

Online Appendix to Labor Supply and the Value of Non-Work Time: Experimental Estimates from the Field

Alexandre Mas and Amanda Pallais

Appendix A. UAS Survey Details

The Understanding American Study (UAS) Survey 79 was distributed by the University of Southern California Center for Economic and Social Research (CESR) to 5,812 people in their nationally-representative panel of respondents who speak English and had completed a background survey. The survey was in the field from December 15, 2016 until February 7, 2017, and 74% of the invited panel participants completed the survey. Respondents were compensated \$3 for the survey, which averaged 4 minutes.

Respondents were asked for their labor force status and were then routed to corresponding sections of the survey. All respondents were asked the easiest way to report their earnings (hourly, weekly, etc.) at their main or last job, and how much they typically earn(ed) at their main or last job in that pay period.

Employed and unemployed respondents then saw a series of vignettes that paired two hypothetical jobs which differed only in the number of hours per week and wages. Before proceeding to the next vignette, respondents chose the job that they would prefer. The (randomized) wages in these vignettes were percentage multiples of their current or previous wage, entered earlier in the survey.

Specifically, we asked:

Imagine that you are applying for a new job in the same line of work as your [main, last] job and you have been offered two positions. Both positions are the same as your [main, last] job and to each other in all ways including benefits, other than the work schedule and how much they pay. Assume you can take no other jobs. ¶ Please read the descriptions of the positions below. ¶ Position 1) This position is X+10 hours per week and has a fixed Monday-Friday daytime schedule. The position pays \$Y per hour. ¶ Position 2) This position is X hours per week and has a fixed Monday-Friday daytime schedule. The position pays \$Z per hour. ¶ Which position would you choose?

Here, “X” is 10, 20, or 30 hours per week and “Y” – the hourly wage in the longer job – is a worker’s current hourly wage. The hourly wage in the shorter job, “Z”, is a random multiple of the worker’s current hourly wage: [65%, 80%, 90%, 95%, 98%, 100%, 102%, 105%, 110%, 120%, 135%]. We use these wages to calculate effective wages using Equation (1) in the text. [Main, last] is “main” for employed workers and “last” for unemployed workers. Each employed or unemployed participant answered all four hypotheticals. The order of the questions was randomized as was which job was Position 1. The remainder of the survey asked about respondents’ marital status, parental status, and any partner’s or spouse’s labor supply behavior.

The estimate for \tilde{z} presented in the text is based on a sample of respondents who are in the labor force and reported their pay hourly. This includes 2,354 choices made by 785 people.

Appendix Figure 1. Job Advertisement

[center] [Phone Survey Associate / Data Entry Associate] ([city, state])

[center] is currently recruiting [phone survey interviewers / data entry associates].

This is not a sales or telemarketing position.

Please follow the link [link] to apply to this opportunity. We do not accept applications through email.

Essential Functions

[Make phone calls in order to implement phone surveys / Accurately and quickly perform data entry tasks]

Desired Skills

Good communication skills

Ability to work with others

Used to basic computer and/or mobile applications

- Principals only. Recruiters, please don't contact this job poster.
- do NOT contact us with unsolicited services or offers

compensation: Hourly

employment type: employee's choice

Notes: The name of the center is redacted.

Job Description

Tell us which of the following two positions you prefer. The type of work is the same in both jobs. Please click on each job title in order to review the work descriptions.

It is important that you read the position descriptions carefully so you can indicate your preference below.

Positions

Phone Survey Associate Position #104 (click for description)

This is a one-month work-from-home phone survey position.

The position is 25 hours per week.

This position pays 15.60 dollars per hour.

Phone Survey Associate Position #126 (click for description)

This is a one-month work-from-home phone survey position.

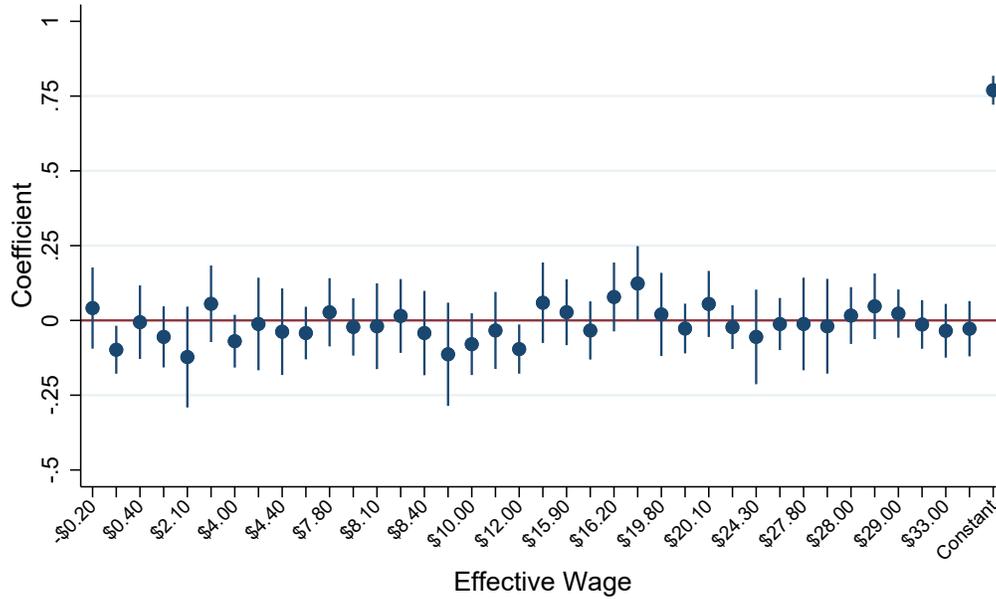
The position is 20 hours per week.

This position pays 18.00 dollars per hour.

If you were selected for both positions, which one would you prefer? Write your preferred position in the box below. If you are hired, we will offer you your choice. Your choice will not affect whether you receive a job offer. It will only be reviewed after hiring decisions have been made. If there are other open positions at _____ you will also be considered for those. If you are not interested in applying, simply click on "No thanks, this isn't for me".

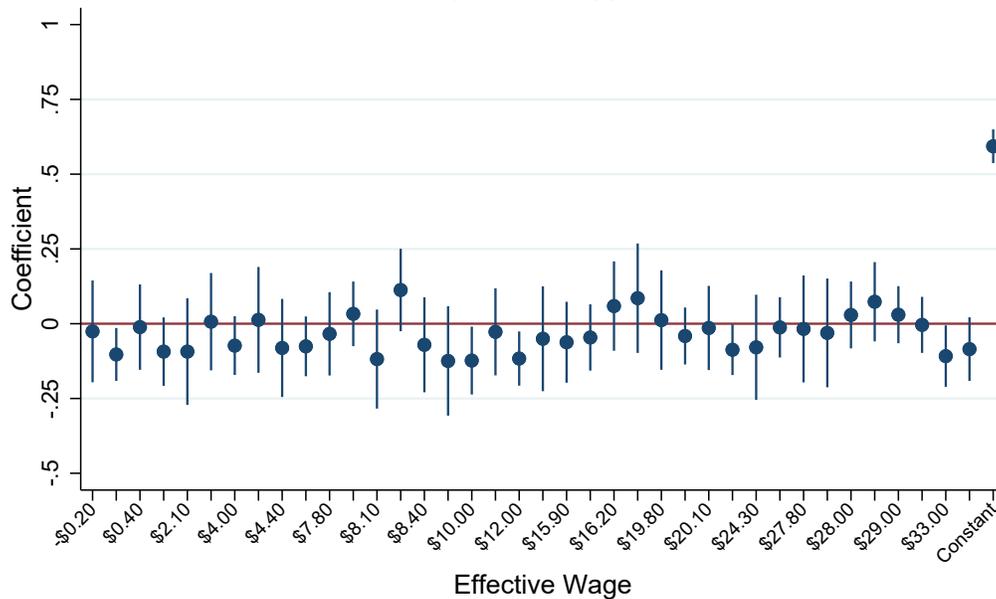
Notes: Here, the name of the center is redacted.

Appendix Figure 3. Probability of Choosing a Job Option by Effective Wage
All Experiment Applicants



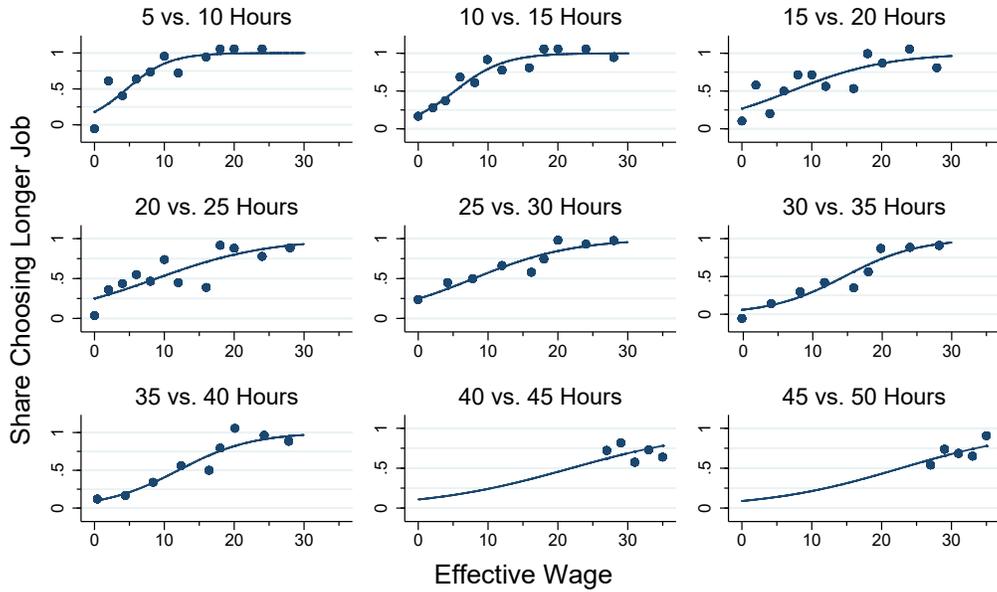
Notes: The figure plots the coefficients from a regression of an indicator for choosing one of the two job options on (non-rounded) effective wage dummies. Applicants are included if they were presented with the job options. The omitted category is an \$18 effective wage. Vertical bars show 95% confidence intervals.

Appendix Figure 4. Probability of Submitting Subsequent Demographic Information by Effective Wage
All Experiment Applicants



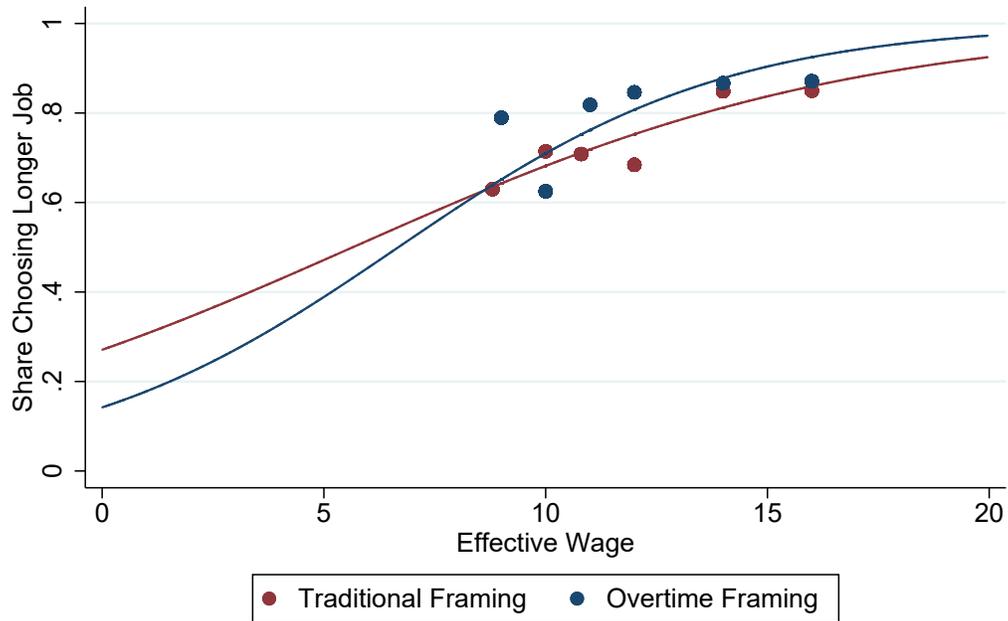
Notes: The figure plots the coefficients from a regression of an indicator for submitting the demographic information after the job choice on (non-rounded) effective wage dummies. Applicants are included if they were presented with the job options. The omitted category is an \$18 effective wage. Vertical bars show 95% confidence intervals.

Appendix Figure 5. Marginal Value of Time
Unemployed Applicants; Corrected for Inattention



Notes: Applicants chose between two jobs with different hours per week and hourly wages. Each panel shows results from a different choice. The points show the inattention-corrected shares of applicants who chose the longer position at each effective wage, plotted as $(\hat{Y}_h - \hat{\alpha}) / (1 - 2\hat{\alpha})$, where \hat{Y}_h is the fraction of applicants who chose the longer hours job. Due to the inattention correction, these 'shares' can be below zero or above one. The maximum likelihood fits show the results of estimating a mixture model off of the individual-level data. Specifically, we estimate $Pr(1[h_i] = 1 | e_{ih}) = P_e(1 - \alpha) + (1 - P_e)\alpha = F(be + c; \mu, \sigma)(1 - 2\alpha) + \alpha$, where $P_e = Pr(MVT_{ih} < e_{ih})$ and 2α is the fraction of individuals who are inattentive. We estimate $2\hat{\alpha} = 10.0\%$ using the fraction of applicants who incorrectly recalled their job choice later in the application. In the '40 vs. 45 Hours' and '45 vs. 50 Hours' panels, we constrain the intercepts, $Pr(1[h_i] = 1 | e_{ih} = 0)$, to values predicted using the estimated intercepts at lower hour treatments, as described in the text.

Appendix Figure 6. Framing Comparison
35 vs. 40 Hours



Notes: The figure shows the results from the framing comparison described in the text. In the “traditional framing,” the 35 and 40 hour jobs had two separate hourly wage rates. In the “overtime framing,” the 35 and 40 hour jobs both paid the same wage up to 35 hours per week. The 40 hour job paid a separate wage for the last five hours (hours over 35 hours per week). All experimental applicants in this treatment are included, regardless of their employment status. As in the main results, we constrain the intercept of the overtime framing treatment, $Pr(1|h_i = 1|e_{ih} = 0)$, to a value predicted using the estimated intercepts at lower hour treatments.

Appendix Table 1. Hourly Wages by Effective Wage

Effective Wage	<u>5 vs. 10 Hours</u>		<u>10 vs. 15 Hours</u>		<u>15 vs. 20 Hours</u>		<u>20 vs. 25 Hours</u>		<u>25 vs. 30 Hours</u>		<u>30 vs. 35 Hours</u>		<u>35 vs. 40 Hours</u>	
	5 Hours	10 Hours	10 Hours	15 Hours	15 Hours	20 Hours	20 Hours	25 Hours	25 Hours	30 Hours	30 Hours	35 Hours	35 Hours	40 Hours
\$0.00	18.00	9.00	18.00	12.00	18.00	13.50	18.00	14.40	18.00	15.00	18.00	15.40	18.00	15.80
\$2.00	18.00	10.00	18.00	12.70	18.00	14.00	18.00	14.80	18.00	15.70	18.00	16.00	18.00	16.30
\$4.00	18.00	11.00	18.00	13.30	18.00	14.50	18.00	15.20	18.00	16.30	18.00	16.60	18.00	16.80
\$6.00	18.00	12.00	18.00	14.00	18.00	15.00	18.00	15.60	18.00	17.00	18.00	17.10	18.00	17.30
\$8.00	18.00	13.00	18.00	14.70	18.00	15.50	18.00	16.00	18.00	17.70	18.00	17.70	18.00	17.80
\$10.00	18.00	14.00	18.00	15.30	18.00	16.00	18.00	16.40	18.00	18.00	18.00	18.00	18.00	18.00
\$12.00	18.00	15.00	18.00	16.00	18.00	16.50	18.00	16.80	18.00	18.00	18.00	18.00	18.00	18.00
\$16.00	18.00	17.00	18.00	17.30	18.00	17.50	18.00	17.60	18.00	18.00	18.00	18.00	18.00	18.00
\$18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
\$20.00	16.00	18.00	17.00	18.00	17.30	18.00	17.50	18.00	17.60	18.00	17.70	18.00	17.70	18.00
\$24.00	12.00	18.00	15.00	18.00	16.00	18.00	16.50	18.00	16.80	18.00	17.00	18.00	17.10	18.00
\$28.00			13.00	18.00	14.70	18.00	15.50	18.00	16.00	18.00	16.30	18.00	16.60	18.00

Notes: For each applicant, we randomly selected an hours choice and an effective wage. Each row displays the hourly wages associated with a given effective wage.

Appendix Table 2. Descriptive Statistics

	Experiment		CPS	
	All	Unemployed Applicants	All	Phone Survey and Data Entry Workers
Female	83%	83%	51%	68%
Currently Employed	41%	0%	95%	100%
Full-time	14%	0%	79%	81%
Part-time	28%	0%	16%	19%
Unemployed	59%	100%	5%	0%
Unemployed for < 3 Months	37%	64%		
Unemployed for 3-6 Months	7%	13%		
Unemployed for > 6 Months	14%	23%		
Age				
Average Age	33.6	32.7	39.8	37.3
< 30 years old	46%	49%	30%	36%
30-40 years old	30%	30%	22%	25%
> 40 years old	24%	21%	48%	39%
Education				
No High School Degree	2%	2%	14%	6%
High School	27%	30%	27%	30%
Some College, No Degree	44%	44%	19%	29%
College Degree	24%	21%	29%	32%
Advanced Degree	4%	2%	10%	4%
Race				
White	45%	44%	61%	58%
Black	34%	34%	13%	16%
Hispanic	11%	12%	18%	19%
Other	9%	10%	9%	8%
Observations	2,658	1,152	248,596	3,367

Notes: The first column of data presents descriptive statistics on the entire experiment sample, while the second column focuses on unemployed applicants. The third column presents statistics on respondents ages 16 to 64 in the 2016 CPS Merged Outgoing Rotation Groups (MORGs), while the final column includes only CPS respondents in phone survey occupations (telemarketers, bill and account collectors, customer service representatives, and interviewers, except eligibility and loan) and data entry keyers, where observations on workers in phone survey and data entry occupations are weighted by the prevalence of each position in the experiment. CPS respondents with associate's degrees are included in the college degree category.

Appendix Table 3. Randomization Assessment
p-Values from Regressions of Covariates on Effective Wage Dummies

	5 vs. 10	10 vs. 15	15 vs. 20	20 vs. 25	25 vs. 30	30 vs. 35	35 vs. 40	40 vs. 45	45 vs. 50
Age	0.79	0.83	0.95	0.51	0.72	0.78	0.19	0.69	0.47
Female	0.94	0.11	0.14	0.85	0.50	0.21	0.58	0.70	0.43
White	0.51	0.61	0.98	0.83	0.95	0.53	0.84	0.02	0.95
Black	0.75	0.77	0.62	0.91	0.37	0.01	0.42	0.28	0.47
Hispanic	0.30	0.89	0.72	0.83	0.03	0.77	0.14	0.38	0.18
Other Race	0.15	0.44	0.79	0.40	0.78	0.21	0.54	0.01	0.84
Applicants in Treatment	304	305	323	292	305	319	272	272	266

Notes: Each cell reports the p-value of an F-statistic from a separate regression of the demographic characteristic indicated by the row on effective wage dummies for individuals presented with the hours choice indicated by the column. This table includes all applicants who chose one of the jobs presented to them.

Appendix Table 4. Descriptive Statistics by Hours Choice
Unemployed Applicants

	5 vs. 10	10 vs. 15	15 vs. 20	20 vs. 25	25 vs. 30	30 vs. 35	35 vs. 40	40 vs. 45	45 vs. 50	p-value of difference
Age	31.9	31.8	32.2	33.2	31.9	32.7	31.0	33.9	35.3	0.097
Number Reporting Age	116	121	126	150	134	131	108	120	128	1,134
Female	86.7%	80.8%	84.8%	76.9%	85.3%	81.8%	84.8%	83.8%	84.1%	0.658
Number Reporting Gender	98	104	112	130	116	110	92	99	107	968
<i>Race/Ethnicity</i>										
White	42.9%	53.8%	47.8%	43.1%	37.4%	41.7%	45.4%	49.0%	38.6%	0.311
Black	33.7%	28.8%	28.7%	36.2%	36.5%	38.0%	34.0%	31.4%	42.6%	0.483
Hispanic	12.2%	9.6%	14.8%	11.5%	16.5%	13.0%	12.4%	6.9%	6.9%	0.353
Other Race	11.2%	7.7%	8.7%	9.2%	9.6%	7.4%	8.2%	12.7%	11.9%	0.905
Number Reporting Race/Ethnicity	98	104	115	130	115	108	97	102	101	970
<i>Education</i>										
No High School Degree	4.3%	2.4%	3.1%	2.6%	3.0%	0.8%	1.8%	2.5%	0.8%	0.700
High School	29.1%	39.5%	28.9%	27.5%	32.6%	30.1%	33.0%	32.2%	21.7%	0.190
Some College, No Degree	42.7%	33.9%	45.3%	45.1%	53.3%	46.6%	38.4%	45.5%	45.7%	0.143
College Degree	23.1%	23.4%	21.1%	23.5%	8.9%	18.0%	23.2%	18.2%	26.4%	0.027
Advanced Degree	0.9%	0.8%	1.6%	1.3%	2.2%	4.5%	3.6%	1.7%	5.4%	0.148
Number Reporting Education	117	124	128	153	135	133	112	121	129	1,152
Total Applicants in Regression Sample	117	124	128	153	135	133	112	121	129	1,152

Notes: The first nine columns of data show the mean of the demographic characteristic indicated by the row for applicants in the hours choice indicated by the column. The final column shows the p-value from a test that the means across hours choices are equal. The table also provides the number of applicants who reported each piece of demographic information.

Appendix Table 5. Marginal Value of Time
Unemployed Applicants; Corrected for Inattention

	Mean	N
5 vs 10 Hours	\$4.63 (0.95)	117
10 vs 15 Hours	\$5.24 (1.05)	124
15 vs 20 Hours	\$7.03 (1.77)	128
20 vs 25 Hours	\$8.84 (1.72)	153
25 vs 30 Hours	\$7.92 (1.85)	135
30 vs 35 Hours	\$14.56 (1.40)	133
35 vs 40 Hours	\$11.99 (1.53)	112
40 vs 45 Hours	\$21.87 (1.75)	121
45 vs 50 Hours	\$22.73 (1.57)	129
Implied \tilde{z}	0.58 (0.04)	902

Notes: This table replicates the first two columns of Table 1, where the estimates are derived from an inattention-corrected maximum likelihood model. To correct for inattention, we estimate a mixture model $Pr(1[h_i] = 1 | e_{ih}) = P_e(1 - \alpha) + (1 - P_e)\alpha = F(be + c; \mu, \sigma)(1 - 2\alpha) + \alpha$, where $P_e = Pr(MVT_{ih} < e_{ih})$ and 2α is the fraction of individuals who are inattentive. We estimate $2\hat{\alpha} = 10.0\%$ using the fraction of individuals who incorrectly recalled their job choice later in the application.

Appendix Table 6. Marginal Value of Time
All Applicants and Unemployed who Completed the Application

	<u>A. All Experiment Applicants</u>		<u>B. Unemployed Applicants who Completed the Application</u>	
	Mean	N	Mean	N
5 vs. 10 Hours	\$5.52 (0.88)	304	\$4.71 (0.99)	113
10 vs. 15 Hours	\$6.62 (1.08)	305	\$5.28 (1.22)	123
15 vs. 20 Hours	\$8.65 (1.01)	323	\$7.00 (1.91)	128
20 vs. 25 Hours	\$9.96 (1.14)	292	\$8.83 (1.78)	150
25 vs. 30 Hours	\$11.16 (1.18)	305	\$8.02 (1.90)	131
30 vs. 35 Hours	\$16.21 (0.89)	319	\$14.77 (1.36)	131
35 vs. 40 Hours	\$13.20 (1.21)	272	\$12.00 (1.50)	112
40 vs. 45 Hours	\$21.12 (0.99)	272	\$21.28 (1.65)	118
45 vs. 50 Hours	\$25.30 (1.14)	266	\$22.55 (1.52)	128
Implied \bar{z}	0.64 (0.03)	2,120	0.58 (0.04)	888

Notes: This table replicates the first two columns of Table 1. In Panel A, all experiment applicants are included regardless of employment status. In Panel B, only unemployed applicants who completed the application are included.

Appendix Table 7. Marginal Value of Time
Unemployed Applicants, Using Probit and Lowess

	<u>A. Probit</u>		<u>B. Lowess</u>	
	Mean	N	Mean	N
5 vs. 10 Hours	\$4.89 (0.99)	117	\$4.25 (0.97)	117
10 vs. 15 Hours	\$5.20 (1.39)	124	\$5.13 (1.26)	124
15 vs. 20 Hours	\$6.98 (2.01)	128	\$6.03 (2.64)	128
20 vs. 25 Hours	\$9.03 (1.76)	153	\$7.45 (2.92)	153
25 vs. 30 Hours	\$8.00 (1.84)	135	\$7.18 (2.61)	135
30 vs. 35 Hours	\$14.75 (1.30)	133	\$14.97 (1.96)	133
35 vs. 40 Hours	\$12.02 (1.49)	112	\$12.14 (1.87)	112
40 vs. 45 Hours	\$22.02 (1.65)	121	\$16.36 (2.31)	121
45 vs. 50 Hours	\$22.70 (1.51)	129	\$22.79 (3.69)	129
Implied \tilde{z}	0.59 (0.04)	902	0.54 (0.06)	902

Notes: The table provides statistics on workers' marginal value of time in each hours range. Estimates are limited to applicants who are unemployed. In Panel A, estimates are derived from a probit model, and robust standard errors are calculated using the delta method. In Panel B, points are derived from a linear interpolation between points predicted from locally weighted regressions, and standard errors are bootstrapped using 500 samples. The implied \tilde{z} estimate is based on hours up to 40.

Appendix Table 8. Overtime Marginal Value of Time: Robustness to Constraints
Unemployed Applicants

	40 vs. 45 Hours	45 vs. 50 Hours
<i>Intercept Constrained Using</i>		
Linear Extrapolation from Non-Overtime Hours Choices	\$21.89 (1.70)	\$22.69 (1.54)
Quadratic Extrapolation from Non-Overtime Hours Choices	\$27.96 (0.70)	\$28.16 (0.62)
Linear Extrapolation from Non-Overtime Hours Choices: Both Choices Use Same Intercept	\$22.20 (1.66)	\$22.39 (1.58)
Average Intercept from Non-Overtime Hours Choice	\$19.26 (1.94)	\$19.44 (1.85)
Intercept from 35 vs. 40 Choice	\$21.83 (1.71)	\$22.02 (1.62)
No Intercept Constraint	\$43.10 (15.90)	\$24.70 (3.66)

Notes: The table shows the estimated mean and quantiles of MVT for the overtime treatments using different constraints on the "intercept": the fraction choosing the longer job at a \$0 effective wage. In the first five methods, the constraints are calculated using the estimated intercepts from the non-overtime treatments. The first is the preferred method used in the text, where estimated intercepts from the non-overtime hours choices are regressed on the average hours in the choice and this function is used to predict the intercept in the 40 vs. 45 and 45 vs. 50 hours treatments. The second uses the same method, where the function used to predict the intercepts is a quadratic function of hours. In this method, the predicted intercept is below zero, so an intercept of 0.0001 is used. The third uses the same linear extrapolation as the first but constrains the intercepts in both overtime choices to the predicted intercept at 45 hours per week. The fourth uses the average intercept from the non-overtime hours choices. The fifth uses the estimated intercept in the 35 vs. 40 hours choice. The last row of data shows results without intercept constraints. Estimates are limited to applicants who are unemployed and are derived from a maximum likelihood model. Robust standard errors calculated using the delta method are in parentheses. There are 121 observations in Panel A and 129 observations in Panel B.

Appendix Table 9. Descriptive Statistics using Sample Weights
Unemployed Applicants

	CPS	Experiment	
	Hourly Workers	Unweighted	Weighted
Female	50%	83%	50%
Age	38.0	32.7	36.2
<i>Race</i>			
White	58%	44%	60%
Black	14%	34%	15%
Hispanic	21%	12%	18%
Other Race	8%	10%	7%
<i>Education</i>			
No High School Degree	12%	2%	2%
High School	34%	30%	31%
Some College, No Degree	23%	44%	44%
College Degree	27%	21%	20%
More than College	4%	2%	3%
Observations	92,378	1,152	922

Notes: The first column of data shows descriptive statistics for hourly workers ages 16-64 in the 2016 CPS Merged Outgoing Rotation Groups. The second and third columns of data show descriptive characteristics for unemployed applicants in our experiment, with and without sample weights. The weights are constructed using race categories, a female dummy, age, and age*race, age*female, and female*race interaction terms. Sample weights are capped at a maximum of 10 standard deviations above the sample mean weight, affecting one observation.