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Rush from the Border?
Explaining Shifts in Population Mobility in Contemporary Mexico.

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Introduction

In this paper, we analyze changes in the sociodemographic patterns of internal migration in Mexico over the last 15 years and elucidate the spatial context of these patterns. Most scholarship of Mexican migration streams focuses solely on international movement to the neglect of internal options and thus provides an incomplete and biased picture of existing sociodemographic dynamics. Therefore, the work presented here offers a critical extension by embedding international migration within an improved understanding of internal dynamics. We focus on a particularly interesting time period that covers a period of important changes in the Mexican political economy, as well as the US economic recession. These changes have altered the relative attractiveness of the Mexico-US border region as a migrant destination and, overall, yielded changes in the Mexican migration system. It is these changes that this study is targeting analytically to better understand observed shifts in the Mexican population.

Using data from the 2000 and 2010 Mexican census long form samples, we examine the determinants of specific migration streams of origin-destination municipalities and match these streams to 1999 and 2009 economic census information, respectively, as well as data reflecting violence. This paper contributes substantially to an improved understanding of internal migration within Mexico as we expect to find lower than expected rates of internal migration driven by a reduction in net migration into the borderlands—a result of decreasing in-migration to and increasing out-migration from these areas. We hypothesize that these changes are mainly due to three factors: 1) limited local economic spillovers from the liberalization of the Mexican political economy, 2) the increasing violence associated with the drug trade, and 3) declining attractiveness of the borderlands as a destination in light of increasing immigration enforcement in the United States. By testing these hypotheses, empirically, this paper sheds important light on the internal migration system in Mexico, thereby enhancing understanding of international migration dynamics and determinants as well, and the interactions between internal and international movement.

Background

National, regional, and local economic restructuring is associated with population mobility in developed and developing nations (e.g., Kandel & Parrado 2005; Villarreal & Hamilton 2012). In Mexico, prior work has shown that economic liberalization in the 1980-1990s gradually shifted population movements away from the largest cities and industrial centers of Mexico City, Guadalajara, and Monterrey. Instead, movement has shifted toward border cities—especially Tijuana and Ciudad Juárez (Villarreal & Hamilton 2012). These large and rapid movements changed historic Mexican population distribution dynamics that had been prevalent since the middle of the 20th century (Garza 2003). These recent changes have also contributed to momentous, and oftentimes challenging, social, political and environmental transformations of the borderlands (e.g. Sabo et al 2014).
As related to international migration, the new demographic dynamics of the borderlands increasingly acted as a springboard for migration to the United States among a small but growing number of “step migrants” during the 1990s (Fussell 2004; Lozano-Ascencio et al. 1997) resulting in significant increases in international migrants. In all, the shifting internal dynamics also shaped patterns of international flows and this is the connection we aim to better understand.

Over the last 10 years, the Mexican and U.S. political economies have experienced another round of relatively deep transformations, which may have yielded reduced internal migration overall. For example, the rate of inter-state migration in 2005-2010 was 3.2%, somewhat lower than the 4.2% in 1995-2010 (INEGI 2015). In addition, the selectivity of internal migration has likely changed as well. Specifically, political economic shifts on both sides of the border may have reduced the attractiveness of the border cities as destinations while also resulting in higher levels of education among migrants (Romo Viramontes et al. 2013).

However, past work on these dynamics has failed to explain the reasons behind observed reduced flows nor did it reveal the features of internal mobility in Mexico more broadly. We believe that key in explaining these patterns is the examination of new, or reemerging, flows into cities in the Central-West and South and consideration of these flows as related to and interacting with international migration. Our work contributes to these understandings.

In theory, the liberalization of the Mexican economy during the 1980s and 1990s, especially the signing of the North American Free Trade Agreement (NAFTA, 1994), should have created backwards and forward linkages and economic multipliers that would bring more local investment. Such investment would be expected to spark agglomeration economies, regionally.

Although NAFTA has failed to create these multipliers at a broad national level (Cypher & Delgado-Wise 2011), some industries have experienced growth. Examples include auto, and to some extent electronics industries, that have expanded along the borderlands and also towards the Central-West (e.g., Guanajuato, Jalisco, and Aguascalientes) and South-Central (Puebla) parts of the country.

While it is plausible that NAFTA failed to deliver additional economic development, it is unlikely the only, or perhaps main reason, behind the region’s declining attractiveness. Beginning in the early-mid 2000s, drug-related violence reached unprecedented levels along marijuana, poppy, and methamphetamine production areas in the Northwest, Central-West, and South. Violence also intensified in the trading corridors of the Southern borderlands and coastal areas for the importation of production materials for cocaine and methamphetamines. And finally, violence also penetrated the Northern borderlands' trading corridors used for the distribution and exportation of products to US markets. These corridors also fuel local consumption as well as a “vice tourism” industry.

State intervention and inter- and intra-cartel conflict have resulted in ebbs and flows of this drug-related violence (e.g., Ainslie 2013). Yet, since 2006 across Mexico, over 230,000 individuals have been forced to leave their homes as a consequence of this violence (Robles, Calderon, Magaloni 2013) and the borderlands have been particularly hard hit (e.g., Rios & Shirk 2011).

Another pathway through which the drug-related violence is impacting migration is through reducing "step" migration to the US. Increased enforcement in the US as related to drugs and immigration likely make the borderlands less attractive increasing the risks and costs of migration. In addition, violence related law enforcement has shaped return migration within Mexico by increasing the number of
deportees from the US who remain "stuck" at the border and are unable to return to their origins in the Mexican interior (Giorguli & Gutierrez 2012). There is no doubt that the US economic recession has played an important role here too. In the late 2000s, shifts occurred in US-Mexico migration both in changing the selectivity of migrants (McKenzie & Rapoport 2010) and reducing overall return flows (Rendall, Brownell and Kups 2011).

Overall, this paper outlines changes to the Mexican migration system over 1995-2010 in order to better understand the implications of shifts in internal and international migration patterns.

**Data & Methods**

To illuminate patterns and determinants of internal migration within Mexico, we use data from the 2000 and 2010 Mexican Census long form samples available through IPUMS International (MPC 2014). We focus on inter-municipal and inter-state migration to examine mobility both between cities as well as broader regional redistribution. We also include consideration of international origins and destinations assuming these are related to US-Mexico migration although we are unable to determine explicitly if these moves are to/from the US. Still, according to aggregated tabulations from the 2000 census available from INEGI, where information of country of destination was available, 94 % of people who were living in another country in 1995 and had returned to a rural locality in Mexico by 2000 had lived in the U.S.¹

To reflect political economy and violence, we include measures of occupational distribution, employment data, and homicide rates from Mexico’s National Institute of Statistics and Geography (INEGI).

We have two analytical approaches. First, we examine both municipality- and state-level aggregate flows and their composition, with a focus on specific origins and destinations (see Tables 1 and 2 for flows 2005-2010. Age and educational breakdowns offer a general sense of the composition of specific migrant flows while overlaying municipality and state socioeconomic characteristics and levels of violence will allow for an aggregate look at the determinants of population redistribution. This approach allows for an interesting examination of selectivity of flows from/to the border as well as between other regions of Mexico.

Second, we will model household level migration using discrete choice models to understand sending and destination area factors associated with migration (see Villarreal & Hamilton 2012). We run both time periods, 1995-2000 and 2005-2010, within the same modeling framework in order to compare determinants and their changing role over time. Within these models we control for gender, age, educational levels of individuals, as well as socioeconomic characteristics, including violence levels, of municipality of origin and destination.

**Results**

Table 1 provides aggregate flow data for the top 10 origin-destination streams for Mexican migrants at the municipality level for 2005-2010. Interesting migration patterns emerge even from this preliminary look and indicates the enormous potential of this analysis at the national scale.

¹ Calculated through query at http://www.inegi.s
Even with border violence, the largest migration stream is within northern regions as individuals move toward the border. This stream has the youngest age profile of the top 10 migrant streams and is 51% male. Other key movements are within the major metropolitan areas of Guadalajara and Monterrey. With nearly 35,000 individuals moving from the US to Tijuana, 2005-2010, the sixth largest stream likely comprises many deportees resultant of US immigration enforcement. This group is over 62% male and also has a slightly higher average age at nearly 32 years.

Table 1. Top 10 Municipality level migrant streams, 2005-2010

<table>
<thead>
<tr>
<th>Municipality of Residence, 2005 (origin)</th>
<th>Municipality of Residence, 2010 (destination)</th>
<th>Number of Migrants</th>
<th>Average Age</th>
<th>% Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guadalupe</td>
<td>Juarez</td>
<td>53,609</td>
<td>25.93</td>
<td>50.88</td>
</tr>
<tr>
<td>Guadalajara</td>
<td>Tlajomulco de Zuniga</td>
<td>51,201</td>
<td>26.12</td>
<td>51.57</td>
</tr>
<tr>
<td>Guadalajara</td>
<td>Tonala</td>
<td>43,037</td>
<td>28.40</td>
<td>50.88</td>
</tr>
<tr>
<td>Guadalajara</td>
<td>Zapopan</td>
<td>37,535</td>
<td>32.07</td>
<td>47.97</td>
</tr>
<tr>
<td>San Nicolas de los Garza</td>
<td>Apodaca</td>
<td>37,508</td>
<td>27.98</td>
<td>48.67</td>
</tr>
<tr>
<td>Abroad</td>
<td>Tijuana</td>
<td>34,991</td>
<td>31.97</td>
<td>62.27</td>
</tr>
<tr>
<td>Monterrey</td>
<td>Gral. Escobedo</td>
<td>30,478</td>
<td>25.12</td>
<td>50.53</td>
</tr>
<tr>
<td>Ecatepec de Morelos</td>
<td>Tecamac</td>
<td>30,175</td>
<td>27.06</td>
<td>48.53</td>
</tr>
<tr>
<td>Ecatepec de Morelos</td>
<td>Acolman</td>
<td>29,301</td>
<td>28.95</td>
<td>49.16</td>
</tr>
<tr>
<td>Chicoloapan</td>
<td>Chimalhuacan</td>
<td>26,286</td>
<td>28.10</td>
<td>47.21</td>
</tr>
</tbody>
</table>

A regional perspective offered by calculations of migration crossing state boundaries offers a broader picture as shown in Table 2. This perspective underlines the importance of considering both international and internal migration, and using different scales to provide different lenses upon this process.

At the state-level, we again see the magnitude of movement within Mexico City's dominant metropolitan region as the top 2 streams represent this mobility. Yet six of the remaining migrant streams represent movement from abroad back to Mexico, including states of the central region (Guanajuato) and both east (Veracruz de Ignacio) and west coasts (Michoacan de Ocampo). Only the 10th cross-state stream -- Veracruz to Tamaulipas -- represents movement toward the US border.
Table 2. Top 10 state level migrant streams, 2005-2010

<table>
<thead>
<tr>
<th>State of Residence, 2005</th>
<th>State of Residence, 2010</th>
<th>Number of Migrants</th>
<th>Average Age of Migrant</th>
<th>% Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distrito Federal</td>
<td>Mexico</td>
<td>389,526</td>
<td>30.19</td>
<td>48.28</td>
</tr>
<tr>
<td>Mexico</td>
<td>Distrito Federal</td>
<td>158,693</td>
<td>29.28</td>
<td>45.66</td>
</tr>
<tr>
<td>Abroad</td>
<td>Jalisco</td>
<td>93,648</td>
<td>30.61</td>
<td>64.48</td>
</tr>
<tr>
<td>Abroad</td>
<td>Michoacan de Ocampo</td>
<td>81,870</td>
<td>30.81</td>
<td>69.87</td>
</tr>
<tr>
<td>Abroad</td>
<td>Guanajuato</td>
<td>75,963</td>
<td>31.75</td>
<td>77.49</td>
</tr>
<tr>
<td>Abroad</td>
<td>Mexico</td>
<td>67,219</td>
<td>31.04</td>
<td>69.75</td>
</tr>
<tr>
<td>Abroad</td>
<td>Baja California</td>
<td>62,203</td>
<td>32.77</td>
<td>62.64</td>
</tr>
<tr>
<td>Mexico</td>
<td>Hidalgo</td>
<td>56,601</td>
<td>27.82</td>
<td>47.68</td>
</tr>
<tr>
<td>Abroad</td>
<td>Veracruz de Ignacio de la Llave</td>
<td>56,102</td>
<td>31.89</td>
<td>72.64</td>
</tr>
<tr>
<td>Veracruz de Ignacio de la Llave</td>
<td>Tamaulipas</td>
<td>48,157</td>
<td>27.05</td>
<td>47.51</td>
</tr>
</tbody>
</table>

Activities Prior to PAA

Recall that we presented 3 hypotheses which guide these analyses. We predict that changes to the internal migration system are mainly due to three factors: 1) limited local economic spillovers created by the liberalization of the Mexican political economy, 2) the violence associated with the drug trade, and the 3) declining attractiveness of the borderlands as a destination in light of increasing immigration enforcement in the United States.

We presently have both the 2000 and 2010 IPUMS data in-hand and have undertaken the origin-destination flow analyses for 2005-2010 for both municipality (local) and state (regional) levels. We are currently overlaying socioeconomic data on the flows preliminarily outlined above to probe into substantive questions and test our three hypotheses. This same approach will be applied to the 1995-2000 origin-destination flows to explore economic spillovers, violence and increased US immigration enforcement on the Mexican migration internal and international systems across the past two decades.

The next analytical step is discrete choice models operating at the individual-scale, while we will also explore modeling municipal migration rates with Poisson regressions modeling migrant counts and population exposed as offset with municipality characteristics included at origin and destination.

Overall, by testing the three hypotheses linking political, economic and cultural change to migration systems, this paper sheds important light on the internal migration system in Mexico, thereby enhancing understanding of the role of international migration dynamics and determinants as well. Building on this manuscript, our future work will integrate environmental factors into the push-pull characteristics of Mexican municipalities as well as undertake explicit spatial analyses including cross-scale examination.
References


