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Outside options and wages: What can we learn from subjective assessments?

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Abstract This paper studies the correlates of subjective assessments of how easy it would be for a worker to find another job as good as the present one and how easy it would be for an employer to replace a worker. First, I study the correlates of these two subjective assessments. Second, I study whether respondents who report better chances of reemployment receive higher wages and whether respondents who think they are easy to replace receive lower wages. The results are consistent with the standard job-matching model, which predicts that wages increase with better outside opportunity of the worker and fall with better outside opportunity of the employer.

Keywords Wages · Outside options · Job-matching model

JEL Classification J31 · J41 · J50 · M51

1 Introduction

Subjective assessments can help to inform economists about how the labor market works. For example, measures of job satisfaction have been used to estimate the

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relationship between wages and social capital in the workplace (Helliwell and Huang 2010), gregariousness (Krueger and Schkade 2008), and time to commute (Stutzer and Frey 2008). Other examples include papers on preferences regarding job tasks (Quintana-Domeque 2011), personality traits (Mohanty 2009; Groves 2005), self-assessed health (Böckerman and Ilmakunnas 2009), and "locus of control" studies (Andrisani 1977; Cebi 2007; Coleman and DeLeire 2003).

This paper explores what can be learned from responses to two novel survey questions that were included in the 2000 wave of the Swedish Level of Living Survey (Levnadsnivåundersökningen, or LNU). The first question asks the respondent to assess her own ability to find employment as good as her current job. The second question asks the respondent to judge how easy it would be for her employer to replace her with an equivalent substitute. These two subjective assessments are of interest to labor economists because the responses to them can be interpreted as measures of outside options in the context of the standard job-matching model.

I start by studying the correlates of the subjective questions. Understanding the correlates of these questions is important because later we want to interpret their relationship with wages. Then, I estimate a set of wage equations where I regress wages on the subjective questions. Knowing whether the subjective assessments explain the variation in wages can be used to shed light on whether wages are set in a way described by the standard job-matching model—where wages depend on outside options—or whether other models provide a better account of how wages are set.

It is worthwhile to point out that the two questions on subjective assessments of outside labor market opportunities are unique to LNU. Typically, data on what constitutes a worker's better outside opportunities or data on which workers are hard to replace are not observed, and researchers have to impute those data by using econometric techniques. As the two questions ask about expectations, they capture these prospects as perceived directly by the respondent.

Although using questions about subjective perceptions may strike some as unorthodox, the approach of this paper follows the tradition in labor economics that elicits information about how wages are set by directly asking workers and employers about their experiences. This approach was used by Bewley (1999) in his seminal study on wage rigidity and, more recently, by Hall and Krueger (2010, 2012).

Hall and Krueger (2010, 2012) use survey questions to determine which models characterize how wages are set in the USA. Among others, the models considered include the standard job-matching model with Nash wage bargaining (Mortensen and Pissarides 1994) and the alternating-offer wage bargaining model (Hall and Milgrom 2008). The standard job-matching model assumes that wages are determined by a Nash bargain that "gives primacy to the bargainers' outside options" (Hall and Krueger 2010, p. 8). In contrast, in the Hall–Milgrom model, outside options are not influential and the resulting wage is, in practice, independent of them. Hence, empirically, the two models can be distinguished by the extent to which wages are linked to outside options of the worker and the firm.

Hall and Krueger (2010, 2012) find that one-third of respondents have bargained over pay. However, they cannot directly distinguish between the Mortensen–Pissarides and the Hall–Milgrom matching models because they do not have measures of outside options. Unlike Hall and Krueger, I do not have direct information on the details regard-

ing the wage-setting process, but I can use data on wages and the survey questions on outside options to contrast the standard job-matching model with Nash bargaining and the Hall–Milgrom alternating-offer wage bargaining model.

The main findings are as follows: Better-educated women are systematically more likely to report good chances of reemployment, while for men the relationship between education and reemployment is less clear. This difference could be attributed to gender differences in confidence. For both men and women, conditional on the available observables, wages increase with ease of subjective reemployment and decrease with subjective replaceability, but this relation is more robust for women. If the two subjective questions measure the outside options of the worker and of the employer, then the outside option-wage link is consistent with the predictions of the textbook job-matching model, which assumes that wages are dependent on outside options because they are an outcome of the Nash bargain. However, because this paper uses survey data, one must be exercise caution when interpreting the results. For example, unobserved worker heterogeneity may influence wages as well as survey responses. This unaccounted-for heterogeneity might lead the researcher to overstate the estimated relationship between wages and subjective questions, especially if the researcher knows less about the respondent's circumstances than the survey respondent.

If the results of this paper are to be interpreted through the lens of the job-matching model with Nash bargaining, but direct data on bargaining are not available, one has to ask "Did individual-level wage bargaining exist in Sweden in the late 1990s and early 2000s?" To answer this question, consider the following evidence. Granqvist and Regnér (2008) report that since the 1990s individual negotiations over pay have become frequent in the Swedish labor market. Furthermore, Säve-Söderbergh (2007) uses data from 1999 and 2000 on wage bids, wage offers, and starting wages for a sample of recent college graduates and finds that over half of the respondents in her sample have bargained over pay. Hence, there is evidence that individual-level wage negotiations did take place in Sweden during the period considered in this paper.

The rest of the paper is organized as follows. I begin by presenting the theoretical background, where I focus on the standard job-matching model to illustrate how outside options affect wages and the assumptions regarding the wage-setting process. Next, in Sect. 3, I describe the data used and the two questions central to this paper. I also discuss their relation to the previously outlined theoretical concepts. Section 4 describes the empirical framework. In order to understand the determinants of the subjective assessments, I start by fitting ordered logit models. As a next step, I estimate a set of wage equations including the subjective assessments. Section 5 presents the results, and Sect. 6 discusses the findings. The final section concludes.

2 Theoretical background

In this section, I discuss the textbook job-matching model and the concept of a "threat point" in a Nash bargain. Next, I discuss the empirical predictions of the standard job-matching model with a Nash bargain and the Hall–Milgrom alternating-wage offer model.

First, consider the textbook job-matching model (e.g., Pissarides 2000, chapter 1). In this model, the wage, w, is determined by asymmetric Nash bargaining between

the worker and the firm, and depends on U, the threat point of the worker (scaled by a discount rate, r), V, the threat point of the firm, and p, which denotes worker productivity, weighted by the bargaining power of the worker, β:[1]

$$w = \beta p + (1 - \beta) rU - \beta rV. \tag{1}$$

The equilibrium wage in this model increases with U and falls with V.[2]

Typically, the standard job-matching model sets U equal to the outside option of the worker and V equal to the outside option of the firm. Binmore, Rubinstein, and Wolinsky (1986, p.185) define the outside option as "the best alternative that a player can command if he withdraws unilaterally from the bargaining process." In the standard job-matching model, for the worker this is the utility of unemployment, while for the firm it is the value of holding a vacancy open.

Hall and Milgrom (2008) argue that setting the threat point in the textbook job-matching model equal to the outside option is erroneous. This is because threatening to unilaterally quit the wage bargain and look for another worker or firm to negotiate with is not a credible threat. Instead, the authors argue that the appropriate threat point in the context of the matching model is the perpetuity value of delaying the wage bargain. Hall and Milgrom call their job-matching model the alternating-offer wage bargaining model.

Setting the threat point to the outside option matters for how economists think about how wages are determined. In the standard job-matching model setting the threat point equal to the outside option implies that wages are set by a Nash bargain. If so, then wages depend on labor market conditions, such as labor market tightness, the aggregate wage level, worker productivity, and business cycle conditions. In addition, the worker's outside option, U, depends on the probability of finding a new job and on unemployment benefits, while the employer's outside option, V, also depends on the costs of posting a vacancy and on the probability that an employer fills a vacancy; these expressions are derived in "Appendix 1." Hence, the empirical prediction of the standard job-matching model is that wages depend on outside options because wages are assumed to be set by a Nash bargain.[3]

[1] Note that in the matching literature, the term p is interpreted as the productivity of a match. For the purposes of this paper I treat it as a human capital variable.

[2] It is usually assumed that entry is costless for the firm, $V = 0$. A more general case allows firms to pay an entry cost to enter the market. If the firms exhaust the gains from opening a vacancy, then V equals the cost of entry.

[3] Also other models of involuntary unemployment predict that outside options matter for wages. For example, in the basic sequential job search model, the strategy of the worker is to compare wage offers and pick the best option. The implication of the optimal strategy is that wages increase with better employment prospects. Also, nonsearch models of unemployment may postulate a wage-setting mode dependent on outside options of the worker or the firm or both. For example, the shirking model of the efficiency wage theory (Shapiro and Stiglitz 1984) predicts the efficiency wage to be increasing with the rate at which workers find new jobs. Note that in the standard version of the shirking model of the efficiency wage theory, the firm should not have difficulty in replacing a fired worker. In some versions of efficiency wage models, however, firms may be keen to pay a higher wage because of concerns about worker retention and costs of recruitment; see Lang (1991) and Montgomery (1991). The prediction is that workers who are difficult to replace will be paid higher wages. I focus on the matching literature because one can derive an intuitive

In contrast, in the Hall–Milgrom (2008) model, since the threat points are set to the perpetuity values of delaying the bargain, the impact of the outside options on wages is, in comparison, small. Hence, the prediction of the Hall–Milgrom model is that wages are as good as independent of outside options because wages are assumed not to be set by a Nash bargain. Note that the Hall–Milgrom model does not predict independence of wages from outside options, but rather a limited relationship between wages and outside options.[4] Testing the extent to which wages depend on outside options can be viewed as a way to contrast whether the process of determining wages is better described by the Nash bargaining or by the Hall–Milgrom alternating-offer wage bargaining model, although it is important to stress that, given the data, this test is indirect.

3 Data

The data used for this paper come from the 2000 wave of the Swedish Level of Living Survey (LNU), which includes information on about 5,000 individuals aged 18–75 randomly selected from the Swedish population (Fritzell and Lundberg 1994). The survey is administered in face-to-face interviews, and it is considered to be of high quality.

3.1 Subjective assessments

The 2000 wave of LNU contains two novel questions regarding so-called reciprocal dependence relations in the workplace (Tåhlin 2007). The two questions ask the respondents to assess their chances of reemployment and replaceability in the current job:

1. How easy do you think it would be for you to get a job as good as your current one if for some reason you had to leave your employer?
2. How easy do you think it would be for your employer to replace you if you left?

Responses to both questions are measured on an ordinal scale ranging from 1 to 5, with an answer of "1" indicating "very difficult" and a response of "5" corresponding to "very easy."

Recall that in the standard job-matching framework, under the assumption of risk-neutrality, the wage in Eq. (1) is a split between p and two pecuniary measures: the expected outside wages of the worker and the firm. Hence, the outside options measure

Footnote 3 continued
and linear relationship between wages and the outside options and because it is a well-known framework for analyzing the labor market.

[4] The equilibrium wage expression in Hall and Milgrom (2008) includes an outside option term scaled by the probability of a wage bargain breakdown. The authors argue that when this breakdown parameter equals 1, their model is reduced to the standard job-matching model with a Nash bargain, whereas when this breakdown parameter equals 0, the wage bargaining process is completely separate from the outside option. For their numerical simulations, the authors set the value equal to 0.0055, making the impact of the outside option in practice negligible for wages.

the utility each side gains if either one of them quits the bargaining process and returns to searching. The two LNU questions do not measure the utility of such a scenario; instead they ask the respondent to evaluate how easy it is for each side to return to the labor market and form another match. However, since the outside option of the worker is a function of the probability that a worker can find a job, then question 1) can be thought of as a subjective job-arrival rate, and since the outside option of the firm is a function of the probability that a firm can fill a vacancy, then question 2) can be thought of as a subjective rate at which vacancies are filled. If questions 1) and 2) are indeed measures of these rates, they can be used as proxies for outside options.[5]

In general, answering what subjective assessments measure is a tricky task; see Hamermesh (2004) for a discussion of the use of subjective outcomes in economics. On the one hand, the subjective measures used in this study could measure the true job-arrival rate of the respondent or the true vacancy-filling rate of the respondent's employer. In that case, we would expect them to correlate with predictors of true reemployment or replaceability. For example, if it is costly for workers to move among employers due to geographic location, we would expect the worker to have worse chances of finding as good a job. In that case, we would expect geographic location to correlate with that subjective assessment. On the other hand, because the assessments are subjective, they might be colored by idiosyncrasies of a respondent's personality, such as confidence. In that case, we would not expect observables to explain much of variation in the two LNU questions. Anticipating the results, I find that the variation contained in subjective assessments is a mix of both of these explanations: The questions are both correlated with observables in expected ways, but much of the variation remains unexplained. I return to the discussion regarding the meaning of the two subjective questions in Sect. 6 of the paper.

3.2 Summary statistics

Table 1 shows the variation in the two variables of interest, abbreviated as "Ease of finding as good a job" and "Ease of being replaced."[6] A detailed description of the variables is in "Appendix 2."

In the top panel (panel A) of Table 1, we see that the majority of answers to the subjective assessments are concentrated around the categories "fairly difficult" and "not particularly difficult."[7]

[5] Note that I assume that the job-arrival rate and the vacancy-filling rate vary between workers and their employers, while the remaining factors do not. Instead, in the standard job-matching model the transition probabilities are the same for all workers and firms, workers and firms are ex-ante identical, and the model predicts a single wage. Albrecht and Vroman (2002) study a standard job-matching model that generates worker and firm heterogeneity in wages and outside options by allowing for differences in skills among the workers and differences in job requirements demanded by the firms.

[6] The 2000 wave of LNU includes 5,142 individuals, of who 2,973 report a positive wage. I keep "prime-aged" workers, aged 25–54, and I drop self-employed workers and those employed in farming. The analysis sample consists of 1787 observations.

[7] Pearson's χ^2 test statistic for the hypothesis that the columns and rows in Table 1 are independent has a p value of 0, suggesting that they are not independent. Cohen's kappa coefficient of agreement between these ordinal variables equals 0.0217, suggesting only slight "agreement" between the two measures.

Table 1 Distribution of answers to "Ease of finding as good a job" and "Ease of being replaced"

	Ease of being replaced						
	Very difficult	Fairly difficult	Not part. difficult	Fairly easy	Very easy	Total	%
Panel A: Entire sample							
Ease of finding as good a job							
Very difficult	37	63	77	28	26	231	13
Fairly difficult	52	217	184	54	19	526	29
Not part. difficult	47	211	157	30	9	454	25
Fairly easy	72	178	84	42	7	383	21
Very easy	52	85	28	17	11	193	11
Total	260	754	530	171	72	1787	100
%	15	42	30	10	4	100	
Panel B: Men							
Ease of finding as good a job							
Very difficult	19	35	29	14	10	107	12
Fairly difficult	27	117	82	18	6	250	27
Not part. difficult	30	127	68	20	2	247	27
Fairly easy	48	101	39	23	2	213	23
Very easy	30	49	12	7	8	106	11
Total	154	429	230	82	28	923	100
%	17	46	25	9	3	100	

Table 1 continued

	Ease of being replaced						
	Very difficult	Fairly difficult	Not part. difficult	Fairly easy	Very easy	Total	%
Panel C: Women							
Ease of finding as good a job							
Very difficult	18	28	48	14	16	124	14
Fairly difficult	25	100	102	36	13	276	32
Not part. difficult	17	84	89	10	7	207	24
Fairly easy	24	77	45	19	5	170	20
Very easy	22	36	16	10	3	87	10
Total	106	325	300	89	44	864	100
%	12	38	35	10	5	100	

Source: Swedish Level of Living Survey (LNU), 2000

The lower two panels of Table 1 (panel B and C) show the distribution of answers to "Ease of finding as good a job" and "Ease of being replaced" separately for men and women. Noticeably, a higher percentage of men than women think they would be either very difficult or fairly difficult to replace. Women are more likely than men to think that finding as good a job would be fairly difficult.

Table 2 presents the summary statistics. Because there are relatively few observations per each category, in order to increase the statistical power of the analysis, I convert the two subjective questions into binary indicators: "Easy to find as good a job" and "Easy to be replaced." Each binary indicator equals one if the respondent has answered "fairly easy" or "very easy" and zero if the respondent has answered "very difficult," "fairly difficult," or "not particularly difficult." In Table 11, in the appendix, I present results with alternative definitions of binary indicators. Table 2 shows that about one-third of the sample thinks it would be easy for them to find as good a job, but about 14 % think it would be easy to be replaced by their employer.

Figure 1 presents the distribution of the logarithm of wages for each answer to "Easy to find as good a job" (Panel A) and "Easy to be replaced" (Panel B).

4 Empirical models

In order to understand what explains the variation in the subjective assessments, I begin by estimating a generalized ordered logit, where I regress each of the subjective questions on a vector of observables. This model relaxes the assumption that the coefficients on explanatory variables are constant for the different categorical outcomes and hence nests the standard ordered logit as a special case.

Next, I turn to estimating regressions describing the association between the subjective questions and wages. Consider this model where the log of wages is regressed on the two subjective binary indicators, and a vector of observables, $\mathbf{x}$:

$$\log w = \alpha + \beta_1 \text{ Easy to find as good a job} + \beta_2 \text{ Easy to be replaced} + \mathbf{x}'\boldsymbol{\theta} + \varepsilon,$$

where easy to find as good a job is a dummy that equals one if the respondent answered "fairly easy" or "very easy" and zero otherwise and easy to be replaced is a dummy that equals one if the respondent answered "fairly easy" or "very easy" and zero otherwise.

The standard job-matching model predicts β_1-coefficient to be positive and β_2-coefficient to be negative because wages are assumed to be set through a Nash bargain with threat points set to outside options. In contrast, Hall and Milgrom's (2008) matching model predicts that β_1 and β_2 are, in practice, close to zero because of the limited influence that outside options exert on the threat points. In other words, the prediction of the standard job-matching model is that the β_1-coefficient and β_2-coefficient will be economically large and statistically significant, while the prediction of the Hall–Milgrom model predicts an economically small, although statistically relevant relationship. To judge whether a point estimate is economically large, I compare the results to the estimates of returns to schooling estimated for Sweden. I discuss these estimates further in Sect. 5.2.

Table 2 Descriptive statistics

Variable	Mean	SD	Min	Max
Outcome variables				
Wage (SEK/h)	121.67	62.16	46.46	1732.1
Ease of finding as good a job (1–5)	2.88	1.2	1	5
Ease of being replaced (1–5)	2.46	0.99	1	5
Easy to find as good a job (0–1)	0.32	0.47	0	1
Easy to be replaced (0–1)	0.14	0.34	0	1
Controls				
Years of education/100	0.13	0.03	0.04	0.27
Years of experience/100	0.19	0.09	0	0.4
Years of tenure/100	0.1	0.09	0	0.4
Employer-provided training in last 12 months (0–1)	0.54	0.5	0	1
Private sector (0–1)	0.58	0.49	0	1
Woman (0–1)	0.48	0.5	0	1
Married (0–1)	0.59	0.49	0	1
Union member (0–1)	0.84	0.36	0	1
Unemployed in 1999? (0–1)	0.06	0.23	0	1
No. of times switched industry in past 8 years	1.15	1.62	0	7
Physical capabilities index (1–4)	1.19	0.62	1	4
Socioeconomic status (SES)				
Unskilled blue-collar worker	0.21			
Skilled blue-collar worker	0.18			
Skilled blue-collar worker, a supervisor	0.15			
White-collar worker	0.26			
"Higher-level" white-collar worker	0.20			
Region of residence				
Stockholm	0.19			
Middle-sized cities	0.38			
Southern urban area	0.17			
Northern urban area	0.05			
Northern rural area	0.05			
Gothenburg	0.10			
Malmö	0.05			
Number of observations	1787			

Source: Swedish Level of Living Survey (LNU), 2000

In order to use the subjective questions to contrast these two models in a wage regression, one has to account for differences in human capital. This is because differences in human capital are likely to influence the answers to the subjective responses. To do so, I control for the vector **x**, which consists of measures of human capital, such as years of education, labor market experience, employer-provided training, and

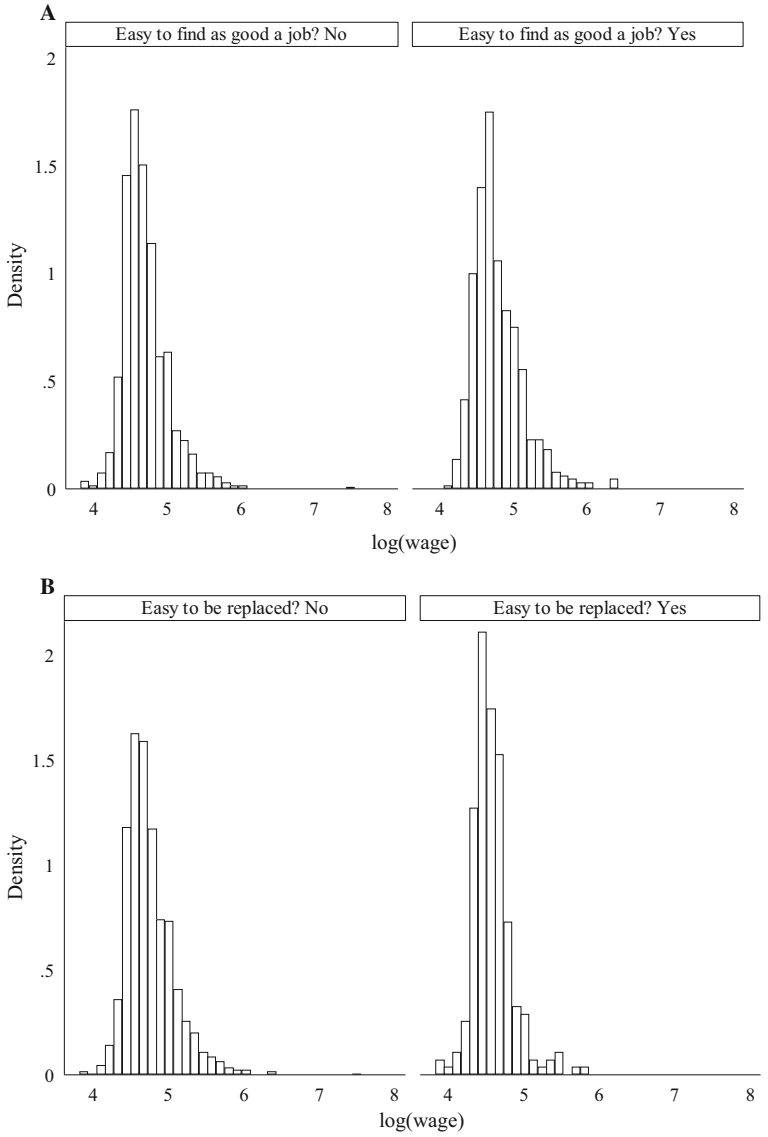

Fig. 1 Histograms of the logarithm of wages for each subjective measure (converted to a binary indicator)

tenure. Furthermore, I control for worker heterogeneity by including socioeconomic category of the respondent, sector of employment, union membership, whether the respondent has been unemployed in the last year, and the number of times the respondent has switched industries where he or she was employed since the last wave of LNU. I estimate separate models for men and women.

In order to interpret β_1 and β_2 as causal estimates, the identifying assumption is that, conditional on **x**, the two subjective dummies are uncorrelated with the regression error term, ε, which is not likely to hold. For example, the way a respondent assesses his or her labor market prospects could reflect personality traits, such as ambition, which is typically unobserved by the researcher. Suppose that ambition correlates positively with wage and with the ease of finding as good a job, but negatively with the ease becoming replaced. In this case, the resulting coefficients will overstate the magnitude of the true β_1- and β_2-parameters. Therefore, the OLS estimates of β_1 and β_2 provide an upper bound of the effect of outside options on wages. Since the subjective questions were only asked in the 2000 wave of LNU, this study cannot use within-person variation to identify β_1 and β_2 and is therefore best interpreted as descriptive.[8]

5 Results

In this section, I first discuss the results from the ordered outcome models. Next, I turn to estimating the relationship between the subjective assessments and wages.

5.1 The determinants of subjective assessments

Table 3 presents the coefficients from two generalized ordered logits, estimated separately for men and for women, for the outcome variable "Ease of finding as good a job" on a set of covariates. Table 4 also presents the coefficients from two generalized ordered logits, estimated separately for men and for women, for the outcome variable "Ease of being replaced" on a set of covariates.[9] I begin by focusing on how the variable *education* correlates with the subjective measures in Table 3 and 4. Then, I highlight other interesting patterns in Tables 3 and 4.

Table 3 presents four models, numbered (1) through (4), where model (1) contrasts the category "very difficult" with the remaining categories, model (2) contrasts the categories "very difficult" and "fairly difficult" with the remaining categories, model (3) contrasts the categories "very difficult,""fairly difficult, " and "not particularly dif-

[8] Ideally, one would have instrumental variables (IVs) to correct for the endogeneity in the two subjective measures. To be valid, such IVs would have to affect wages only through the effect they have on the respondents' subjective assessments. In order to construct such instruments, I calculated average region-by-industry responses to each of the two subjective questions, using the rationale that the conditions in the labor market may affect an individual's wage through the effect they have on the respondent outside options. Unfortunately, the first-stage in the two-stage least squares regressions was relatively weak (F-statistic on the excluded instruments <10). These results are available from the author.

[9] The more standard ordered logit imposes the "parallel-regression assumption," which, in effect, constraints the coefficients on the covariates to be constant across the ordered categorical outcomes. The test of this assumption showed that in particular for the outcome variable "Ease of finding as good a job," the human capital variables (in particular, years of education, employer-provided training, and tenure) reported p values that were close to or less than 0.05; for the other ordered outcome, "Ease of being replaced," the test generated fewer low p values; I conducted the test using the "brant" command in Stata. This suggests that, at least for the human capital covariates, the data might be better described by a generalized ordered logit. I include estimates from a standard ordered logit in the appendix, see Table 7.

Table 3 Generalized ordered logit estimates of correlates of workers' subjective assessments of the "Ease of finding as good a job"

Model	Men				Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Covariates								
Education (years)/100	54.012***	20.239	5.835	−109.883***	40.618**	83.609***	83.517***	55.500
	(20.940)	(16.887)	(18.624)	(30.255)	(16.393)	(16.433)	(21.653)	(49.832)
Education sq. /100	−1.448**	−0.573	−0.012	4.076***	−1.376**	−2.672***	−2.520***	−1.518
	(0.699)	(0.596)	(0.644)	(0.990)	(0.574)	(0.568)	(0.735)	(1.683)
Experience (years)/100	1.356	−1.253	−3.822	−2.277	6.516	5.314	3.425	2.841
	(5.958)	(3.459)	(3.713)	(5.616)	(6.384)	(3.909)	(4.348)	(6.655)
Exp. sq./100	−0.084	−0.041	0.050	0.003	−0.221	−0.155	−0.169	−0.099
	(0.136)	(0.085)	(0.099)	(0.141)	(0.143)	(0.098)	(0.118)	(0.184)
Tenure (years)/100	−5.514	−5.443*	−5.961*	−7.523	−4.670	−3.102	−6.296*	−17.286***
	(4.542)	(3.213)	(3.320)	(5.021)	(4.342)	(3.252)	(3.788)	(5.370)
Tenure sq./100	0.117	0.111	0.134	0.199	0.067	0.025	0.155	0.350*
	(0.131)	(0.098)	(0.109)	(0.168)	(0.131)	(0.107)	(0.136)	(0.207)
Employer-provided training	0.769***	0.208	0.163	0.330	0.114	−0.246	−0.219	0.070
	(0.250)	(0.150)	(0.159)	(0.241)	(0.236)	(0.154)	(0.170)	(0.289)
Married	−0.068	0.085	0.066	−0.320	−0.381	−0.165	−0.033	0.108
	(0.249)	(0.157)	(0.162)	(0.270)	(0.243)	(0.159)	(0.174)	(0.290)

Table 3 continued

Model	Men				Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Socioeconomic status (SES)								
Skilled blue-collar	0.555*	0.749***	0.375	0.186	0.547	−0.035	−0.295	−0.325
	(0.336)	(0.221)	(0.229)	(0.381)	(0.362)	(0.263)	(0.295)	(0.481)
Skilled blue-collar (a supervisor)	0.319	0.445	0.019	0.068	0.563*	0.122	−0.494*	−0.773
	(0.480)	(0.278)	(0.293)	(0.449)	(0.331)	(0.240)	(0.276)	(0.474)
White-collar	−0.156	0.405*	−0.008	−0.518	0.587*	0.104	−0.335	−0.192
	(0.393)	(0.227)	(0.250)	(0.405)	(0.348)	(0.253)	(0.274)	(0.415)
"Higher-level" white-collar	0.216	0.599**	−0.006	0.052	1.050**	0.831**	−0.348	−0.551
	(0.477)	(0.255)	(0.254)	(0.402)	(0.479)	(0.323)	(0.321)	(0.474)
Private sector	0.729***	0.502***	0.310	0.389	−0.493**	−0.265	−0.119	−0.676**
	(0.273)	(0.173)	(0.190)	(0.377)	(0.246)	(0.166)	(0.178)	(0.265)
Union member	0.069	−0.255	0.125	−0.766**	−0.241	0.383*	0.063	−0.481
	(0.380)	(0.212)	(0.208)	(0.300)	(0.352)	(0.225)	(0.234)	(0.381)
Region of residence								
Middle-sized cities	−0.633	−0.136	−0.576***	−0.814***	0.400	−0.531**	−0.492**	−0.594*
	(0.446)	(0.213)	(0.214)	(0.291)	(0.320)	(0.215)	(0.213)	(0.342)
Southern urban areas	−0.774	−0.027	−0.382	−1.232***	0.138	−0.541**	−1.103***	−1.489***
	(0.493)	(0.244)	(0.246)	(0.452)	(0.354)	(0.259)	(0.294)	(0.560)
Northern urban areas	−1.129*	−0.607*	−1.761***	−26.865***	−0.372	−0.826**	−0.734*	−1.394*
	(0.623)	(0.361)	(0.501)	(1.134)	(0.494)	(0.358)	(0.419)	(0.843)
Northern rural areas	−0.493	−0.406	−0.820**	−1.291*	−0.139	−0.760*	−1.583***	−2.354*
	(0.648)	(0.364)	(0.377)	(0.731)	(0.515)	(0.398)	(0.534)	(1.210)

Table 3 continued

Model	Men				Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Gothenburg	−1.280**	−0.216	−0.431	−0.481	0.545	0.131	−0.386	−0.398
	(0.522)	(0.301)	(0.284)	(0.395)	(0.457)	(0.289)	(0.283)	(0.400)
Malmö	−1.040*	−0.105	−0.507	−1.296*	−0.263	−0.775**	0.005	0.470
	(0.591)	(0.380)	(0.383)	(0.700)	(0.512)	(0.355)	(0.337)	(0.470)
Unemployed in 1999?	−0.762*	−0.738**	0.091	−0.337	−0.660	−0.169	−0.349	−0.149
	(0.456)	(0.345)	(0.366)	(0.598)	(0.418)	(0.325)	(0.375)	(0.512)
No. of times switched industry	−0.177**	−0.003	−0.089	−0.136*	0.027	0.006	−0.132**	−0.277**
	(0.080)	(0.060)	(0.060)	(0.082)	(0.092)	(0.062)	(0.065)	(0.108)
Index of physical capabilities	−0.226	−0.056	−0.089	−0.182	−0.304**	0.058	0.148	−0.208
	(0.170)	(0.142)	(0.140)	(0.271)	(0.128)	(0.112)	(0.129)	(0.233)
Constant	−1.645	−0.878	−0.434	7.039***	−0.458	−5.861***	−6.036***	−4.054
	(1.587)	(1.234)	(1.416)	(2.323)	(1.365)	(1.243)	(1.629)	(3.816)
Observations	923	923	923	923	864	864	864	864

Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The estimations use the following reference category for dummy variables: an unmarried man who has vocational training, lives in Stockholm, was employed in 1999, now works in the manufacturing industry, and does not belong to a union. The regressions use survey sampling weights

Model (1) contrasts the category "very difficult" with the categories: "fairly difficult," "not particularly difficult," "fairly easy," and "very easy"

Model (2) contrasts the categories "very difficult" and "fairly difficult" with the categories: "not particularly difficult," "fairly easy," and "very easy"

Model (3) contrasts the categories "very difficult," "fairly difficult," and "not particularly difficult" with the categories: "fairly easy" and "very easy"

Model (4) contrasts the categories "very difficult," "fairly difficult," "not particularly difficult," and "fairly easy" with the category: "very easy"

Table 4 Generalized ordered logit estimates of correlates of workers' subjective assessments of the "Ease of being replaced"

Model	Men				Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Covariates								
Education (years)/100	24.863	16.479	20.279	184.706*	−77.617**	−1.114	−40.385*	38.261
	(18.194)	(17.838)	(24.769)	(106.035)	(37.803)	(16.373)	(23.302)	(108.868)
Education sq. /100	−0.999*	−0.434	−0.565	−6.609	2.677*	−0.380	1.373	−1.144
	(0.590)	(0.619)	(0.776)	(4.193)	(1.398)	(0.601)	(0.890)	(4.124)
Experience (years)/100	−11.387**	−5.897*	−9.006*	18.280	−7.447	−3.335	5.871	5.119
	(5.188)	(3.524)	(5.218)	(16.654)	(6.272)	(3.701)	(4.876)	(7.605)
Exp. sq./100	0.298**	0.204**	0.220*	−0.200	0.120	0.067	−0.168	−0.049
	(0.131)	(0.086)	(0.128)	(0.349)	(0.153)	(0.091)	(0.119)	(0.224)
Tenure (years)/100	0.835	5.652*	−1.717	−21.400	1.996	3.235	−12.388***	11.578
	(4.161)	(3.055)	(4.391)	(19.236)	(4.710)	(3.036)	(3.925)	(12.849)
Tenure sq./100	0.010	−0.120	0.093	0.540	−0.105	−0.095	0.296**	−0.235
	(0.137)	(0.096)	(0.146)	(0.440)	(0.162)	(0.101)	(0.137)	(0.468)
Employer-provided training	0.181	−0.422***	−0.248	−1.280	−0.064	−0.172	−0.396	−1.264*
	(0.193)	(0.154)	(0.251)	(1.055)	(0.218)	(0.154)	(0.247)	(0.720)
Married	−0.129	−0.130	−0.071	−0.331	0.109	0.182	0.027	−0.845*
	(0.204)	(0.153)	(0.240)	(1.036)	(0.245)	(0.155)	(0.213)	(0.497)
Socioeconomic status (SES)								
Skilled blue-collar	−0.494	−0.515**	−0.536*	−0.848	0.290	−0.031	−0.698**	−0.636
	(0.316)	(0.216)	(0.277)	(1.053)	(0.444)	(0.257)	(0.316)	(0.532)
Skilled blue-collar (a supervisor)	−0.237	−0.470*	−0.802*	−41.948	0.296	−0.318	−1.053***	−0.463
	(0.394)	(0.276)	(0.432)	(0.000)	(0.371)	(0.231)	(0.314)	(0.925)

Table 4 continued

Model	Men				Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
White-collar	−0.536	−0.697***	−1.289***	−1.810	−0.264	−0.586**	−1.184***	−0.511
	(0.328)	(0.240)	(0.419)	(1.988)	(0.371)	(0.233)	(0.327)	(0.850)
"Higher-level" white-collar	−0.753**	−0.972***	−1.170***	−1.715	−0.077	−0.795***	−2.441***	−2.257
	(0.332)	(0.253)	(0.401)	(1.632)	(0.420)	(0.294)	(0.600)	(1.543)
Private sector	0.145	0.177	−0.155	−1.055	−0.005	−0.259	−0.022	−0.467
	(0.245)	(0.182)	(0.274)	(1.075)	(0.248)	(0.162)	(0.235)	(0.573)
Union member	0.964***	0.239	0.632	−2.022	−0.047	−0.116	0.032	−0.038
	(0.233)	(0.211)	(0.406)	(1.252)	(0.345)	(0.224)	(0.327)	(0.589)
Region of residence								
Middle-sized cities	−0.108	0.178	−0.168	−1.081	−0.105	−0.420**	0.295	−0.023
	(0.271)	(0.209)	(0.298)	(0.767)	(0.329)	(0.204)	(0.316)	(0.719)
Southern urban areas	−0.639**	0.231	−0.263	−2.737**	0.113	−0.340	0.359	0.800
	(0.321)	(0.241)	(0.365)	(1.369)	(0.425)	(0.246)	(0.355)	(0.859)
Northern urban areas	−0.518	−0.273	−2.011*	−24.220***	−0.388	0.159	0.934**	0.278
	(0.469)	(0.382)	(1.071)	(2.091)	(0.543)	(0.373)	(0.471)	(0.847)
Northern rural areas	−0.499	0.298	0.510	−2.165	−0.510	−0.347	0.811*	0.732
	(0.450)	(0.333)	(0.453)	(1.925)	(0.573)	(0.356)	(0.422)	(0.872)
Gothenburg	−0.468	0.041	−0.120	−1.807**	−0.567	−0.403	−0.250	−27.448***
	(0.348)	(0.279)	(0.455)	(0.912)	(0.386)	(0.276)	(0.494)	(0.816)

Table 4 continued

Model	Men				Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Malmö	−0.448	−0.284	−1.493	−6.857	−0.606	−0.434	0.299	−0.433
	(0.444)	(0.442)	(1.087)	(0.000)	(0.444)	(0.326)	(0.500)	(1.059)
Unemployed in 1999?	0.084	1.203***	1.251***	1.161	−0.356	−0.514	0.072	1.617*
	(0.470)	(0.357)	(0.420)	(0.786)	(0.513)	(0.341)	(0.362)	(0.914)
No. of times switched industry	−0.047	−0.020	0.042	−0.146	−0.119	0.147**	−0.028	0.323**
	(0.073)	(0.056)	(0.076)	(0.216)	(0.091)	(0.061)	(0.079)	(0.142)
Index of physical capabilities	−0.443***	0.078	0.332**	0.044	−0.005	0.133	0.248*	−0.067
	(0.145)	(0.116)	(0.165)	(0.603)	(0.225)	(0.109)	(0.137)	(0.302)
Constant	1.354	−1.775	−2.894	−11.836*	8.572***	1.541	1.720	−6.102
	(1.370)	(1.303)	(2.109)	(6.431)	(2.501)	(1.181)	(1.603)	(7.472)
Observations	923	923	923	923	864	864	864	864

Robust standard errors in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The estimations use the following reference category for dummy variables: an unmarried man who has vocational training, lives in Stockholm, was employed in 1999, now works in the manufacturing industry, and does not belong to a union. The regressions use survey sampling weights

Model (1) contrasts the category "very difficult" with the categories: "fairly difficult," "not particularly difficult," "fairly easy," and "very easy"

Model (2) contrasts the categories "very difficult" and "fairly difficult" with the categories: "not particularly difficult," "fairly easy," and "very easy"

Model (3) contrasts the categories "very difficult," "fairly difficult," and "not particularly difficult" with the categories: "fairly easy" and "very easy"

Model (4) contrasts the categories "very difficult," "fairly difficult," "not particularly difficult," and "fairly easy" with the category: "very easy"

ficult" with the remaining categories, and model (4) contrasts "very difficult,""fairly difficult, " "not particularly difficult," and "fairly easy" with the category "very easy." Hence, the baseline category of the dependent variable goes from the most pessimistic to more optimistic. A positive coefficient on a covariate, for example, years of education, shows that respondents with more years of education are more likely to report to be in a higher category of "Ease of finding as good a job."

Table 3 reveals interesting differences across the four models between men and women for years of education. For men, the strongest correlations with respect to years of education are observed at the most extreme assessments. Hence, in model (1), an additional year of education is positively correlated with the probability that a respondent reports a higher category of "Ease of finding as good a job" than "very difficult." At the other extreme, model (4) shows that an additional year of education is negatively correlated with the probability that the respondent reports that it is "very easy" to find as good a job, compared with all the other categories. This perhaps reflects a level of overconfidence of men who report the likelihood of reemployment as "very easy." For models (2) and (3), the correlation with respect to years of education is positive, but not statistically different from zero.

For women, the association between years of education and "Ease of finding as good a job" is different. First, the associations are positive in all of the models, although not precise in model (4). Hence, for women, an additional year of education is almost always positively correlated with the probability that she reports a higher category of ease of finding as good a job.

When comparing the associations with respect to education between men and women, it appears that, by and large, the regressions for women are the most similar to model (1) for men, which is a model that compares whether education matters for the ease of reemployment in the lowest end of the scale of the self-reported ordered outcome. Recall that Table 1 shows that, compared to men, women are more likely to perceive their chances of finding as good a job more pessimistically and they deem the employers' chances of replacing them with an equivalent worker as greater than men. Together, this perceived weaker labor market standing could indicate that women face a higher degree of monopsony power than men (see Hirsch et al. 2010; Ransom and Sims 2010, and Ransom and Lambson 2011), but it could also indicate that women systematically undervalue their position in the labor market.

Table 4 presents the coefficients from two generalized ordered logits, estimated separately for men and for women, for the outcome variable "Ease of being replaced." For men, all of the models show that an additional year of education is positively correlated with the ease of being replaced, but this relationship is only statistically significant in model (4). This pattern is puzzling and different when compared with the estimates for women, where the coefficients have the expected negative sign. For women, except for model (4), an additional year of education correlates negatively with the ease of being replaced.[10]

[10] As a robustness check, I also estimated two linear models. In the first model, I rescaled the dependent categorical variable so that a marginal change in a regressor can be interpreted as a standard deviation change in the subjective assessment; Praag and Ferrer-i-Carbonell (2006) call this the "probit-adapted OLS" (POLS) model. Second, I use the 0–1 variables "Easy the find as good a job" and "Easy to be replaced" and estimate

With respect to the other covariates, the following patterns emerge in Tables 3 and 4. For both men and women, having an additional year of tenure is often associated with subjectively perceived fewer chances of finding as good a job, but there is little correlation with how easy it is to replace a worker with more tenure. For both men and women, a higher socioeconomic status (relative to the reference category, unskilled blue-collar worker) correlates positively with the ease of finding as good a job, while negatively with the ease of being replaced. This is not surprising as socioeconomic status in part reflects skills. Note, however, that not all of these coefficients are individually statistically different from zero.

In Table 3, working in the private sector tends to correlate positively with the "Ease of finding as good a job" for men, but negatively for women. In Table 4, there is no statistically significant correlation between private sector and the "Ease of being replaced." For both men and women, living anywhere outside of Stockholm tends to correlate negatively with how easy it is to find as good a job but also with how easy it is to be replaced. Having been unemployed in the previous year correlates negatively with the "Ease of finding as good as job," and positively with the "Ease of being replaced," although the coefficients are often imprecise. Being in worse health, i.e., scoring higher on the index of physical capabilities, tends to correlate positively with the ease of being replaced.

Overall, many of the associations have the expected sign, providing an indirect validation of the subjective assessments. These patterns are discussed further in Sect. 6. The differences in how men and women perceive their reemployment and replaceability provides further rationale for looking separately at how the subjective questions correlate with wages for men and women.

5.2 Wage regressions

Having established these results, one would like to know if and to what extent the subjective assessments relate to wages. I begin by regressing the logarithm of wages on the binary indicators "Easy to find as good a job" and "Easy to be replaced." In Table 5, columns numbered (1) show results, separately for men and women, estimated by regressing log wages on the subjective dummies and a constant. Across the OLS regressions, the β_1-coefficients have a positive sign, while the β_2-coefficients have a negative sign.[11]

Columns numbered (2) additionally controls for human capital variables and other observables and is the preferred OLS specification. For men, controlling for these variables leads to the coefficients on both subjective questions to diminish in absolute

Footnote 10 continued
linear probability models (LPM). The take-away from the POLS models (in Table 8) and the LPMs (in Table 9) is very similar to that from the standard ordered logit from Table 7, but not surprisingly, the LPM explains less variation than the POLS model.

[11] Table 10 presents results where log wages have been regressed on the full set of categorical subjective assessments. Similarly to Table 5, the coefficients on "Ease of finding as good a job" are mostly positive and the coefficients on "Ease of being replaced" are negative, but there is often not enough power to precisely estimate individual coefficients on the categorical variables.

Table 5 Estimated wage equations with workers' subjective assessments converted to binary indicators: estimates for men and women

Model	(1)	(2)	(1)	(2)
	Men		Women	
	OLS	OLS	OLS	OLS
Covariates				
Easy to find as good a job	0.063***	0.045**	0.095***	0.063***
	(0.024)	(0.018)	(0.021)	(0.016)
Easy to be replaced	−0.146***	−0.023	−0.164***	−0.035**
	(0.028)	(0.023)	(0.020)	(0.017)
Human capital				
Education (years)/100		−1.462		1.848
		(2.501)		(1.471)
Education sq./100		0.153		−0.003
		(0.093)		(0.053)
Experience (years)/100		2.454***		1.436***
		(0.364)		(0.345)
Experience sq./100		−0.044***		−0.022**
		(0.009)		(0.008)
Tenure (years)/100		0.346		0.043
		(0.344)		(0.287)
Tenure sq./100		−0.005		−0.001
		(0.010)		(0.009)
Employer-provided training		0.033*		0.072***
		(0.019)		(0.014)
Other controls				
Married		0.007		−0.016
		(0.016)		(0.015)
Union member		−0.101***		−0.020
		(0.029)		(0.027)
Private sector		0.157***		0.128***
		(0.020)		(0.016)
Unemployed in 1999?		−0.005		−0.008
		(0.036)		(0.027)
No. of times switched industry		−0.023***		−0.010*
		(0.007)		(0.005)

Table 5 continued

Model	(1)	(2)	(1)	(2)
	Men		Women	
	OLS	OLS	OLS	OLS
SES dummies?	No	Yes	No	Yes
Constant	4.827***	4.266***	4.639***	4.032***
	(0.015)	(0.165)	(0.011)	(0.107)
p value[a]	0	0.0261	0	0
R^2	0.025	0.464	0.075	0.471
Observations	923	923	864	864

Dependent variable: logarithm of wages. Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The regressions use survey sampling weights

[a] p value from an F test of whether the coefficient on "Easy to find as good a job" and the coefficient on "Easy to be replaced " equal zero

value and lose precision, which is indicative of subjective assessments in part being proxies for human capital. Hence, for men, in column (2), the β_1-coefficient changes from 0.063 to 0.045, while the β_2-coefficient changes even more: from -0.146 to -0.023 but loses precision. For women, the coefficients in column (2) also diminish in absolute value (from 0.095 to 0.063 for the β_1-coefficient and from -0.164 to -0.035 for the β_2-coefficient), but remain individually predictive of wages.[12] Note that when I pool men and women and estimate the model in column (2) where I interact all of the coefficients with gender, the male-female differences with respect to "Easy to find as good a job" and "Easy to be replaced" are not statistically significant.

It is informative to evaluate the magnitude of the coefficients of interest in the context of Swedish data. According to Björklund (2000), the typical estimate in a Mincer wage regression yields that the return to an additional year of schooling in Sweden is about 2–4 %, which is relatively small and in part due to the compressed Swedish wage distribution. Hence, in the context of the Swedish labor market, the coefficients on "Easy to find as good a job" and "Easy to be replaced" are economically meaningful. This suggests that outside options may matter for wages.

5.3 Quantile wage regressions

In order to see what can be further learned about the correlations of the binary indicators with wages at points of the log-wage distribution other than the mean, in Table 6, I estimate quantile regressions for men and women. All of the regressions use the same specification as the OLS model (2) in Table 5.

[12] In Table 11, in the appendix, I present log-wage regressions where each binary indicator instead equals one if the respondent has answered "fairly easy," "very easy" or "not particularly difficult" and zero if the respondent has answered "very difficult" or "fairly difficult." Defining the variables this way makes the β_1-coefficient and β_2-coefficient lose precision for men when I control for respondent characteristics. For women, the β_1-coefficient remains significant and positive but the β_2-coefficient also loses precision.

Table 6 Estimated quantile wage regressions with workers' subjective assessments converted to binary indicators: estimates for men and women

Quantile	Panel A: Men								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	10	20	30	40	50	60	70	80	90
Covariates									
Easy to find as good a job	0.038**	0.025	0.030	0.029*	0.031*	0.036*	0.054***	0.053**	0.053
	(0.018)	(0.019)	(0.019)	(0.016)	(0.019)	(0.020)	(0.018)	(0.024)	(0.041)
Easy to be replaced	−0.020	−0.026	−0.018	−0.034	−0.022	−0.034	−0.022	−0.037	−0.048
	(0.026)	(0.028)	(0.028)	(0.024)	(0.028)	(0.030)	(0.027)	(0.037)	(0.061)
p value[a]	0.0768	0.293	0.220	0.0798	0.196	0.113	0.00853	0.0624	0.0768
Observations	923	923	923	923	923	923	923	923	923
Quantile	Panel B: Women								
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	10	20	30	40	50	60	70	80	90
Covariates									
Easy to find as good a job	0.048***	0.049***	0.043***	0.034**	0.049***	0.041**	0.029	0.031	0.092**
	(0.017)	(0.014)	(0.014)	(0.015)	(0.017)	(0.017)	(0.020)	(0.024)	(0.037)
Easy to be replaced	−0.031	−0.018	−0.039**	−0.044**	−0.027	−0.028	−0.050*	−0.048	−0.082*
	(0.022)	(0.018)	(0.018)	(0.019)	(0.022)	(0.022)	(0.026)	(0.031)	(0.048)
p value[a]	0.00567	0.00147	0.00114	0.00563	0.00752	0.0219	0.0496	0.137	0.0103
Observations	864	864	864	864	864	864	864	864	864

Dependent variable: logarithm of wages. Standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). Each regression uses the same specification as model (2) in Table 5

[a] p value from an F test of whether the coefficient on "Easy to find as good a job" and the coefficient on "Easy to be replaced" equal zero

For men, the coefficient on "Easy to find as good a job" matters the most at the upper distribution of wages; see columns (5)–(8). Also, for men, the coefficient on "Easy to be replaced" is never statistically different from zero. For women, both the β_1-coefficient and the β_2-coefficient correlate the strongest at the top of the wage distribution; see column (18). Note, however, that when I pool men and women and interact all of the coefficients with gender, the male-female difference in the β_1-and β_2-coefficients is not statistically significant.

6 Discussion

The standard job-matching model predicts that, in addition to aggregate factors, the worker's outside option depends on the probability of finding a new job, while the employer's outside option depends on the probability that an employer fills a vacancy. Therefore, we would expect that the "true" outside options of both the worker and the firm to depend on factors such as geographic location, gender, human capital and socioeconomic status, all of which turn out to be predictive of the two subjective questions. In particular, the estimates from the ordered logits in Tables 3 and 4 show that, for women, the better-educated report the greatest ease in finding equivalent employment, while at the same time they report being less easy to replace. For men, the link between education and the subjective assessments is less clear. At the same time, according to Table 1, women perceive their position in the labor market to be weaker than men.[13]

How do these correlations compare to Swedish labor market statistics? Björklund et al. (2000, chapter 8) discuss the cross-sectional variation in the Swedish unemployment rate in the late 1990s. They highlight that the unemployment rate tends to decrease with the level of education and age (or labor market experience), that it is low in Stockholm and the highest in northern Sweden, and, at that time, it was slightly lower for women than for men. Hence, possibly with the exception of the unemployment rate being lower for women than for men, the correlations from Tables 3 and 4 show that the subjective perceptions of reemployment correlate similarly to how the unemployment rate varies by groups. This provides some validation for the interpretation that the subjective measures are picking up the true ease of reemployment and replaceability.

That observables help to explain the variation in the two subjective measures is also evident from the goodness of fit. Hence, the explained variation in the "probit-adapted OLS" regression using "Ease of finding as good a job" as an outcome yields an R^2 of about 11–16 % and the regression using "Ease of being replaced" as an outcome yields an R^2 of about 10 %; see Table 8. Note also that slightly more variation is explained in the regressions for women than in the regressions for men.

It is, nevertheless, possible that the unexplained variation in the subjective questions could reflect unobserved personality traits, such as a general attitude to life and suc-

[13] Also when I pool men and women and estimate ordered logits for the two subjective measures, the coefficients on the indicator for a female indicate that, conditional on other observables, women are more likely to report worse chances of reemployment and higher chances of becoming replaced.

cess. The latter explanation might explain some of the difference between the observed unemployment rates and how men and women approach answering subjective assessments. Perhaps women are less confident or have a different locus of control, which leads them to answer the questions less confidently? Even if the subjective ease of reemployment and replaceability do not reflect "true" reemployment and replaceability, the subjective perceptions of a weaker labor market standing may have an effect on wages. This could happen if the perceived weaker labor market standing affects how women bargain over wages.

Turning to the wage regressions, the estimates in Tables 5 and 6 show that wages correlate positively with the ease of reemployment and negatively with the ease of replaceability. When controlling for other covariates, the predictive power of the subjective questions diminishes, but they remain jointly predictive of wages.

At a first glance, the point estimates in Tables 5 and 6 may suggest that the subjective questions matter more for women's wages at the mean and at other points of the wage distribution. Assuming that bargaining does take place in Sweden, then, conditional on women viewing their outside options as weaker, this would imply that women might bargain less successfully, which may lead to a "self-fulfilling" gender pay gap. Säve-Söderbergh (2007)—who finds that Swedish women are equally likely to initiate a wage bargain as men but are less successful in obtaining a higher wage—lends empirical support to this interpretation. The evidence in favor of this finding, is, however, mixed. On the one hand, the β_1- and β_2-coefficients from model (2) in Table 5 are not different across men and women at conventional levels of statistical significance. On the other hand, in Table 11, which uses an alternative definition of "Easy to find as good a job" and "Easy to be replaced," the β_1-coefficient from model (2) in Table 11 is statistically different for men and women.

If the two subjective questions are measures of the outside option of the worker and the outside option of the employer, then the results in Tables 5 and 6 show that there is a statistical link between wages and outside options, as predicted by the standard job-matching model. Taking this interpretation at face value and assuming that bargaining does occur on the Swedish labor market, the results imply that the process for how wages are set is described by the Nash bargain. An interesting task for future research would be to conduct a survey getting directly at this. This could be done by, for example, asking respondents both about self-perceived outside options as well as asking the specific "How was your wage determined?" questions that Hall and Krueger (2010, 2012) asked.

Establishing the link between outside options and wages has broader implications. In the job-matching model, the dependency of wages on outside options has implications for the unemployment rate. If policymakers increase unemployment benefits, the standard job-matching model predicts an increase in unemployment. In this model, the responsiveness of the unemployment rate to unemployment benefits depends, however, on how responsive wages are to workers' outside options. Again, if taken at face value, the results show that wages do respond to outside options.

7 Summary

This paper seeks to understand the heterogeneity in the answers to two novel questions of workers' assessments of their labor market opportunities. The first asked respondents about their perceived chances of finding a job as good as the current one, and the second asked about their employers' chances of finding a replacement. I study the determinants of these questions and whether they correlate with wages. I interpret the subjective measures as perceived outside options and interpret the wage regressions through the lens of the standard job-matching model, which predicts wages to depend on outside options.

Descriptive correlations between the subjective questions and respondent characteristics show that, for women, there is a positive correlation between more education and the self-reported ease of finding as good a job. The results also indicate a negative relationship between these human capital measures and the difficulty in being replaced by the employer. However, the results also show that geographic location is a statistically significant predictor of the two subjective questions.

Compared to men, women tend to view their position in the labor market as weaker—they report more difficulty in finding as good a job and report being easier to replace than male workers. These findings suggest either a degree of employer market power with respect to women employees, or, that women differ systematically from men in how they answer the subjective questions.

Regression analysis reveals that wages correlate positively with the ease of finding as good a job and negatively with the ease of becoming replaced. This relationship is statistically significant, especially for women, and holds once I control for measures of human capital and other respondent characteristics. These results are consistent with the standard job-matching model, which predicts that wages depend on outside options.

The results in this paper are best thought of as an analysis in the spirit of Bewley (1999) and Hall and Krueger (2010, 2012). These two studies survey workers (Hall and Krueger) and employers (Bewley) about their experiences with wage negotiations. The broader aim of their research is to inform labor economists about the empirical basis for the wage-setting behavior commonly assumed in labor market models. Hence, the subjective outside option-wage association reported in this paper, complemented by evidence on individual-level wage bargaining in Sweden (Säve-Söderbergh 2007), lends suggestive support for the wage-determination process described by the standard job-matching model.

Appendix 1: Outside options

In this section, I derive the expressions for the outside options in the standard job-matching model. Consider the asset value of employing a worker, where J is the value of the firm with a worker, V is the value of holding a vacancy, p denotes productivity, w is the wage paid, and σ is the probability of job separation:

$$r J(w) = p - w - \sigma(J(w) - V).$$

The next equation describes the asset value for the firm of having a vacancy, where c is the cost the firm pays to post a vacancy and $q(\theta)$ is the probability that the firm fills a vacancy, which depends on θ, the labor market tightness:

$$rV = -c - q(\theta)(J(w) - V).$$

Analogously, for the workers we have that:

$$\begin{aligned} rW(w) &= w - \sigma(W(w) - U) \text{ and} \\ rU &= b - \theta q(\theta)(W(w) - U), \end{aligned}$$

where W is the value of employment and U is the value of being unemployed. $\theta q(\theta)$ is the probability of finding a job, and b is the level of unemployment insurance benefits (or the value of leisure). The wage is an outcome of an asymmetric Nash bargain subject to the equations above:

$$w = \arg\max_{\hat{w} \geq b} \left(W(\hat{w}) - U\right)^{\beta} \left(J(\hat{w}) - V\right)^{1-\beta}$$

Taking the first-order conditions, we obtain Eq. (1): $w = \beta p + (1 - \beta) rU - \beta rV$.

Solving for rU and rV gives that:

$$rU = \frac{(r + \sigma)\, b + \theta q\,(\theta)\, w}{r + \sigma + \theta q\,(\theta)} \text{ and } rV = \frac{-(r + \sigma)\, c + q\,(\theta)\,(p - w)}{r + \sigma + q\,(\theta)}.$$

Appendix 2: Description of variables

Wage Gross hourly wage. Constructed from questions on gross fixed monthly and weekly pay, bonus pay, and remuneration for inconvenient working hours, divided by hours usually worked. (1 SEK = 7 USD.) (Survey question)

Ease of finding as good a job Answer to question, "How easy do you think it would be for you to get a job as good as your current one if you for some reason had to leave your employer?" 1 = very difficult, 2 = fairly difficult, 3 = not particularly difficult, 4 = fairly easy, 5 = very easy. (Survey question)

Easy to as good a job Equals one if answer to question, "How easy do you think it would be for you to get a job as good as your current one if you for some reason had to leave your employer?" is equal to "fairly easy" or "very easy" and zero otherwise. (Survey question)

Ease of being replaced "How easy do you think it would be for your employer to replace you if you left?" 1 = very difficult, 2 = fairly difficult, 3 = not particularly difficult, 4 = fairly easy, 5 = very easy. (Survey question)

Easy to be replaced Equals one if answer to question, "How easy do you think it would be for your employer to replace you if you left?" is equal to "fairly easy" or "very easy" and zero otherwise. (Survey question)

Education How many years of full-time education do you have? (Survey question)

Experience How many years altogether have you spent in gainful employment? Years of labor market experience. (Survey question)
Tenure Years of job tenure. Calculated from the year of employment at present work. (Survey question)
Employer-provided training Have you in the past 12 months received training during paid work time? (Survey question)
Private Equals one if employed in the private sector. (Survey question)
Union member Equals one if a member of a trade union. (Survey question)
Woman Equals one if a woman. (Survey question)
Married Equals one if married. (Registry information)
Unemployed in 1999? Equals one if unemployed at any time during 1999. (Survey question)
Socioeconomic status (SES) categories Categories: unskilled blue-collar; skilled blue-collar; skilled blue-collar, a supervisor; white-collar; "higher-level" white-collar. (Survey question)
No. of industry switches How many times a respondent switched 1-digit industry of employment in the past eight years. (Registry information)
Index of physical capabilities based on questions regarding mobility (whether the respondent can walk 100 meters without difficulties, run 100 meters without difficulties, and walk up and down the stairs without difficulties). 1 = if yes to all questions, 4 = if no to all questions, 3 = if no to walk and run, but yes to walk up/down the stairs, and 2 = if yes to walk and walk up/down the stairs, but no to run.
Region The region of residence: Stockholm; Gothenburg; Malmö; medium-sized city; southern urban area; northern urban area; northern rural area. (Survey question)

Appendix 3: Additional results

See Tables 7, 8, 9, 10 and 11.

Table 7 Ordered logit estimates of correlates of workers' subjective assessments

Covariates	Men		Women	
	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)
Education (years)/100	−2.298	24.968	68.875***	−19.580
	(20.391)	(15.769)	(12.083)	(12.125)
Education sq. /100	0.388	−0.846	−2.155***	0.411
	(0.731)	(0.546)	(0.418)	(0.419)
Experience (years)/100	−2.616	−7.205**	3.663	−0.457
	(3.220)	(3.264)	(3.308)	(3.227)
Exp. sq./100	0.004	0.213***	−0.136*	−0.013
	(0.081)	(0.078)	(0.081)	(0.078)
Tenure (years)/100	−5.414**	2.282	−6.371**	−0.860
	(2.737)	(2.684)	(2.778)	(2.723)
Tenure sq./100	0.119	−0.023	0.115	0.008
	(0.087)	(0.082)	(0.092)	(0.092)
Employer-provided training	0.301**	−0.224	−0.099	−0.211
	(0.130)	(0.138)	(0.135)	(0.140)
Married	0.019	−0.164	−0.149	0.080
	(0.140)	(0.134)	(0.136)	(0.143)
Socioeconomic status (SES)				
Skilled blue-collar	0.623***	−0.560***	0.066	−0.274
	(0.203)	(0.209)	(0.235)	(0.245)

Table 7 continued

Covariates	Men		Women	
	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)
Skilled blue-collar (a supervisor)	0.286	−0.518**	0.055	−0.543**
	(0.240)	(0.243)	(0.219)	(0.233)
White-collar	0.095	−0.794***	0.174	−0.787***
	(0.206)	(0.216)	(0.235)	(0.240)
"Higher-level" white-collar	0.241	−0.969***	0.369	−0.922***
	(0.220)	(0.230)	(0.269)	(0.271)
Private sector	0.449***	0.083	−0.330**	−0.199
	(0.154)	(0.162)	(0.142)	(0.150)
Union member	−0.135	0.500**	0.103	−0.084
	(0.184)	(0.205)	(0.197)	(0.205)
Region of residence				
Middle-sized cities	−0.459**	−0.084	−0.371*	−0.175
	(0.190)	(0.183)	(0.193)	(0.169)
Southern urban areas	−0.404*	−0.195	−0.600***	−0.052
	(0.218)	(0.222)	(0.221)	(0.214)
Northern urban areas	−1.049***	−0.558**	−0.830**	0.351
	(0.277)	(0.279)	(0.335)	(0.346)
Northern rural areas	−0.600**	−0.054	−0.845**	0.101
	(0.294)	(0.336)	(0.328)	(0.345)

Table 7 continued

Covariates	Men		Women	
	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)
Gothenburg	−0.424	−0.239	−0.058	−0.356
	(0.277)	(0.249)	(0.232)	(0.224)
Malmö	−0.608*	−0.477	−0.170	−0.314
	(0.321)	(0.326)	(0.384)	(0.309)
Unemployed in 1999?	−0.526	1.326***	−0.324	−0.206
	(0.378)	(0.436)	(0.286)	(0.349)
No. of times switched industry	−0.073	−0.016	−0.068	0.080
	(0.052)	(0.054)	(0.053)	(0.058)
Index of physical capabilities	−0.143	0.017	−0.014	0.119
	(0.143)	(0.178)	(0.106)	(0.102)
Cutoffs				
Cutoff 1	−2.620*	−0.647	2.266**	−4.750***
	(1.452)	(1.144)	(0.948)	(0.923)
Cutoff 2	−0.928	1.654	4.113***	−2.691***
	(1.449)	(1.153)	(0.964)	(0.925)
Cutoff 3	0.249	3.214***	5.250***	−0.825
	(1.449)	(1.163)	(0.971)	(0.921)
Cutoff 4	1.733	4.748***	6.678***	0.449
	(1.451)	(1.169)	(0.982)	(0.912)
Observations	923	923	864	864

Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The estimations use the following reference category for dummy variables: an unmarried man who has vocational training, lives in Stockholm, was employed in 1999, now works in the manufacturing industry, and does not belong to a union. The regressions use survey sampling weights

Table 8 "Probit-adapted OLS" estimates of correlates of workers' subjective assessments

Covariates	Men		Women	
	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)
Education (years)/100	0.359	10.226	29.741***	−10.383*
	(7.945)	(6.688)	(5.641)	(6.089)
Education sq. /100	0.133	−0.349	−0.918***	0.245
	(0.277)	(0.225)	(0.201)	(0.212)
Experience (years)/100	−1.635	−3.439**	1.989	−0.701
	(1.571)	(1.509)	(1.596)	(1.591)
Exp. sq./100	0.013	0.101***	−0.070*	0.005
	(0.040)	(0.037)	(0.038)	(0.039)
Tenure (years)/100	−2.648**	0.650	−3.348**	−0.264
	(1.315)	(1.250)	(1.320)	(1.335)
Tenure sq./100	0.057	0.000	0.063	−0.000
	(0.042)	(0.039)	(0.043)	(0.045)
Employer-provided training	0.169***	−0.101	−0.030	−0.108
	(0.064)	(0.064)	(0.066)	(0.068)
Married	0.001	−0.081	−0.105	0.031
	(0.067)	(0.064)	(0.066)	(0.071)
Socioeconomic status (SES)				
Skilled blue-collar	0.271***	−0.296***	0.016	−0.118
	(0.097)	(0.100)	(0.109)	(0.119)

Table 8 continued

Covariates	Men		Women	
	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)
Skilled blue-collar (a supervisor)	0.117	−0.276**	0.001	−0.232**
	(0.118)	(0.116)	(0.102)	(0.111)
White-collar	0.005	−0.401***	0.074	−0.358***
	(0.100)	(0.103)	(0.108)	(0.114)
"Higher-level" white-collar	0.096	−0.485***	0.172	−0.438***
	(0.108)	(0.109)	(0.129)	(0.129)
Private sector	0.220***	0.018	−0.171**	−0.098
	(0.076)	(0.076)	(0.069)	(0.073)
Union member	−0.090	0.218**	0.032	−0.058
	(0.090)	(0.091)	(0.094)	(0.098)
Region of residence				
Middle-sized cities	−0.213**	−0.052	−0.171*	−0.059
	(0.091)	(0.088)	(0.093)	(0.086)
Southern urban areas	−0.216**	−0.137	−0.296***	−0.016
	(0.105)	(0.103)	(0.107)	(0.105)

Table 8 continued

Covariates	Men		Women	
	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)	Ease of finding as good a job (1–5)	Ease of being replaced (1–5)
Northern urban areas	−0.539***	−0.293**	−0.417***	0.149
	(0.137)	(0.128)	(0.160)	(0.173)
Northern rural areas	−0.307**	−0.065	−0.448***	0.042
	(0.146)	(0.158)	(0.150)	(0.170)
Gothenburg	−0.229*	−0.133	−0.029	−0.189*
	(0.130)	(0.117)	(0.117)	(0.109)
Malmö	−0.295*	−0.235	−0.135	−0.162
	(0.158)	(0.148)	(0.172)	(0.147)
Unemployed in 1999?	−0.271	0.557***	−0.162	−0.091
	(0.166)	(0.194)	(0.134)	(0.159)
No. of times switched industry	−0.044*	−0.006	−0.037	0.030
	(0.025)	(0.026)	(0.026)	(0.028)
Index of physical capabilities	−0.051	0.025	0.001	0.058
	(0.070)	(0.074)	(0.047)	(0.049)
Constant	0.234	−0.430	−1.865***	1.477***
	(0.589)	(0.508)	(0.449)	(0.461)
R^2	0.118	0.102	0.160	0.093
Observations	923	923	864	864

Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The regressions use survey sampling weights. The estimations use the following reference category for dummy variables: an unmarried man who has vocational training, lives in Stockholm, was employed in 1999, now works in the manufacturing industry, and does not belong to a union. OLS rescales the dependent variable by using the "probit-adapted OLS" (POLS) method described by Praag and Ferrer-i-Carbonell (2006). A change in a regressor shows the standard deviation change in "Ease of finding as good a job" and "Ease of being replaced"

Table 9 Linear probability model estimates of correlates of workers' subjective assessments converted to binary indicators

Covariates	Men		Women	
	Easy to find as good a job (0–1)	Easy to be replaced (0–1)	Easy to find as good a job (0–1)	Easy to be replaced (0–1)
Education (years)/100	−2.123	0.822	11.572***	−4.238
	(3.574)	(2.256)	(2.558)	(2.925)
Education sq. /100	0.116	−0.022	−0.350***	0.121
	(0.124)	(0.072)	(0.095)	(0.098)
Experience (years)/100	−0.743	−0.786	0.104	0.733
	(0.775)	(0.568)	(0.747)	(0.644)
Exp. sq./100	0.008	0.019	−0.013	−0.023
	(0.019)	(0.014)	(0.018)	(0.016)
Tenure (years)/100	−1.220*	−0.421	−1.140*	−1.375***
	(0.660)	(0.440)	(0.628)	(0.507)
Tenure sq./100	0.027	0.018	0.025	0.034**
	(0.020)	(0.015)	(0.019)	(0.016)
Employer-provided training	0.052	−0.029	−0.025	−0.051**
	(0.033)	(0.022)	(0.032)	(0.026)
Married	0.012	−0.010	−0.019	0.001
	(0.033)	(0.023)	(0.032)	(0.028)
Socioeconomic status (SES)				
Skilled blue-collar	0.079	−0.085**	−0.027	−0.111**
	(0.048)	(0.038)	(0.053)	(0.052)
Skilled blue-collar (a supervisor)	−0.007	−0.081*	−0.065	−0.165***
	(0.060)	(0.043)	(0.047)	(0.045)

Table 9 continued

Covariates	Men		Women	
	Easy to find as good a job (0–1)	Easy to be replaced (0–1)	Easy to find as good a job (0–1)	Easy to be replaced (0–1)
White-collar	0.002	−0.133***	−0.020	−0.158***
	(0.051)	(0.038)	(0.050)	(0.046)
"Higher-level" white-collar	−0.007	−0.138***	−0.016	−0.215***
	(0.055)	(0.039)	(0.064)	(0.048)
Private sector	0.070*	−0.021	−0.025	−0.019
	(0.038)	(0.027)	(0.033)	(0.029)
Union member	0.014	0.026	0.031	0.004
	(0.047)	(0.027)	(0.046)	(0.038)
Region of residence				
Middle-sized cities	−0.122**	−0.028	−0.112**	0.026
	(0.047)	(0.030)	(0.046)	(0.031)
Southern urban areas	−0.096*	−0.038	−0.206***	0.033
	(0.054)	(0.034)	(0.052)	(0.040)
Northern urban areas	−0.319***	−0.132***	−0.172**	0.133**
	(0.066)	(0.036)	(0.077)	(0.067)
Northern rural areas	−0.177**	0.049	−0.257***	0.128**
	(0.073)	(0.065)	(0.063)	(0.065)

Table 9 continued

Covariates	Men		Women	
	Easy to find as good a job (0–1)	Easy to be replaced (0–1)	Easy to find as good a job (0–1)	Easy to be replaced (0–1)
Gothenburg	−0.089	−0.019	−0.084	−0.025
	(0.063)	(0.042)	(0.061)	(0.036)
Malmö	−0.112	−0.088**	−0.028	0.035
	(0.085)	(0.040)	(0.073)	(0.052)
Unemployed in 1999?	0.018	0.265***	−0.050	−0.020
	(0.081)	(0.078)	(0.063)	(0.058)
No. of times switched industry	−0.018	0.001	−0.024**	0.003
	(0.013)	(0.009)	(0.012)	(0.011)
Index of physical capabilities	−0.010	0.051*	0.040*	0.031
	(0.030)	(0.029)	(0.023)	(0.023)
Constant	0.613**	0.186	−0.358*	0.617***
	(0.273)	(0.181)	(0.198)	(0.221)
	0.065	0.104	0.104	0.126
Observations	923	923	864	864

Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The regressions use survey sampling weights. The estimations use the following reference category for dummy variables: an unmarried man who has vocational training, lives in Stockholm, was employed in 1999, now works in the manufacturing industry, and does not belong to a union

Table 10 Estimated wage equations with workers' subjective assessments: estimates for men and women

Model	(1)	(2)	(3)	(1)	(2)	(3)
	Men			Women		
Covariates						
Ease of finding as good a job						
Fairly difficult	0.067*	−0.002		−0.016	−0.023	
	(0.036)	(0.029)		(0.025)	(0.022)	
Not part. difficult	0.057	−0.036		0.060**	0.012	
	(0.037)	(0.031)		(0.027)	(0.024)	
Fairly easy	0.078**	0.021		0.090***	0.049**	
	(0.036)	(0.031)		(0.029)	(0.025)	
Very easy	0.173***	0.057		0.124***	0.078**	
	(0.046)	(0.039)		(0.042)	(0.035)	
Ease of being replaced						
Fairly difficult	−0.042	0.018		0.034	0.024	
	(0.038)	(0.028)		(0.031)	(0.023)	
Not part. difficult	−0.033	0.036		−0.025	0.016	
	(0.041)	(0.032)		(0.031)	(0.023)	
Fairly easy	−0.129***	0.029		−0.146***	−0.010	
	(0.046)	(0.036)		(0.034)	(0.028)	
Very easy	−0.298***	−0.107**		−0.162***	−0.026	
	(0.051)	(0.042)		(0.041)	(0.032)	

Table 10 continued

Model	(1)	(2)	(3)	(1)	(2)	(3)
	Men			Women		
Human capital?	No	Yes	Yes	No	Yes	Yes
Other controls?	No	Yes	Yes	No	No	Yes
Constant	4.809***	4.227***	4.284***	4.622***	4.015***	3.985***
	(0.043)	(0.172)	(0.164)	(0.032)	(0.111)	(0.108)
Observations	923	923	923	864	864	864
R^2	0.044	0.481	0.471	0.098	0.486	0.469
p value[a]: model (1) = model (2)	0			0		
p value[b]: model (2) = model (3)	0.0188			0.0007		

Dependent variable: logarithm of wages. Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The regressions use survey sampling weights. Model (1) is a regression of log wages on the two subjective variables "Ease of finding as good a job" and "Ease of being replaced." Model (2) additionally controls for years of education and its square, years of experience and its square, years of tenure and its square, an indicator for employer-provided training, whether the respondent is married, is a union member, works in the private sector, was unemployed in the previous year, the number of times the respondents switches industries, and a vector of socioeconomic indicators. Model (3) uses the same controls as model (2), but does not control for the two subjective variables "Ease of finding as good a job" and "Ease of being replaced"

[a] p value from an F test of whether the added controls in model (2) are significant

[b] p value from an F test of whether the subjective assessments in model (2) are significant

Table 11 Estimated wage equations with workers' subjective assessments converted to binary indicators using an alternative definition: estimates for men and women

Model	(1)	(2)	(1)	(2)
	Men		Women	
	OLS	OLS	OLS	OLS
Covariates				
Easy to find as good a job[a]	0.040*	0.004	0.099***	0.054***
	(0.023)	(0.018)	(0.017)	(0.014)
Easy to be replaced[a]	−0.054**	0.006	−0.092***	−0.013
	(0.023)	(0.018)	(0.017)	(0.014)
Human capital				
Education (years)/100		−1.626		1.872
		(2.553)		(1.474)
Education sq./100		0.161*		−0.004
		(0.095)		(0.053)
Experience (years)/100		2.448***		1.344***
		(0.371)		(0.344)
Experience sq./100		−0.044***		−0.020**
		(0.009)		(0.008)
Tenure (years)/100		0.300		0.089
		(0.347)		(0.285)
Tenure sq./100		−0.005		−0.002
		(0.010)		(0.009)
Employer-provided training		0.035*		0.074***
		(0.019)		(0.014)

Table 11 continued

Model	(1)	(2)	(1)	(2)
	Men		Women	
	OLS	OLS	OLS	OLS
Other controls				
Married		0.008		−0.013
		(0.016)		(0.015)
Union member		−0.102***		−0.024
		(0.029)		(0.027)
Private sector		0.161***		0.129***
		(0.020)		(0.016)
Unemployed in 1999?		−0.012		−0.009
		(0.036)		(0.027)
No. of times switched industry		−0.024***		−0.011**
		(0.007)		(0.006)
SES dummies?	No	Yes	No	Yes
Constant	4.827***	4.282***	4.635***	4.027***
	(0.021)	(0.165)	(0.015)	(0.109)
p value[b]	0	0.936	0	0
R^2	0.008	0.460	0.069	0.468
Observations	923	923	864	864

Dependent variable: logarithm of wages. Robust standard errors are in parentheses (*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$). The regressions use survey sampling weights

[a] Easy to find as good a job" and "Easy to be replaced" equal one if the response equals "fairly easy," "very easy" or "not particularly difficult" and zero otherwise

[b] p value from an F test of whether the coefficient on "Easy to find as good a job" and the coefficient on "Easy to be replaced" equal zero

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