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Migrations, risks, and uncertainty: A field experiment in China

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ABSTRACT

We report data from the first incentivized artefactual field experiment conducted in China to understand whether Chinese migrants differ from non-migrants in terms of preferences regarding risk and uncertainty in various contexts. We find that, compared to non-migrants, migrants are significantly more likely to enter competitions when they expect competitive entries from others; however, migrants are not different from non-migrants in risk and ambiguity preferences where strategic uncertainty is absent. Our results suggest that migration may be driven more by a stronger belief in one's chance of succeeding in an uncertain competitive environment than by differences risk attitudes related to state uncertainty.

1. Introduction

Migration plays a critical role in efficiently re-allocating labor to where it is valued the most; it is the "grease for the wheel of the labor market" (Borjas, 2001). The past few decades have witnessed a burgeoning interest in understanding the determinants of migration decisions, including expected income differences (Harris and Todaro, 1970; Brucker and Jahn, 2011); rank in the local income distribution (Stark and Taylor, 1991); age and education (Sjaastad, 1962; Schwartz, 1976; Chiswick, 1986 Malamud and Wozniak, 2012); family and personal networks (Boyd, 1989; Pedersen et al., 2008; Munshi, 2003); concentration of peers in the area of destination (Mora and Taylor, 2005); asymmetric information on skills (Katz and Stark, 1987; Chen, 2005).

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This paper investigates whether Chinese migrants differ from non-migrants in terms of preferences under uncertainty, and we report results from the first incentivized artefactual field experiment (as classified in Harrison and List, 2004) on this topic. Imagine an aspiring migrant who considers the possibility to move to a big city for employment. She must make a series of decisions, explicitly or implicitly, such as, should she move to a city? Which city? The answers in turn depend on her assessment of the likelihood of finding a job in the city, how much money does this job allow her to earn and save, in which cities does she have social networks, and many others questions. These decisions involve both risk and ambiguity, as she may or may not have enough information to assess the probabilities of the outcomes related to these questions. Moreover, her job prospects also depend on the level of competition from other migrants, an entirely different source of uncertainty that involves other people's strategic behavior.

Nonetheless, and although early theoretical literature has recognized its importance (Stark, 1981; Stark and Levarhi, 1982; Katz and Stark, 1986), few empirical studies on migration have measured the role of preferences towards risk and uncertainty (Williams and Baláž, 2012). Moreover, the empirical evidence in the literature has largely relied on census or survey data with self-reported risk preferences that were not elicited in an incentive-compatible way (David, 1974; Stark and Levhari, 1982; Guiso and Paiella, 2006; Gibson and McKenzie, 2009; Jaeger et al., 2010; Czaika, 2012; Akgüç et al., 2016). For example, using survey data from Germany,[1] Bonin et al. (2009) show that first generation migrants are more risk averse than natives, while Jaeger et al. (2010) provide evidence that migration propensity is positively associated with willingness to take risks. Other studies also use hypothetical vignettes (as an example, see Batista and Umblijs, 2014). To the best of our knowledge, we are the first to conduct an incentivized field experiment to measure risk preferences directly and investigate the relationship between risk preferences and migration propensity.[2]

We chose to conduct our experiment in China since the country has experienced the largest rural-urban labor migration in the history of humanity (Meng et al., 2010). For instance, in the year 2013, the number of migrants surpassed 289 million.[3,4] In our study, "migrants" are defined as those who have a rural Hukou but live and work in a urban location different from their hometown as listed in the Hukou system (*i.e.*, Household Registration System).[5] "Non-migrants," or "stayers," are those who have a rural Hukou and live in their hometowns. We contribute to the literature on migration and risk attitudes also by considering two types of stayers: (i) those living in locations where there is little out-migration; and (ii) those in locations where there is substantial out-migration.[6]

By means of incentivized elicitation methods we measured migrants' and non-migrants' preferences toward risk and ambiguity in various contexts, by differentiating uncertainty that depends only on random events and uncertainty that also depends on others' decisions. State uncertainty refers to unknown outcomes, with or without information regarding the probability distributions (Ellsberg, 1961; Fox and Tversky, 1995). To study state uncertainty, we use incentivized lottery choices. Strategic uncertainty, on the other hand, is caused by the purposeful behavior of other players in an interactive decision situation (Brandenburger, 1996). To study strategic uncertainty, we elicit the willingness to compete for a limited number of prizes when others' decisions are simultaneous, by means of a market entry game inspired by Camerer and Lovallo (1999). This may proxy the fact that migration exposes individuals to competition from other migrants and local residents.[7] Our main hypotheses are the following:

Hypothesis 1a. Migrants exhibit different preferences under state uncertainty than non-migrants.

Hypothesis 1b. The two types of stayers exhibit different preferences under state uncertainty.

Hypothesis 2a. Migrants exhibit different preferences under strategic uncertainty (i.e., different degrees of competitiveness) than non-migrants.

Hypothesis 1b. The two types of stayers exhibit different preferences under strategic uncertainty.

If migration is indeed a self-selection process in which risk-seeking individuals migrate and risk-averse individuals stay (Umblijs, 2012), then stayers in locations with substantial out-migration should be relatively more risk-averse people in the population, and migrants should be relatively more risk seeking. These stayers are also possibly less competitive as large-scale migration can improve the situation of stayers through less competition for jobs at the local level (Mishra, 2007;

[1] Both studies used survey data from the German Socio-Economic Panel (SOEP) where risk preferences are measured on an eleven-point scale with the question "willingness to take risk in general," with no monetary incentives provided to survey respondents.

[2] More generally, see McKenzie and Yang (2012) on the advantages of using experiments to study migration.

[3] We use the terms "migrants" and "migrant workers" interchangeably. The number is obtained from the 2013 annual report of migrant workers published by the National Bureau of Statistics of China: http://www.stats.gov.cn/english/PressRelease/201402/t20140224_515103.html

[4] This rural-urban labor migration is characteristically different from labor migration in developed countries. First, it is a recent phenomenon, with only three decades of history since China's transition to a market economy and alleviation of the suppression of labor mobility in the early 1980's (Lin et al., 1998; Zheng et al., 2003). Second, most of migration flows are directed toward low-skill manufacturing jobs and the scale is large, as extremely abundant labor in rural areas (80% of China's population in early 1980's) began to move to urban areas in search of job opportunities in the rapidly growing manufacturing and service sectors. Third, these low-skilled migrant workers often move to cities for jobs alone while their children and spouses stay in hometowns. Many of them treat the migration as temporary, and plan to return to their hometowns after saving for a few years from their factory jobs.

[5] This is the generally agreed-upon definition, which is used by the Chinese Census Bureau.

[6] The main reason that we distinguish the two types of stayers and separate them in experiment is that stayers live and interact with the same type of stayers in their everyday life. Thus we chose a setting that was most natural to them. In contrast, migrants living in cities have the opposite experience as they interact with a diverse background of other migrants. Therefore, we did not separate migrants into two types.

[7] This is even more the case when countries use visa lotteries to select among applicants (like the U.S. Green Card Lottery) (see examples in McKenzie and Yang, 2012).