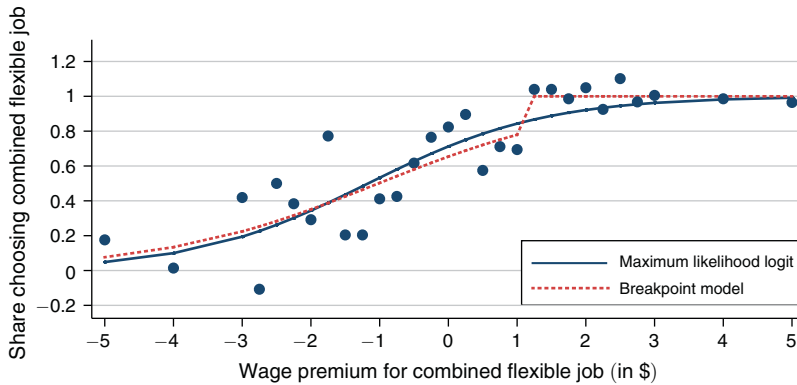
FIGURE 4. WTP FOR COMBINED FLEXIBLE JOB (*Corrected for Inattention*)

Notes: Applicants chose between a job with a traditional M–F 9 AM–5 PM schedule and one that would allow them to make their own schedule, choose the number of hours they work, and work from home (the "combined flexible" job). The points show the fraction of applicants who chose the combined flexible job at each wage premium. The wage premium is the wage in the combined flexible job minus the wage in the M–F 9 AM–5 PM job. These points have been corrected for applicant inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.
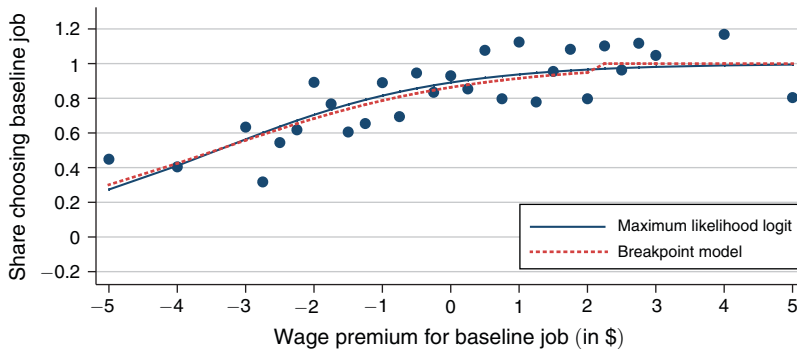
FIGURE 5. WTP TO AVOID EMPLOYER DISCRETION (*Corrected for Inattention*)

Notes: Applicants chose between a job with a traditional M–F 9 AM–5 PM schedule and one with a schedule that varied from week to week, could include evenings and weekends, and was given to workers one week in advance (the "employer discretion" job). The points show the fraction of applicants who chose the M–F 9 AM–5 PM job at each wage premium. The wage premium is the wage in the M–F 9 AM–5 PM job minus the wage in the employer discretion job. These points have been corrected for applicant inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

shows the CDFs for the WTP distribution to avoid this option. Note here that the baseline M–F 9 AM–5 PM job is now the higher amenity position and the *y*-axis is the fraction of people who choose the baseline job. The *x*-axis is the wage difference between the baseline position and the employer discretion position. For this alternative, the ML and breakpoint models yield an almost identical fit, suggesting no mass point in the WTP distribution. The average worker is willing to give up 20 percent of wages to avoid this employer discretion (Table 5 and online Appendix Table 4).

And while there is variation in workers' aversion to this work arrangement, even the bottom 25 percent of workers are willing to give up 10 percent of earnings to avoid this option. Here we see a similar pattern of estimates in the nationally representative UAS study discussed below as well as in the 20 hour-per-week comparisons (online Appendix Table 6).

Workers may dislike employer discretion either because it entails working nonstandard hours or because it requires workers to adjust their schedules on short notice. We use two sets of supplemental treatments to distinguish between these possibilities. We find that workers have a strong aversion for working nonstandard times, in particular evenings and weekends. However, conditional on working nonstandard hours, they do not appear to dislike having their hours change from week to week or learning their schedules only a week in advance.

In the first supplementary treatment we gave some workers a choice between a standard M–F 9 AM–5 PM job and a job with a potentially nonstandard schedule that was consistent from week to week. (The exact wording of this treatment and the others in this section are presented in online Appendix Table 13.) The position description stated that the work schedule would be the same from week to week, but would be determined at a future time, before the job begins.[42] This job differs from the employer discretion job only in that in this job the hours are the same from week to week, while in the employer discretion job, the schedule can change from week to week and workers are only guaranteed a week's notice of their schedule. Despite the fact that this job came with consistency and ability for more advanced planning, the average worker required the same amount to take this job (20 percent) as they did for the employer discretion job (Table 7). This points to the nonstandard work schedule as the more likely reason for the strong distaste for irregular jobs.

We test workers' aversion to nonstandard schedules directly in the second set of supplementary treatments. Here we elicit preferences for schedules that involve working alternative times and days. We gave workers a choice between our baseline M–F 9 AM–5 PM job and jobs with consistent alternative schedules: (i) M–F 7 AM–3 PM, (ii) M–F 12 PM–8 PM, and (iii) Th–M (including weekends) 9 AM–5 PM. On average, workers like the 7 AM–3 PM schedule. However, they dislike working evenings and weekends. The average worker requires 14 percent more to work evenings and 19 percent more to work weekends. It is interesting that the point estimate for the mean WTP to avoid weekend work ($3.27) is very close to the corresponding point estimate to avoid employer discretion ($3.41). This pattern further reinforces the conclusion that the aversion to employer discretion is rooted in a distaste for nonstandard work schedules. These findings are also helpful in that these very differently worded comparisons lead us to the same conclusions, quantitatively and qualitatively, suggesting internal consistency in the experimental approach.[43]

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[42] The schedule in this job was described as follows: "The work schedule in this position will be the same from week to week. You will be given your work schedule before the job begins. The hours can be morning through evening, weekdays and weekends, but not nights."

[43] Diamond (1996) recommends testing for internal consistency in contingent valuation surveys. We go further in Section IV by comparing WTP estimates in the market setting to estimates from a nationally representative survey.

Table 7—Unpacking Aversion to Employer Discretion

Alternative option	Base option	Mean	SD	Quantiles			Observations
				25th	50th	75th	
Irregular hours, consistent schedule	M–F 9 am–5 pm	$3.42 (0.50)	$5.73 (1.05)	−$0.05 (0.48)	$3.42 (0.50)	$6.89 (1.04)	626
Morning schedule (M–F 7 am–3 pm)	M–F 9 am–5 pm	−$1.09 (0.44)	$1.12 (1.52)	−$1.77 (0.74)	−$1.09 (0.44)	−$0.41 (1.24)	202
Afternoon/evening schedule (M–F 12 pm–8 pm)	M–F 9 am–5 pm	$2.39 (0.73)	$4.34 (1.04)	−$0.24 (0.46)	$2.39 (0.73)	$5.02 (1.28)	195
Weekend schedule (Th–M 9 am–5 pm)	M–F 9 am–5 pm	$3.27 (0.70)	$4.13 (0.99)	$0.76 (0.55)	$3.27 (0.70)	$5.77 (1.18)	209
2nd shift (M–F 3 pm–11 pm)	1st shift (M–F 7 am–3 pm)	$5.20 (1.72)	$6.21 (2.13)	$1.43 (0.76)	$5.20 (1.72)	$8.96 (2.94)	192

Notes: The table provides statistics on workers' willingness to pay for the base option relative to the alternative option. Estimates are based on an inattention-corrected maximum likelihood logit model using data from the experiment. Bootstrapped standard errors based on 500 samples are in parentheses. Online Appendix Table 13 contains the job description text for each treatment.

We also estimate workers' willingness to pay to work the "1st shift" (M–F 7 am–3 pm) relative to the "2nd shift" (M–F 3 pm–11 pm), by having workers choose between these two options. We find that workers strongly prefer the first to the second shift. Even the 25 percent of workers who least dislike the later shift require approximately 8 percent more to work the second shift. This is larger than the second shift wage premium reported in employer surveys. These surveys tend to find that only a relatively small share of employers has a second shift premium, and when they do it is in the 5–10 percent range (Aguirre and Moore-Ede 2014).

IV. Understanding America Study

To further probe the external validity of our experimental results, we designed a survey to elicit valuations of work arrangements from participants in the nationally representative Understanding America Study.[44] We focus on three work arrangements: flexible scheduling, working from home, and employer discretion.

All employed and unemployed respondents were asked to consider the following scenario about an employer discretion job:

> *Imagine that you are applying for a new job in your* [*current line of work, same line of work as your last job*], *and you have been offered two positions. Both positions are the same as your* [*current/last*] *job in all ways, and to each other, other than the work schedule and how much they pay. Please read the descriptions of the positions below.*
>
> *Position 1) This position is 40 hours per week. The work schedule is Monday–Friday 9 am–5 pm. This position pays the same as your* [*current/last*] *job.*

> *Position 2) This position is 40 hours per week. The work schedule in this position varies from week to week. You will be given your work schedule one week in advance by your employer. The hours can be morning through evening, weekdays and weekends, but not nights. This position pays "X" your [current/last] job. Which position would you choose?*

Here, [current/last] is "current" for employed workers and "last" for unemployed workers. Employed workers were instructed that these positions were in their current line of work, while unemployed respondents were told the positions were in the same line of work as their last job. For employed workers "*X*" randomly varies between "30% less than," "the same as," "2% more than," "5% more than," "10% more than," "15% more than," "25% more than," and "35% more than."[45] These values were chosen to match the values used in our experiment, where the largest wage gap offered was 31 percent. We used fewer values of *X*: "5% more than," "15% more than," and "35% more than," for the unemployed group since it is a much smaller sample. We use workers' choices when the employer discretion job pays 30 percent less than the M–F 9 AM–5 PM job to measure inattention. As in our experiment, we assume that workers choosing the employer discretion job when it pays 30 percent less are inattentive. We randomized whether the employer discretion position was Position 1 or Position 2.

We ask workers a similar question to elicit their WTP to work from home, with two adjustments. First, we allow for the possibility that some workers cannot do their jobs from home. We first ask workers, regardless of where they actually work, what fraction of their work could feasibly be completed from home. If they answered at least 10 percent, our hypothetical positions are described as being in the workers' current line of work and the same as their current job in all ways other than the work location and pay. If less than 10 percent of their work could be completed from home, we describe the jobs as being a new line of work.[46] Second, to determine the effect of travel time on WTP for working from home, we randomize the one-way commute time "*Y*." We chose the commute times, 10, 20, 30, and 40 minutes, to match the mean commute time in the experimental sample and use the same values of "*X*" as in the employer discretion question:

> *Imagine that you are applying for a new job in [your current line of work, the same line of work as your last job, a different line of work] and you have been offered two positions. Both positions are the same [as your current main job, as your last job] in all ways and to each other, other than the work location and how much they pay. Please read the descriptions of the positions below.*

> *Position 1) This position has the same schedule as your [current, last] job. In this job, you have the option of working from home as well as on-site "Y" minutes from your home. This position pays the same as your [current, last] job.*

> *Position 2) This position has the same schedule as your [current, last] job. This job requires you to work exclusively on-site "Y" minutes from your home. This position pays "X" your [current, last] job. Which position would you choose?*

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[45] We also clarify that "By pay we mean your salary if you [are, were] a salaried employee or your hourly pay if you [are, were] an hourly employee. If you [are, were] a part-time salaried employee we mean the salary you would have received if working on a full-time basis."

[46] Unemployed workers are asked this question about their previous job and treated accordingly.

To elicit WTP for flexible scheduling, we first ask respondents whether they can choose the days and times that they work. Unemployed and self-employed respondents are not included. If the respondent reports having a flexible job, we ask:

> *Suppose your primary employer gives you the option of working a fixed work schedule, Monday-Friday during the daytime. Under this arrangement you would continue to work your usual number of hours but once your schedule is set you may not change the times and days of work. In exchange for having this fixed rather than flexible schedule you would get [2/5/10/20/35]% higher pay. Would you agree to this arrangement if given the choice?*

If the respondent does not report having a flexible job we ask:

> *Suppose your primary employer gives you the option of being able to make your own work schedule. Under this arrangement, you would continue to work your usual number of hours but you may freely choose the times and days you work. In exchange for having this flexible rather than fixed schedule you would get [2/5/10/20/35]% lower pay. Would you agree to this arrangement if given the choice?*

The UAS allows us to ask about the presence of children in the home, which seemed inappropriate on a job application. The survey targeted 2,318 respondents and the response rate was 84 percent.[47]

We present the findings in two ways. We show figures like the ones for job applicants, plotting the share of respondents who selected either the baseline position (in the baseline versus employer discretion comparison) or the work-from-home or flexible-schedule position. We also estimate inattention-corrected ML models, as above, to quantify valuations over these alternatives (Table 8). In the UAS, workers' average willingness to pay for flexible scheduling was 2.5 percent of wages, relative to 2.8 percent in our experimental data. This argues against the concern that experimental participants disguised their desire for flexibility to be more appealing applicants. We designed our choice page to explicitly eliminate this concern, assuring applicants that (i) their choice would not affect whether they were hired, but only what job they were matched to and (ii) their choice would be reviewed only after hiring decisions were made. Applicants' willingness to avoid the employer discretion job also suggests that they were not simply choosing the most palatable job to employers.

Figure 6 plots the choices for the flexible-schedule job for survey respondents not in flexible-schedule jobs. There is very little demand in this group for flexible positions; only one-half of respondents are willing to take even a 2 percent pay cut for flexibility. Among individuals currently in positions with flexible scheduling, it is more nuanced. While the mean WTP is still quite low among this group (2.0 percent), there is a subset of workers that really values flexibility. The top 25 percent of workers in flexible jobs is willing to give up 16 percent of their pay for the option to make their own schedule. This is consistent with sorting in the labor market,

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[47] We added the work from home questions in a later module. We targeted the same individuals, but the response rate was 74 percent.

TABLE 8—WILLINGNESS TO PAY FOR ALTERNATIVE WORK ARRANGEMENTS (*Percent of Wages*)

Panel A. Mean WTP for flexible schedule

All	In flexible schedule job	Not in flexible schedule job	Difference
2.5	2.0	1.9	0.1
(0.4)	(1.9)	(0.3)	(1.9)
1,598	450	1,148	1,598

Panel B. Mean WTP for work from home

All	Has formal work from home arrangement	No formal work from home arrangement	Difference
10.0	18.7	8.6	10.1
(1.4)	(2.5)	(1.6)	(3.0)
1,371	177	1,193	1,370

Panel C. Mean WTP to avoid employer discretion

All	In irregular, inconsistent schedule job	Not in irregular, inconsistent schedule job	Difference
29.3	26.9	30.5	3.6
(1.7)	(5.2)	(2.0)	(5.6)
1,614	218	1,250	1,468

Notes: The table shows statistics for workers' willingness to pay for (or to avoid) the various alternative work arrangements relative to the M–F 9 AM–5 PM baseline job. Respondents are considered to have a flexible schedule job if they report being able to make their own schedule at work and an irregular schedule job if their employer chooses the worker's schedule and it varies from week to week. Estimates, expressed in percents of wages, are generated using an inattention-corrected maximum likelihood logit model. Standard errors calculated using the delta method are in parentheses.
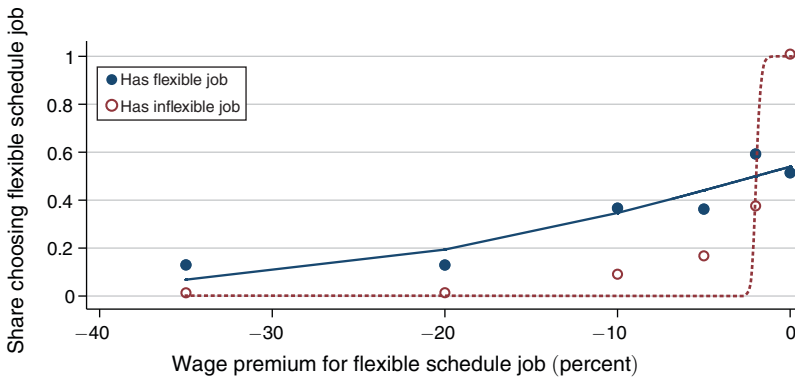
Source: UAS data

FIGURE 6. WTP FOR FLEXIBLE SCHEDULE (*Corrected for Inattention*)

Notes: Survey respondents chose between a job with a traditional M–F 9 AM–5 PM schedule and one in which they could make their own schedule (still working 40 hours per week). The points show the fraction of survey respondents who preferred the flexible schedule job at each wage premium, separately for workers in jobs with and without flexible schedules. When considering workers' existing jobs, flexible jobs are defined as those in which the respondent is able to make his or her own schedule, and all other jobs are defined as having inflexible schedules. Negative wage premia indicate the M–F 9 AM–5 PM job paid more than the flexible schedule job. These points have been corrected for respondent inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

Source: UAS data
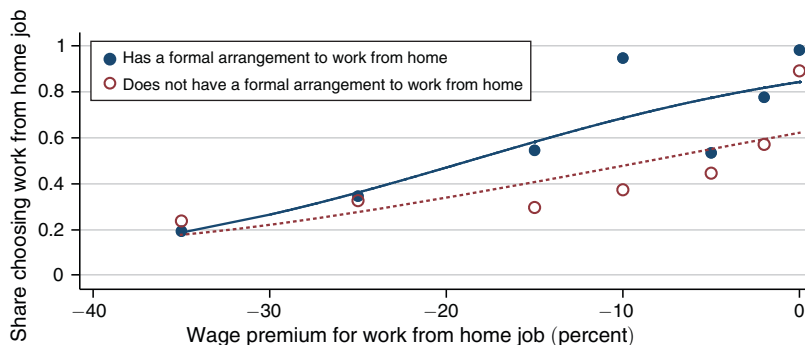
FIGURE 7. WTP TO WORK FROM HOME (*Corrected for Inattention*)

Notes: Survey respondents chose between an on-site job and one with the option to work from home. The points show the fraction of survey respondents who preferred the job with the option to work from home at each wage premium, separately for workers who do and do not have a formal arrangement with their employer to work from home. Negative wage premia indicate the on-site job paid more than the work from home job. These points have been corrected for respondent inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

Source: UAS data

where workers with the highest WTP for flexible scheduling are in flexible-schedule jobs.[48] This may also be driven by the endowment effect, with workers valuing the ability to make their own schedules because they have it.

Figure 7 plots the WTP to work from home separately for workers with and without formal work from home arrangements. Overall, mean WTP for this type of flexibility (10.0 percent) is similar to the WTP we estimate in the experiment. When we reweight WTP in the UAS by the distribution of workers' actual commute times in the experiment, we get an average WTP for working at home of 8.4 percent, very similar to the 7.8 percent we obtain in the experiment. Consistent with labor market sorting, workers with formal work-from-home arrangements are willing to pay significantly more (18.7 percent of wages versus 8.6 percent) for this option. We also estimate the impact of randomly assigned travel time on the WTP for home work in the UAS (Table 9). WTP for working from home is relatively similar when workers have 10- and 20-minute one-way commutes (6.9 percent and 7.4 percent, respectively). It starts increasing when workers have to travel at least an hour round-trip. We also estimated WTP in the field study by workers' estimated actual commute time to the job. For this exercise we used workers' zip codes and the Google Maps API to calculate the typical driving time to the downtown area of each worker's metro area (where the job was said to be located) on a Monday at 8 AM. Most workers who applied to the position were relatively close to the stated work location: 75 percent had less than a 25-minute one-way commute and only 12 percent live more than 35 minutes away. Due to the low number of longer distance commuters, we cannot obtain precise estimates on how WTP varies by commute time in the field.

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[48] Past evidence on sorting into job attributes based on preferences includes Viscusi and Hersch (2001), Borghans, ter Weel, and Weinberg (2014), and Krueger and Schkade (2008).

Table 9—Willingness to Pay for Work from Home Option by Commute Time Using Data from the Survey and the Experiment

Panel A. UAS Mean (percent)	Observations	*Panel B. Experiment* Mean	Observations
I. Job is 10 minutes away 6.9 (2.4)	361	I. Job is less than 15 minutes away $1.22 (1.22)	232
II. Job is 20 minutes away 7.4 (3.1)	321	II. Job is 15–24 minutes away $1.36 (0.49)	211
III. Job is 30 minutes away 12.0 (2.7)	359	III. Job is 25–34 minutes away $1.25 (2.70)	89
IV. Job is 40 minutes away 15.0 (2.9)	330	IV. Job is 35 or more minutes away $2.36 (5.71)	65

Notes: The table shows statistics for workers' willingness to pay for the work from home job relative to the M–F 9 am–5 pm baseline job. Data in panel A come from the Understanding America Study and use the job distance specified in the vignette, which was randomized across job respondents. Data in panel B come from the experiment and use the applicant's distance from the job, calculated using the Google Maps API as described in the text. Distances are for a one-way commute. Estimates are based on an inattention-corrected maximum likelihood logit model using data from the experiment. Standard errors calculated using the delta method (panel A) and bootstrapping (panel B) are in parentheses.

Table 8 shows the additional wages workers need to accept a job with employer discretion. The estimated mean WTP to avoid employer discretion in the survey is 29.3 percent as compared to 23.1 percent in the field study. Amongst unemployed workers in the UAS, WTP to avoid employer discretion is almost identical to the field study (22.7 percent).[49] Consistent with labor market sorting, the average worker in an employer discretion job is less averse to this job than is the average worker in a job without employer discretion, though this difference is not significant (Table 8). Nevertheless, workers in jobs with employer discretion would be willing to give up a significant fraction of their wages for M–F 9 am–5 pm jobs: the top 25 percent of workers would give up at least 43 percent of their earnings (Figure 8). This suggests the presence of frictions or other job characteristics that prevent perfect sorting.

V. Heterogeneity in Valuations

A number of papers suggest that women value flexibility and standard work schedules more than do men (e.g., Wiswall and Zafar 2016) and that this may explain gender wage gaps (e.g., Goldin and Katz 2011 and Cortés and Pan forthcoming). We find that women do have a higher valuation for worker-friendly work arrangements and a stronger distaste for employer discretion than do men. However, the differences in work schedules by gender along these margins are not large enough to explain a substantial part of gender wage gaps.

[49] While one might have worried that many experimental participants were unemployed because they dislike employer discretion, unemployed workers do not dislike employer discretion more than do employed workers.
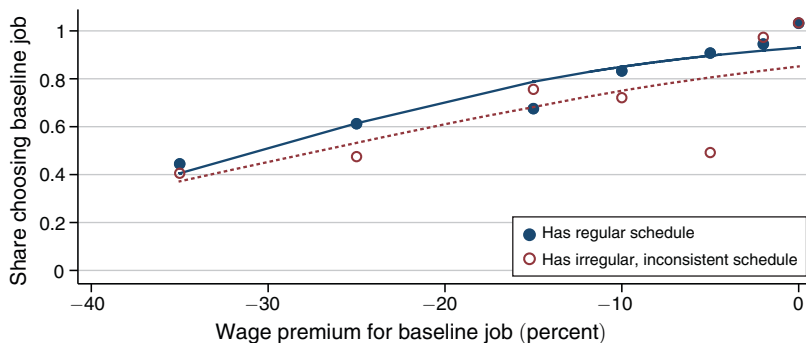
FIGURE 8. WTP to Avoid Employer Discretion (*Corrected for Inattention*)

Notes: Survey respondents chose between a job with a traditional M–F 9 am–5 pm schedule and one with a schedule that varied from week to week, could include evenings and weekends, and was given to workers one week in advance (the "employer discretion" job). The points show the fraction of survey respondents who preferred the M–F 9 am–5 pm job at each wage premium, separately for workers in jobs with regular and irregular schedules. When considering workers' existing jobs, irregular schedules are those in which the respondent's schedule varies from week to week and is set by his or her employer. All other work schedules are considered regular. These points have been corrected for respondent inattention, as described in the text. Due to the inattention correction, the inattention-corrected "shares" can be below 0 or above 1. The maximum likelihood and breakpoint model fits are estimated off the individual-level data, correcting for applicant inattention.

Source: UAS data

Table 10 shows mean willingness to pay by gender for the five main alternative work arrangements in our field experiment and online Appendix Table 14 shows the quantiles of the WTP distributions. On average, neither men nor women are willing to pay much for flexibility in their schedules or in the number of hours they work. While we do not have information on whether the workers in our experiment have children, we do have this information for workers in the UAS. Table 11 shows that, on average, even women with young children (under four years of age) are not willing to take a pay cut for flexible scheduling. Even at the upper quantiles of the distribution, women with young children do not have higher WTP for flexible scheduling than do men. This is consistent with the fact that women with young children are not more likely to be in jobs with flexible schedules (Table 11).

While women do not seem to value the flexibility to adjust their schedule from the traditional M–F 9 am–5 pm schedule, they do seem to be willing to pay substantially more than are men for the ability to work from home (more than twice as much, though this difference is not statistically significant). They are also willing to pay more for the combined flexible job. And women are willing to pay twice as much as are men to avoid employer discretion (Table 10). In particular, in the UAS, we find that women with young kids are willing to give up almost 40 percent of their wages to avoid a job with an irregular schedule. Unlike women, men with young children are not willing to pay more than other men to avoid a nonstandard schedule (Table 11). Women with young children also appear to have a higher WTP to work from home than do other women.[50]

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[50] Our results are similar when we consider children of different ages. For all ages up to 18, we find women with children that age or younger have a higher WTP to avoid employer discretion than do other women. The difference

TABLE 10—WILLINGNESS TO PAY BY GENDER (*Data from the Experiment*)

	Mean WTP for flexibility				Mean WTP to avoid
	Flexible schedule	Flexible number of hours	Work from home	Combined flexible	Employer discretion
Female	$0.58	−$0.19	$1.59	$1.56	$4.27
	(0.34)	(0.28)	(0.40)	(0.48)	(0.78)
Male	$0.16	−$0.34	$0.68	$0.03	$2.11
	(0.34)	(0.36)	(0.42)	(0.43)	(0.54)
Difference (female – male)	$0.42	$0.15	$0.91	$1.52	$2.16
	(0.48)	(0.46)	(0.58)	(0.63)	(0.98)
Observations	609	638	576	654	621

Notes: The table shows the mean willingness to pay for or to avoid each alternative work arrangement, by gender. Estimates are generated using an inattention-corrected maximum likelihood logit model using data from the experiment. Bootstrapped standard errors based on 500 samples are in parentheses.

TABLE 11— WTP BY GENDER AND PARENTAL STATUS (*Data from Understanding America Study*)

	Flexible schedule			Work from home			Employer discretion		
	% in flexible schedule jobs	WTP for flexible schedule	Obs.	% with formal work from home arrangement	WTP to work from home	Obs.	% in irregular, inconsistent schedule jobs	WTP to avoid employer discretion	Obs.
Panel A. Women									
Women with children under 4	27.6%	1.6% (0.8%)	138	18.6%	15.4% (5.4%)	120	13.6%	37.9% (7.4%)	141
Women without children under 4	28.9%	1.7% (0.5%)	724	10.8%	8.4% (2.6%)	638	12.4%	29.8% (2.5%)	742
p-value of difference	0.79	0.88		0.09	0.24		0.76	0.30	
Panel B. Men									
Men with children under 4	19.3%	1.8% (0.6%)	118	9.2%	8.0% (5.6%)	87	13.6%	24.4% (3.9%)	110
Men without children under 4	26.7%	3.6% (0.6%)	617	9.6%	10.3% (1.8%)	524	18.9%	29.0% (2.9%)	620
p-value of difference	0.14	0.05		0.91	0.70		0.25	0.34	
p-value: difference between women with children under 4 and all other groups	0.85	0.25		0.05	0.29		0.59	0.22	

Notes: Estimates are generated using an inattention-corrected maximum likelihood logit model using data from the UAS. Standard errors calculated using the delta method are in parentheses. Respondents are considered to have a flexible schedule job if they are able to set their own schedule and are considered to have an irregular, inconsistent schedule job if their employer sets their schedule and their schedule varies from week to week. The fraction of each group in each type of job is conditional on employment.

As we would expect based on their preferences, women are more likely to work from home (12.9 percent of female and 7.3 percent of male hourly workers have a formal work-from-home arrangement). Women are also less likely to be in jobs

is significant at the 5 percent level only for children under three years old. Women with young children are never willing to pay more for flexible scheduling than are other women, regardless of the age cutoff we use. And women with young children always have a higher WTP to work at home than do other women, but this difference is only ever significant at the 10 percent level.

with inconsistent, irregular schedules (16.6 percent of women versus 19.3 percent of men). These gaps change to 4.4 percent and 5.7 percent, respectively when controlling for education, race and ethnicity, age, marital status, self-employment, and part-time work.[51] However, because the difference in the prevalence of these arrangements by gender is so small, even with sizable compensating differentials, these differences cannot explain large gender wage gaps. For example, with a 20 percent compensating differential for both work at home and working a fixed schedule instead of an irregular one, the differences by gender in the prevalence of these arrangements would only lead to a 1.7 percent raw gender wage gap or a 2.0 percent gap with controls.

While we do find large differences by gender in WTP for alternative work arrangements, we do not find significant or consistently signed differences by the other characteristics we have: ethnicity, age, education, number of ACT WorkKeys questions answered correctly (experimental data only), or family income (UAS data only). Online Appendix Table 15 shows the differences in WTP for alternative work arrangements for these subgroups.

Table 12 presents results from regressions of whether the applicant chose the more-flexible job on worker characteristics. We limit the regression to choices in our main treatments where the more-flexible job had a lower wage. (In the employer discretion treatment, the more-flexible job is the baseline job.) We control for the wage gap Δw. Consistent with our other results, workers choosing worker-friendly arrangements are more likely to be female, but they look similar on other characteristics.

VI. Discussion and Conclusion

We implement a discrete choice experiment in the job application process for a national call center to estimate workers' willingness to pay for alternative work arrangements. Despite widely held views on the importance of workplace flexibility,[52] the majority of workers do not value flexible scheduling or the ability to choose the number of hours they work. Workers do value the option to work from home and strongly dislike employers setting their schedules on short notice, mainly because they don't want to work evenings and weekends. Overall, the traditional M–F 9 AM–5 PM schedule works well for most people, perhaps because this schedule allows them to coordinate their leisure time. Despite these strong preferences for traditional hours, the incidence of odd-hour work is high in the United States. Hamermesh and Stancanelli (2015) find that adjusting for demographics and number of hours worked, workers in the United States are far more likely to work unusual hours than workers in continental Europe.

We find that job-seeker aversion to irregular schedules appears to be rooted more in their distaste for evening and weekend work than inconsistency of schedules.

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[51] These statistics come from the UAS. They differ from the prevalence numbers in Table 11 since here we consider only hourly workers, for whom we think our experiment is most representative. Using all workers in the UAS, women are 2.6 percentage points more likely to have a work-from-home arrangement (1.3 percentage points with controls) and 5.2 percentage points less likely to have an inconsistent, irregular schedule (7.6 percentage points with controls).

[52] Susan Dominus, "Rethinking the Work-Life Equation," *New York Times Magazine*, February 25, 2016 (https://www.nytimes.com/2016/02/28/magazine/rethinking-the-work-life-equation.html).

TABLE 12—RELATIONSHIP BETWEEN JOB CHOICE AND APPLICANT CHARACTERISTICS

	Chose more-flexible job					
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.133 (0.028)					0.140 (0.032)
Black		0.001 (0.029)				−0.012 (0.033)
Hispanic		−0.002 (0.040)				0.013 (0.046)
Other race		0.030 (0.045)				−0.001 (0.050)
Some college			−0.004 (0.032)			−0.005 (0.034)
College degree or more			0.024 (0.037)			0.021 (0.040)
ACT questions correct				0.000 (0.012)		−0.004 (0.013)
Above median age					0.013 (0.025)	−0.014 (0.030)
Mean of dependent variable	0.444	0.438	0.437	0.437	0.445	0.434
Observations	1,564	1,538	1,301	1,301	1,620	1,180
R^2	0.028	0.014	0.021	0.021	0.016	0.037

Notes: Each column presents the results of a regression of an indicator for whether a worker chose the more-flexible of the jobs presented on the characteristics in the left-most column. Applicants from the flexible schedule, flexible number of hours, work from home, combined flexible, and employer discretion treatments who were presented a choice in which the more-flexible job was offered at a lower wage are included. The more-flexible job in the employer discretion treatment is the baseline job. All regressions include a control for the difference in the wages offered.

This may be surprising given the amount of recent policy attention to providing workers with predictability and stability in scheduling. For example, San Francisco and Seattle have recently passed laws that require some employers to give workers their schedules with two weeks' notice and pay workers additional "predictability pay" if they change schedules within this window.[53] In 2015, the New York attorney general investigated 13 large firms for giving workers their schedules on too-short notice.[54] Meanwhile, Starbucks changed its policies to provide baristas with at least one week of advanced scheduling,[55] while Walmart provided some workers with fixed shifts with the same hours each week.[56] We note, however, that our experiment does not include any jobs with on-call scheduling or in which workers learn their shifts less than a week in advance. Workers may still have a strong aversion to these scheduling practices.

[53] For example, see: Jeanne Sahadi, "San Francisco Prasses Retail Worker 'Bill of Rights,'" *New York Times*, December 9, 2014; and Janet I. Tu, "Seattle City Council Approves Worker-Scheduling Law," *Seattle Times*, September 19, 2006.

[54] Hiroko Tabuchi, "Retailers Scrutinized for Schedules and Staffing," *New York Times*, April 13, 2015.

[55] Jodi Kantor, "Starbucks to Revise Policies to End Irregular Schedules for Its 130,000 Baristas," *New York Times*, August 14, 2014.

[56] Lydia DePillis, "Walmart Is Rolling Out Big Changes to Worker Schedules This Year," *Washington Post*, February 17, 2016.

Our estimates of the WTP distribution for workplace amenities allow us to shed light on market compensating differentials. For all of the job attributes we consider, there is considerable evidence of heterogeneity in valuations, suggesting that any analysis based on mean WTP alone will lead to possibly misleading conclusions. While scheduling flexibility is not valued by most workers, the right tail in the WTP distribution still allows for potentially large market compensating wage differentials. The estimates imply that an employer could set the wage of a flexible-schedule job or a work-from-home job at 11 percent or 14 percent below the market wage of a fixed-schedule job, respectively, and still attract at least 25 percent of the applicants who would have applied to the fixed-schedule job at the higher wage.

Whether there is a business case for setting lower wages and providing this flexibility depends on a number of things, including the relative productivity of workers with high WTP. In the Chinese firm studied by Bloom et al. (2015), workers who chose to work from home appear at least as productive ex ante as workers who did not. In our experiment, workers who select into flexible positions differ significantly only in their gender; they have similar educational characteristics and scores on the cognitive application questions as workers choosing less-flexible positions (Table 12). Another important factor is the extent to which a firm can distinguish higher-ability applicants with a high WTP for these arrangements from lower-ability workers since setting a lower wage would mean attracting more lower-ability applicants. A firm would also need to consider the impact of these arrangements on worker productivity, turnover, and capital costs.[57]

Alternatively, we can interpret our estimates as providing the WTP distribution for the overall workforce (or the population of hourly workers). There is evidence that this is a reasonable approximation given the close correspondence between the weighted and unweighted estimates, and the experimental and nationally representative survey estimates. Viewed this way, the WTP distributions shed light on the cost to firms of alternative work arrangements. In the frictionless Rosen (1986) framework, workers with the highest valuations for an amenity work at firms with the lowest cost of providing it. These firms provide the amenity, while higher-cost firms employing lower-valuation workers do not. The market compensating differential is the marginal worker's valuation of the amenity, or equivalently, the marginal firm's cost of providing it.

Taking our estimated distribution of WTP as the market distribution, we can calculate the implied market compensating differential for an attribute by inverting $E[\hat{Y} | \Delta w]$. Under perfect sorting, if p is the share of workers in the alternative arrangement, the marginal worker's valuation is the $1 - p$ percentile of the WTP distribution. This is of course not meant to be taken literally as the actual market compensating differential—there are many reasons why such differentials may not appear—but it is a useful way to assess magnitudes.[58]

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[57] In a randomized experiment, Bloom et al. (2015) find that working from home increased the productivity of call center workers in a Chinese company. Moen et al. (2016) experimentally evaluate the effects of greater employee control over work time in a US company and find evidence of higher job satisfaction and lower stress among employees.

[58] In the presence of frictions, there may be no market compensating differential, even if workers have an aversion to a job attribute. Our finding of heterogeneous valuations provides support for the general case of the Lang and Majumdar (2004) matching model which can explain the absence of compensating differentials, the low incidence of job amenities, and the potential for Pareto-improving regulations on workplace conditions.

In the UAS survey, 20 percent of hourly workers report being able to make their own schedules. Based on our estimates, there are still workers on the margin who would choose flexible scheduling at a 12 percent wage discount. The fact that employers are not offering these marginal workers flexible scheduling suggests that flexible scheduling is quite costly for the marginal employer to implement. To the extent that there is not perfect sorting of workers to firms based on the value of the amenity, this conclusion is amplified: there are workers in inflexible jobs willing to take even larger pay cuts for flexible scheduling.[59] Offering flexible scheduling could be costly to firms because it leads to difficulties in worker coordination or in the ability to monitor workers.

We can do a similar calculation for the ability to choose the number of hours worked. Given that 18 percent of hourly workers in the UAS report being able to choose the number of hours they work, this suggests a market compensating differential of 10 percent: a sizable compensating differential even given that the average worker does not value this type of flexibility.

Despite the fact that the average worker places a relatively high valuation on working from home, only a relatively small share of hourly workers (10 percent in the UAS) has a formal work-from-home arrangement. This suggests that there are workers who don't have this option who would be willing to take 21 percent lower wages for the ability to work from home. The fact that they are not working from home suggests that it is likely quite costly for employers to implement this type of flexibility.[60]

Women value working from home and dislike employer discretion more than men do. However, because men are only slightly less likely to work from home and slightly more likely to work irregular schedules, even with large compensating differentials, these differences in preferences cannot explain a large part of gender wage gaps.

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[59] One caveat is that firms may be prevented from lowering wages by the minimum wage. However, in the UAS we find that the prevalence of and WTP for flexible scheduling are similar when we restrict attention to workers earning above-minimum wages.

[60] This may be surprising given the positive benefits of work from home found in Bloom et al. (2015). Some jobs (e.g., operating a cash register) cannot be conducted from home and many others may require more cooperation and teamwork, potentially reducing the benefits of home work. Alternatively, many employers may overestimate the costs of providing worker flexibility. Hohl (1996) and Altman and Golden (2007) also suggest that flexible scheduling may reduce firms' costs (e.g., by reducing turnover) or have a negligible effect on costs.

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