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Understanding different migrant selection patterns in rural and urban Mexico ☆

Jesús Fernández-Huertas Moraga *

FEDEA, Spain
IAE (CSIC), Spain

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ABSTRACT

The productive characteristics of migrating individuals, emigrant selection, affect welfare. The empirical estimation of the degree of selection suffers from a lack of complete and nationally representative data. This paper uses a dataset that addresses both issues: the ENET (Mexican Labor Survey), which identifies emigrants right before they leave and allows a direct comparison to non-migrants. This dataset presents a relevant dichotomy: it shows negative selection for urban Mexican emigrants to the United States for the period 2000–2004 together with positive selection in Mexican emigration out of rural Mexico to the United States in the same period. Three theories that could explain this dichotomy are tested. Whereas higher skill prices in Mexico than in the US are enough to explain half of the negative selection result in urban Mexico, its combination with network effects and wealth constraints fully accounts for positive selection in rural Mexico.

1. Introduction

The goal of this paper is to explain why the pattern of emigrant selection varies in rural and urban Mexico. Fernández-Huertas Moraga (2011) shows that emigrants from Mexico to the United States earn an average wage before migrating lower than the average wage of those who decide to stay home. This is what Borjas (1999) defines as negative selection. However, Fernández-Huertas Moraga (2011) also shows that positive selection exists in rural Mexico, where rural Mexico is formed by those who live in localities with 2500 inhabitants or less.[1]

The literature offers three main arguments that could explain these facts. This paper examines the relative merits of these three competing arguments. It must be noted though that they are neither exclusive nor exhaustive. Previous papers (see below) had already shown the qualitative validity of the three arguments in different frameworks and with distinct datasets. The contribution of this paper is to assess both their qualitative and their quantitative relevance in a common framework and with the same dataset: the Encuesta Nacional de Empleo Trimestral (ENET), Mexico's labor force survey.[2]

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* FEDEA, Jorge Juan, 46, 28001 Madrid, Spain. Tel.: +34 914350401.
E-mail address: jfernandezhuertas@fedea.es.

[1] Whether positive or negative selection prevails in Mexico is not a settled question. Chiquiar and Hanson (2005), Lacuesta (2010) and Mishra (2007) argue for intermediate to positive selection in Mexico as a whole whereas Ibarrarán and Lubotsky (2007) report negative selection. Caponi (2010) and Cuecuecha (2005) obtain mixed results. McKenzie and Rapoport (2007) and Orrenius and Zavodny (2005) find positive selection in rural Mexico. See Fernández-Huertas Moraga (2011) and Hanson (2006) for a complete review of these results. More recent papers using the Mexican Family Life Survey, such as Ambrosini and Peri (2012) or Kaestner and Malamud (forthcoming), obtain results in line with Fernández-Huertas Moraga (2011).

[2] This is the dataset Fernández-Huertas Moraga (2011) uses to study emigrant selection. He discusses its main advantages and disadvantages. A relevant concern is the attrition rate in the panel: 11% after one quarter and 26% after one year. Though large, these figures are comparable to the attrition rates of commonly used datasets, such as the US CPS, whose attrition rate is 20–30% after one year (Neumark and Kawaguchi, 2004).

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The first argument is developed by Borjas (1987), who disregards the role of migration costs. If the return to skill were to be lower in rural Mexico than in the United States whereas it were to be higher in urban Mexico, then we should expect positive selection out of rural Mexico and negative selection out of urban Mexico.

The second explanation comes from McKenzie and Rapoport (2010). They propose that the existence of different selection patterns in different migrant datasets can be reconciled by the existence of migration networks. Migration networks reduce migration costs so that emigrants out of areas with larger migration networks tend to be more negatively selected than emigrants out of areas with smaller migration networks. Thus, this could explain the different selection patterns in rural and urban Mexico if migration networks were more present in urban than in rural areas.

Finally, a third argument, also from McKenzie and Rapoport (2007) among others in a different setup, is related to the existence of wealth constraints affecting the migration decision. Even in the presence of higher returns to migration for low skill individuals relative to high skill individuals in rural Mexico, which would lead to negative selection, it could happen that these low skill individuals cannot cover migration costs by borrowing, thus resulting in positive selection of migrants.

Out of these three arguments, the first one is independent from the structure of migration costs since Borjas (1987) considers them constant across skill groups. On the contrary, the networks and wealth constraints arguments are fundamentally based in the structure of migration costs. The true relationship between migration costs and skill levels is not only relevant to study why migrant selectivity evolves in one way or another but also to understand the consequences of different migration policies.[3]

One reason why migration costs can be decreasing in skills is through the positive relationship between these skills and wealth (McKenzie and Rapoport, 2007), which can then be combined with the existence of wealth constraints in migration. This paper tackles this theory by regressing, using semi-parametric analysis to account for non-linearities, the decision to migrate on a household wealth index extracted from the ENET. The results indicate that the probability of emigration is increasing in wealth for low wealth individuals and decreasing in wealth for high wealth individuals in rural Mexico (individuals living in localities with less than 2500 inhabitants), consistent with the existence of wealth constraints and with the findings in McKenzie and Rapoport (2007) for the Mexican Migration Project[4] database. However, the result for urban Mexico is that there is no relationship between wealth and the emigration probability. This could explain why there is positive selection in rural Mexico whereas there is negative selection of emigrants from Mexican urban areas.

As for the ability of skill prices to account for the different selection patterns, simple Mincer regressions are used first to show that the return to education in rural Mexico does not seem to be low enough to generate positive selection of emigrants to the United States. This finding is confirmed by the fact that observable skills account for as much of the observed degree of selection in urban Mexico as in rural Mexico. In order to estimate wages based on observable skills, the counterfactual wage density estimation procedure developed by DiNardo et al. (1996) and applied by Chiquiar and Hanson (2005) is used.

Finally, network effects, as defined by McKenzie and Rapoport (2010), are shown to be more relevant in shaping migration decisions in rural Mexico. When networks are added as an additional observable variable to the DiNardo et al. (1996) counterfactual wage estimation, all of the observed degree of positive selection in rural Mexico can be accounted for. When networks and wealth are jointly considered, much more than the observed degree of positive selection in rural Mexico is accounted for, implying a degree of negative selection in unobservables similar to that in urban Mexico.

In a cross-country setting, Belot and Hatton (2012) similarly show that a combination of the Roy model (Roy, 1951) in log utility terms, as in Borjas (1987), with poverty constraints can explain selection patterns to 29 OECD countries in 2000–2001. However, Grogger and Hanson (2011) and Rosenzweig (2007) question the usefulness of the Borjas (1987) log utility interpretation of the Roy model and argue instead for using a linear utility model to study selection. The contribution of this paper to this ongoing debate is to show a case where both models can be distinguished. The existence of positive selection in rural Mexico is coherent with both models once the log utility model is corrected to allow for wealth constraints but the existence of negative selection in urban Mexico is only compatible with the log utility model.[5]

The structure of the paper is as follows. First, the simple theory underlying this study is sketched. Second, a description of the ENET dataset and several stylized facts are presented. The following section explores how well different theories are able to explain the opposed selection patterns in rural and urban Mexico. Finally, the main conclusions of the paper are drawn.

2. Emigrant selection theory

This section reviews three simple variations to the classical selection framework derived by Borjas (1987) from the combination of the Roy (1951) selection model and the Sjaastad (1962) idea that migration is an investment decision in which individuals make the utility maximizing choice out of a set of alternatives. These variations offer explanations to the fact that emigrant selection patterns differ in rural and urban Mexico.

Following Borjas (1999), positive selection is defined as a situation in which[6]:

$$E(\log w_0|\text{emigration}) > E\log(w_0|\text{no emigration})$$

where w_0 represents the wage level in the original location (rural or urban Mexico in this case).

Positive selection implies that emigrants are on average more productive (as reflected on their wage) than non-migrants. The above inequality can be easily computed from the ENET data for the Mexico–US case since both the wages of non-migrants and migrants right before migration can be observed. In addition, the difference between the two expectations can be interpreted as the degree of selection (DS):

$$DS \equiv E(\log w_0|\text{emigration}) - E(\log w_0|\text{no emigration}).$$

2.1. The differential returns to skill explanation

First, following Borjas (1987) and his simpler exposition in Borjas (1999), consider the case where migration costs, in time equivalent units, are constant across skill levels so that emigrant selection is determined by the differences in returns to skills among competing destinations. Suppose that individuals maximize utility on a period by period basis and that their decisions for each period do not affect their outcome in subsequent periods.[7] Utility consists of their log wage income net of time equivalent migration costs. Of course, migration costs are not

[3] Borger (2010) provides an excellent example.

[4] The Mexican Migration Project, developed by Princeton University and the University of Guadalajara, surveys communities in Mexico. For more information, see http://mmp.opr.princeton.edu/. Also, see Fernández-Huertas Moraga (2011) for a comparison of the ENET and MMP datasets.

[5] To be fair, the linear utility model could also be modified in its structure of migration costs in order to accommodate the possibility of negative selection. However, one would need to find something in the structure of migration costs that differs between urban and rural Mexico.

[6] The definition in Borjas (1999) also includes that the earnings of immigrants will be higher than those of natives in the host country as long as the base average wage both groups have access to is the same.

[7] Alternatively, think of a Mincerian world (Mincer, 1958) where wages are constant over time or, in a more sophisticated yet still simple version, where the best prediction about future wages can be obtained from current wages.