The Mexican Dream? The Effect of Return Migrants on Hometown Development

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Abstract: 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, we know relatively little about the degree to which former migrants affect the wellbeing of their local communities over time. In this study we evaluate the effect of return migrants on health, education, income, and political participation in Guanajuato, Mexico during the period 2000-2010. Our 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.

Keywords: return migrants, migration, human development, political participation.

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, 2010). 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 (Passel et al., 2013).[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

[1] We would like to acknowledge Richard Wood, Bob Fiala, participants from the 2014 WSSA Conference, and anonymous referees for their helpful comments and suggestions.

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 migrant 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. Our task in this paper 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, to our knowledge, no empirical research has been done 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 important issue to study. Our paper attempts to fill this gap. We statistically analyze the effect of return migrants on healthcare, education, income, and political participation. We find that return migrants have a positive effect on all of these measures, suggesting that former migrants may play a key role in underpinning development trends in their home communities.

Results from field research in central Mexico, detailed in Waddell (2013, 2014), motivate this paper, and support our findings. Specifically, since 2009 we have met many former migrants settling back into their hometown regions. Across these conversations we noticed a recurring trend. In explaining how things should be done in Mexico, former

migrants frequently evoke lessons learned while living abroad. For example, in the summer of 2011 during a research visit to the small town of Ojo de Agua, Guanajuato we talked to two men who were working on a municipal road. Almost immediately the workers began to express their frustration with the project. According to them, several local families had recently reneged on an agreement to allow the municipal government to use a small part of their land to complete the road. As a result, the project faced a serious impasse that threatened the road's completion. As one of the young men explained, "When I was living in Nebraska this type of thing never would have happened. In the U.S., you see, they do things differently. The people work together for the good of the community and when necessary the government steps in and takes over. Here the government only acts in the interest of those who can pay for it." The other former migrant, who was nodding his head in agreement, added, "That's why we are different you see. We come back with a new vision of the world and we refuse to do things the way they've always been done. If they stop this project, believe me, we'll head down to the municipal president's office and make sure they know how we feel." In another instance, María José, who had recently moved back from California, noted, "Here there are traffic laws, but the people don't respect them and the authorities don't enforce them. In Mexico for the right amount of money you can get out of anything and the citizens are the ones to blame because they allow it to go on. They participate in it. If things are going to change it has to start with the people. Myself, I've seen how things can work differently and I'm now determined to contribute to a better Mexico." On a similar note, Martin, who lived several years in New Mexico and now lives near Jerécuaro, Guanajuato, brought up the importance of cultural habits in driving economic

productivity. “In Mexico people work at their own pace. If it gets done today, so be it and if it has to wait until tomorrow, we’ll then that’s ok too. In the U.S. though, everyone is working with a deadline and if you don’t meet the deadline 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 (Levitt & Lamba-Nieves, 2011), investments in human capital (Hanson and Woodruff 2003; Yang 2010), entrepreneurialism (Woodruff & Zenteno, 2007; Yang, 2010), and politics (Li & McHale, 2009; Pérez-Armendáriz & David Crow, 2010; Pfutze, 2012; Spilimbergo, 2009). Still, only a handful of studies directly address return migration (Arce et al., 2011; Batista & Vicente, 2010; Bertoli & Marchetta, 2012; Chauvet & Mercier, 2011; Dustmann, Fadlon & Weiss, 2010; Marchetta, 2012; Reichert et al., 2014; Rother, 2009), and where they do, results are largely limited to the analysis of small surveys and qualitative field data.

Our 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. We focus on Guanajuato for several reasons. First, migration is particularly widespread in Guanajuato and has a long history dating back to before 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 2010). 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 our variables of interest.[2]

All else equal, our findings indicate that in the state of Guanajuato the percentage of 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. We also find that return migrants share a positive relationship with electoral participation, indicating that former migrants may influence political norms within their communities. In contrast, we find that remittances, and thus migration, have a negative effect on development outcomes and electoral participation.

Our 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 capital and cultural capital. Still, we find that the degree to which these social transfers contribute to development appears to depend a great deal on local policy environments. The Mexican government has a wide array of programs designed to

[2]For a much more detailed review of historic migration trends out of Guanajuato please see: Arias, Patricia. (2004). Old Paradigms and New Scenarios in a Migratory Tradition: U.S. Migration from Guanajuato. In Jorge Durand & Douglas S. Massey (Eds.), *Crossing the Border: Research from the Mexican Migration Project.* New York, New York: The Russell Sage Foundation.

support migrants and their families in the U.S. as well as encourage financial investments in their hometown communities. However, officials lend 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. Our 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 they learned while residing abroad.

Our study is organized in the following manner. Section 1 summarizes related literature. In Section 2 we present our panel data, and in Section 3 we outline our empirical specifications. Section 4 discusses the results, and in Section 5 we offer a brief series of conclusions.

1. 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 in general, 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. 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, fewer Mexicans may feel the need to emigrate to the U.S., and in addition, a growing number of migrants have decided to return to their country of origin.

Between 2005 and 2010 nearly 1.4 million Mexicans returned to their homeland (INEGI, 2010). This figure is nearly double the number of migrants that returned between 1995 and 2000 (INEGI, 2000). Although a small percentage of these individuals were deported, most migrants returned on their own volition (Passel et al., 2012).

What do we know about the demographics of return migrants? Available research indicates that returnees are more likely to be young males who have few ties to the U.S. (Reyes, 2001; Ravuri, 2014). Females, in contrast, 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 (Carrion-Flores, 2006; Reinhold & Thom, 2009). On the other hand, the least educated are also more likely to return to Mexico, perhaps due to 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 that have favorable labor markets (Reyes, 2001; Lindstrom, 1996). Migrants who acquire skills aboard that are easily transferrable to labor markets in their home countries tend to return more frequently than those who acquire less-applicable skills (Dustmann, Fadlon, & Weiss,

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 (Riosmena, 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 that 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? Furthermore, do return migrants influence political participation? If so, how might one measure these effects? 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 (Pérez-Armendáriz & David Crow, 2010; Levitt & Lamba-Nieves, 2011; Marchetta, 2012; C.S. Smith, 2006). 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 back 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 et al., 2007; Amuedo-Dorantes & Pozo, 2010; Borraz, 2005; Antman, 2010; Calero et al., 2009;

Cox & Ureta, 2003; Creighton, 2013; Ilahi, 2001; Kendal & Kao, 2001; Lu & Treiman, 2011; Mansuri, 2006; Yang, 2010), and return migrants in particular (Arce et al., 2009), 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 that a strong education is the soundest avenue to obtain better employment and improve standards of living. Data from EMMEU, for example, reveals 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, Kanaiaupuni 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 et al., 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; Yunez et al., 2000; Durand & Arias, 1997; Massey & Parrado, 1997; Arce et al., 2009; Woodruff, 2007; Woodruff & Zenteno, 2007). 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 returnees 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;

Goldring, 2002; Goodman & Hiskey, 2008; Itzigsohn & Villacrés, 2008; Pfutze, 2012). Pérez-Armendáriz and 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 civil associations and protests. Pfutze (2012), 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) 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 (2010) 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 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] 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."

As the reader will note, existing research mainly focuses on the effects of transnational connections on those they left behind. Far less attention is lent to the influence of return migrants on the communities they choose to resettle in. In the remainder of this paper we systematically analyze the effects of return migrants on communal wellbeing across 46 municipalities in the state of Guanajuato, Mexico. Grounded in extant research, we hypothesize that returnees will improve education, healthcare, income, and political participation within their local communities.

2. 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 the state 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, 2010).

Table 1 outlines the municipal-level balanced panel data used in this study. Our 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).[3] In our analysis we regress HDI, and each of the index's individual indicators, on independent variables of interest, and control variables.

Figure 1 plots human development trends in Guanajuato across municipalities from 2000 through 2010. As the reader will note, at the turn of the twenty-first century very few of Guanajuato's municipalities surpassed .8 on the HDI scale. In turn, by 2010 more than nine of the state's 46 municipalities had exceeded .8, and all municipalities registered HDI levels 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. Our task is to evaluate the degree to which return migrants have contributed to this progress. Although our analysis is limited to Guanajuato, our results may help researchers interpret outcomes in other parts of Mexico, and the rest of the world.

[Figure 1 about here]

Our 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 that turned out to vote

[3] Income per capita is adjusted for inflation, using August 2005 as a baseline (INEGI).

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

[Table 1 about here]

The variable *% Homes with Remittances* represents the percentage of homes in a given municipality that receive 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, we favor 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. Thus, for the purpose of cross-municipality analysis, the percentage of homes receiving remittances provides a better measure of the potential impact of remittances. These different ways in which remittances can be measured 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). We expect to find 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 et al., 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). Our 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 as a means of controlling 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. Given this, we expect 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. We expect that electoral participation will be higher in those municipalities that have relatively larger voting-age populations. However, given the gendered nature of migration trend coupled with Mexico's patriarchal past, we suspect that voting trends may be very different for voting age males and females. Specifically, we expect that municipalities with higher percentages of voting age females (relative to males) will experience lower turnout rates. Data for these variables are made available by INEGI.

3. Empirical Specification

We start our analysis by evaluating the relationship between HDI and a matrix of independent variables. Consider the basic model

$$HDI_{i,t} = \gamma Rtrn\_Migr_{i,t} + \beta' X_{i,t} + v_i + u_{i,t} \quad (1)$$

where subscripts correspond to municipality *i* at time *t*, and *Rtrn_Migr* denotes our 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, our main variable of interest, *Rtrn_Migr* may be endogenous. That is, return migrants may affect development, but also, migrants may be returning as a response to improved conditions in Mexico. In that case, *Rtrn_Migr* will be correlated with the error term, and our coefficient estimates will be biased. We address this endogeneity problem by lagging the endogenous explanatory variables, so that causality, forced by the time dimension, can only run in one direction.

Further, if our disturbance term is first-order autoregressive, then we have

$$\mathrm{u}_{i,t} = \rho \mathrm{u}_{i,t-1} + e_{i,t},$$

where $|\rho| < 1$, and $e_{i,t}$ is independent and identically distributed (i.i.d.) with mean 0 and variance σ^2. To account for autocorrelation, we estimate a Generalized Least Squares model estimator (GLS) based on Baltagi and Wu (1999).

Our specification thus becomes

$$HDI_{i,t} = \gamma Rtrn\_Migr_{i,t-1} + \beta' X_{i,t} + v_i + u_{i,t}, \quad (2)$$

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 σ^2, then our specification becomes a random-effects model.

In the second stage of our analysis we assess the relationship between Electoral Participation and a matrix of independent variables. We again run the GLS model, specified as

$$Elect\_Particip_{i,t} = \gamma Rtrn\_Migr_{i,t-1} + X'_{i,t}\beta + v_i + u_{i,t} \quad (3)$$

where the dependent variable $Elect\_Particip_{i,t}$ corresponds to the cross-sectional unit *i* at time *t*.

4. Results

In recent decades human development levels have improved a great deal across the state of Guanajuato. The goal of our 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.

We initially run both fixed-effects and random-effects specifications, and implement Hausman's (1978) specification test. We do not reject the null hypothesis that the preferred model is random-effects, thus indicating that the unobservable individual effects in our 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 2 displays the results of our model specified by equation (2). Our 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.[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 1,000 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%,

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

and literacy rates go up by nearly 6%. Finally, for every 10% increase in return migrants, municipal income per capita goes up by $1,862 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 $5,631 US dollars during the period 2000-2010. These findings reveal the measurable impact of return migrants on hometown communities.

[Table 2]

Our findings echo previous qualitative research that argues 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, our quantitative trends parallel Waddell's (2013) research on the ground in Guanajuato. For example, while interviewing migrants in the field we found that return migrants were far more likely to bring up the importance of education. In the small town of El Timbinal, which is located in Yuriría, Guanajuato, return migrant leaders proudly showed us the school that they had helped fund. In addition, migrant leader Ángel Calderón informed us that the town's migrant club frequently sponsors children who are interested in continuing with their education beyond the primary level. As this indicates, the social capital that flows into migrant hometowns, indirectly captured in our results, may be an important key to understanding why return migrants have a positive impact on local development outcomes. Taken together, our research on return migrants implies 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 "ir al Norte" and "probar suerte" (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 they send back 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. We strongly suspect 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), our findings indicate that raw cash transfers do not contribute much to the long-term development of the wider community.[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 our model specified by equation (3), which explores the relationship between electoral participation and return migrants. We run three regression models. $\chi 2$ tests show that regressions are significant across each model.

[Table 3]

The percentage of homes with return migrants has a positive effect on electoral participation, such that for every 10% increase in return migrants, electoral participation increases by nearly 9%. This finding echoes earlier work (Pérez-Armendáriz & Crow, 2010; Batista & Vicente, 2010; Chauvet & Mercier, 2011; 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*

[5] Here it is worth noting that there is likely an interaction effect between remittances and return migration. In our 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 number 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.

with remittances is significant and negative in each model, indicating that as the percentage of homes receiving migrant 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 rather, parabolic. In this case, β_1 no longer captures the marginal effect of X_i on Y_i. Instead, the quadratic term represents the increasing (or decreasing) marginal effects of X_i on Y_i or $\partial Y_i / \partial X_i = \beta_1 + 2\beta_2 X_i$. In other words, electoral participation increases as per capita income improves but eventually participation levels 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. In time, 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 would 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 that one would expect to engage with the state the most. Together, these factors help explain why areas with high migration in Guanajuato experience drops in voting turnout. To our knowledge, 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.

5. Conclusions

In 1980 anthropologist George Gmelch wrote, "Large numbers of returnees in a community or region may provide the critical mass needed to organize and bring about needed reforms" (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 Mexico for that matter, is not well understood. With this in mind, in the present study we attempt to shed light on the degree to which return migrants underpin social, economic, and political changes in Guanajuato, Mexico. To this end, we analyze original panel data compiled for the period 2000-2010.

The results of our study indicate that where former migrants settle back into life, fewer infants die before the age of 5, more children attend school, literacy rates improve, per capita income rises, and citizen engage in electoral politics in greater numbers. These findings reveal the potential for return migrants to contribute to local development outcomes in their hometown communities. To the best of our knowledge, our 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, 2010; Bertoli & Marchetta, 2012; Chauvet & Mercier, 2011; Marchetta, 2012; Rother, 2009). Still, although our understanding of return migration is improving, there is a great deal that we do not know. Future research should compare the effect of return migration across different regions and countries. Also, it would be helpful to understand the degree to which a migrant's former legal status affects his or her impact on hometown communities. Finally, future research needs to address the potential interaction effect between return migration and remittances. Specifically, does return migration improve the development potential of remittances? If so, under what conditions?

Our research has important implications for policy makers. As we demonstrate, 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 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 would be in the Mexican state's best interest to encourage returnees, and reduce potential barriers to development within migration-prone regions.

In recent years the Mexican government has designed several programs aimed at supporting the country's large diaspora community as well as channeling the positive effects of migration within migrant-sending communities. *Bienvenido a Casa Paisano*, for example, is designed to facilitate migrants during their trips home with things such as repatriation of remains, filing official paperwork, and renewing visas. A handful of other programs of this nature exist (*3x1 para Migrantes*, *Vete Sano y Regresa Sano*, etc.) but their primary focus is on supporting migrants in their pursuit of the American dream. Our findings suggest that the Mexican government would be wise to design policies to help return migrants pursue a "Mexican dream." In doing so, policy makers may find that they are able to mitigate the very social-economic factors that underpin emigration in the first place.

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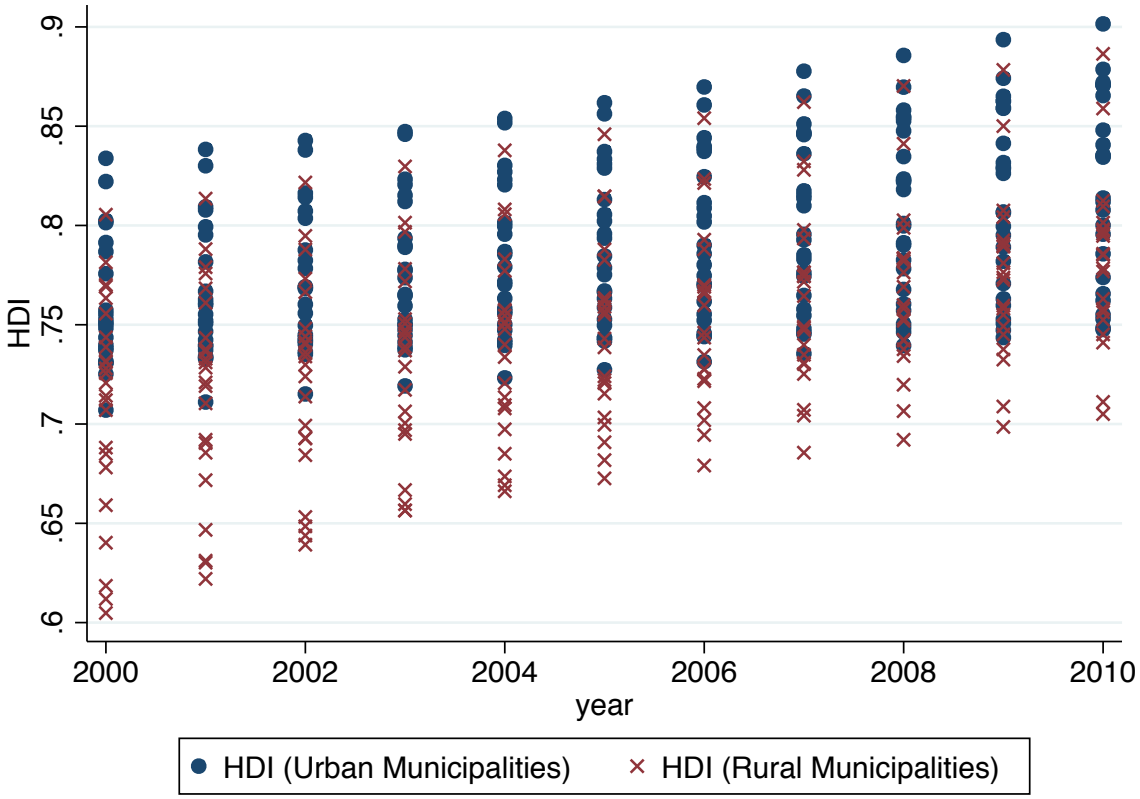
Figure 1

Guanajuato human development index, by municipality, 2000-2010



Source: INEGI.

Table 1

Descriptive Statistics

Variable	Mean	S.D.	Data Source
HDI	.77	.05	INEGI; SNIM
Infant Mortality Rate	22.43	7.61	INEGI
Education Attendance Rate	61.48	3.92	INEGI
% Pop Illiterate	85.53	5.08	INEGI
Income per Capita[1]	69,720	46,267	INEGI
Electoral Participation	51.39	7.26	CIDAC; IFE
% Homes Return Migrants	4.49	2.26	CONAPO
% Homes Remittances	13.36	6.68	CONAPO
Municipal Population	113,553	4,601	INEGI
Municipal Revenue per Capita[2]	101.93	62.19	SNIM
Public Works per Capita[3]	922.09	21.23	SNIM; INEGI
Population 18+ (% total)	58.12	4.13	SNIM; INEGI
Population 18+ (% total female)	31.83	2.32	SNIM; INEGI

Source: CIDAC, CONAPO, IFE, INEGI, SEDESHU, and SNIM.

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

Table 2

Human development in Guanajuato, by municipality, 2000-2010

	Human Development Indicators				
	HDI	Infant Mortality Rates	School Attendance	Literacy Rates	Income per Capita
	Coef.	Coef.	Coef.	Coef.	Coef.
% Homes with return migrants	.01*** (.0006)	-1.27*** (.10)	.88*** (.08)	.59*** (.05)	186.24*** (34.54)
% Homes with remittances	-.002*** (.0004)	.39*** (.06)	-.35*** (.04)	-.12*** (.03)	-45.06** (14.94)
Municipal revenue per capita	.0001*** (.00002)	-.03*** (.003)	.02*** (.003)	.003* (.002)	4.60*** (1.19)
Public works per capita	.000002 (.0000004)	-.0002^{+} (.0001)	.0002** (.00008)	.00004 (.00005)	.54*** (.05)
Municipal population (log)	.03*** (.004)	-2.78*** (.61)	-.23 (.36)	2.92*** (.39)	-754.16*** (87.52)
Constant	.42*** (.04)	56.05*** (6.91)	63.09*** (4.15)	52.52*** (4.37)	9481.37*** (1045.89)
N	460	460	460	460	460
Prob. > $\chi 2$	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2	.48	.43	.25	.43	.66

Source: CIDAC, CONAPO, IFE, INEGI, SEDESHU, and SNIM.

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

*** Statistical significance at the .001 level

Table 3
Electoral participation in Guanajuato, by municipality, 2000-2010

	Model I	Model II	Model III
Electoral participation (DV)			
	Coef.	Coef.	Coef.
% Homes with return migrants	1.14**	.97**	.93**
	(.42)	(.43)	(.42)
% Homes with remittances	-.37**	-.36**	-.31*
	(.16)	(.16)	(.16)
Public works per capita	.002**	.002**	.002**
	(.0006)	(.0007)	(.0007)
School attendance (% attended)	.23	.36*	.34^{+}
	(.20)	(.21)	(.21)
Income per capita (logs)	7.04	283.66*	295.69*
	(11.89)	(164.99)	(165.63)
Income per capita squared (logs)	--	-198.00*	-206.29*
	(--)	(118.07)	(118.44)
Population 18+	-.29^{+}	-.35*	--
	(.21)	(.21)	(--)
Population 18+ (% total female)	--	--	-.68*
	(--)	(--)	(.37)
Constant	47.96**	-52.54*	-54.79*
	(14.50)	(61.38)	(61.38)
Number of obs.	138	138	138
Prob. > $\chi 2$	(0.000)	(0.000)	(0.000)
R-squared	.18	.17	.19

Source: CIDAC, CONAPO, IFE, INEGI, SEDESHU, and SNIM.
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
*** Statistical significance at the .001 level