



## Linking risk aversion and type of employment

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### ABSTRACT

Employees whose incomes have a variable component should exhibit lower risk aversion than fixed-income earners. This hypothesis is tested on 258 individuals interviewed in Italy, aged between 25 and 40 in the course of face-to-face-interviews. We find that the probability of being a variable income earner decreases with risk-aversion. Further, we investigate the link between risk preferences and job insecurity and find that women in temporary jobs are more risk averse than women in permanent ones.

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### 1. Introduction

Risk-attitude determines choices over alternative risky income streams. This implies, among other things, that risk-attitude should affect occupational choices made by individuals. In particular, individuals exhibiting higher degrees of risk aversion should prefer occupations characterised by lower variability in income streams, such as wage employment. On the contrary, entrepreneurship and self-employment, which are typically associated with risky returns, should be preferred by individuals with lower risk aversion. This proposition has received extensive empirical support from experimental and survey studies (among others; Barsky et al., 1997; Cramer et al., 2002; Ekelund et al., 2005).

A corollary of the result that jobs with variable rewards are associated with lower risk aversion should be that, within the category of wage employees, risk aversion varies according to the wage contract: individuals in employments with fixed incomes (e.g. teachers and civil servants) are likely to exhibit higher risk aversion than individuals whose employments entail a variable income stream because their wages embed a performance-pay component (e.g. financial consultants and promoters and call centre opera-

tors). The link between type of wage income and risk aversion has received very little attention (Brown et al., 2006), although it could prove potentially relevant on two grounds. First, differences in risk-aversion between fixed and variable income employees may explain some demand–supply mismatches observed in the labour market. Second, they may be one element motivating social resistance to labour policies aimed at increasing the share of the so-called atypical or non-standard forms of employment that have been introduced in several European countries in order to make labour markets more flexible.

Using the results of a survey study developed ad hoc, this paper tests this hypothesis adopting a direct measure of risk aversion derived from Barsky et al. (1997), and specifically designed to fit the employment context. Previous evidence on the link between fixed vs. variable income employment and risk aversion relies on proxies of risk taking. Our investigation is based on the analysis of 258 interviews in which we elicited information on respondents' personal characteristics, employment status, and risk preferences.

Next, using the same data set, we investigate the links between job insecurity and risk aversion. Recent empirical literature has shown that risk aversion is affected by optimism/pessimism about own economic situation (Andersen et al., 2008), by past macroeconomic experience (Malmendier and Nagel, 2009) and by credit constraints faced (Guiso and Paiella, 2008). These results contrast with the standard economist's view that posits that preferences are a primitive and are not affected by personal employment experiences or by variables related to the state of the economy.

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Trends towards flexibility in some European labour markets, coupled with the effect of the global macroeconomic crisis, have given rise to feelings of job insecurity among workers (Gallup, 2004, 2008). The perception of job insecurity has affected household consumption (Benito, 2006) and investment decisions (Diaz-Serrano, 2005). We conjecture that individuals holding insecure jobs because their employment is temporary may be less prone to risk taking than employees in tenured jobs.

Results suggest that, indeed, the probability of being in a variable income job decreases with risk aversion. Results concerning the dependence of risk aversion on job security suggest that women in permanent jobs are less risk averse than women in temporary jobs.

The remaining of the paper is organized as follows: Section 2 discusses the relevant literature; Section 3 presents the design of the study and the hypotheses tested; Section 4 shows the results of the data analysis. Section 5 concludes with implications and possible extensions of our findings.

## 2. Literature review

Most of the empirical literature on the links between variable returns from labour and risk aversion has focused on the choice between entrepreneurship and wage employment, providing unambiguous empirical support for the hypothesis that entrepreneurs exhibit lower risk aversion than employees. For instance, Barsky et al. (1997) report measures of preference parameters relating to risk aversion based on 11,707 survey responses elicited from participants in the Health and Retirement study in the US. Respondents are separated into four risk preference categories, depending on the answer to two questions relating to their willingness to take risks concerning labour income. Most respondents (64.6%) fall in the highest risk aversion category. Self-employed display less risk aversion than employees.

Cramer et al. (2002) present the results of a survey that traces the labour market history of approximately 1700 individuals in the Netherlands, and elicit the reservation price for a simple lottery.<sup>2</sup> Respondents had been either employed or self-employed all their life. Probit equations explaining the self-employment choice are estimated, controlling for background variables such as gender, education level, and parental characteristics. The data suggest that entrepreneurs are less risk-averse than employees. Hartog et al. (2002) use data coming from three different surveys to estimate the impact of a series of background and time-variant factors on risk-aversion. In two of the data sets risk aversion falls with higher income and with self-employment. Analogous results are obtained by Ekelund et al. (2005) using a psychological measure of risk avoidance to explain the choice to be self-employed among a sample drawn from the Northern Finland 1966 Birth Cohort Study.

Concerning the issue of the link between risk aversion and the choice of employment type according to the variability of income streams, the only study we are aware of is Brown et al. (2006). These authors test whether the degree of risk aversion and income variability are negatively related, distinguishing among fixed wages, performance pay contracts, and self-employment.<sup>3</sup> Risk preferences are captured by a series of proxies for risk aversion (e.g. insurance expenditure) and for risk loving behaviour (e.g. expenditure on alcohol and gambling). Results show that the stronger the preference for risk, the higher the probability of choosing a variable income job.

None of the studies discussed above address the issue of the potential endogeneity of risk aversion measures with respect to the self-employment decision.<sup>4</sup> Self vs. wage employment are modelled as a choice resulting from maximization of expected utility. However, if risk aversion were not stable but affected by experience, it is possible that an individual choosing self-employment (for instance, because of family background) develops a lower risk-aversion afterwards (Cramer et al., 2002). The instability of preferences has a limited place in economics and is mostly tied to the idea of habit formation (Campbell and Cochrane, 1999), rather than to the effect of work experience. Not so is the point of view of other social sciences: for instance, according to sociologists, economists neglect the role that the social and cultural environments may play in shaping preferences (Taylor-Gooby and Zinn, 2006). Rather than being stationary, preferences change and evolve on the basis of experience. Likewise, the psychology literature argues that personal experience, especially if recent, plays a great influence on personal decisions (Taylor-Gooby and Zinn, 2006).

Evidence that risk preferences may be affected by own economic or the macroeconomic situation has been provided by a small number of recent studies. In a longitudinal study, Harrison et al. (2007) and Andersen et al. (2008) elicit the risk preferences of a sample of 253 individuals representative of the Danish population. Results show that the null hypothesis of temporal stability of the constant relative risk aversion (CRRA) index cannot be rejected. However, two indicators of the “state of nature”, namely how positive respondents feel about their financial situation and their optimism about future expenditure are negatively related to the change in CRRA. Guiso and Paiella (2008) show that being liquidity constrained (or risking to become such) makes individuals more risk averse. Malmendier and Nagel (2009) find that investors’ willingness to bear financial risk depends on personal experiences of macroeconomic history. Although these studies do not attempt to disentangle explicitly whether economic experiences affect preferences or beliefs, the evidence they provide is suggestive of the existence of endogenous preferences or, at the very least, of a learning process.

## 3. The study

### 3.1. Survey description

For the purposes of the study, we interviewed 258 individuals aged between 25 and 40. Of these, 130 (50.4%) are males and 128 females (49.6%), mean age is 31, 108 (42%) are married, 76 (29.5%) have a University degree, 216 (83.7%) were employed and 42 unemployed at the time of the interview.<sup>5</sup> A wide array of data on demographics, schooling, occupational status, income, parental social status and occupation, consumption and saving behaviour was collected for each respondent. In addition, participants in the study were asked for their risk preferences. Responses were collected at the exit of a large supermarket located in the outskirts of a large town in Southern Italy. Those who accepted to take part in the interview were rewarded with a small gadget. Those who declared to be self-employed or to have an age outside the cohort 25–40 were turned down, as the focus of the survey was on the attitudes and behaviour of employees in temporary jobs vs. those in

<sup>2</sup> Respondents were asked how much they would pay for a ticket in a hypothetical lottery with 10 tickets and a single prize of 1000 guilders.

<sup>3</sup> The data set is a cross-section from the UK Family Expenditure Survey 1996–2000.

<sup>4</sup> Cramer et al. (2002) attempt to simultaneously estimate both the entrepreneurship selection and risk attitude by means of two-stage least square, but results are severely affected by multi-collinearity.

<sup>5</sup> No respondent declared to be part of the inactive share of the population.

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