Risk attitudes and reservation wages of unemployed workers: Evidence from panel data

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A R T I C L E   I N F O

A B S T R A C T

This paper studies risk attitudes of unemployed job seekers and their relationship to self-reported reservation wages. We find that risk aversion is prevalent, and that reservation wages decrease slightly over time. Furthermore, risk aversion and reservation wages are negatively correlated.

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1. Introduction

Experimental evidence on individual job search behavior suggests that because job seekers are risk-averse, they select reservation wages that never exceed those of an optimal risk-neutral worker (Cox and Oaxaca, 1992). However, outside the laboratory there is little evidence on the distribution of risk preferences among job seekers. Moreover, no direct evidence is available on the impact of individual risk attitudes on the reservation wage in the general population. From a policy point of view, this lack of evidence is challenging, since the degree of risk aversion of workers and the corresponding level of reservation wages are pivotal for the optimal design of an unemployment insurance system (e.g., Acemoglu and Shimer, 1999; Schimer and Werning, 2007). In this paper, we first describe the distribution of risk attitudes of unemployed job seekers using representative panel data from Germany. We then provide first empirical evidence of the relationship between risk attitudes and reservation wages. The main aim of our empirical work is to complement existing evidence on job search behavior from the lab with evidence from the general population and thereby to help understand which results are robustly generalizable.

2. Data and descriptive evidence

The empirical analysis is based on the German Socio-Economic Panel (SOEP) (Wagner et al., 2007; Haisken-DeNew and Hahn, 2006). We use data for the years 2004 to 2006. Our sample consists of unemployed job seekers aged 18–65 in the respective years.

Our direct measure of individual risk attitudes is based on the following survey question: "How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" Respondents indicate their risk preference on an eleven-point scale; with zero indicating total unwillingness to take risks and ten indicating total willingness to take risks. This general risk measure was collected in the years 2004 and 2006. Dohmen et al. (2005) show that the general measure of risk preferences in the SOEP is a reliable predictor of risk-taking behavior in a field experiment.

Fig. 1 shows the distribution of the willingness to take risks in general for our subsample. A first observation is that there is substantial heterogeneity in risk attitudes in 2004 and 2006. Moreover, if we classify respondents with "0–5" answers in the questionnaire as risk-averse, around 60% of all unemployed job seekers are risk-averse in both years. Fig. 2 plots the individual differences in the reported willingness to take

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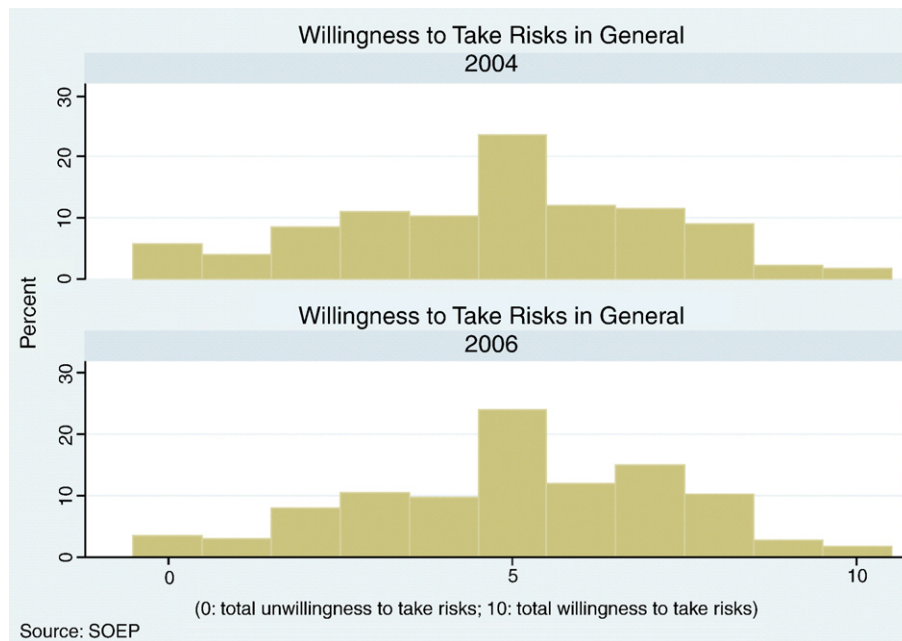   *E-mail address:* markus.pannenberg@fh-bielefeld.de.

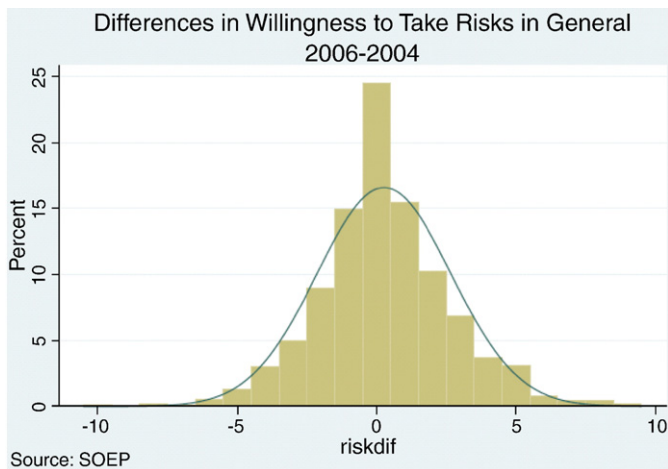Fig. 1. Risk attitudes of unemployed workers in Germany.

Fig. 2. Changes in risk attitudes over time.

risks in general between 2004 and 2006. The distribution is fairly symmetric around 0 and indicates no systematic shifts of individual risk preferences over time.

Table 1 reports some descriptive statistics of subjective net reservation wages in Germany.[1] If we calculate first (second) differences in reservation wages over time, the median of the individual differences always decreases, while with respect to the mean this does not hold for the period 2005–2006. Rows 7 (8) of Table 1 reveal that the mean (median) of the individual ratio of the reservation wage and current unemployment benefits is always greater than one.[2] The mean (median) of the individual ratio of the real net reservation wage and the last real net wage is always close to one, which is in line with results from the lab (Falk et al., 2006). If we calculate the ratio of reservation wages and the first post-unemployment wage, the mean of this ratio is always greater than one but close to it in 2005 and the overall median is fairly close to one. Hence, the self-reported reservation wages in the SOEP appear to be of reasonable quality.

3. Regression results

In our empirical specifications, reservation wages are specified lognormally as a linear function of our direct measure of risk attitudes and vectors of control variables. For the sake of a more intuitive interpretation we recode the eleven-point scale of the measure of risk attitudes for our regression analysis in reverse order, i.e., "0" indicating strongly risk-prone and "10" strongly risk-averse.

In a first step we use pooled OLS specifications based on a subsample of unemployed job seekers in the years 2004 and 2006, for whom information on risk attitudes is available. Since measurement error might be an issue with respect to our risk measures, we additionally employ an "errors in variables (EIV)" approach, where the measure of reliability is Cronbach's alpha (alpha = 0.63). Columns (1)–(4) of Table 2 reveal that there is a significantly negative correlation between the individual degree of risk aversion and the level of reservation wages in all specifications.

In the presence of omitted variables like cognitive ability the parameter estimates of our pooled OLS/EIV specifications might be biased. To tackle this issue, we apply two fixed effects panel (FE) specifications to control for unobserved time-invariant individual heterogeneity. We start with a standard FE specification for the years 2004 and 2006, where information on risk attitudes is available. To identify the impact of time-invariant variables like the previous wage we additionally apply the following two-step FE estimation procedure (Wooldridge, 2002, pp. 325–326) for the years 2004 to 2006: (1) Use a FE specification to identify the effects of time-varying variables on reservation wages. (2) Calculate person-specific averaged residuals over time and use them as dependent variable in an OLS-regression on all time-invariant characteristics including a proxy for individual risk aversion.[3] The proxy for risk-aversion stems from a principal component analysis for the years 2004 to 2006.[4] In 2005, where information on risk attitudes is not available, we use psychometric information whether the respondent "has an active imagination" from

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[1] All monetary variables are deflated using the CPI with base year 2000.

[2] Moreover, 9 out of 10 respondents report a reservation wage that is higher than the respective level of unemployment benefits.

[3] We did test whether the individual risk measure is endogenous in the second-step. Individual height is used as an instrument. The results from C-tests do not indicate that our proxy of individual risk aversion is endogenous.

[4] Using the regression-scored factor also reduces potential measurement error in our risk measure.