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Land property rights and international migration: Evidence from Mexico ☆

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ABSTRACT

In this paper, I ask whether there is a relationship between land property rights and international migration. In order to identify the impact of property rights, I consider a country-wide land certification program that took place in Mexico in the 1990s. My identification strategy exploits the staggered implementation and the households' eligibility for the program. I find that the program increased the eligible households' likelihood of having one or more members abroad by 12%. In terms of the number of migrants, my coefficient estimates explain 26% of the 1994–1997 increase in migrants from ejido areas and 13–15% of the increase from all of Mexico. Consistent with our theoretical model, the impact is strongest for households without a land will. This implies that land inheritance issues drive at least part of the effect.

1. Introduction

From 1990 to 2005, the share of Mexicans in the United States increased from 5.2% to 10.2% (Hanson, 2010). During the same period, remittances from the US to Mexico rose from US$2.5 billion to US $21.7 billion, with an average of US$7.5 billion, or 59% of the net FDI (World Bank, 2010). Mexico is the main source of both legal and illegal immigration to the US. In 2004, 56% of the 10.3 million Mexicans in the US were there illegally (Passel, 2005). Hence, illegal immigration causes huge pressure on the US government to limit border crossing (Hanson and Spilimbergo, 1999), drives the political fortunes of US Governors (Hanson, 2005) and stands high on the agenda of every US presidential candidate. Understanding what drives this migration flow is critical for any assessment of future patterns and policy design (Hanson, 2006).

Although recent studies attribute a large share of this rise in migration to demographic factors (Hanson and McIntosh, 2009, 2010), the Mexican government implemented various policies in the 1990s that may have affected migration, and rigorous quantitative evidence of the effect of these policies on migration has been lacking (Hanson, 2006). I contribute to the literature by showing that changes in land property rights in the 1990s affected migration to the US. The research questions are: (1) Is there a relationship between land property rights and Mexico–US migration? (2) If there is, do better defined property rights slow down or speed up migration flows?

In order to identify the impact of property rights on migration behavior, I make use of the land certification program *Procede*, which was implemented throughout the 1990s and targeted all ejido land in the country. *Ejidos* are areas of land allocated in usufruct to groups of farmers, called *ejidatarios*, and cover about 60% of all agricultural land in the country (Velez, 1995). Procede provided households with certificates for their housing plot, their individual agricultural plots, and their right to use the common land. By providing certainty over land rights, the certificates may have led households to reoptimize their labor supply in favor of off-farm activities, like migration. In order to account for potential omitted variable bias, I exploit program timing and households' eligibility for the program. I find that the program increased the eligible households' likelihood of having one or more members abroad by 12%. In terms of number of migrants, my coefficient estimates for eligible households explain 26% of the 1994–1997 increase in Mexican migrants from ejido areas and 13–15% of the increase from all of Mexico.

The paper also contributes to the literature on land property rights and titling programs, and to the literature on international migration. Concerning the latter, Hanson (2010) argues in his recent survey that it is very challenging to reconcile the level of global migrants (about

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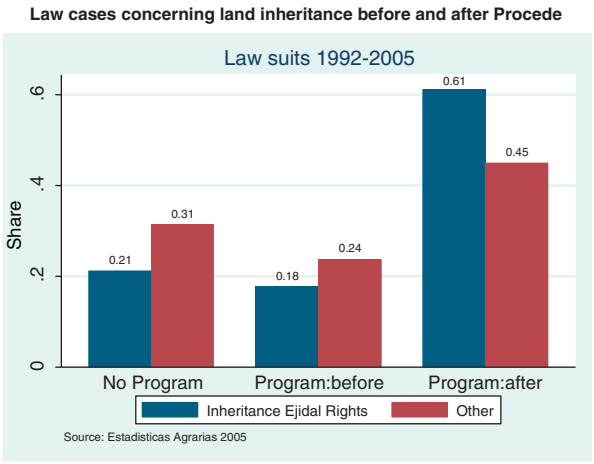

Note: the figure shows the differential increase of law suits concerning land inheritance (relative to other categories) after the program took place. See Morales Jurado and Colin Salgado (2006) for details.

Fig. 1. Law cases concerning land inheritance before and after Procede. Note: the figure shows the differential increase of law suits concerning land inheritance (relative to other categories) after the program took place. See Morales Jurado and Colin Salgado (2006) for details.

3% of the global population) with large and persistent wage differentials across countries. Notwithstanding the recent rise in global migration, the rate is not as high as would be expected if wage differentials were the main driver.[3] This is even more puzzling in the case of Mexico, where borders are porous and illegal migration is widespread. Hanson (2006) calculates that, at the existing wage rates (confirmed by Rosenzweig (2007)), it takes less than two months for a migrant with 5–8 years of education to recoup the costs of crossing the border. The present paper contributes to this literature by identifying another strong yet neglected cost of migration: tenure insecurity.

I also contribute to the literature on land titling programs. In the last decade, research has mainly aimed at estimating the impact on investments (see Pande and Udry (2006), Deininger and Feder (2009), and Galiani and Schargrodsky (2011) for excellent reviews), whereas "the relationship between land tenure and off-farm labor market participation is under-researched, especially in rural areas of developing countries" (Deininger and Feder, 2009:256). For urban areas, the evidence is mixed. Field (2007) finds a positive impact on labor supply outside the home among urban squatters in Peru, while Galiani and Schargrodsky (2010) find no impact among urban squatters in Buenos Aires. Whether urban property rights have an impact on labor supply outside the home may depend on whether the labor supply was constrained prior to the change in property rights (Galiani and Schargrodsky, 2011). For rural areas, Do and Iyer (2008) find a positive impact on off-farm labor supply among rural households in Vietnam, although it is ten times smaller than the impact identified by Field (2007).[4] To my knowledge, there is no evidence on the impact of land certification on migration, which is the natural extension of the study of non-farm labor participation. Because Mexican household members can now leave their land (and even rent it out) without fear of being expropriated or losing their inheritance, they may be able to migrate to seek higher-income work in urban areas or the US.

The major added value of the paper is the identification strategy. Property rights are typically endogenous to household behavior (Besley and Ghatak, 2010). In order to tackle the corresponding identification challenge, I take the following steps. First, I consider a land certification program that provides a neat source of discontinuity in de facto property rights between certified and non-certified communities. Second, I use survey data on the same households prior to the program to control for all unobserved time-invariant differences between program and non-program areas that may be correlated with migration behavior. Third, I control for time-varying differences between program and non-program areas, which may still be correlated with migration behavior, by using state–year (and even municipality–year) fixed effects and detailed information on border issues, migration networks, and involvement in markets and government programs.[5]

2. Context: Procede in Mexican ejidos[6]

Following the 1911 revolution, the Mexican government established the policy that groups of farmers could receive non-transferable land in usufruct, free of charge. The ejido is the agrarian institution that is endowed with such land and which is generated with this application (Quesnel, 2003). The ejidatarios are the farmers who applied for such land. They could decide whether to divide part or all of the land into individual plots. Each of them received one individual plot and access to the common land. Individual plots were used mainly for rainfed agriculture, while common land was used mainly for cattle and livestock grazing (Procuraduaria Agraria, 2010).

Throughout the decades, ejidos came to include an estimated 3.2 million ejidatarios in about 30,000 ejidos and to constitute 56% of the national land usable for agriculture (World Bank, 1999).[7] Ejidos became characterized by levels of capital endowment significantly lower than in the private sector (World Bank, 2001) and by extreme poverty (Velez, 1995).

The 1992 Agrarian Law grants ejidatarios full property rights to their urban plots, the rights to sell (exclusively to members of the same ejido) and rent out their individual plots, and the right to use the common land, but not to transfer it. The law confirms the use rights for all plot types, and introduces the transfer rights for urban and individual plots. In addition, it introduces the rights to use wage labor and to leave the individual plots fallow for more than two years. Because of the limits on the right to sell, it is virtually impossible to use land as collateral to obtain credit.[8]

At the end of 1993, the government launched a massive certification program, called Procede. As part of the program, ejidatarios' rights over

[3] It could also be that cross-country wage differentials are lower than the average earning differences if migrants' self-selection is positive. This may not apply to Mexico, as Chiquiar and Hanson (2005) find that selection there is intermediate. Evidence is not conclusive, though; see Orrenius and Zavodny (2005), Mishra (2007), Ibarraran and Lubotsky (2007), Moraga (2011), Caponi (2006) and McKenzie and Rapoport (2010).

[4] Field (2007) finds an increase equal to 3.04 working hours outside the home per week per working household member, while Do and Iyer (2008) find an increase equal to 0.36, almost ten times smaller. In the latter paper, there is no descriptive statistic on labor supply before (and after) the program, so we cannot speculate on the extent to which the labor supply was constrained.

[5] This identification strategy is what distinguishes the present paper from Mullan et al. (2011) and de la Rupelle et al. (2009), who look at rural–urban migration in China, and de Braw and Mueller (2009), who look at internal migration in Ethiopia. In contrast to them, we use a land certification program to identify the causal impact of land property rights on migration, rather than self-reported tenure security or land transferability.

[6] See the working paper version Valsecchi (2010) for references to the Mexican legislation.

[7] The remaining land used for agriculture is private property and is not considered in this study.

[8] A plot can be used as collateral only with credit institutions that already have commercial relationships with the ejido, and, in case of default, the credit institutions can seize the plot only for the amount of time necessary to get the money (Art. 46). Hence, we do not expect certificates to have increased access to credit. Acquisition of full property rights (dominio pleno) requires an additional deliberation of the ejido Assembly and an individual application of the ejidatario to the RAN (Art. 81–82). In practice, very few Assemblies seem to have done so. Only 6/248 ejidos in our sample have adopted dominio pleno.

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