The Mexican Dream? The effect of return migrants on hometown development

Benjamin James Waddell a,⁎, Matías Fontenla b

a Adams State University, Department of Sociology, 208 Edgemont Blvd, Alamosa, CO 81101, USA
b University of New Mexico, Department of Economics, MSC 05 3060, 1 University of New Mexico, Albuquerque, NM 87131, USA

A R T I C L E   I N F O
Article history:
Received 1 July 2014
Received in revised form 15 February 2015
Accepted 15 February 2015
Available online xxx

Keywords:
Return migrants
Migration
Human development
Political participation

A B S T R A C T

Mexican migrants are returning to their homeland at record rates. Along with material goods, these former migrants may bring with them new ways of thinking about the world and envisioning the future. Still, relatively little is known about the degree to which former migrants affect the wellbeing of their local communities over time. This study evaluates the effect of return migrants on health, education, income, and political participation in Guanajuato, Mexico during the period 2000–2010. The findings imply that returnees may have positive effects within local economies, improving not only income, but also education, healthcare, electoral participation, and overall wellbeing. The results of this study have important implications for policy makers operating within emigration-prone regions of the world.

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1. Introduction

Today, there are more migrants returning to Mexico from the U.S. than there are Mexicans crossing into the U.S. in pursuit of the American Dream (INEGI). In fact, for the first time since the Great Depression net migration flows from Mexico to the U.S. have reversed, with estimates of the U.S. unauthorized immigrant population from Mexico dropping from a peak of 6.9 million in 2007, to 6.0 million in 2012 (Passell et al., 2012). 1

A number of push factors may be related to this historic change, including heightened border enforcement, a rise in deportations, the growing dangers associated with illegal border crossings, and weaker U.S. job opportunities.

Many immigrants may also simply be following through with their original plan to work hard in the U.S. and return home riding on the coattails of their success abroad. However, it appears that improved labor markets in Mexico as well as important shifts in the country’s demographics, such as lower fertility rates, may be pulling former migrants back home. Regardless of their reasons for returning, former migrants share one thing in common: They are not the same as when they left. Living and working in the U.S. appears to have changed them, and they, in the process of returning, may be changing Mexico. Still, current research sheds little light on the actual influence of return migrants on hometown communities. The task of this study is to empirically assess the degree to which return migrants impact—if at all—their hometown communities.

Many studies have focused on the effects of immigration. However, the authors are unaware of any empirical research on the effect of return migrants on development over time in their home communities. Given the recent reversal in migration flows, and the potential impact of return migrants on their homelands, this becomes an

http://dx.doi.org/10.1016/j.soscij.2015.02.003
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Please cite this article in press as: Waddell, B.J., & Fontenla, M. The Mexican Dream? The effect of return migrants on hometown development. The Social Science Journal (2015), http://dx.doi.org/10.1016/j.soscij.2015.02.003
you lose your job. Here I have my own tortilla factory and I try to run it like my bosses ran their businesses back in the U.S. I open every day at the same time, I pay attention to quality control, and I always make the customer my priority.

As these men and women show, return migrants often come back to their homelands with a different vision of the world. This tendency is confirmed by existing research, which reveals that living abroad or in larger urban centers alters the way migrants and their family members think about social norms (Lewitt & Lamba-Nieves, 2011), investments in human capital (Hanson & Woodruff, 2003; Yang, 2008), entrepreneurialism (Woodruff & Zenteno, 2007; Yang, 2008), and politics (Li & McHale, 2009; Pérez-Armendáriz & Crow, 2010; Pfutze, 2012; Spilimbergo, 2009; Waddell, 2015). Research in this area reflects the reality that while international immigration has reached historic highs in recent years, a large percentage of migrants eventually end up returning to their homeland. For example, a 2008 study by the Organization for Economic Co-operation and Development (OECD) found that after five years roughly 18% of Mexican migrants returned home, whereas 24% of South American migrants returned, 43% of Canadian migrants, and 54% of migrants from the European Union (Dumont & Spielvogel, 2008:172).

Return migrants clearly make up an important percentage of international migration flows. Still, only a handful of studies directly address the effect of return migration on hometown communities (Arce, Renato, & José Antonio, 2011; Batista & Vicente, 2011; Marchetta, 2012; Chauvet & Mercier, 2011; Dustmann, Faldon, & Weiss, 2010; Marchetta, 2012; Rother, 2009; Von Reichert, Cromartie, & Arthun, 2014), and where they do, results are largely limited to the analysis of small surveys and qualitative field data.

This study looks to build on extant research by considering municipal-level effects of return migration over the years 2000–2010 in the state of Guanajuato, Mexico. The research focuses on Guanajuato for several reasons. First, migration is particularly widespread in Guanajuato and has a long history pre-dating the Great Depression (Durand, 1987). Second, Guanajuato is one of the leading return-migrant receiving states in the nation, and it sends more migrants to the U.S. than any other state (INEGI). Third, the state’s income per capita and demographics are roughly average for the nation, but with large heterogeneity across municipalities. It has both high-income industrialized cities, like León and Celaya, and poor rural municipalities with large indigenous populations, such as Xichú and Atarjea. Such socio-demographic variation across the state makes Guanajuato an ideal location for exploring the effects of return migration on human development—measured in terms of education, healthcare, income, and civic participation. Finally, data is available at the municipal level for all the variables of interest.2

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2 For a much more detailed review of historic migration trends out of Guanajuato, see Arias (2004). Old Paradigms and New Scenarios in a Migratory Tradition: U.S. Migration from Guanajuato. In Jorge Durand and
All else equal, the findings indicate the percentage of Guanajuato homes with return migrants is strongly associated with higher levels of municipal development over time. Return migrants have a particularly strong impact on levels of municipal education and health outcomes. Return migrants also share a positive relationship with electoral participation, indicating that former migrants may influence political norms within their communities. In contrast, remittances, and thus migration, have a negative effect on development outcomes and electoral participation.

The findings indicate that in addition to financial capital, return migrants very likely bring back with them less tangible, but arguably more important, forms of capital, such as human and cultural capital. Still, the degree to which these social transfers contribute to development appears to depend greatly on local policy environments. The Mexican government has a wide array of programs designed to support migrants and their families in the U.S. as well as encourage financial investments in their hometown communities. However, officials tend far less attention to assisting return migrants. In fact, if anything, by glorifying migrants as national heroes, local officials play a key role in encouraging additional emigration. These results suggest that the Mexican government would be wise to design policies to help return migrants pursue a “Mexican Dream.” In doing so, officials would facilitate the reintegration of millions of citizens but may also incite long-term growth within local economies by encouraging migrants to tap into skills learned abroad.

This study is organized in the following manner. Section 2 summarizes related literature. Section 3 presents the panel data, and Section 4 outlines the empirical specifications. Section 5 discusses the results, and Section 6 offers a brief series of conclusions.

2. Literature review

Over the last thirty years Mexico has experienced a number of fundamental social, economic, and political shifts. Human development indices have improved throughout the country, revealing the successful expansion of education, healthcare, and employment to previously marginalized populations. Poverty and inequality are hardly a thing of the past, but Mexicans are better off today than they were four decades ago (Esquivel, 2010). In addition, since the late 1980s Mexico has experienced an unprecedented opening of the political sphere (Avritzer, 2002). Across the country parties now compete for political posts in relatively transparent elections. Moreover, the decentralization of decision making and resource allocation from the federal government to state and municipal authorities has opened up avenues for political participation to previously excluded groups. Perhaps as a consequence of these changes, coupled with a historic economic slowdown in the U.S., fewer Mexicans feel the need to emigrate abroad, and a growing number of migrants have decided to return to their country of origin.

In many respects the jury is still out regarding why so many migrants have returned to Mexico in the last decade. However, the purpose here is not to assess why migrants are returning home but to evaluate how those who do return might be affecting their local communities. With that in mind, between 2005 and 2010 nearly 1.4 million Mexicans returned to their homeland (INEGI). This figure is nearly double the number of migrants that returned between 1995 and 2000 (INEGI). Although a small percentage of these individuals were deported, most migrants returned on their own volition (Passell, Cohn, & Gonzalez-Barrera, 2012).

Available research indicates that returnees are more likely to be young males with few ties to the U.S. (Ravuri, 2014; Reyes, 2001). Females are far less likely to return home. Researchers attribute this to the fact that males stand to lose a great deal of social status by leaving a highly patriarchal society, whereas females stand to gain a great deal of freedom in the U.S. (Hondagneu-Sotelo, 1994). Education levels also appear to play a key role. Extant research indicates that highly educated immigrants who have clear advantages within local labor markets are more likely to return home (Carrión-Flores, 2006; Reinhold & Thom, 2009). On the other hand, the least educated are also more likely to return to Mexico, perhaps due to the fact that their opportunities in the U.S. are limited by human capital barriers (Public Policy Institute of California, 1997). In addition, migrants who own property in Mexico tend to return more frequently (Ravuri, 2014), and in general, migrants return more often to areas with favorable labor markets (Lindstrom, 1996; Reyes, 2001). Migrants who acquire skills abroad that are easily transferrable to labor markets in their home countries tend to return more frequently than those who acquire less-applicable skills (Dustmann et al., 2010, p. 66). Finally, legal status affects the probability that a migrant will return. For example, research from the Mexican Migration Project reveals that undocumented immigrants in the U.S. are less likely to return to Mexico than immigrants who have obtained legal status (Riosmen, 2004). In short, return migration is filtered by gender, education, socio-economic wellbeing, economic conditions within hometown communities, and legal status.

To be clear, a relatively small percentage of immigrants return home, but for the millions who do, there is obvious value in understanding how they affect receiving communities. What is the effect of millions of former migrants settling back into life in Mexico? Do these individuals improve human development levels? And if so, how do they affect individual indicators of human development, such as healthcare, education, and income? Furthermore, do return migrants influence political participation? If so, how might these effects be measured? Existing research provides initial insight into these inquires.

A growing number of studies analyze the manner in which current migrants influence social norms and local belief systems back home (Smith, 2006; Levitt & Lamba-Nieves, 2011; Marchetta, 2012; Pérez-Armendáriz & Crow, 2010). These studies evaluate the effects of migration networks on hometown communities. As Levitt and Lamba-Nieves (2011) argue, migrants frequently remit

social and culture norms to their hometowns. Their research demonstrates that social remittances influence the way those left behind think about education, healthcare, local business ventures, and even politics. These findings suggest that return migrants likely influence development outcomes within receiving communities.

Regarding education, scholars have found that ties with migrants (Acosta, Fajnzylber, & Humberto Lopez, 2007; Amuedo-Dorantes & Pozo, 2010; Antman, 2010; Borraz, 2005; Calero, Bedi, & Sparrow, 2009; Cox & Ureta, 2003; Creighton, 2013; Illahi, 2001; Kandel & Kao, 2001; Lu & Treiman, 2011; Mansuri, 2006; Yang, 2008), and return migrants in particular (Arce et al., 2011), have a positive impact on education attainment in migrant-sending regions. Arce et al. analyze the Survey of Mexican Migration to the United States (EMMEU), and find that return migrants place additional value on the education of their children. The migrant experience instills belief in education as the soundest avenue to obtain better employment and improve standards of living. Data from EMMEU, for example, reveal that 59.7% of children attend school in households headed by return migrants, whereas in comparable households without return migrants only 47.2% regularly go to school (Arce et al., 2009, p. 174). Given this, one might suspect that in regions with higher concentrations of return migrants, local residents would, by way of example, come to place more emphasis on the education of their children.

In terms of health, a number of studies note the potential for migration to improve physical wellbeing in migrant-sending regions. Levitt (1997) finds that migrants remit social practices that foster improved health outcomes in Mexico. In separate studies, Kanaiapunni and Donato (1999), and López Córdova (2004), find that household remittances have positive effects over time on the wellbeing of families. Specifically, they find that municipalities receiving relatively higher influxes of remittances experience a significant drop in infant mortality rates. Similarly, researchers have found that remittance flows have a positive impact on overall healthcare expenditures in Mexico (Amuedo-Dorantes & Pozo, 2009; Valero-Gil, 2008). In turn, Frank and Hummer (2002) find that babies born into families with at least one migrant living abroad register higher birth weights. These outcomes are likely a product of both relaxed liquidity constraints as well as access to improved shelter and infrastructure—that is, modern housing, potable water, electricity, refrigeration, etc. (Duryea, López-Córdova, & Olmedo, 2005). Although existing research does not directly address the impact of return migrants on health, given these findings, one might suspect that returnees would have a positive impact on healthcare outcomes in areas receiving former migrants.

Concerning economic outcomes, an emerging body of literature demonstrates that return migrants, relative to those who have not migrated, are much more likely to obtain stable employment and participate in entrepreneurial ventures. This is particularly true for return migrants who resided abroad for extended periods of time (Arce et al., 2009). Return migrants tend to use capital saved abroad to start independent businesses in fields such as arts and crafts, transportation, construction, small stores, ranching, and farming (Adams, 2006; Arce et al., 2009; Durand & Arias, 1997; Massey & Parrado, 1997; Woodruff & Zenteno, 2007; Woodruff, 2007; Yunez, Taylor, & Becerril, 2000). Marchetta (2012) finds that Egyptians returning from oil rich countries in the Middle East have a positive effect on local economies. Specifically, she finds that return migrants are more likely to engage in entrepreneurial business ventures, and most importantly, compared to non-migrants, they are more likely to succeed. Similarly, in rural communities in the U.S. Von Reichert and colleagues (2014, p. 200) find that return migrants who have spent extended periods of time in cities bring back human capital and occupy professional positions that are often difficult to fill in rural communities. Moreover, returnees foster a spirit of entrepreneurialism, which creates local jobs and improves the quality of life in rural America.

Finally, regarding political norms, studies reveal that migrants often influence political tendencies within hometowns and surrounding regions (Germano, 2013; Goldberg, 2002; Goodman & Hiskey, 2008; Itzigsohn & Villacrés, 2008; Pfutze, 2012). Pérez-Armendáriz & Crow (2010) find that connections with “relatives or friends who have migrated north greatly raises one’s proclivity toward democratic participation.” Their findings indicate that individuals living in areas with high levels of migration are more likely to participate in politics beyond the electoral booth, such as civic associations and protests. Pfutze (2012, p. 174), in turn, points to a link between household remittances and political change, indicating, “as remittances increase voters’ disposable income, the necessary clientelistic transfers paid in exchange for political support would need to increase as well. To the extent that the government faces budget constraints, this patronage system will become unsustainable.” Pfutze’s suggest that migrants, via cash transfers and social networks, play a role in promoting electoral competition and “the improvement of democratic institutions at the local level.” Chauvet and Mercier’s (2011, p. 1) research in the West-African nation of Mali shows that migrants frequently trigger “transfers of political norms” and in this manner contribute to higher participation rates in local elections. On a similar note, Batista and Vicente (2011) document evidence in Cape Verde that suggests that return migrants have a positive effect on the demand for political accountability. Like Chauvet and Mercier (2011), they note that this effect is particularly evident among migrants who have lived in countries with relatively better governance. Related to this, Rother’s (2009) work in the Philippines demonstrates that the effect of return migrants on local politics depends a great deal on the country in which migrants resided in abroad. Rother (p. 274) finds that migrants returning from non-democratic countries in the Middle East have a proclivity to be less supportive of democratic norms. This finding leads the author to conclude “it is [is] clear that migrants are a worthwhile factor to include in the research on external factors of democratization, diffusion, democratic consolidation and diffuse support for democracies.”

Existing research mainly focuses on the effects of transnational connections on those whom immigrants left behind. Far less attention is lent to the influence of return migrants on the communities where they choose
to resettle. The remainder of this paper systematically analyzes the effects of return migrants on communal well-being across 46 municipalities in the state of Guanajuato, Mexico. Grounded in extant research, the hypothesis is that returnees will improve education, healthcare, income, and political participation within their local communities.

3. Data

Guanajuato is the ideal location to analyze the effect of return migration on local communities. The state has a deep history of emigration to the U.S. Over the last several decades it has ranked among the top three migrant-sending states in the nation, and in recent years the state has sent more migrants to the U.S. than any other Mexican state. In 2010, for example, 116,235 migrants left Guanajuato for the U.S. Michoacán had the second highest total, sending 83,642 migrants to the U.S. At the same time, however, Guanajuato is also one of the leading return-migrant receiving states in the nation (INEGI).

Table 1 outlines the municipal-level balanced panel data. The first dependent variable of interest is the Human Development Index (HDI). The HDI, designed by the United Nations Development Program (UNDP), employs data logged by the National Institute of Statistics and Geography (INEGI). The HDI ranges from 0 to 1, where 1 implies highest human development. The index is composed of equal weights of 1/3 each, for health (infant mortality rate), education (school attendance rate, and literacy rate), and living standards (income per capita).1

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDI</td>
<td>.77</td>
<td>.05</td>
<td>INEGI; SNIM</td>
</tr>
<tr>
<td>Infant mortality rate</td>
<td>22.43</td>
<td>7.61</td>
<td>INEGI</td>
</tr>
<tr>
<td>Education attendance rate</td>
<td>61.48</td>
<td>3.92</td>
<td>INEGI</td>
</tr>
<tr>
<td>% Pop illiterate</td>
<td>85.53</td>
<td>5.08</td>
<td>INEGI</td>
</tr>
<tr>
<td>Income per capita1</td>
<td>69,720</td>
<td>46,267</td>
<td>INEGI</td>
</tr>
<tr>
<td>Electoral participation</td>
<td>51.39</td>
<td>7.26</td>
<td>CIDAC; IFE</td>
</tr>
<tr>
<td>% Homes return migrants</td>
<td>4.49</td>
<td>2.26</td>
<td>CONAPO</td>
</tr>
<tr>
<td>% Homes remittances</td>
<td>13.36</td>
<td>6.68</td>
<td>CONAPO</td>
</tr>
<tr>
<td>Municipal population</td>
<td>113,553</td>
<td>4601</td>
<td>INEGI</td>
</tr>
<tr>
<td>Municipal revenue per capita2</td>
<td>101.93</td>
<td>62.19</td>
<td>SNIM</td>
</tr>
<tr>
<td>Public works per capita2</td>
<td>922.09</td>
<td>21.23</td>
<td>SNIM; INEGI</td>
</tr>
<tr>
<td>Population 18+ (total)</td>
<td>58.12</td>
<td>4.13</td>
<td>SNIM; INEGI</td>
</tr>
<tr>
<td>Population 18+ (total female)</td>
<td>31.83</td>
<td>2.52</td>
<td>SNIM; INEGI</td>
</tr>
</tbody>
</table>

Source: Proposals to Change Mexico (CIDAC), National Population Council (CONAPO), Federal Electoral Institute (IFE), National Institute of Statistics and Geography (INEGI), National System of Municipal Information (SEDESHU), and National System of Municipal Information (SNIM).

1, 2, 3 Figures in Mexican Pesos. Exchange rate for 2010 was $12.38 pesos per $1 U.S. dollar.

3 Figures

above the .6 level. Furthermore, by 2010 several municipalities approached the .9 level, with one municipality, Celaya, surpassing it. Moreover, development inequalities between municipalities have decreased over the last 10 years—the reduced spread between the most developed and least developed municipalities in Guanajuato evidences this trend. Finally, since 2000, development levels in rural municipalities where the bulk of return migrants settle have improved substantially relative to urban municipalities. The task is to evaluate the degree to which return migrants have contributed to this progress. Although the analysis is limited to Guanajuato, the results may help researchers interpret outcomes in other parts of Mexico and the rest of the world.

The final dependent variable of interest is Electoral Participation, which is employed to evaluate the relationship between return migration and participation in local elections. The variable measures the percentage of eligible voters who turned out to vote in elections during the period 2000–2010. Elections were held in 2003, 2006, and 2009. Data for this variable come from the Federal Electoral Institute (IFE) and Proposals to Change Mexico (CIDAC).

Concerning explanatory variables, the main variable of interest, % of Homes with Return Migrants, measures the percentage of homes with a migrant who returned to Mexico within the previous five years and stayed. Data for this variable was collected from the National Population Council (CONAPO), and INEGI. The expectation is that return migrants will have a positive impact on measures of human development and political participation.

The variable % Homes with Remittances represents the percentage of homes in a given municipality receiving migrant remittances. Data for this variable is from the CONAPO and INEGI. The total amount of remittances a municipality receives would be the usual variable employed. However, this analysis favors the percentage of homes receiving remittances due to the fact that family members frequently withdraw remittances in larger cities in neighboring municipalities, and as a result, where remittances are withdrawn does not necessarily correspond to the location in which remittances may have an impact.

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1 Income per capita is adjusted for inflation, using August 2005 as a baseline (INEGI).
Thus, for the purpose of cross-municipality analysis, the percentage of homes receiving remittances provides a better measure of the potential impact of remittances. This different way of measuring may be a key contributing factor to the current research disagreements on the effects of remittances on development. Some studies find a positive relationship between remittances and economic development (Fajnzylber & López, 2008), while others find a negative relationship on development outcomes (Reichert, 1981). The anticipated result is a negative relationship between overall human development and migrant remittances. This expectation is grounded in the fact that most remittances are not invested in entrepreneurial projects or public infrastructure, but are rather used for conspicuous consumption in migrant hometowns (Durand & Massey, 1992). Also, at the aggregate municipal level, forgone wages due to migration may be much higher than the remittances that replace them.

**Municipal Population** is included in order to control for population differences across municipalities. Previous studies have demonstrated that migrants from rural areas are more prone to go to the U.S., whereas their counterparts from relatively urban areas are more likely to migrate to larger regional cities (Massey and España, 1987). Moreover, municipal capacity—measured in terms of the human capital of municipal workers and municipal transparency, measured in terms of government transparency and accountability—increases dramatically in more urban municipalities (UNDP, 2005). The qualitative research on the ground in Guanajuato reaffirms this notion. Data for this variable comes from the National System of Municipal Information (SNIM) and INEGI.

**Municipal Revenue per Capita** is included to control for municipal income. Although municipalities in Mexico do not collect income taxes, they do receive property taxes, as well as fees for services such as business licenses and building permits. Municipalities that generate more revenue naturally have more resources to invest in local development initiatives. Thus it is expected that municipalities with higher revenues will have more favorable development outcomes compared to municipalities that generate less revenue. In turn, in order to control for municipal spending on public works projects, the variable **Public Work Spending per Capita** is included. This variable measures the amount of money municipalities spend per capita on public works projects in a given year. Controlling for public works spending is particularly important in Mexico due to the fact that since 1997 municipal governments have wielded a great deal of control over fiscal spending, especially in the area of public works projects. Data for this variable comes from SNIM and INEGI. Finally, the variables **Population 18+ (% total)**, and **Population 18+ (% total female)** are included in order to control for the percentage of municipal populations eligible to vote. Electoral participation should be higher in those municipalities with relatively larger voting-age populations. However, given the gendered nature of migration trends coupled with Mexico’s patriarchal past, voting trends may be very different for voting age males and females. Specifically, municipalities with higher percentages of voting age females relative to males will likely experience lower turnout rates. Data for these variables are made available by INEGI.

### 4. Empirical specification

The analysis begins by evaluating the relationship between HDI and a matrix of independent variables. Consider the basic model

\[
\text{HDI}_{i,t} = \gamma \text{RtnMigr}_{i,t} + \beta X_{i,t} + v_i + u_{i,t} \tag{1}
\]

where subscripts correspond to municipality \(i\) at time \(t\), and \(\text{RtnMigr}\) denotes the main variable of interest, the percentage of homes with return migrants. \(X_{i,t}\) represents the matrix of control variables, \(v_i\) denotes time-invariant fixed parameters, and \(u_{i,t}\) is the standard error.

However, the main variable of interest, \(\text{RtnMigr}\) may be endogenous. That is, return migrants may affect development, but migrants may also return as a response to improved conditions in Mexico. In that case, \(\text{RtnMigr}\) will be correlated with the error term, and the coefficient estimates will be biased. The endogeneity problem is addressed by lagging the endogenous explanatory variables so that causality, forced by the time dimension, can only run in one direction. Further, if the disturbance term is first-order autoregressive, then

\[
u_{i,t} = \rho u_{i,t-1} + \epsilon_{i,t},
\]

where \(|\rho| < 1\), and \(\epsilon_{i,t}\) is independent and identically distributed (i.i.d.) with mean 0 and variance \(\sigma^2\). To account for autocorrelation, a Generalized Least Squares model estimator (GLS) is estimated based on Baltagi and Wu (1999). The specification thus becomes

\[
\text{HDI}_{i,t} = \gamma \text{RtnMigr}_{i,t-1} + \beta X_{i,t} + v_i + u_{i,t}, \tag{2}
\]

where if \(v_i\) is assumed to be fixed parameters, then our specification becomes a fixed-effects model. If \(v_i\) are assumed to be realizations of an i.i.d. process with mean 0 and variance \(\sigma^2\), then our specification becomes a random-effects model.

In the second stage of the analysis the relationship between Electoral Participation and a matrix of independent variables is assessed. The GLS model is run again, specified as

\[
\text{ElectParticip}_{i,t} = \gamma \text{RtnMigr}_{i,t-1} + X_{i,t} \beta + v_i + u_{i,t}, \tag{3}
\]

where the dependent variable \(\text{ElectParticip}_{i,t}\) corresponds to the cross-sectional unit \(i\) at time \(t\).

### 5. Results

In recent decades human development levels have improved a great deal across the state of Guanajuato. The goal of the first stage of analysis is to determine the degree to which return migrants have contributed to these advances in human development over the time period 2000–2010.

Initially, both fixed-effects and random-effects specifications are run, and Haussman’s (1978) specification test is implemented. The null hypothesis, that the preferred model is random-effects, is not rejected thus indicating
Table 2

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>% Homes with return migrants</td>
<td>.01***</td>
<td>−1.27***</td>
<td>.88***</td>
<td>.59***</td>
<td>186.24***</td>
</tr>
<tr>
<td></td>
<td>(6 × 10⁻⁴)</td>
<td>(10)</td>
<td>(.08)</td>
<td>(.05)</td>
<td>(34.54)</td>
</tr>
<tr>
<td>% Homes with remittances</td>
<td>−2 × 10⁻³</td>
<td>.39**</td>
<td>−.35***</td>
<td>−12**</td>
<td>−45.06**</td>
</tr>
<tr>
<td></td>
<td>(4 × 10⁻⁴)</td>
<td>(.06)</td>
<td>(.04)</td>
<td>(.03)</td>
<td>(14.94)</td>
</tr>
<tr>
<td>Municipal revenue per capita</td>
<td>1 × 10⁻⁴**</td>
<td>−.03***</td>
<td>.02**</td>
<td>3 × 10⁻³**</td>
<td>4.60***</td>
</tr>
<tr>
<td></td>
<td>(.00002)</td>
<td>(3 × 10⁻³)</td>
<td>(.003)</td>
<td>(2 × 10⁻¹)</td>
<td>(1.19)</td>
</tr>
<tr>
<td>Public works per capita</td>
<td>2 × 10⁻⁶</td>
<td>−2 × 10⁻⁵</td>
<td>2 × 10⁻⁴**</td>
<td>4 × 10⁻⁵</td>
<td>.54</td>
</tr>
<tr>
<td></td>
<td>(4 × 10⁻⁵)</td>
<td>(.16)</td>
<td>(8 × 10⁻⁵)</td>
<td>(5 × 10⁻⁵)</td>
<td>(.05)</td>
</tr>
<tr>
<td>Municipal population (log)</td>
<td>.03**</td>
<td>−.23</td>
<td>2.92**</td>
<td>−754.16**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4 × 10⁻⁵)</td>
<td>(.61)</td>
<td>(.36)</td>
<td>(.39)</td>
<td>(87.52)</td>
</tr>
<tr>
<td>Constant</td>
<td>.42**</td>
<td>56.05**</td>
<td>63.09**</td>
<td>52.52**</td>
<td>9481.37**</td>
</tr>
<tr>
<td></td>
<td>(.04)</td>
<td>(6.91)</td>
<td>(4.15)</td>
<td>(4.37)</td>
<td>(1045.89)</td>
</tr>
</tbody>
</table>

N = 460

Prob. > χ² = .000

R² = .48

Source: CIDAC, CONAPO, IFE, INEGI, SEDESHU, and SNIM. For the full list of acronyms please see Table 1.

Notes: Standardized coefficients reported. Standard errors in parentheses.
* Statistical significance at the .1 level.
** Statistical significance at the .05 level.
*** Statistical significance at the .01 level.

that the unobservable individual effects in the models are independently distributed from the regressors. That is, a random-effects model is both consistent and efficient. Tables 2 and 3 report the results for the GLS random-effects model specification.

Table 3

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% Homes with return migrants</td>
<td>1.14**</td>
<td>.97**</td>
<td>.93**</td>
</tr>
<tr>
<td></td>
<td>(.42)</td>
<td>(.43)</td>
<td>(.42)</td>
</tr>
<tr>
<td>% Homes with remittances</td>
<td>−37**</td>
<td>−.36**</td>
<td>−.31**</td>
</tr>
<tr>
<td></td>
<td>(.16)</td>
<td>(.16)</td>
<td>(.16)</td>
</tr>
<tr>
<td>Public works per capita</td>
<td>2 × 10⁻³**</td>
<td>2 × 10⁻³**</td>
<td>2 × 10⁻³**</td>
</tr>
<tr>
<td></td>
<td>(6 × 10⁻⁴)</td>
<td>(7 × 10⁻⁴)</td>
<td>(7 × 10⁻⁴)</td>
</tr>
<tr>
<td>School attendance (% attended)</td>
<td>.23</td>
<td>.36</td>
<td>.34</td>
</tr>
<tr>
<td></td>
<td>(.20)</td>
<td>(.21)</td>
<td>(.21)</td>
</tr>
<tr>
<td>Income per capita (logs)</td>
<td>7.04</td>
<td>283.66</td>
<td>295.69</td>
</tr>
<tr>
<td></td>
<td>(11.89)</td>
<td>(164.99)</td>
<td>(165.63)</td>
</tr>
<tr>
<td>Income per capita squared (logs)</td>
<td>−198.00</td>
<td>−118.07</td>
<td>−206.29</td>
</tr>
<tr>
<td></td>
<td>(−)</td>
<td>(118.44)</td>
<td>(118.44)</td>
</tr>
<tr>
<td>Population 18+</td>
<td>.29**</td>
<td>.35</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>(.21)</td>
<td>(.21)</td>
<td>(−)</td>
</tr>
<tr>
<td>Population 18+ (% total female)</td>
<td>−.29**</td>
<td>−.35</td>
<td>−.68</td>
</tr>
<tr>
<td></td>
<td>(.21)</td>
<td>(.21)</td>
<td>(.37)</td>
</tr>
<tr>
<td>Constant</td>
<td>47.96**</td>
<td>−52.54</td>
<td>−54.79</td>
</tr>
<tr>
<td></td>
<td>(14.50)</td>
<td>(61.38)</td>
<td>(61.38)</td>
</tr>
<tr>
<td>Number of obs.</td>
<td>138</td>
<td>138</td>
<td>138</td>
</tr>
<tr>
<td>Prob. &gt; χ²</td>
<td>.0000</td>
<td>.0000</td>
<td>.0000</td>
</tr>
<tr>
<td>R-squared</td>
<td>.18</td>
<td>.17</td>
<td>.19</td>
</tr>
</tbody>
</table>

Source: CIDAC, CONAPO, IFE, INEGI, SEDESHU, and SNIM. For the full list of acronyms please see Table 1.

Notes: Standardized coefficients reported. Standard errors in parentheses.
* Statistical significance at the .1 level.
** Statistical significance at the .05 level.
*** Statistical significance at the .01 level.

Table 2 displays the results of the model specified by Eq. (2). The main variable of interest, % Homes with return migrants, shares a strong positive relationship with all measures of human development, implying that return migrants may play an important role in underpinning
development trends in the state of Guanajuato. The coefficient for return migrants is relatively large at .01, indicating that returnees contribute to positive development outcomes in Guanajuato during the period 2000–2010.\textsuperscript{4} Regarding individual indicators, for every 10% increase in return migrants infant mortality rates fall by nearly 13 in the ensuing year, indicating that for every 1000 births 13 fewer children die before their fifth birthday. The percentage of return migrants residing in households has a similar effect on school attendance and literacy rates. For every 10% increase in return migrants, school attendance rates increase by almost 9%, and literacy rates go up by nearly 6%. Finally, for every 10% increase in return migrants, municipal income per capita goes up by $1862 Mexican pesos, roughly $155 US dollars. In practical terms, this represents a 3% increase on average municipal income per capita, which was $69,720 pesos or $5631 US dollars during the period 2000–2010. These findings reveal the measurable impact of return migrants on hometown communities.

These results echo extant research that finds that when migrants return to their countries of origin they bring with them new and innovative ways of thinking, and as a result, contribute to community development. They may do this not only through monetary means, but also by opening up communities to alternative ways of seeing the world. Further, the quantitative trends parallel Waddell’s (2013), Waddell’s (2014) research on the ground in Guanajuato. For example, interviews of migrants in the field revealed that return migrants were far more likely to bring up the importance of education. In the small town of El Timbalal, which is located in Yuriria, Guanajuato, return migrant leaders proudly showed us the school they had helped fund. In addition, migrant leader Ángel Calderón indicated the town’s migrant club frequently sponsors children who are interested in continuing with their education beyond the primary level (Waddell, 2014). Related to this, the findings outlined above indicate that social capital brought back by migrants may help explain why return migrants have a positive impact on local development outcomes. Taken together, the regression results imply that returnees may have positive effects on their hometowns, improving not only the economy, but also education, healthcare, and overall wellbeing.

In contrast with return migrants, the independent variable % Homes with remittances shares a negative relationship between household remittances and all measures of human development. For every 10% increase in household remittances infant mortality rates increase by 4, literacy rates drop by 1%, school attendance experiences a 4% decrease, and income per capita drops by $450 pesos, or $38 US dollars. This finding indicates that household remittances alone may repress human development at the municipal level in Guanajuato. This outcome likely relates to several factors. First, in communities that receive high remittance flows, children grow up admiring migrants. Migrants, after all, are part of a relatively privileged economic sector in the Mexican countryside. As a result, young men and more and more young women see migration to the U.S. as the key to a successful future. As migrants frequently suggested during field interviews, the only way to get ahead in Mexico is to go North and try one’s luck. In this sense, individuals leave in order to financially support their immediate family members. Remittances, therefore, are a welfare transfer from abroad intended to improve the individual wellbeing of those left behind. However, instead of spurring local development, the money is often spent on conspicuous consumption and in turn motivates others to leave as well, thus creating a vicious cycle in which migration becomes the only way out. Migration may also drain municipalities of their most productive and motivated workers, thus lowering output and labor productivity within local economies. The suspicion here is that forgone wages due to migration are on average much higher than the remittances that replace them. Therefore, despite the fact that remittances trickle into communities and create multiplier effects within local economies (Quinn, 2005), this study indicates that raw cash transfers do not contribute much to the long-term development of the wider community.\textsuperscript{5}

Municipalities with relatively larger revenues are expected to have better development outcomes. The variable Municipal Revenue per Capita supports this notion, reporting positive and relatively large coefficients across each model. In turn, Public Works per Capita has a positive impact on infant mortality rates, school attendance rates, and per capita income. Finally, Municipal Population shares a positive relationship with HDI, confirming the notion that human development levels are higher in relatively more urban municipalities.

Table 3 outlines the results of the model specified by Eq. (3) exploring the relationship between electoral participation and return migrants. Three regression models were run; $\chi^2$ tests show that regressions are significant across each model.

The percentage of homes with return migrants has a positive effect on electoral participation: for every 10% increase in return migrants, electoral participation increases by nearly 9%. This finding echoes earlier work (Batista & Vicente, 2011; Chauvet & Mercier, 2011; Pérez-Armendáriz & Crow, 2010; Rother, 2009), indicating that when migrants return to their hometowns they have the potential to reengage local communities in electoral politics. In contrast, the coefficient for the variable % Homes with remittances is significant and negative in each model, indicating that as the percentage of homes receiving migrant

\textsuperscript{4} In interpreting this effect it is important to note the HDI index runs from 0 to 1; thus, what may seem like relatively small increases should be interpreted as substantially significant.

\textsuperscript{5} Here it is worth noting there is likely an interaction effect between remittances and return migration. In the panel data there is a positive correlation ($r = .39$) between these two variables, indicating that the percentage of homes receiving remittances tends to be higher in precisely those communities that also receive higher numbers of return migrants. Still, despite this interaction, return migration is found to have a positive effect on development outcomes whereas remittances are found to hamper local development. This finding implies that it may be in the absence of return migrants—and the social and human capital they bring with them—that remittances are most pernicious. Teasing out the exact effect of this interaction is an important issue worthy of further research.
remittances increases, the number of registered voters participating in elections falls. A one standard deviation shift in the percentage of homes receiving remittances leads to a nearly 3% drop in electoral participation. This finding mirrors previous research (Goodman & Hiskey, 2008; Germano, 2013), implying that as communities gain economic support from friends and family living abroad, they become less likely to engage in local affairs.

Public Works per Capita has a positive effect on electoral participation. However, the effect is small, implying that while municipal investments in public works projects likely contribute to local development, they do not appear to have a large impact on electoral participation trends. In turn, School Attendance has a more notable effect on voter participation. For every 10% rise in school attendance rates, electoral participation increases by more than 3%.

In Model I Income per Capita shares a positive relationship with electoral participation. However, as Models II and III illustrate, this relationship does not appear to be linear but parabolic. In this case, \( \beta_1 \) no longer captures the marginal effect of \( X_i \) on \( Y \). Instead, the quadratic term represents the increasing or decreasing marginal effects of \( X_i \) on \( Y \) or \( \partial Y / \partial X_i = \beta_1 + 2 \beta_2 X_i \). In other words, electoral participation increases as per capita income improves but eventually begin to drop in municipalities with higher per capita income levels. This trend mirrors the experience of relatively wealthy nations in which electoral participation rates have fallen off in the later stages of development.

Finally, as Models I and II reveal, Population 18+ has a negative effect on electoral participation, demonstrating that as the percentage of eligible voters increases, electoral participation falls. Also, as Model III illustrates, Population 18+ (% total female) has a negative effect on electoral turnout, implying that electoral participation in the state of Guanajuato may be moderated by gender norms. Given the state’s long history of male migration to the U.S., this outcome makes sense. That is, typically working age males leave their hometowns for the U.S. right around the time they would become eligible to vote. Once migrants gain stable employment abroad, they begin to send money home, but mainly to female members of the family that were left behind. However, as previously discussed, remittances make it less likely that individuals feel a need to engage with the state. Moreover, in a highly patriarchal society like Mexico, working age males, many of whom have migrated to the U.S., are the very individuals most expected to engage with the state. Together, these factors help explain why areas with high migration in Guanajuato experience drops in voting turnout. This is a novel finding. Related to this, it is worth reemphasizing the fact that even when controlling for the absence of voting age males, the percentage of homes with return migrants continues to have a positive effect on electoral participation. This outcome is testimony to the strong influence of return migrants within local communities across Guanajuato.

6. Conclusions

In his seminal 1980 analysis of return migration, Gmelch wrote, “Large numbers of returnees in a community or region may provide the critical mass needed to organize and bring about needed reforms” (p. 144). If there has ever been a critical mass of return migrants it is to be found in the current wave of returnees settling back into life in Guanajuato, Mexico. Still, the degree to which return migrants actually affect local development outcomes in Guanajuato, or anywhere else for that matter, is not well understood. The present study attempts to shed light on the degree to which return migrants underpin social, economic, and political changes in Guanajuato using original panel data compiled for the period 2000–2010.

The results indicate that where former migrants settle back into life in Guanajuato, fewer infants die before the age of 5, more children attend school, literacy rates improve, per capita income rises, and citizens engage in electoral politics in greater numbers. These findings reveal the potential for return migrants to contribute to improved development outcomes in their hometown communities. These findings are novel and add to a growing body of literature concerning the impact of return migrants on hometown communities and regions (Arce et al., 2011; Batista & Vicente, 2011; Marchetta, 2012; Chauvet & Mercier, 2011; Marchetta, 2012; Rother, 2009). Still, although the research improves the general understanding of return migration, there are a number of important issues that we are unable to address in this manuscript.

First, the generalizability of this research is limited by its focus on one specific case study. However, within the context of Mexico, the findings in the state of Guanajuato likely mirror the experiences of neighboring states such as Michoacán, Jalisco, Zacatecas, and Durango, all of which have experienced large influxes of return migrants in recent years. With this in mind, future research should focus on comparing the effect of return migration across different regions and countries, both within Mexico and beyond. Second, it would be helpful to understand the degree to which a migrant’s former legal status affects his or her impact on hometown communities. Research in this direction would improve understanding of foreign policy decisions on local development outcomes. Third, researchers need to address the potential interaction effect between return migration and remittances. For example, do return migrants improve the development potential of remittances? Although unable to address this question here, a better understanding of the interaction effect of these two variables could help policy makers maximize the development potential of remittances. Finally, social scientists need to investigate how returnees respond to local economic conditions. Are returnees more likely to come back to areas with relatively stronger economies? Although these queries fall outside the scope of the current article, they are important questions worthy of additional inquiry.

This research also has important implications for policy makers. Return migration has the potential to improve local development outcomes. However, as previous studies reveal (Arce et al., 2011, p. 173), more often than not the new skill sets that former migrants bring back with them are underutilized. In this sense, the degree to which return migrants influence their homeland may largely be contingent on local policy makers. The underutilization of return migrant capital is likely due to local factors such as lack of state support, limited credit markets, insufficient access to...
education, and poor infrastructure. Given this, as a means of maximizing the development yields of human capital brought back by former migrants, it is in the Mexican state’s best interest to reduce potential barriers to development within migration-prone regions.

In recent years the Mexican government has engaged with its large diaspora community in new and innovative ways. Specifically, the government has implemented a number of programs for diaspora communities that allow them to interact transnationally with their communities of origin. For example, Bienvenido a Casa Paisano facilitates migrants returning home with things such as the repatriation of remains, filing official paperwork, and renewing visas. Vete Sano y Regresa Sano, on the other hand, is designed to support the health care of migrants and their families. In turn, the program 3 × 1 para Migrantes allows migrants to spearhead community development projects including the expansion of local electricity grids, as well as the construction of roads, schools, and sewage systems. The 3 × 1 program is unique in that for every dollar migrants contribute to a project the government contributes three additional dollars.

Still, while extremely important, the aforementioned programs focus almost exclusively on supporting current migrants. In turn, the Mexican state has focused far less attention on issues related to the reintegration of return migrants into Mexican society. A notable exception to this is found in the case of La Universidad de Guanajuato’s branch campus located in Yuriria, Guanajuato. The campus recently launched a new program for return migrants designed to certify former migrants as instructors of English as a second language. The program recognizes that many migrants return with the ability to speak English but they frequently lack the basic skills, such as writing and arithmetic, necessary to formally instruct others in English as a second language. The program is unique in that it allows returnees to capitalize on skills they obtained while living abroad. In this sense, the program helps returnees pursue a Mexican Dream by obtaining meaningful employment teaching English in local primary and secondary schools. Although this program is a pilot study and is only now being adopted in other parts of the state, the Mexican government would be wise to expand programs of this nature to migrant-sending regions across the country. In doing so, the findings outlined in this study suggest that policy makers may very well mitigate some of the very social-economic factors that underpin emigration in the first place.

References


Please cite this article in press as: Waddell, B. J., & Fontenla, M. The Mexican Dream? The effect of return migrants on hometown development. The Social Science Journal (2015), http://dx.doi.org/10.1016/j.soscij.2015.02.003


