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Motivations for Mexican-US Migration: Does the Economy Matter?

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ABSTRACT

This research examines Mexican immigrants' motivations for crossing into the US to evaluate whether macroeconomic conditions affect these motivations. Using a data set of 44,017 Mexican migrants from 2010 through September 2016 and controlling for personal factors, results indicate economic motivations are moderated by US macroeconomic conditions and in the expected way, i.e. the US unemployment rate (growth rate) is inversely (directly) associated with economic motivations to cross into the US and positively associated with non-economic (familial-based) motivations. Results also suggest that Mexican migrants coming to the US in the wake of the Great Recession (i.e. in 2010 and 2011) were much less likely to cross for economic reasons than those crossing in 2015 and 2016, while those crossing in 2013 and 2014 were more likely to cross for economic reasons. We suspect nationalistic rhetoric amplified by Trump's campaign for US president may have crowded out economic motivations as immigrants expected the proposed anti-immigrant policies to reduce the availability of US economic opportunities. Similar support for macroeconomic "push" effects from the Mexican economy were not found. Additionally, economic and familial-based motivations for migrating appear to be substitutes and both respond to US macroeconomic conditions though in opposite ways.

Introduction

Anti-immigrant rhetoric adopted by President Donald Trump throughout his 2016 presidential campaign once again brought US-Mexican immigration policies to the forefront of political discourse. Perhaps most famous among the proposals was candidate Trump's plan to build a large, physical wall along the US–Mexican border. While these policies were positioned as a way of mitigating immigration from Mexico, highly-motivated immigrants (and their potential US employers) historically have and continue to find ways to circumvent political and physical barriers intended to impede their immigration (Warren and Kerwin 2017).

Adding fuel to the political discourse is the conventional wisdom that the vast majority of unauthorized immigrants in the US are of Mexican origin and that their numbers have reached historic levels. However, recent data from the Pew Research Center demonstrate

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that the unauthorized immigrant population in the US actually peaked in 2007 at about 12.2 million and since then has fallen to around 11 million in 2015 (Passel and Cohn 2016; Pew Research Center 2016). Further, individuals of Mexican origin only comprise slightly more than half (52%) of the unauthorized population (Passel and Cohn 2016). As with the total unauthorized immigrant population, the number of unauthorized Mexican immigrants has also fallen since peaking in 2007, reversing the previous trend of increasing unauthorized immigration to the US (Gonzalez-Barrera and Krogstad 2017). We find the timing of this reversal—i.e. at the onset of the Great Recession—to be extremely important since there may be a cause and effect, a factor which contributes to our motivation for this analysis. The obvious implication here is that a greatly-weakening US economy during the Great Recession may reduce or even reverse a "pull" effect for Mexican-US migration.

The existence of a "pull" effect (and a corresponding "push" effect from Mexico) is actually a matter of considerable ongoing debate. As of this writing, there are three major theories of motivations for Mexican-US migration: a broadly-defined Neoclassical Economic Theory (NET) (into which a "push–pull" thesis can be placed), Social Capital Theory (SCT), and Empire Theory of Migration (ETM). Each of these will be discussed in detail below.

The emphasis of this research is empirical. In particular, we wish to consider whether macroeconomic factors (including economic growth and unemployment rates in the US and Mexico) contribute to Mexican-US migration. Further, since motivations may be affected by individual-level characteristics (such as age, gender, literacy, English-speaking ability, frequency of cross, and whether they crossed alone), we control for personal characteristics while including macroeconomic variables over time. Using a probit analysis of survey data of 44,017 individuals crossing from Mexico to the US during the period of 2010–2016, we find that the US unemployment rate varies inversely with economic motivations for crossing into the US. Similarly, economic growth in the US is directly associated with the economic motivation to migrate to the US. Further, when we include fixed effects by year, immigrants who migrated right after the Great Recession (i.e. in 2010 and 2011) were less likely to migrate for economic reasons while those who migrated in 2013 and 2014 were significantly more likely to migrate for economic reasons (the reference category was 2015 and early 2016). Results presented here suggest that anti-immigration policies may be undermined by economic factors well beyond the control of any political party.

Background

Neoclassical Economic Theory and New Economics of Labor Theory

The Neoclassical Economic Theory (NET), assumes that potential immigrants use a rational, cost–benefit analysis framework in deciding whether to emigrate to the US. Migrants are assumed to be well-informed, rational agents who use a cost–benefit analysis to decide whether to migrate to a foreign country. In the context of Mexican-US migration, prospective migrants first compare what they expect to earn in wages in the US against those which they can maintain in their home country. While wages in the US may be higher due to greater access to capital, technology, and higher productivity, prospective immigrants would also consider the anticipated costs of migrating including

transactions costs and the costs of psychological, cultural, and occupational assimilation. The NET model postulates that migration occurs when the net benefits of doing so are positive (or at least positive enough). Thus, if US wages and productivity rise, more Mexicans will be willing to incur the transactions costs and emigrate to exploit more "favorable" US economic conditions (Anderson and Gerber 2008). Similarly (and importantly for this current endeavor), if unemployment rates fall, then the risk of being unemployed in the US falls, thereby raising the expected wages.

The neoclassical economic model in this context is essentially an extension of classic, rural-urban migration theory models such as those posited by Todaro (1969), Harris and Todaro (1970) and Ranis and Fei (1961). However, the major driver for immigration according to neoclassical economics is a binational wage gap, rather than a rural-urban differential. Other things being equal, the larger the international wage gap between two countries, the greater the individual incentive to migrate to the higher-wage country. Cornelius (1989) argues that US firms continue to demand hard-working Mexican immigrants, particularly in low-skilled jobs, thus supporting wages for prospective immigrants. However, research by Borjas (1990), Card (2005), and Bean, Gonzalez-Baker, and Capps (2001) suggests that the impact of immigration on domestic wages is minimal, particularly for non-immigrant labor markets. In other words, immigrants seem to fill demand that is not highly-contested by the domestic labor force.

Reinforcing the neoclassical framework, research by Borjas (1990) demonstrates that countries that are relatively poor and geographically close to the US have higher emigration rates to the US. Additionally, Borjas (1990, 1994, 1995) extends neoclassical economic theory into the policy realm, critiquing US immigration policy for not taking full advantage of the favored position of the US as a high demander of labor in the global immigration market.

According to the neoclassical economic theory's macroeconomic extension, migration is a product of the macro-level processes of the supply and demand of labor between countries with unequal economic infrastructures. Thus, countries such as the US, with large endowments of capital and relatively scarce labor resources, have higher nominal wages than developing countries. Conversely, countries like Mexico, with relatively high levels of labor relative to capital, suffer from lower wages due to the surplus of workers and scarcity of local employment opportunities. The US's high demand for (and relatively short supply of) low-skilled labor causes an increase in nominal wages in the US relative to Mexico, contributing to a binational wage gap between the two linked economies.

On the policy side, the US government has put in place measures designed to deter Mexican migratory flow by raising the transactions costs (financial, psychic, and material) and reducing the perceived gains of crossing. A practical manifestation of this is the 1965 Amendments to the Immigration Nationality Act. The legislation reoriented family reunification as the objective for a new visa allocation system and imposed an annual visa supply cap under which all Latin American immigrants—indeed all immigrants—had to compete (Massey, Durand, and Malone 2003). These measures implicitly increased transactions costs for Mexican migrants as their probability of legal entry became limited by overall visa supply reductions and the favoring of immigrants of US families over skilled workers (Borjas 1990).

Key provisions in the 1986 Immigration Reform and Control Act (IRCA) allocated more resources to increase US Border Control enforcement thus increasing the perceived

probability of apprehension and deportation, a manifestation of the "prevention through deterrence" strategy (Cornelius 2001). Additionally, it imposed sanctions on US employers who hired illegal immigrants, thereby making US jobs less attractive and reducing the net benefits of migration. While the implications of this model suggest that greater US border security would reduce perceived gains of migrating thereby decreasing illegal immigration from Mexico, this does not appear to have materialized in terms of reduced illegal migration to the US post-1986. In fact, unauthorized immigration appears to have increased dramatically even in the absence of a wage differential (Massey and Espinosa 1997; Massey, Durand, and Malone 2003; Massey and Riosmena 2010). It seems that political efforts to reduce unauthorized immigration to the US have either not been very effective or have suffered from additional confounding effects, as unauthorized immigration to the US continued to rise even after the 1986 IRCA legislation (Cornelius 1981, 1989; Bustamante 1989). Indeed, research by Fernandez-Kelly and Massey (2007) suggests that increased border security may have backfired by reducing cyclical movements of return migration to Mexico as immigrants attempt to spare themselves from the greater perceived risks of reentry, resulting in an unprecedented accumulation of Mexicans residing in the US. In sum, while the neoclassical model has strong appeal, the empirical evidence supporting it is mixed.

The New Economics of Labor Theory (NELT) suggests that international migration provides an opportunity for households to manage labor market risk and provide access to capital (Massey and Espinosa 1997). This collective yet temporary strategy can be particularly salient in cases where labor markets are volatile and uncertain and/or when capital markets are volatile due to currency interventions, price inflation, and shocks. In this context, remittances can serve a valuable function in smoothing consumption, providing access to capital, and ensuring financial security (Cornelius 1990; Massey, Durand, and Malone 2003). This also provides a mechanism for households that may otherwise lack access to capital markets to own their own land, home, or business that can, in turn, also provide collateral for financing additional purchases (Massey and Espinosa 1997). In this context, international migration is viewed not only as a means of increasing lifetime earnings but as a strategy to smooth consumption and investment over time and a form of insurance to protect households' economic well-being by creating contingency reserves.

A more general framework which is consistent with both neoclassical economics and new economics of labor theories is the Push–Pull Theory of immigration. Proponents of this theory posit that migrants in the sending country experience economic, social, or political hardships which make emigration to a nearby country more appealing. Similarly, favorable economic, social, or political conditions in the destination country serve as drivers to "pull" immigrants to that country (Portes and Böröcz 1989; Portes and Rumbaut 2014). We believe the Push–Pull Theory is compatible with the neoclassical economic theory and the new economics of labor theory, since country-level conditions can tip the scales in such a way that individuals find positive net benefits from migration. However, one of the major critiques of Push–Pull Theory is its inability to explain why immigration tends to favor one poor nation over another and why there are geographic concentrations of migrants within the same sending country rather than a more uniform geographic distribution if individuals are facing the same macroeconomic conditions (Portes and Böröcz 1989). Further, despite changing economic, political, and

social conditions in the US and Mexico over the second half of the 20th century, there was a monotonic increase in the number of Mexican immigrants to the US by decade from 1930–2000 (see Gonzalez and Fernandez 2003, 58).

Social Capital Theory

The Social Capital Theory of migration (SCT) posits that social capital (see Coleman 1988), in the form of family, friends, neighbors, etc. is a main contributor to motivations for international migration. Massey and Espinosa (1997) define social capital in this context as relating to the summation of resources available and gains to be accrued by an individual due to mutual relationships. As it applies to a Latin American context, larger extended family units create and reinforce social capital and extend those bonds within a narrow radius of trust comprised of mostly family (Fukuyama 2001). For Mexican migrants, having interpersonal ties with former or current US migrants represents a valuable social asset that can be leveraged to obtain valuable cultural and employment-based information and assistance that reduce the transactions costs and increase the expected net returns to skills or education in migrating (Borjas 1990; Massey and Espinosa 1997; Anderson and Gerber 2008). These migrant networks ultimately serve as vehicles of information regarding US economic and social conditions and facilitate achievement in entry and assimilation in the US labor market as knowledge is transferred between experienced and amateur migrants (Borjas 1990; Massey and Espinosa 1997). The SCT can also explain the self-perpetuating nature of migration whereby Mexican immigrants—initially drawn to a particular location in the US by friends and relatives—in turn, rely on their own social networks to help their employers fill job openings, thus creating a positive feedback loop (Cornelius 1981). Each successive wave of migrants leveraging their migrant networks further decreases the costs (i.e. information and transactions) and raises the benefits (i.e. increased probability of finding work) associated with migration for the subsequent wave (Massey and Espinosa 1997). Perhaps ironically, IRCA, which granted amnesty to roughly 2.3 million unauthorized US immigrants and the *Bracero* [Laborer] program which brought 5 million Mexican farmers to the US before it, both contributed to this positive-feedback immigration process by legalizing and likely promoting vast networks of immigrants who had previously been marginally existing in the shadows (Massey and Espinosa 1997; Durand, Massey, and Zenteno 2001; Massey, Durand, and Malone 2003). While this theory is criticized as being dismissive of US policy/trade practices (Ibarra and Carlos 2015) and assumes the US and Mexico operate independently economically (Gonzalez and Fernandez 2002), social networks are believed to enhance migration systems and propel migration (Borjas 1990; Portes and Rumbaut 2014).

Empire Theory of Migration

The Empire Theory of Migration (ETM) begins with the premise that a dominant country (i.e. the US) exerts tremendous economic and political power over a subordinate country (i.e. Mexico), thus disrupting its institutions in such a way as to promote internal migration within Mexico and binational migration to the US. Contrary to the Push–Pull thesis in which within-country conditions are assumed to operate independently (Gonzalez and Fernandez 2002), the ETM implies a certain level of control by the

dominant country over the natural resources and labor of the subordinate country (Ibarra and Carlos 2015). According to Ibarra and Carlos (2015, 215):

> … the United States continually has sought not simply a position of international leadership, but *the* dominant position, both through having the world's largest military and through establishing itself as the moral arbiter of the global economic, political and social systems.

The roots of ETM stretch back to the Porfirio Diaz presidency of the late-19th century in which President Diaz opened Mexico's economy to foreign investment. However, the way these policies were implemented led to a massive redistribution of wealth, siphoning off profits from Mexican companies and, indeed, entire industries to Mexican elites and foreign (namely, US) investors (Gonzalez and Fernandez 2003). This disruption and subsequent redistribution of wealth is believed to have served as a major impetus to the Mexican Revolution in the early 20th century (Ibarra and Carlos 2015). While ETM's emphasis is on immigration, it has echoes of the Dependency Theory of Development, championed by Singer (1950), Prebisch (1959, 1962) and Frank (1967). The Dependency Theory posited that developing countries, particularly those in Latin America, remain underdeveloped principally because they are part of a global capitalist system in which "peripheral" countries (like Mexico) serve a "central" country (like the US) which exerts hegemonic control throughout the region of Latin America. While ETM and its predecessor, the Dependency Theory of Development, lack empirical support, the role of the US initiatives such as the *Bracero* [Laborer] program (Gonzalez and Fernandez 2003) or lax border enforcement policies (Bustamante 1989) have—at a minimum—been self-serving, even while US immigration policies over the past century often lacked coherence.

Empirical Framework

The emphasis in this current endeavor is on testing individual-level motivations for crossing to the US, while including macroeconomic variables for both the US and Mexico. In terms of policy proposals, if motivations are strongly affected by either US or Mexican economic conditions, then prospective immigrants may be highly motivated to circumvent legal and physical barriers. Similarly, if family reunification motivations are complementary to economic conditions, then the motivations for crossing may be compounded and reinforced by changing economic conditions, reducing even further the effectiveness of policies designed to stymie unauthorized immigration. In short, policies such as a "wall" may be rendered less effective if the motivations for crossing to the US are strong. As such, we wish to test the following three hypotheses:

> H_1: Favorable changes in the US economy will provide a positive economic motivation to migrate to the US (a "pull" motivation).
>
> H_2: Unfavorable changes in the Mexican economy will provide a positive economic motivation to migrate to the US (a "push" motivation).
>
> H_3: Economic and non-economic (familial-based) motivations for migration from Mexico to the US are substitutes.

In what follows below, we provide a description of our data and then discuss the methodology to test these hypotheses.

Data and Methodology

Data

We used data from the Survey of Migration at Mexico's Northern Border (EMIF Norte), a collaborative project which began in 1993 between El Colegio de la Frontera Norte (COLEF), the National Population Council, the Secretariat of Labor and Social Welfare, and other government departments in Mexico (see STPS 2006; Rendall et al. 2009; STPS 2014). This ongoing study aims to increase understanding of the phenomenon of labor migratory flows between Mexico and the US, identify the flow's characteristics, volume, and trends, and determine its impactful effects on the labor market in both neighboring societies (COLEF 2013). These surveys have been conducted daily in Mexican cities along the US–Mexico Border (including Tijuana, Mexicali, Matamoros, Nuevo Laredo, Piedras Negras, and Ciudad Juarez) with Mexican residents and immigrants to collect demographic attributes and migration-specific information regarding their migratory trips across the US–Mexico border. According to Rendall et al. (2009), compared to other databases estimating the flow of Mexican emigrants such as the National Survey of Demographic Dynamics (ENADID) from the Instituto Nacional de Estadística Geografíca e Informática (INEGI) and the Mexican Migration Project (MMP), COLEF's EMIF data was concluded to not only be less biased, but to include significantly larger sample sizes that represent reasonably well the geographic origins of Mexico's migrants to and from the US.

Based on our chosen analytical framework, we selected the *Migrantes Procedentes del Sur* [Migrants coming from the South] database which surveys Mexican residents who engage in the migratory flow from Southern Mexico to the Northern Border region in Mexico. The survey population is comprised of Mexican residents 15 years of age or older, born in Mexico, who do not live in the city of the interview, whose movement to the Northern Border region or the US stems from specific motivations, and who have no expected date of return to their place of habitual residence (COLEF 2013). The data set is further classified according to participants' final migration destination: those bound to a Mexican city in the Northern Border region and those bound to the US. To test *why* Mexican migrants desire to enter the US, the filtered data set used in the empirical analysis only includes observations of those who migrated to the Northern Border region as a means of crossing into the US.

Tracking the monthly motivations for migrating to the Northern Border region from January 2010 to September 2016 we observe some clear patterns (Figure 1). First, the percentage of migrants wishing to continue "in transit to the US" falls precipitously in the late-summer of 2015 and remains low after November of that same year. Though we are uncertain about the causes of this shift, we suspect that then-presidential-hopeful, Donald Trump's, disparaging comments about Mexican immigrants in June 2015 and beyond signaled a much stricter interpretation and implementation of federal immigration statutes if he were elected versus that of previous administrations (Diamond 2015; Ye Hee Lee 2015)—something which was borne out under (then) Department of Homeland Security Secretary, John Kelly (Ford 2017) in the first six months of Trump's presidency. Further, we note that the proportion of those migrating to the Northern Border region either "to work or look for work" increases dramatically during the same time. Put together, these two series suggest

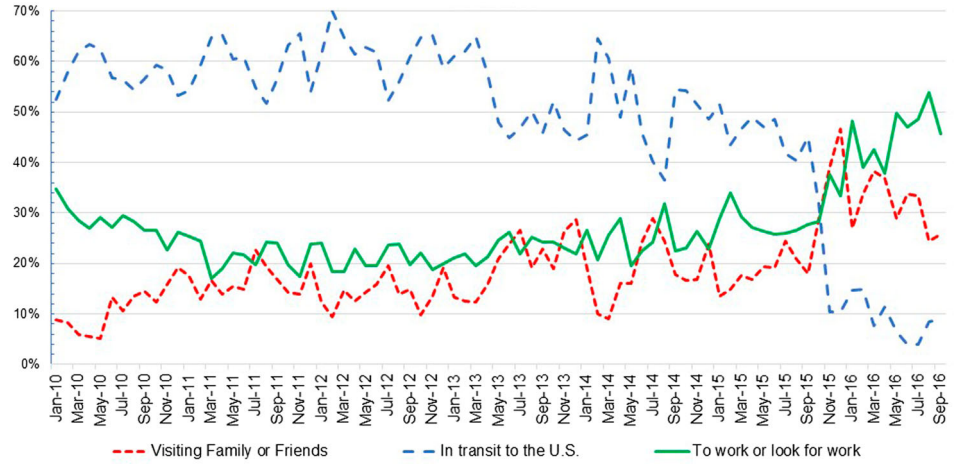

Figure 1. Monthly Motivations for Migrating to the Northern Border Region in Mexico, 2010–2016. Source: Data from the database entitled "Migrantes Procedentes del Sur" provided by El Colegio de la Frontera Norte and Mexican governmental department affiliates for the years January 2010 to September 2016.

that immigrants' motivations changed in late 2015, as they decided to go to the Northern Border region of Mexico and stop there to work or to look for work, rather than continuing on to the US. The proportion going to the Northern Border region to visit family or friends initially rises but then diverges from the "work or look for work" trend in 2016.

Assuming there was no shock to the prospective immigrants' social networks in the US, these results seem to support the Neoclassical Economic Theory and New Economics of Labor Theory of international migration. The changing political rhetoric may have changed the calculus of immigration by increasing the probability and legitimization of apprehension, workplace raids, and discriminatory treatment, thus reducing the net benefit of migration as either a means of increasing personal/household wealth or reducing household income risk.

Our final data set includes 44,017 observations and includes basic demographic characteristics (gender, age, ability to read and write in any language, and ability to speak English), migration-specific traits (frequency of crossing the US–Mexico border and whether migrants crossed alone or with others), and macroeconomic indicators of both countries (monthly unemployment rate [UR] and quarterly GDP growth rate [GR]).

Methodology

To test our hypotheses, we estimated two empirical models focusing on the probability of having an economic rationale (Model 1) and non-economic rationale (Model 2). We defined respondents as having an "economic rationale" for migration if they indicated they were crossing to the US mainly "to work" or "to look for work." We considered respondents who indicated their main reason for crossing was "to reunite with family and friends" as having a non-economic (familial-based) rationale. Since having an

economic motivation for migrating is a discrete variable taking on the value of either 0 or 1, we used a probit model. Specifically, we estimated the following:

$$\begin{aligned}(1)\quad \Pr(\text{Economic Motivation} = 1) = (&\beta_1 + \beta_2\ \text{Male} + \beta_3\ \text{Younger than 30} \\ &+ \beta_4\ \text{Crossed Alone} + \beta_5\ \text{Can Read/Write} + \beta_6\ \text{Spoke English} \\ &+ \beta_7\ \text{Frequency of Cross} + \beta_8\ \text{US UR} + \beta_9\ \text{MX UR} + \beta_{10}\ \text{US GR} \\ &+ \beta_{11}\ \text{MX GR}),\end{aligned}$$

where the right-hand-side variables are being male (Male), younger than 30 years old (Younger than 30), crossing alone (Crossed Alone), being literate (Can Read/Write), speaking English (Spoke English), and the number of times the respondent has crossed (Frequency of Cross). The four variables of interest to test our hypotheses include the unemployment rate in the US (US UR) and Mexico (MX UR) and the economic growth rate in the US (US GR) and Mexico (MX GR). We believe the unemployment rate should be a particularly good measure since it is an (inverse) indicator of labor demand in an economy while the growth rate is a less-specific measure, but should be positively associated with labor demand and productivity (which is fundamental to real wage growth). We performed a similar estimation for the non-economic motivation with the following model:

$$\begin{aligned}(2)\quad \Pr(\text{Non - economic (Familial} - \text{based) Motivation} = 1) = (&\beta_1 + \beta_2\ \text{Male} \\ &+ \beta_3\ \text{Younger than 30} + \beta_4\ \text{Crossed Alone} + \beta_5\ \text{Can Read/Write} \\ &+ \beta_6\ \text{Spoke English} + \beta_7\ \text{Frequency of Cross} + \beta_8\ \text{US UR} + \beta_9\ \text{MX UR} \\ &+ \beta_{10}\ \text{US GR} + \beta_{11}\ \text{MX GR}).\end{aligned}$$

Results

The vast majority of the sample (94.4%) was male and literate (93.9%) (Table 1). Over half (58.8%) were younger than 30 years old and around 14% could speak English. The mean number of times crossed in one's lifetime was 0.790 with a wide range. The unemployment rate in the US averaged 8.1% in this sample period, ranging from 4.7 to 9.9% while the Mexican unemployment rate averaged 5.0%, ranging from 3.7 to 5.8%. The growth rate in the US averaged 2.076%, ranging from −1.5 to 5% while that for Mexico averaged 0.826%, ranging from −0.8 to 1.5%.

We provide two variations of our Model 1. In the first version (Model 1A) we include the four macroeconomic variables of interest but do not provide fixed year effects. In the second version (Model 1B), we do provide the fixed year effects but exclude the macroeconomic variables. In essence, Model 1B relies on the fixed year effects to incorporate any "yearly" conditions that would very likely include changing macroeconomic conditions. Since our test period goes from January 1, 2010 to September 30, 2016 (when the US economy was recovering from the Great Recession of 2007–2009) (U.S. Bureau of Labor Statistics 2012), we have a natural experiment to capture this recovery period in the US. It bears noting here that Mexico's recession and corresponding recovery were not as dramatic (as indicated by the lower ranges in Table 1).

Results presented for Model 1A are generally as expected (Table 2). Males and younger respondents in the survey were more likely to cross for economic reasons. Factors

Table 1. Descriptive Statistics.

Variable	Description	Mean	Std Dev	Min	Max
Dependent variables					
Economic motivation	Reason is to work or look for work in the US	0.953	0.2123	0	1
Familial-based motivation	Reason is to reunite with family & friends in US	0.047	0.2123	0	1
Demographic characteristics					
Male	Gender is male	0.944	0.230	0	1
Younger than 30	Migrant is younger than 30 years old	0.588	0.492	0	1
Older than 30	Migrant is older than 30 years old	0.412	0.492	0	1
Can read/write	Migrant can read or write	0.939	0.239	0	1
Speak English	Migrant can speak English	0.141	0.348	0	1
Migration-specific variables					
Crossed alone	Migrant crossed US–Mexico border by themselves	0.570	0.495	0	1
Frequency of cross	Times migrants crossed US–Mexico border ever	0.796	3.572	0	96
Macroeconomic variables					
US UR	US monthly unemployment rate	0.081	0.013	0.047	0.099
MX UR	Mexico's monthly unemployment rate	0.050	.004	0.037	0.058
US GR	US quarterly GDP growth rate	2.076	1.670	−1.5	5
MX GR	Mexico's quarterly GDP growth rate	0.826	0.464	−0.8	1.5

associated with being less likely to cross for economic reasons are literacy, speaking English, and higher frequency of cross. While literacy and English-language ability may be associated with higher human capital and therefore greater expected wages, perhaps these effects do not dominate here since they may also be associated with non-economic motivations (including going to the US to study and being with family or friends). The variables of interest for the US have the expected signs. Lower unemployment rates and higher growth rates are associated with higher probability of crossing to the US for economic reasons. Clearly, these results are supportive of H_1. However, H_2 does not receive similar support, as the coefficients for Mexican unemployment rate and growth rate are not significant predictors.

Table 2. Probit Results.

	Model 1A (D.V. is Economic Motivation)		Model 1B (D.V. is Economic Motivation)		Model 2 (D.V. is Non-economic Motivation)	
Variable	Estimated coefficient	Std. error	Estimated coefficient	Std. error	Estimated coefficient	Std. error
Male	1.680[a]	0.030	1.681[a]	0.030	−1.765[a]	0.033
Younger than 30	0.210[a]	0.024	0.209[a]	0.024		
Older than 30					0.441[a]	0.029
Crossed alone	−0.005	0.024	−0.007	0.024	0.217[a]	0.030
Can read/write	−0.296[a]	0.061	−0.288[a]	0.061	0.098	0.065
Speak English	−0.432[a]	0.029	−0.444[a]	0.029	0.369[a]	0.034
Frequency of cross	−0.010[a]	0.002	−0.009[a]	0.002	0.014[a]	0.002
US UR	−6.577[a]	1.263			7.802[a]	1.504
MX UR	−2.125	3.666			−0.833	4.382
US GR	0.023[a]	0.007			−0.003	0.008
MX GR	−0.022	0.028			0.043	0.034
2010			−0.146[a]	0.052		
2011			−0.185[a]	0.051		
2012			0.077	0.053		
2013			0.135[b]	0.057		
2014			0.166[a]	0.062		

Notes: a, b, and c indicate significance at the 0.01, 0.05 and 0.10 levels, respectively. Reference categories for Model 1B are the years 2015 and 2016.

The results presented for Model 1B are generally supportive of the notion that the economic recovery in the US was associated with greater economic motivation for migrating. The coefficients for 2010 and 2011 are negative (relative to the reference category of 2015 and 2016) while the coefficient for 2012 is not significantly different from zero. The coefficients for 2013 and 2014 are positive and significant suggesting that these years are associated with an economic motivation for migration. To illustrate these results better, we provide a figure with US unemployment rates and the coefficients for each year provided in the shaded regions (see Figure 2). The "yearly effect" on economic motivation to migrate goes from negative to positive over the four-year period highlighted in the figure, coinciding with the strong US economic recovery. While these results make sense overall, it is puzzling that 2013 and 2014 would be associated with a higher economic motivation than 2015 and part of 2016. In other words, we would expect all of the coefficients to be negative vis-à-vis the reference years, though becoming less negative over time. Perhaps the pragmatism echoed in the changing political winds noted earlier starting in summer 2015 discouraged economic immigration as either (i) the probability of apprehension and profiling by Immigration Control and Enforcement (ICE) crowded out improving job prospects, thereby reducing the net benefit calculus for prospective immigrants, or (ii) perhaps job prospects were improving much more for US citizens than for Mexican immigrants. Unfortunately, data limitations here prevent a precise identification of causality.

We would expect the results for Model 2 to be essentially the opposite of Model 1 if these two motivations are substitutes and this is essentially the case. Those crossing for non-economic (familial-based) reasons are more likely to be female and older. They are more likely to cross alone, be able to speak English, and cross more frequently. Among the macroeconomic variables, the one significant coefficient is for the US unemployment rate, which is positively associated with non-economic motivations for immigration. This finding indicates that in poorer US labor market conditions, prospective Mexican migrants might perceive it to be too risky to migrate to the US with the intent of finding employment and will therefore be more likely to cross to visit family instead. These results suggest a trade-off between economic and non-economic motivations, which supports H_3.

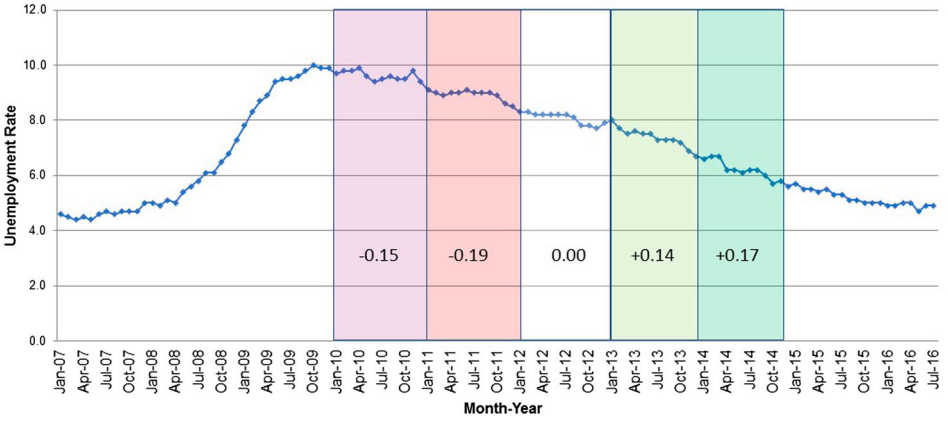

Figure 2. US Unemployment Rate with Superimposed Model 1B Categories Results. Source: Bureau of Labor Statistics, LNSI14000000.

Conclusions

This investigation has attempted to identify personal motivations for crossing to the US by Mexican immigrants and analyze how changes in the macroeconomic environment in both countries impacts migration decisions. Specifically, we have tested whether economic motivations to cross into the US are affected by macroeconomic conditions in the US and Mexico (H_1 and H_2, respectively). We also tested whether economic and non-economic (familial-based) motivations are substitutes (H_3). These hypotheses are key to understanding whether recent policy initiatives such as increased border enforcement and the construction of a "wall" will stop the flow of immigrants, as suggested. If unauthorized Mexican migration is strongly affected by macroeconomic factors in the US (like robust economic growth and low unemployment) then these policies and conditions may be off-setting or counter-balancing. Further, we wished to consider whether economic and family-based motivations for immigration are substitutes or reinforcing because if they are substitutes, then strong motivations to migrate may exist even during recessions as long as family reunification remains a powerful motivator.

We used a very large data set of Mexican migrants (44,017) spanning from January 2010 to September 2016 and included personal/demographic variables. Additionally, we included US and Mexican unemployment and growth rates for each month and quarter (respectively) during the survey to try to capture variations in these factors over time. We also included a fixed effects model in which the years (rather than unemployment rate and growth rate) are included.

Results presented here are clearly supportive of our first hypothesis (H_1) as we find that US unemployment and growth rates are both powerful predictors of economic motivations to migrate to the US (and in the expected way) representing manifestations of the Neoclassical Economic and New Economics of Labor Theories. Further, when using a fixed effects model, the coefficients for 2010 and 2011 are negative, vis-à-vis the reference category of 2015 and 2016. The coefficient for 2012 is not significantly different from zero, and those for 2013 and 2014 are positive (relative to reference categories of 2015 and 2016). These results suggest that economic motivation is negatively associated with the early years of the study which were right after the Great Recession in the US. While the economic motivation is more positively associated with 2013 and 2014 than 2015 and 2016, we believe survey respondents may have been internalizing the reduced probability of either finding or holding onto a job in the US due to expectations of heightened US immigration policy enforcement associated with the possibility of a Trump presidency. Because we do not find similar effects for macroeconomic factors in Mexico, these results do not support our second hypothesis (H_2). However, we believe the evidence for "push" factors (see Anderson and Gerber 2008) are either not as strong as previously believed or—more likely—the time frame considered here was not long enough to capture large enough variations (including an entire business cycle) in the Mexican economy. Unfortunately, changes in the way the key questions were framed limited our analysis to only the dates used in this study. We leave the expansion of this analysis over longer periods of time for future investigations.

Regarding our third hypothesis (H_3), we do find that results for the non-economic motivations (Model 2) are generally the opposite of those for the economic motivation. While the coefficient for US economic growth is no longer significant, higher US

unemployment rates are positively associated with *higher non-economic* motivations for migrating to the US. In other words, poorer labor market conditions in the US are associated with greater migration for noneconomic, i.e. familial-based reasons (relating to the Social Capital Theory). In sum, we find support for H_1 and H_3 but not for H_2. While these results suggest that the US economy plays a significant role in Mexican migrants' motivations for crossing into the US, data limitations prevent us from assessing the relative strength of these factors vis-à-vis specific policy changes such as increased border enforcement or construction of additional border barriers.

Results presented here do, however, provide a warning to policymakers in the US and elsewhere that personal motivations for crossing can be very strongly affected by economic forces, either alone or in conjunction with other socio-political factors. Therefore, policies geared towards preventing Mexican-US migration (such as a "wall") may be off-set by economic factors that provide sufficient "pull" on potential migrants who value better economic opportunities for themselves and their families. Further, if US policymakers desire to work *with* economic motivations, rather than against them, one policy recommendation would be to develop a robust temporary visa or guest worker program which provides accountability (and ensures US employer compliance to human rights and labor standards) while allowing for a more realistic ebb and flow of immigrants responding to normal variations in economic conditions over time or to the systematic economic interdependence shared between the two countries.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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