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Abstract

We test what survey measures of the reservation wage reveal about individual labor supply, i.e., an individual's willingness to substitute leisure by consumption. To this end, we combine the reservation wage measure from a large labor market survey with the reservation wage for a one-hour job that we elicit in an online experiment. We find that these two measures are highly correlated. On average, the experimental reservation wage increases by 50 Cents for every Euro increase in the survey measure.

Keywords: Reservation Wage, Labor Supply, Search, Validation of Survey Measures
JEL Classification: C83, C91, J22

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1 Introduction

The concept of the reservation wage usually appears twice in a labor economics textbook. First, in the section on *labor supply*, and then in the section on *job search*. With respect to labor supply, the reservation wage indicates the threshold wage that makes an individual indifferent between working and enjoying leisure. With respect to job search, it is the threshold above which a concrete job offer is accepted so that no further job search is conducted. These are different concepts. Consider an individual with little regard for leisure. In terms of labor supply, this individual has a low reservation wage. However, when asked what wage she requires to accept a certain job, she may indicate a relatively high reservation wage when in general her job market prospects are very good.

In this paper, we examine what survey measures of the reservation wage reveal about labor supply. A standard question that provides a survey measure for the reservation wage is: "What is the lowest wage you would be willing to work for?" In many cases, these questions are framed in the context of labor search, e.g., the question is introduced by "Imagine you were searching for a job [...]." A large number of studies in labor economics use such measures; see, for example, Feldstein and Poterba (1984), DellaVigna and Paserman (2005), or Le Barbanchon et al. (2017). We combine a survey measure of the reservation wage (framed in the context of search) with an experimental measure of the reservation wage for a one-hour job. Importantly, job search concerns should not matter for our experimental measure since the job is short-term and a one-time opportunity. Thus, if the survey measure only reflects search concerns, the reservation wages from survey and experiment should not be correlated.

We find that the two measures are highly correlated. On average, the experimental reservation wage increases by 0.50 Euros if the survey measure of the reservation wage increases by one Euro. The survey measure therefore reflects not only search concerns, but also an individual's willingness to substitute leisure by consumption. Moreover, we find that observable characteristics that are correlated with the survey measure are also correlated (in the same direction) with our experimental measure. We therefore also contribute to a growing literature which shows that experimental behavior reflects important preferences that matter for real-world behavior (e.g. Dohmen et al. 2011).

2 Survey and Experiment

Survey. Our survey data originate from the "Panel Study Labor Market and Social Security", PASS (DOI: 10.5164/ IAB.FDZD.1806.en.v1). PASS provides a database to study the demographics and labor market behavior of a representative sample of the German population with

an over-representation of long-term unemployed (Trappmann et al. 2013). It is conducted annually by the research institute of the German Federal Employment Agency (IAB). Reservation wages are elicited in PASS in the following way. First, individuals are asked what net monthly earning they would expect if they were searching for a job. Second, they are asked whether they would also work for a net wage lower than that. When the answer is "no", their expected wage equals their reservation wage. When the answer is "yes", the following question is asked: "What would this lower net wage have to be such that you would be willing to work for it?" This procedure ensures that participants do not confuse the concepts of an expected wage and a reservation wage.

Experiment. We offer PASS subjects a job that takes an hour to complete. Their task in the job is to digitalize scanned PDF documents. Subjects can work from home using their own computer. No particular skills or equipment are needed to perform the job. Subjects receive their salary after working on the job for one hour.

In the experiment, we elicit subjects' reservation wages for the job through the Becker-DeGroot-Marschak mechanism, which is a standard tool in experimental economics to elicit reservation values (e.g., Bohm et al. 1997). After describing the job, subjects are asked at which wage between 9 and 35 Euros they are willing to work for one hour. A random number x between 9 and 35 is then generated. If x is weakly above the participant's reservation wage, he or she is admitted to the job and is paid a wage of x. Otherwise, the experiment ends. Thus, each subject has an incentive to indicate the true reservation wage. We also included the option to state that a subject does not want to accept the job even if the wage is 35 Euros.

The experiment was conducted over the internet during the fielding period of PASS wave 11. Upon clicking on the link to our experiment, subjects first participate in a short survey. If subjects are admitted to the job, they can complete it immediately or at a later stage. All payments were made one week after the end of the experiment.

3 Results

We recruited 711 PASS subjects to participate in our experiment (21.7 percent response rate); 551 subjects entered a reservation wage between 9 and 35 Euros, while the others indicated that their reservation wage is above 35 Euros. Table 1 contains the descriptive statistics of our analytic sample; 46 percent are male and the average age is 43.2 years. The average reservation wage is 10.78 Euros per hour in the survey, and 18.00 Euros for the one-hour job in the experiment. In the following, we analyze how these two measures are correlated.

Table 2 presents our main result. We study the correlation between the reservation wage from the survey and the experimental reservation wage. Column (1) contains an OLS re-

gression with the survey measure as exogenous and the experimental reservation wage as endogenous variable. We observe a highly significant positive association. On average, the experimental reservation wage increases by 0.49 Euros when the reservation wage from the survey increases by one Euro. When we take into account that the reservation wage in the experiment is censored to lie between 9 and 35 Euros (Tobit Column (2)), the association even increases to 0.74. In a log-log specification (Column (3)), we find that the experimental wage increases by 0.37 percent when the survey wage increases by one percent. In Column (4), we investigate heterogeneity in the relationship, and we see that survey and experimental wage show stronger associations for males and weaker for unemployed, maybe because the latter have a lower opportunity cost for one hour of work.

In Table 3, we examine which factors influence the experimental and survey reservation wage, using a seemingly unrelated regression framework. Most factors affect the two measures in the same direction and with similar intensity. Male subjects and subjects with high school degree (abitur) ask for a higher wage both in the survey and experiment, while unemployed individuals ask for a lower wage in both domains. Age and relationship status have a significant effect on the survey measure, but not on the experimental measure. Nevertheless, the effects there go in the right direction. With exception to education and relationship status, the magnitude of coefficients is not significantly different. We also find a significant and positive correlation between the unobserved factors in the two regressions.

In summary, these results indicate that the reservation wage from the survey and the experimental reservation wage measure similar objects. In particular, the survey measure provides substantial information about an individual's willingness to exchange leisure for consumption, even though it explicitly refers to job-search. These results can be useful for future experimental work that elicits reservation wages for short-term jobs and for studies that draw on survey measures of the reservation wage.

Table 1: Descriptive Statistics

Variables	experimental sample mean (sd)	N
exp. reservation wage [9,35]	18.00 (7.29)	493
survey reservation wage	10.78 (4.60)	493
male	0.46 (0.50)	493
age in years	43.22 (11.28)	493
unemployed	0.20 (0.40)	493
abitur	0.45 (0.50)	493
married	0.37 (0.48)	493
number children	1.16 (1.16)	493

Note that the number of observations in the analytic sample is lower than the number of subjects that entered a valid reservation wage (N=551). The reason is that we do not obtain survey reservation wages for individuals who never searched for a job but are subjects in the experiment.

Table 2: Estimated correlation of the experimental reservation wage on survey reservation wage

Variables	(1) OLS	(2) Tobit	(3) OLS	(4) OLS
survey res. wage	0.487***	0.744***		0.388***
	[0.077]	[0.123]		[0.087]
log survey res. wage			0.369***	
			[0.047]	
male				1.844***
				[0.649]
unemployed				-1.758**
				[0.835]
age in years				0.028
				[0.031]
abitur				1.125
				[0.688]
married				-0.076
				[0.688]
number children				-0.240
				[0.292]
constant	12.520***	14.552***	1.946***	11.731***
	[0.906]	[1.540]	[0.110]	[1.449]
observations	493	629	493	493
R-squared	0.095		0.117	0.124

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; robust standard errors in brackets; Column (3): log-log-specification. All specifications also control for the meaning treatment, i.e. the experiment variation in high and neutral meaning of the task. The estimated meaning coefficient is not significantly different from zero. Controls in Column (4) are chosen as in Le Barbanchon et al. (2017).

Table 3: Estimated coefficients of joint estimation of log experimental reservation wage and log survey reservation wage

Variables	(1) log exp. res. wage	(2) log survey res. wage	(3) Wald test on coeff. [p-value]
male	0.133***	0.076**	2.12
	[0.035]	[0.030]	[0.145]
unemployed	-0.160***	-0.213***	1.11
	[0.044]	[0.038]	[0.292]
age in years	0.002	0.004***	0.80
	[0.002]	[0.001]	[0.372]
abitur	0.125***	0.229***	6.50**
	[0.036]	[0.030]	[0.011]
married	0.015	0.091***	3.05*
	[0.038]	[0.033]	[0.081]
number children	-0.009	0.010	1.11
	[0.016]	[0.014]	[0.293]
constant	2.629***	2.016***	
	[0.074]	[0.063]	
observations	493	493	
R-squared	0.089	0.239	
residual correlation, ρ	0.253		
Breusch-Pagan statistic	31.45 (0.000)		

*** $p < 0.01$,** $p < 0.05$,* $p < 0.1$ standard errors in brackets in Columns (1) and (2). Seemingly unrelated regression estimates for two equations. Estimates in Columns (1) and (2) also control for the meaning treatment, i.e. the experiment variation in high and neutral meaning of the task. The estimated meaning coefficient is not significantly different from zero. Column (3): Wald statistic for testing the null hypothesis of estimated coefficients having the same effects on outcomes. Breusch-Pagan statistic for testing the null hypothesis of zero error correlation between two equations.

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