Determinants of Migration Choices: The Role of Beliefs about Pecuniary and Nonpecuniary Outcomes

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Job Market Paper

This Version: November, 2022. Latest Version HERE

Abstract

Why do young adults migrate? This paper studies the reasons behind migration choices of young, highly educated individuals from lagging-behind regions. I collect a rich dataset on subjective expectations right at the time when respondents are making their choice of whether to migrate out of Andalusia, one of the poorest regions of Spain. I then use the data to estimate a life-cycle model of migration choice, taking migration duration into account. Crucially, the collected data allow me to separate preferences from beliefs. Regarding pecuniary factors, I find that migration decisions are more sensitive to earnings, followed by the prospects of full-time employment and a better match between studies and job. Moreover, results from counterfactual exercises show that nonpecuniary factors, such as being close to family and quality of social life, play a larger role than pecuniary factors on choosing whether to migrate. Given the large expected likelihood of short-term migration, I study the reasons for planning to migrate temporarily. Counterfactual exercises show that a human capital acquisition strategy plays as small role on the plan to migrate short-term. Instead, expected short-term migration is largely motivated by preferences for nonpecuniary outcomes.

*European University Institute, Department of Economics; E-mail: alaitz.ayarza@eui.eu. I am indebted to my advisors Sule Alan and Michèle Belot, for their continuous guidance and support. I thank Jesús Bueren and Alessandro Tarozzi for their invaluable feedback. This work benefitted greatly from discussions with Alicia Adsera, Russell Cooper, Elisa Failache, Alessandro Ferrari, Dalila Figueiredo, Konuray Mutluer, Lukas Nord and Marina Sanchez del Villar. I also thank EUI microeconometrics and macroeconomics seminar participants for helpful comments. All remaining errors are mine. I gratefully acknowledge financial support from the European University Institute's Early Stage Research Competitive fund, which allowed me to carry out the surveys. I am also indebted to the Salvador de Madariaga EUI program for financial support as I wrote the paper. This study has been approved by the EUI Research Ethics Committe. Finally, I would like to thank Seguridad Social for kindly providing the data.

I Introduction

The first steps of young adults in the labor market are key to their long-term career prospects. There is growing evidence that the type of firms they sort into and the macroeconomic conditions they face at the start of their careers have lasting effects on their future earnings profiles.[1] To improve long-term career outcomes, young people born in regions with poor economic conditions can choose to start their professional careers elsewhere. Indeed, highly educated young individuals often migrate out of economically distressed regions. Still, many of them stay behind. Which factors shape the migration choices of this population is still not well understood. Do migrants anticipate higher career returns than non-migrants? What are the expected nonpecuniary benefits of migrating and staying?

In this paper, I investigate the determinants of young adults' first out-migration choices from relatively poor areas of advanced economies at completion of tertiary education. To do so, I conducted a survey with university students in a poor region of Spain (Andalusia) and collected their beliefs shortly before they finished their bachelor's degree. I then estimate a life-cycle model of migration choice using rich subjective expectations data on different labor market outcomes and nonpecuniary factors. I use the estimated model to construct counterfactuals that allow me to distinguish the role of pecuniary and nonpecuniary factors on migration choices.

A key challenge to answer this question is the lack of data on the full choice set of agents when they are making their migration decisions. Using observed migration choices and realized outcomes (e.g., realized earnings) to identify the choice model necessitates assuming a belief formation rule about future choice-specific outcomes. Doing so requires strong assumptions about two complex issues: (i) the mapping between realized outcomes and beliefs about them; (ii) the sorting of individuals into migration choices.[2] Estimating individuals' preferences (i.e., the model's parameters) over outcomes based on maintained assumptions on expectations is problematic because observed choices might be consistent with several combinations of ex-

[1] See **?** for the effect of firm size on future earnings, **?** on unemployment and **?** for the negative effect of entering the labor market in bad economic times.

[2] The researcher needs to assume random sorting or assume the characteristics in which the sorting is based in order to construct counterfactual outcomes for the alternatives not chosen by the individual.

pectations and preferences (**?**).

I circumvent this identification problem by collecting data on individuals' subjective expectations about the pecuniary and nonpecuniary outcomes under *each* migration alternative, as well as their expected choice probabilities over migration alternatives. The counterfactual alternatives include not migrating, migrating short-term (return migration) and migrating long-term. These alternatives are mutually exclusive and constitute the complete choice set. By combining this data I am able to estimate a life-cycle model without making strong assumptions on expectations. I then use the estimated parameters to build counterfactual scenarios. These counterfactuals manipulate individuals' expected gains of sets of outcomes. Given their preferences, I study how the expected out-migration choices would change if individuals expected different benefits and costs at the time of making their migration decisions than what they currently do.

Young, highly-educated adults in poor regions may migrate to improve different career-related outcomes. While they are all related, it is important to understand which factors have the predominant role in driving their choices as they have different policy implications (e.g., subsidizing existing firms or providing tax incentives to attract firms in new sectors). I collect the following expected pecuniary outcomes : employment status, wage conditional on employment status (as in **?**) and the quality of the match between the job and their bachelor's degree (i.e., study-job match).[3] This allows me to circumvent the standard endogenous selection into employment issue where job characteristics are only observed for individuals who work. Moreover, expected nonpecuniary factors include enjoying being close to family, partner and friends (which the literature has found to be important) and enjoying the quality of social life, which captures young individuals' broader attitude towards migration.[4]

I find considerable variation in students' beliefs across the different migration alternatives and a clear trade-off between labor market outcomes and nonpecuniary factors. The subjective belief data paint a sensible picture. For example, the majority of students, 73%, think that they would have highest earnings over the life-cycle if they were to migrate long-term, which is consistent with migrating to improve the persistently poor labor market conditions in their

[3] I use the terms pecuniary outcomes, labor market outcomes and career-related outcomes interchangeably.

[4] Expected outcomes at home are collected for their region of birth (Andalusia) and outcomes abroad for each individual's chosen migration destination (another region within Spain or another country).

region of birth. The data also show that students on average anticipate an earnings premium after return. 10 years after graduation, they expect to earn 19% higher earnings *in their region of birth*, Andalusia, if they have accumulated some working experience abroad (short-term migration) than if they always lived in their region of birth (no-migration).[5] The data also reveal that students anticipate nonpecuniary outcomes to be affected by their migration choices. Most students, 90%, expect a higher quality of social life at home than abroad, and they do not expect the gap to close as they accumulate years of life in their migration destinations.

I next use data on subjective choice probabilities and subjective beliefs nonparametrically following the framework proposed by **?**. First, I show that as a result of their expected choices, students expect on average 32% higher earnings over the life-cycle than if they were to stay in their region of birth with certainty. Second, with their expected choices as opposed to choosing their earnings maximizing path with certainty, they are ex-ante willing to forgo 14% of their life-cycle earnings. Given that earnings are lowest in the no-migration alternative and highest in the long-term migration alternative for most students, these results underscore the important role of planned short-term migration as a pathway to increasing lifetime earnings albeit not maximizing them. Additionally, I find that there is a strong positive correlation between the amount of earnings that young adults' are ex-ante willing to forgo for not choosing their earnings maximizing alternative and the loss in nonpecuniary outcomes that they anticipate in this alternative. This underlines the trade-off between increasing earnings and nonpecuniary factors.

I then combine subjective choice probabilities and subjective beliefs into a single coherent life-cycle model that takes the correlation of the outcomes into account. The model includes expected earnings[6], expected study-job match prospects, expected enjoyment from being close to loved ones and expected enjoyment of quality of social life. I find that all outcomes are significant determinants of migration choices. In order to interpret their economic significance and compare results to other studies, I use the estimates of the model parameters to calculate

[5]Several studies model short-term migration as a human capital acquisition strategy (e.g., **?**, **?** , **?** **?**). There is empirical evidence on a wage premium after return, but some find only weak evidence (e.g., **?**) and others stronger evidence (e.g., **?**, **?**).

[6]Expected earnings are calculated by averaging earnings conditional on employment status with employment status probabilities.

elasticities of choice with regard to pecuniary outcomes and willingness-to-pay estimates for nonpecuniary outcomes.

I estimate an average elasticity of choice with respect to earnings equal to 0.80, which is higher but similar in magnitude to other recent studies that analyze migration in Spain using aggregate data and alternative identification strategies and populations (see **?**; **?**).[7] The elasticity of choice to changes in full-time employment probabilities is 0.68, which is closely followed by the elasticity of choice with respect to having good study-job match prospects. Choice responses to increases in part-time employment probabilities are much lower, consistent with young adults at the start of their professional careers seeking to work full-time. On the other hand, I estimate that students have a total willingness-to-pay equal to 74% of their life-cycle expected earnings (12,100€ annually) to increase both nonpecuniary factors from their expected levels in the long-term migration alternative to their expected levels in the no-migration alternative. This number is high but considerably lower than the moving costs estimated in other studies, which exceed 100% of income (e.g., **?**, **?**).[8]

I then use the model parameter estimates to perform a series of counterfactual exercises. Because results above showed that both sets of outcomes are economically significant, the goal of the first two counterfactuals is to asses the role of pecuniary versus nonpecuniary outcomes on expected out-migration choices of young adults. To answer this question I equalize across alternatives, first, beliefs about career-related outcomes, and then, about nonpecuniary outcomes. Comparing how expected migration choices change under each of the two counterfactuals provides a meaningful metric to answer the question. Results show that young adults are more responsive to nonpecuniary factors than to career-related outcomes: for example, if students believed that migrating did not affect their career-related outcomes, they would be 9 p.p. (25%) *more* likely to plan to stay. Instead, believing that they would enjoy the same nonpe-

[7] The result is also comparable to the elasticity of the choice probabilities to changes in earnings found in other migration contexts, using other methodologies (e.g., **?** find elasticities equal to 0.5-1% for Danish engineers, and **?** equal to 0.95% for migration choices from Ecuador to Spain.

[8] These studies estimate dynamic choice models and identify moving costs by assigning a distinct status to each person's birthplace. The discrepancy is likely due to a number of reasons. First, I am able to better identify the costs. Second, I estimate costs for individuals' chosen destinations relative to staying. Instead in their models, the moving cost represents the cost faced by the average individual if they were forced to move to an arbitrary location.

cuniary factors across alternatives would make them 14 p.p. (41%) *less* likely to plan to stay in their region of birth.

Finally, I do two counterfactual exercises to understand the drivers of short-term migration. The counterfactuals manipulate beliefs in the periods in which students are back in their region of birth after having migrated in the short-term migration alternative. The goal of the counterfactuals is to quantify the extent to which young adults' plan to migrate short-term is motivated (i) by an anticipation of career benefits after return (i.e., short-term migration as a human capital acquisition strategy) and (ii) by too low levels of expected nonpecuniary factors under long-term migration. Results show that, while both mechanisms exist, the second one plays a major role. This suggests that individuals' choice to return is more sensitive to nonpecuniary conditions abroad (e.g., whether they make friends or find a partner at the destination) than to labor market conditions at home.

This is the first study that uses subjective expectations data to understand migration decisions under uncertainty. Previous migration studies have used subjective expectations data to asses the accuracy of individuals' expectations about actual realizations in the population, because systematic biases in beliefs can call for policy (information) interventions. These papers focus on migration from developing countries either using regular (e.g., **?**) or irregular pathways (e.g., **?**), where information is scarce and particularly valuable.[9] This paper instead uses subjective expectations data to shed light on the determinants of migration choices, which has been traditionally answered using choice data.

The paper contributes to and builds on three strands of the literature. First, it belongs to the long tradition of work seeking to understand whether expected labor market outcomes influence migration choices (e.g., **?**, **?**, **?**, **?**, **?**, **?**). This research has used choice data and has only studied the role of expected earnings. I complement this research by introducing a new methodology to the migration literature, which uses individual expectations under counterfactual scenarios. This approach allows me to study the role of a broader set of career-related outcomes on young adults' migration choices other than earnings. Moreover, it allows me to circumvent the identification problem in studies that use choice data concerning the separation of preferences and

[9]Other migration studies that use expectations data include **?** and **?**

beliefs.

The paper also builds on the more recent literature that unpacks the black box of migration costs by measuring the role of nonpecuniary factors on migration choices. **?**, **?** and **?** use observational data to understand individuals' preference to move close to family, friends or to places where their broader networks are. **?** focus on measuring the preferences for different location characteristics (e.g., crime rate) and moving costs and **?** characterize the total value of nonpecuniary benefits using stated-preference approaches. I complement this literature by quantifying the importance of nonpecuniary factors by incorporating expectations about these factors as well as expectations about labor market outcomes directly into the choice model. This approach allows one to learn about individuals expectations about nonpecuniary factors, which is interesting per se, and takes individuals' expected migration duration into account.

Finally, this paper adds to the growing literature that uses subjective-expectations data to understand decision-making under uncertainty. The methodology that I employ has mostly been used to study educational choices (**?**, **?**, **?**) or occupational choices (**?**)[10]. It rests on the implicit assumption that the stated choices reported in the hypothetical scenarios are reflective of what respondents would do in actual scenarios. There is growing evidence that the stated approach yields meaningful responses when the counterfactual scenarios presented to respondents are realistic and relevant for them (**?**). Given that the survey is carried out at the time of making migration decisions -when they are about to graduate in a region with high migration prevalence- I argue that this is the case in this study. In this regard, students' expected migration choices are consistent with actual self-selection patterns observed for migrants in Spain: being younger, a male, from a higher socioeconomic status and having higher grades are all statistically and positively related to students' expected probability of migrating (**?**). I complement this literature by studying a new and relevant decision context, migration choices of young adults.

The rest of the paper is organized as follows. Section **??** shows migration patterns in Spain using administrative data. Section **??** outlines the model. Section **??** explains how I collected the

[10]Other studies on educational choices (**?**, **?**, **?**, **?**, **?**, **?**, **?**) and health choices (**?**) also elicit beliefs in counterfactual scenarios, but elicit only the alternative that individuals are most likely to choose or a ranking of them. This approach cannot capture individuals' uncertainty at the time of the survey (**?**), which is important in my setting, as revealed by the results.

data and section **??** describes students' beliefs. Section **??** provides non-parametric results and section **??** presents results of the life-cycle model. Section **??** concludes.