The Push to Immigrate: How the Mexican and U.S. Economies Effect Immigration

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The Push to Immigrate: How the Mexican and U.S. Economies Effect Immigration

Abstract
Immigration is an important human issue whose causes have been the subject of economic and econometric studies. Many of those studies, however, use microeconomic methods and studies. This senior thesis approaches immigration through macroeconomics. Rather than look for the characteristics of people who immigrate, this paper determines how the economies of Mexico and the U.S. effect one's decision to immigrate. This study collects data from 1976 - 2011 on the number of immigrants from Mexico to the U.S., the GDP per capita, life expectancy at birth, education expenditure, and unemployment of each country. Using regression analysis, a model tests the significance and expected effect of each factor on the number of people who immigrate each year. My hypothesis is that these factors do indeed have a significant effect on the number of immigrants arriving in the U.S. each year. If so, then these factors will prove to be important in the decision-making process of each immigrant. Therefore, instead of focusing on heightened security and monitoring of the border, policy directed towards these factors may prove to be more effective and cost efficient in the long run.

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The Push to Immigrate: How the Mexican and U.S. Economies Affect Immigration

by

Jonathan Ramirez

April 21, 2014

The report of the investigation undertaken as a Senior Thesis, to carry two courses of credit in the Department of Economics

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David George
Abstract

The Push to Immigrate: How the U.S. and Mexican Economies Affect Migration

Immigration is an important human issue whose causes have been the subject of economic and econometric studies. Many of those studies, however, use microeconomic methods and studies. This senior thesis approaches immigration through macroeconomics. Rather than look for the characteristics of people who immigrate, this paper determines how the economies of Mexico and the U.S. affect one’s decision to immigrate. This study collects data from 1976 - 2011 on the number of immigrants from Mexico to the U.S., the GDP per capita, life expectancy at birth, education expenditure, and unemployment of each country. Using regression analysis, a model tests the significance and expected effect of each factor on the number of people who immigrate each year. My hypothesis is that these factors do indeed have a significant effect on the number of immigrants arriving in the U.S. each year. If so, then these factors will prove to be important in the decision-making process of each immigrant. Therefore, instead of focusing on heightened security and monitoring of the border, policy directed towards these factors may prove to be more effective and cost efficient in the long run.
I would like to dedicate this thesis to the immigrants who have come before and will come after me in search of the American Dream not only for themselves, but also for their sons and daughters.
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Chapter 1
Immigration: Ready for Reform

With 11.7 million Mexican immigrants living in the United States representing 29% of all immigrants (as of 2011), the controversy surrounding immigration largely involves the Mexican community in the U.S. (Britz and Batalova). The media’s portrayal of Mexican migration focuses on the southern border that the United States shares with Mexico. Images of undocumented crossers, drug activity, and violence coming north to the United States prevail evoking a fear of the outsider in the common U.S. citizen. On Capitol Hill, the policy debates stem from a desire to control the flow of immigration for reasons such as the protection of American jobs or the fear of an invasion from south of the border. Particularly after the 9/11 tragedy, security efforts have dramatically increased, not only in airports, but also along the Mexican – American border. Lately, as demonstrated by Border Patrol’s $3,466,880 budget in 2013, the main solution has been deterrence particularly targeting undocumented migration. The Border Security, Economic Opportunity, and Immigration Modernization Act of 2013, still being debated in Congress, would continue to outfit the Mexican – American Border with “yet more drones, fences, and guards with guns” (“Secure Enough”). The personnel, technology, and resources invested in border security continually militarize the United States’ southern border to counteract a perceived invasion. This militarized mindset prefers deterrence to dissuade migrants from crossing the border. Does deterrence affect the root causes of migration? The causes for migration are the same for both documented and undocumented Mexican citizens. The decision to migrate comes from dissatisfaction with one’s current country of
residence. Therefore, any policy hoping to control the flow of immigration should focus on the impetuses and reasons behind that flow. Although a highly political issue, immigration has a strong link to economics. The economic status of a country determines the quality of life of its citizens and affects the health, education, and employment opportunities available to them. Therefore, comprehensive immigration policy reform should begin with the root causes of immigration focusing on improving the Mexican economy.

This thesis will begin by first surveying the economic literature dealing with immigration focusing on the factors that influence the migratory decision. Beginning with the decision on an individual level, previous literature in economics will eventually establish the theory of this thesis, which will analyze immigration at the macroeconomic level. The survey of literature will begin to explain why people migrate from the human capital theory’s perspective viewing migration as an attempt to increase earning capabilities. Literature concerning the effect of education and health on migratory patterns will further link the individual’s human capital with his or her decision to migrate. The survey of literature will then refer to previous work on the effect of macroeconomic status of donor and host countries on the magnitude and direction of migration. Recognizing the importance of NAFTA’s effect on the economies of the United States and Mexico as well as on their interdependent relationship, this thesis will explain NAFTA’s role in increasing immigration. After discussing NAFTA’s goals and successes, this thesis will connect the failures and deficiencies of NAFTA to the increase in Mexican immigration to the United States and suggest changes to the agreement to better address immigration.
Utilizing the theories and findings of previous economic literature, this thesis will then explain its use of its main theory, the push and pull theory, to explain immigration. In order to construct the empirical models to test its theory, this thesis will refer to the previous literature to support its choice of independent variables to explain the direction and magnitude of migration. The thesis will also provide graphic representations of how the theories and findings of the previous literature support the main theory and model of this thesis. The regression models of this thesis will test the effect that the independent variables (the standard of living, health, educational opportunities, and employment opportunities) have on the yearly number of immigrants entering the United States from Mexico. After discussing the regression results, this thesis will then analyze policy and how well it aligns with the causes of migration. Assessing the attention that U.S. immigration policy pays to the root causes of immigration, this thesis will provide suggestions to improve existing policy.
Chapter 2
The Economics of Immigration

Among the literature explaining immigration from an economic viewpoint, the main theories focus on the microeconomics of individual decision making. The authors study the characteristics of individuals that make them more or less likely to immigrate and apply cost benefit analysis. Although the studies use different populations, their findings establish much of the economic drivers of immigration. The previous literature about migration explains the issue through either intrinsic or external factors. The intrinsic factors are the characteristics of the individuals that motivate immigration. The economy of the country of origin influences the quality life of its citizens, which individuals respond to when deciding whether or not to immigrate. The intrinsic factors tend to be the main focus of microeconomic studies whereas the external factors tend to be so in macroeconomic studies of immigration. This chapter will begin with the human capital model to explain how workers build and use their skills to earn wages. Then this chapter will focus on how people with different levels of education react to the decision to immigrate differently. Finally, this chapter will explain Borjas’ immigration bid theory as well as how historical events have affected immigration flow.

Migration for Self-Investment: The Human Capital Model

Migration, as it is largely a movement of labor, can be explained through the human capital model. Human capital is comprised of knowledge and experience which workers use to earn wages (Becker 16-17). Any attempt to increase human capital is an attempt to increase productivity and the ability to earn higher wages. Migration, along with education and training, is one of the main ways in which individuals can increase their human capital and earning potential (Ehrenberg and
Smith 290). A decision to increase human capital is a self-investment, and like “any other investment,...costs are borne in the near term” with the expectation for higher future returns “in the form of higher future earnings, increased job satisfaction over one’s lifetime, and a greater appreciation of nonmarket activities ands interests” (Ehrenberg and Smith 293). The increased wages of any decision to increase human capital must exceed the costs (education costs, opportunity costs in the form of forgone earnings, and any psychological or emotional costs) (Ehrenberg and Smith 294). Specifically when applied to migration, the human capital theory provides the central goal of any migrant: to search for a means to increase productivity and increase wage-earning capabilities. As discussed later, Borjas will expand upon this theory and call the increased wages and other benefits and human capital increases offered by countries as their “bids” for immigration. In relation to the goals of increasing productivity and ability to earn wages, countries can provide favorable and unfavorable conditions for human capital. For example, if country A has better public education and more job opportunities, workers from country B (having inferior public education and less work opportunities) will want to migrate because they can better develop and utilize their human capital in country A.

The literature also focuses on the characteristics of people that cause them to immigrate. This is the theory of selectivity, which states that certain characteristics make one more likely to migrate. The two main characteristics generally considered are age and education. According to Ehrenberg and Smith, “mobility is much higher among the young and the better-educated” because they are better able to increase their human capital through migration (Ehrenberg and Smith 344). Younger workers are more mobile because they can more easily and quickly adapt to new
settings, and positions requiring skilled labor are not available in their original labor markets. They affirm that the young stand to gain more human capital and future wages as their stay in the new location will be longer than an older person, and a younger person will not face as many psychological costs such as losing friends, separation (from family) anxiety, and other emotional attachments (Ehrenberg and Smith 344). Ehrenberg and Smith equate education with access to information about the location and potential benefit, and those with higher education therefore have more access to that information and can derive more benefit from migration to increase earnings.

In order to test the theory that a person’s characteristics make him or her migrate more frequently, Adrian J. Bailey undertook a study to demonstrate “that migration is a selective process” (Bailey 315). Bailey's paper studied how previous experience with migration affected migratory behavior along with education and age in order to test whether migration history makes one more likely to migrate again or whether there are certain inherent qualities that make one more likely to migrate (Bailey 316). In order to measure this, Bailey uses data from 1000 young adults from the National Longitudinal Survey of Youth which collects data on the individuals' characteristics as well as the length of their sojourns, or stays in a post-migration residence in weeks from years 1978 - 1982 (Bailey 316).

In general, Bailey explains that immigration occurs "when ...expected benefits (appropriately discounted) exceed probable costs" referring to the human capital model and holding migration as a decision to increase one's future productivity (Bailey 317). According to the theory that migration history affects migration behavior, those who have migrated in the past will "factor current
disbenefits[ sic]...into the migration decision more effectively than those without" (Bailey 317). According to the selectivity theory, individuals that are "positively selective" have certain characteristics and will be more successful and therefore have less need to migrate multiple times (Bailey 317). Expanding upon Bailey's assertion, it is important to note that the “selectivity” of an individual and “critical skill mix” necessary to be successful depend on the labor needs of the location to which the individual migrates (Bailey 317). For example, if a young adult were to migrate to a city with a need for computer analysts, the individual with a degree in computer science will be “positively selective” and possess the “critical skill mix” necessary to be successful. If this same individual with the computer science degree were to move to a labor market in great need of agricultural labor, he or she would not be positively selective nor have the “critical skill mix” for success in this market.

In his longitudinal study of migrating young adults, Bailey calls the rate of immigration the “hazard rate” referring to how long an immigrant’s stay is in a new location (Bailey 317). Bailey uses the term sojourn for the immigrant’s stay. A sojourn is the period of time between migrations. The lower the hazard rate, the longer the stay is expected to be. The hazard rate itself is affected by the person’s characteristics (gender, race, marital status, college education, unemployment at the beginning of the sojourn, unemployment at the end of the sojourn) as well as the unemployment rate and urban location, the independent variables in his model.

As the main purpose of Bailey’s paper was to study the activity of regional labor markets, this thesis will utilize the results and theories of Bailey’s work to explain the movement across the Mexican-American border. The study places the individuals into two groups: those with and those without previous immigration
experience. The dependent variable for his models was the length of the sojourns of
the individuals. The rate of migration is the rate at which individuals end their
sojourns and migrate to a new location. A higher migration rate means a shorter
sojourn. Regressing the duration of the sojourns on the individuals’ characteristics,
Bailey tests the significance and the expected effects of college education,
unemployment (as experienced during different parts of the immigrant’s stay),
gender, race, marital status, and whether the individual migrates to an urban area.
He then disaggregates the data to show how the characteristics affected the
duration of second, third, and further sojourns (Bailey 321-323).

Ultimately, Bailey’s results support the hypothesis that migration is a
selective process and showed that individuals’ gender, race, education, urban
location, and employment status do affect their migration rates. His findings provide
insight about the relationship between migration, education, and unemployment.
Individuals with a college education tended to stay longer after their initial and
second sojourns and have to make fewer migrations than those without. Conversely,
those without a college education tended to stay in new locations for a shorter
period of time and exhibited a faster rate of migration (Bailey 323). He concludes
that education can be a proxy for the “mix of skills which enables some migrants to
be more successful than others,” and college educated individuals can “react quickly
and efficiently to changing conditions during their first sojourn” (Bailey 324). Bailey
admits that his findings reveal that the “relationship between unemployment
experience and migration is complex...because the timing of unemployment within
the sojourn is crucial,” but that the national unemployment rate actually slowed the
rate of immigration for the unemployed (Bailey 324). These results establish
rationale for the inclusion of unemployment and education in this thesis to model the macroeconomic factors behind Mexican immigration to the United States.

Attempting to improve upon the general self-selection theory of migration, Caponi found that those most likely to migrate from Mexico were those with the highest and lowest levels of education. His paper proposed to explain the relationship between education and migration and also evaluate the policies of the Mexican and U.S. governments. Caponi uses Borjas’ theory and proposes that human capital, composed of education and the traits passed on by one’s parents, influences migration (Caponi 208). He “consider[ed] human capital to be a country-specific investment” meaning that the human capital gained in one country was not necessarily transferable to another (208). For example, “language and social barriers in the work environment” can impede the migrants’ ability to earn wages and use their human capital (Caponi 209). This absolutely applies to immigration between Mexico and the United States as both the language and culture are vastly different and the adjustment to a new culture can affect one’s productivity. Therefore, the human capital loss that occurs through migration can result from several things: an inability to use a college education for labor in a new country, the inability to communicate in the native language of that country, or the inability to use the new country’s laws to demand a minimum wage. He found that two groups exhibited higher tendencies to migrate: those with practically no education and those with an education level between elementary and high school. Caponi points to two forces in conjunction with the education levels that cause the higher migration rates in these groups: selfishness and altruism (Caponi 208). Selfishness causes individuals to avoid migrating and to avoid the associated loss of human capital. For
example, if one earns a college degree in Mexico and cannot use it to work in the United States, one would lose the human capital of that degree and therefore the personal benefit of wages earned with that degree. Altruism causes individuals to migrate to absorb the human capital loss so that their children and future generations can benefit from the opportunities in the host country. The theory is that as the level of education increases, migration tends to decrease due to the “loss of human capital faced by emigrants and imperfect transferability [from the Mexican to the U.S. economy], that increases with education” (Caponi 208). There is a point at which immigration tends to increase again with education due to “altruism toward [their children] and the transmission of human capital” (Caponi 208). Caponi thus argued that the negative relationship between education and migratory tendencies existed due to an inability to utilize the gain in human capital as an immigrant (at certain levels of education). This is true as not all certifications such as advanced degrees will necessarily be recognized in other countries with other standards. For example, one with a medical degree may have to undergo recertification in another country. The positive relationship between education and migratory tendencies is rooted in the willingness to sacrifice for an improved future for one’s children. Therefore, Caponi’s model assumes that immigration causes a loss of human capital, but people can still choose to migrate for the sake of future generations. This is especially true in the Mexican culture in which the well-being of the family supersedes that of the individual.
Using data from the US and Mexican censuses of 2000, the paper measures the effect of education on logged wages\(^1\) (Caponi 210). Caponi regresses hourly wages on U.S. wages, years of education for Mexican citizens in Mexico, years of education for Mexican immigrants to the U.S., years of education for non-Mexicans working in Mexico. The results show a loss of human capital due to Mexican immigration to the U.S. as “every extra year of schooling is worth about 4.12% less for those working in the U.S. than for those working in Mexico” (Caponi 214). Because the dependent variable is log wages, Caponi concludes from his regression results that “the loss of human capital...is more than proportional and not linear in education,” which further supports the U shape representation of migration (reproduced in Figure 1) that he features with the group with the lowest level of education and the group in between elementary and high school displaying the highest migration rates.

As Bailey associated education with the skills and abilities that form a person’s productivity, Caponi makes the same association and applies it to Mexican immigrants to the United States. Caponi constructs a theoretical model\(^2\) to explain “the reasons and consequences of migration for origin and destination countries” (Caponi 209). Figure 1 illustrates the levels of human capital and their corresponding rates of immigration according to Caponi’s model. Those with the lowest amount of human capital, i.e. the lowest level of education (levels 1-3 in

\(^1\) Wages are logged generally because the relationship between the independent variables and the wages, the dependent variable, may not necessarily be linear. i.e. One extra year

Figure 1), have a much higher emigration rate relative to other levels of education (Caponi 224). The peak level is the highest level of education that an immigrant can attain for his or her children (Caponi 224). This is shown to be around level 6 in Figure 1. After level 6, parents can no longer transfer human capital to their children yielding the downward slope after that point (Caponi 223).

By studying the effects of the Oportunidades program, which pays families to send their children to school, Caponi analyzes how education subsidies affect migration according to levels of education. The goal of this program is to “increase[e] the school attendance of children from poor families in rural and urban areas” by providing families with “conditional monetary contributions” dependent on proof of attendance (Caponi 225). The monetary contributions increase with each additional year of schooling (Caponi 225). Essentially providing a financial incentive for the education of Mexico’s youth, “as a result of the policy, the flow of Mexican immigrants from Mexico to the US becomes smaller in numbers” (Caponi 226). Because the program targets Mexican citizens with the lowest level of education, and therefore lowest human capital, the Oportunidades program “reduces their incentive to migrate” and thus reduces the migration rate of that group (Caponi 227). Ultimately, immigration and other decisions to improve one’s human capital is the decision to provide more for oneself and/or family, and Oportunidades provides an incentive for families to increase their children’s human capital within Mexico. Caponi analyzes a specific driving factor of immigration establishing a basis to consider education when analyzing an immigrant’s motives for leaving her country of origin.
How Countries Bid for Immigrants

In the literature focusing on the external factors that influence migration, George J. Borjas’ work describes migration as a decision influenced by the comparison of the country of origin and the host country. Borjas’ work focuses on three aspects of immigration: the flow of immigrants (direction, size, and composition), the adaptation of immigrants to the host country, and the impact of immigrants on the host economies. For the purpose of this thesis, the first point will be crucial to introducing the notion of the immigration bid and the comparative process an individual uses when deciding to leave a country. Borjas, likening the exchange of immigrants to the exchange of goods in international trade, acknowledges that “people are also ‘traded’ across the same boundaries in the immigration market” (Borjas 460). Both the host and donor country present bids for
individuals. If the host country’s bid is higher than that of the donor country, then the individual will immigrate. Unlike the previous studies of immigration, Borjas focuses on the factors of the countries (host and donor), rather than the characteristics of the immigrating individuals, that provide the motivations to stay or immigrate. Through a cost-benefit analysis, the individual will choose the country that equates to the most beneficial decision (Borjas 461). Some points of donor and host countries that would-be immigrants compare are wages, education possibilities, and the costs of migration such as the time required to immigrate as well as the wages that could have been earned in the donor country (Borjas 461-465). Thus, Borjas’ research paper, in comparing the conditions between two countries to explain immigration, gives support to the argument that the economies that create these conditions influence migration as well. Effectively, groups of immigrants apply the same cost-benefit analysis and bid comparison based on the states of economies. Although Borjas’ study explains migration as the individual’s comparison of countries, the economies of those countries create the conditions that the potential immigrants compare. This thesis will apply his work to a macroeconomic study of migration. Rather than view the conditions of the host and donor countries as part of a comparative process, the macroeconomic focus of this thesis will view the conditions of their economies as push and pull factors both driving people out of the donor country (Mexico) and attracting people into the host country (the United States) restructuring the push and pull theory as utilized by Jenkins as described in the last section of this chapter.
**Mexican-American Interdependence**

The interdependence of the United States and Mexican economy has played a considerable role in creating the current state of immigration between the two countries. According to the Congressional Research Service, the Mexican economy “relies heavily on the United States as an export market” sending 80% of its exports over the Mexican-American border, and “exports accounted for 32% of Mexico’s GDP in 2010” (Villarreal 2). Due to the highly interconnected relationship between the U.S. and Mexican economy, the saying “when the U.S. gets a cold, Mexico gets pneumonia,” holds true especially when exploring U.S. economic history and its effects on Mexican immigration. From the 20th century to the present day, the policies dealing with either the restriction or the admission of immigrant workers establishes a pattern dependent on the particular labor needs of the United States. For example, the large wave of immigrants allowed entry to fill the labor needs caused by the First World War gave way to the creation of the Border Patrol in 1924, after the war had ended (Johnson and Trujillo 34). After the soldiers had returned home from war, the U.S. economy no longer needed foreign labor. During the Great Depression, the State Department introduced restrictions to reduce Mexican immigration to the United States, but the Second World War again created a need for inexpensive labor giving way to the Bracero Program from 1942-1964 (Johnson and Trujillo 34-35). The Bracero Program was “a sort of early nonimmigrant visa policy” which “admitted temporary entry of nearly 4 million Mexican workers” to work in agriculture and who would presumably return after their contracts had been terminated (Johnson and Trujillo 35). When employers (usually farmers) had gotten accustomed to the cheap labor and workers who
“became accustomed to living and working in the United States” decided to stay in the U.S., Operation Wetback in 1954 attempted to deport all of the undocumented immigrants and “raided farms.” The Immigration Reform and Control Act of 1986 (IRCA) and Illegal Immigration Reform of 1996 granted amnesty to a million undocumented workers and increased border security respectively (Johnson and Trujillo 37). Johnson and Trujillo assess the amount of legal work visas issued to be insufficient to meet the demand of both the would-be workers and employers. The authors establish a strong connection with historical events that would cause the U.S. either to welcome or to restrict immigration from Mexico. The last decade of immigration policy has been largely influenced by the 9/11 tragedy and the notable increase in security efforts following (to be discussed in a subsequent chapter). In addition to the previous works focusing on the driving forces behind immigration, this historical point of view highlights the macroeconomic conditions that led to restrictive or admissive immigration policies in the United States. Where the previously discussed works attempt to explain why individuals would move across the border, Johnson and Trujillo explain why the U.S., the host country, may or may not accept them.

How Crises Push Migrants Across the Border

Immigration is not only affected by the needs of the U.S. economy, but also by the hardships of the Mexican economy as seen in its recent history. Durand, Massey, and Parrado collaborated on the article “The New Era of Mexican Migration to the United States” describing the historical shifts in macroeconomic conditions that influenced the state of migration from Mexico to the United States. Beginning with the Second World War, the article describes “a long period of economic growth
based on...creat[ing] and sustain[ing] internal markets” based on increased production “that could serve as springboards for broader economic growth” (Durand, Massey, and Parado 518). For industrial countries, this model of growth focused on “generat[ing] consumer demand capable of supporting mass production and sustained growth” (Durand, Massey, and Parado 518). The authors also reference the Bracero Program and the large influx of temporary workers from Mexico and the subsequent increase in undocumented immigration. The production oriented market gave way to “a new economic model based on international trade” which produced new Mexican economic policy, notably starting in the “northern border region, where in the 1970s the government launched an ambitious industrialization program based on export processing,” but eventually spread to the rest of Mexico (Durand, Massey, and Parado 519). The presidencies of de la Madrid and Salinas de Gortari promoted “export-led development,” which eventually culminated in the North American Free Trade Agreement with the United States and Canada in 1994 (Durand, Massey, and Parado 519). NAFTA did promote “high rates of growth,” but the “interior cities” particularly suffered as they “were not so well positioned to compete globally and found themselves sinking further into poverty” leaving their citizens with two options: “to emigrate or revolt” (Durand, Massey, and Parado 520). Although contributing to the causes of increased migration, the Reagan administration “asserted that the United States had ‘lost control’ of its borders to an ‘invasion’ of illegal immigrants,” and passed the Immigration Reform and Control Act (IRCA) (Durand, Massey, and Parado 521). The Reagan administration, still conscious of the economic need of “growers in Texas and California,” created the Special Agricultural Worker program in 1986 (SAW) that allowed undocumented
workers a path to legalization (Durand, Massey, and Parado 521). Durand, Massey, and Parado doubt the effectiveness of the IRCA stating that it “seems only to have succeeded in transforming a seasonal flow of temporary workers into a more permanent population of settled legal immigrants” actually exacerbating the original issue (Durand, Massey, and Parado 522). The authors cite that “the 2.3 million Mexicans who ultimately filed for legalization” stopped crossing into the United States as well as back to Mexico (Durand, Massey, and Parado 523-524). The IRCA required all who applied for legalization to remain in the U.S. taking classes to earn their green cards. This requirement, along with the more restrictive border security, did in fact deter Mexicans from crossing the border to return to Mexico (Durand, Massey, and Parado 524). Because of the more precarious and life-threatening security that awaited undocumented migrants, the safer option was to remain in the U.S. (Durand, Massey, and Parado 524). As this thesis will later discuss, the IRCA contributed to creating the current immigration situation through its failure to affect the intended reduction of immigrants. The effects of the IRCA on immigrants as well as the social and political issues surrounding them will be crucial in this thesis’ discussion of the political implications of immigration and recommendations for future policy.

**Push and Pull Theory**

In 1977, J. Craig Jenkins tested the hypothesis that the economic conditions of Mexico from 1948 – 1972 had a more significant effect on Mexican migration to the U.S. than the economic conditions in the United States in that same time period (Jenkins 178). Jenkins bases his hypothesis on the push and pull theory of immigration. The push factors that influence migrants are similar to the
immigration bid of the donor country. They are the economic factors, such as the quality of education (as education improves human capital, wages, and unemployment rate that compel individuals to leave their home country. The pull factors are economic factors that attract migrants to the host country such as a higher standard of living, better education, or more employment opportunities.

Similar to the current rhetoric concerning immigration, Jenkins conducted his study at a time when the growing number of undocumented migrants was viewed as the ““alien invasion’ of the century” (Jenkins 178). In addition to determining whether the push or the pull factors have a larger influence on migration flows, Jenkins’ study attempted to compare the undocumented migration with the legal migration of the Bracero Program in order “to determine whether illegal migration is simply a substitute for bracero migration” (Jenkins 179).

Before presenting his model, Jenkins explains certain assumptions: that Mexico and the U.S. constitute a single labor market, that migrants have perfect knowledge of the economic conditions, that workers have the same skills and tastes, and that the workers want more work and higher wages (Jenkins 179). Jenkins collects data from the Immigration & Naturalization Service, the U.S. Bureau of the Budget, the Department of Agriculture, the United Nations, and the Department of Labor for the years 1948 - 1972. Jenkins collects data on the push factors: Mexican agricultural wages, Mexican agricultural commodity prices, Mexican agricultural productivity, and the pull factors: U.S. agricultural wages, U.S. agricultural commodity prices, U.S. employment of farm workers (regular and seasonal), U.S. agricultural unemployment, U.S. agricultural productivity, U.S. investments in
agriculture. The model also uses the U.S. – Mexico wage relation as a ratio of U.S. to Mexican wages as well as the difference between the two. Please see the regression results in Table 1 and Table 2 reproduced below of Jenkins’ study. His empirical model uses rates of migration “calculated by dividing the number of bracero and illegal entrants by the mid-year Mexican population” as the dependent variable (Jenkins 181). Acknowledging that “Operation Wetback” abnormally reduces the number of 1954 undocumented migrants, Jenkins performed two regressions, shown in Table 1 and Table 2, both including and excluding the 1954 data as the policy imposed that specific variation in the dependent variable.
Table 1

**Push vs. Pull (Standardized Partial r's)**

<table>
<thead>
<tr>
<th>PUSH FACTORS:</th>
<th>Predicted Direction</th>
<th>Illegal Aliens</th>
<th>Braceros</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican Agricultural Wages</td>
<td>-</td>
<td>-.26</td>
<td>-.54</td>
<td>-.43</td>
</tr>
<tr>
<td>Mexican Agricultural Commodity Prices</td>
<td>-</td>
<td>-.46</td>
<td>-.53</td>
<td>-.49</td>
</tr>
<tr>
<td>Mexican Agricultural Productivity</td>
<td>-</td>
<td>-.46</td>
<td>-.50</td>
<td>-.56</td>
</tr>
<tr>
<td>Mexican Investment in Agriculture</td>
<td>-</td>
<td>-.38</td>
<td>-.49</td>
<td>-.43</td>
</tr>
<tr>
<td>PULL FACTORS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Agricultural Wages</td>
<td>+</td>
<td>-.16</td>
<td>-.46</td>
<td>-.31</td>
</tr>
<tr>
<td>U.S. Agricultural Commodity Prices</td>
<td>+</td>
<td>.44</td>
<td>.31</td>
<td>.32</td>
</tr>
<tr>
<td>U.S. Employment of Farm Workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>+</td>
<td>-.01</td>
<td>.09</td>
<td>.01</td>
</tr>
<tr>
<td>Seasonal</td>
<td>+</td>
<td>-.25</td>
<td>-.32</td>
<td>-.21</td>
</tr>
<tr>
<td>U.S. Agricultural Unemployment</td>
<td>-</td>
<td>-.37</td>
<td>-.30</td>
<td>-.29</td>
</tr>
<tr>
<td>U.S. Agricultural Productivity</td>
<td>+</td>
<td>-.37</td>
<td>-.45</td>
<td>-.53</td>
</tr>
<tr>
<td>U.S. Investments in Agriculture</td>
<td>-</td>
<td>.23</td>
<td>-.25</td>
<td>.12</td>
</tr>
<tr>
<td>U.S.-MEXICO WAGE RELATION:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As Differential</td>
<td>+</td>
<td>.28</td>
<td>.26</td>
<td>.44</td>
</tr>
<tr>
<td>As Ratio</td>
<td>+</td>
<td>.33</td>
<td>.19</td>
<td>.31</td>
</tr>
</tbody>
</table>

**Note:** aControls introduced for autocorrelation effects and apprehension effort.

**Source:** Jenkins
Table 2

1954 OMITTED (STANDARDIZED PARTIAL r's)\(^a\)

<table>
<thead>
<tr>
<th>PUSH FACTORS:</th>
<th>Predicted Direction</th>
<th>Illegal Aliens</th>
<th>Braceros</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican Agricultural Wages</td>
<td>-</td>
<td>-.24</td>
<td>-.30</td>
<td>-.39</td>
</tr>
<tr>
<td>Mexican Agricultural Commodity Prices</td>
<td>-</td>
<td>-.12</td>
<td>-.29</td>
<td>-.24</td>
</tr>
<tr>
<td>Mexican Agricultural Productivity</td>
<td>-</td>
<td>-.14</td>
<td>-.24</td>
<td>-.41</td>
</tr>
<tr>
<td>Mexican Investment in Agriculture</td>
<td>-</td>
<td>-.12</td>
<td>-.25</td>
<td>-.31</td>
</tr>
<tr>
<td>PULL FACTORS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Agricultural Wages</td>
<td>+</td>
<td>-.22</td>
<td>-.29</td>
<td>-.43</td>
</tr>
<tr>
<td>U.S. Agricultural Commodity Prices</td>
<td>+</td>
<td>.03</td>
<td>.16</td>
<td>.11</td>
</tr>
<tr>
<td>U.S. Employment of Farm Workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>+</td>
<td>-.03</td>
<td>.09</td>
<td>-.13</td>
</tr>
<tr>
<td>Seasonal</td>
<td>+</td>
<td>.01</td>
<td>.03</td>
<td>-.02</td>
</tr>
<tr>
<td>U.S. Agricultural Unemployment</td>
<td>-</td>
<td>-.05</td>
<td>-.17</td>
<td>-.12</td>
</tr>
<tr>
<td>U.S. Agricultural Productivity</td>
<td>+</td>
<td>.06</td>
<td>-.28</td>
<td>.58</td>
</tr>
<tr>
<td>U.S. Investments in Agriculture</td>
<td>-</td>
<td>.04</td>
<td>-.19</td>
<td>.14</td>
</tr>
<tr>
<td>U.S.-MEXICO WAGE RELATION:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Expressed as wage differential</td>
<td>+</td>
<td>-.08</td>
<td>.26</td>
<td>.07</td>
</tr>
<tr>
<td>2. Expressed as wage ratio</td>
<td>+</td>
<td>-.06</td>
<td>.20</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note: \(^a\)Controls introduced for autocorrelation effects and apprehension effort.

Source: Jenkins

Jenkins concluded that the push factors were much more influential than the pull factors (Jenkins 184). For example, the coefficient of Mexican agricultural prices
was -.30 for Braceros (in the model excluding 1954), whereas the coefficient for U.S. agricultural prices was .16, demonstrating that Mexico’s push factors have a greater effect on the migration rate. Another important insight of Jenkins’ work is that the push and pull factors do not affect undocumented immigration in the same way as it affected Bracero immigration thus disproving the hypothesis that the illegal immigration is a continuation of the Bracero immigration (Jenkins 184). For example, he cites the fact that Braceros were mainly wage workers rather than small farm owners whereas undocumented migrants are from both groups. This difference in economic background explains the stronger effect that agricultural commodity prices have on the undocumented migration rate, as the undocumented include small farm owners susceptible to commodity price changes (Jenkins 184). He interprets his results as indicative of Mexico as “a society in transitional modernization” whose “rapid population growth” lacks proportionate “rural or urban economic opportunities,” which he attributes to the redistribution of land from small farm owners to larger entities by the Mexican government (Jenkins 186-187). This thesis will similarly test the hypothesis that macroeconomic factors affect migration, but instead of focusing on agricultural data, the models will use data on the health, education, employment, and living standards of both the United States and Mexico. This thesis will also not look at data on undocumented immigration and solely rely on legal migration statistics.

Applying the human capital theory, as well as the findings of Bailey, Caponi, and Jenkins, this thesis will focus on the macroeconomic push and pull factors imposed on immigration by Mexico and the United States. Using these theories, this thesis will explain both the flow and magnitude of immigration as created and
directed by the economies of the United States and Mexico. The overall goal of this explanation is to recommend comprehensive immigration policy that properly addresses the push and pull factors behind immigration’s magnitude and direction in order to reduce the influx of migrants from Mexico into the United States. This will serve to emphasize the use of policy to develop the economy of Mexico rather than the use of deterrent efforts, an unsustainable and ineffective solution. Before this thesis can explain its theory, it must first discuss the trade agreement NAFTA and its role in creating and directing the flow of migrants across the Mexican-American border.
Chapter 3
NAFTA: A Deal Among Giants

NAFTA’s Good Intentions

For Bush and Clinton, NAFTA was meant to be “a political catalyst for accelerating economic growth on both sides of the border” (Manning and Butera 183). For all three member nations, Canada, the United States, and Mexico, the agreement was meant to reduce barriers to trade and stimulate mutual growth. Canada hoped to remove trade barriers such as tariffs on “automobiles, agriculture, electronics, textiles, and apparel” traded between the three countries to promote economic cooperation (Alexander 49-50). Mexico expected that the inflow of foreign direct investment would help it grow more quickly and that its wage rate would approach the U.S.’s wage rate (Manning and Butera 184). The United States hoped to expand its own export market. Because Mexico serves as the donor country of migrants in this thesis, NAFTA’s role and impact on Mexico will be the main focus. This chapter will identify how NAFTA has increased immigration flows from Mexico to the U.S. by creating the economic need to migrate.

NAFTA’s Supporters

Before discussing NAFTA’s lack of attention to labor migration, it is necessary to first acknowledge where the agreement was successful. For example, Mexico’s exports to the United States increased by 59.6% from 1993 to 2012 actually creating a trade deficit of $61.4 billion in the U.S. for Mexican goods in 2012 (Villareal and Fergusson 9). The free trade agreement has also made Mexico more productive through “technological innovation,” positively affected the Mexican job market, decreased volatility of GDP growth rate, and increased “synchronicity” between the member nations’ economies (Villareal and Fergusson 15). Specifically, the
automotive, technological manufacturing industry, and textile industries have benefited from the inception of NAFTA. The benefitting sectors have a strong reliance on exporting their goods to the United States. Mexico’s strong connection with the United States has promoted five times more foreign direct investment from the U.S. from 1993 to 2011, which in turn has promoted economic growth and expansion (Villareal and Fergusson 17). More recently, The Economist’s 2012 special report professes a hopeful future for Mexico due to its trade and proximity to the United States and the predicted rise in prices for Chinese manufacturing (“A Special Report on Mexico: From Darkness, Dawn” 3). Mexico is also doing well as a manufacturer for other foreign nations. Automobile companies such as Honda and Mazda were constructing plants at the time the article was written and Nissan was even reported to have 80% of their car parts made in Mexico (“A Special Report on Mexico: From Darkness, Dawn” 4). The free trade agreement created a Mexico that was open for business not only to the U.S. and Canada, but also with much of the world. The special report predicts that “Mexico will probably be among the world’s ten biggest economies” within 10 years (“A Special Report on Mexico: From Darkness, Dawn” 3). On the surface, Mexico seems to have taken a golden opportunity. When one looks more closely, the trade agreement may have been more gilded than golden for the growing number of migrant laborers seeking economic opportunity in Mexico’s strongest trading partner.

**NAFTA’s Deficiencies**

One of the main criticisms of NAFTA that particularly applies to migration is the lack of its attention that it paid to the well-being of its workers. Because the United States and Canada were entering into a trade agreement with a developing
country, the agreement should have considered the dependency that was to arise and its effect on the working population of Mexico. Jeff Faux condemns the agreement as an effort to “protect the interests of large corporate investors while undercutting workers’ rights, environmental protections, and democratic accountability” (Scott, Salas, and Campbell 1). As Faux rightly assesses, one of the trade agreement’s main deficiencies was its excessive focus on larger entities such as corporation rather than the workers that they employed. There was, however, a side-agreement to NAFTA called the North American Agreement on Labor Cooperation (NAALC) in which Canada, the United States, and Mexico agreed to “enforce their own labor laws and standards while promoting 11 worker rights principles over the long run” in 1993 (Bolle). The side agreement allowed for sanctions to punish any violation of the principles “pertaining to minimum wages, child labor, and occupational safety and health,” but had no provisions to ensure the other 11 labor principles (such as the right to unionize and employment discrimination) were followed (Bolle 5). The root of NAFTA’s focus on larger economic actors stems from the notion that economic liberalization under NAFTA would benefit corporations who would in turn pass the benefits on to their employees. This criticism points to a reliance on classical economic theory, which holds that, increased trade between Mexico, the U.S., and Canada would in fact reduce the number of migrant laborers. The economic activity created by increased trade should have created a higher demand for labor to produce traded goods. This situation should have benefited Mexican workers as the higher demand for labor should have created more jobs with higher wages. As espoused by Ricardo, the classical theory of international free trade states that NAFTA should have improved
Mexico’s specialization, employment, and trade balance through free trade (Baiman 420). The “increased trade flows” were meant to “become a substitute for migration” as the increased interaction among the trade partners was expected to cause each member to specialize “creatin[g] jobs and rais[in]g wages as a result of technology transfer and competition” (Flores-Macías 436). The expectation was that this economic growth stimulated by trade would in fact raise the standard of living through higher wages. Even assessing this expectation from the human capital model, the logic is sound. Specialization and technological innovation would allow workers to be more productive leading to an increase in human capital and resulting in higher wages. NAFTA did cause a rise in Mexican exports to the U.S., a quickly developing manufacturing sector, and an unprecedented rise in foreign direct investment since the members signed the treaty.

All of these benefits, however, did not necessarily transfer to the workers. Neither the amount nor quality of jobs that NAFTA created seemed to fulfill its promises. The growth of manufacturing was accompanied by the steep increase in the number of factories along the Mexican-American Border called maquiladoras. NAFTA had a hand in the rise of the factories as many of them produced parts and products for American and other foreign countries. Due to the excess supply of workers, the positions in the maquiladoras were not secure. As the jobs tended not to require skilled labor, the high number of workers seeking jobs made it easy for companies to fire workers and quickly fill their positions for any reason. This caused unemployment and led workers either to seek employment in the informal sector or to migrate (Flores-Macías 438). According to Borjas, the industrialization along the

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3 Mexican factories owned by foreign corporations that assemble products for export and sale outside of Mexico.
Mexican border caused unemployment thus weakening of Mexico’s bid for the labor of the migrants. As Mexico’s bid weakened, more Mexican citizens began crossing the border, which at first was facilitated by the close proximity.

In addition to weakening Mexico’s immigration bid, NAFTA also weakened the Mexican agricultural sector, one of the largest suppliers of Mexico’s migrants. NAFTA led to “the privatization of Mexico’s collective farms...and the elimination of agricultural subsidies under NAFTA” which caused unemployment (Fernández-Kelly and Massey 99). After NAFTA, the Mexican government began to favor larger “agri-producers and increase the productivity of Mexican agriculture,” which provides further evidence for the excessive support of larger businesses even at the expense of workers and smaller businesses. Similar to the increase of maquiladoras along the border, the unemployment caused by the changing agricultural sector also weakened Mexico’s immigration bid and caused laborers to utilize their human capital across the border. Supporting Caponi’s use of altruistic motives for migration, rural populations began to grow more dependent on remittances from relatives working in the United States (who in turn stay in the U.S. longer to support their families) (Manning and Butera 187).

It Is Not the EU

Although one of the purposes of NAFTA was to become a formidable trading block able to compete with the EU, the North American nations might benefit from European style policies concerning workers. The main focus of NAFTA was to stimulate the activity of the larger economic actors, but the apparent and steady increase of Mexican migration to the U.S. warrants serious reconsideration of efforts to benefit Mexican workers and ultimately relieve them of the economic burdens
that motivate their migration. The EU “made labor central to the broader process of market integration...harmoniz[ing] social policies, equaliz[ing] infrastructures, and guarantee[ing] worker rights and mobility” (Fernández-Kelly and Massey 99). Because the focus of NAFTA was to support larger industry and stimulate commerce between the three countries, labor was not a main concern. Even NAALC was a poor attempt to protect workers because all three countries were expected to comply with all 11 principles of the agreement as reproduced in Table 3. Any failure to comply outside of the minimum wage, child labor, and occupational health and safety would go unpunished.

Not only paying attention to its workers, but also to the “weaker links of the continental chain”, the EU “channeled investments and resources [into] Spain, Portugal, and to some extent Greece” through the Maastricht Treaty in 1993 (Fernández-Kelly and Massey 105). Had the United States and Canada contributed to the development of Mexico prior to the signing of NAFTA, Mexico may have been able to better take advantage of the opportunity to specialize and respond to the heavy influx of foreign direct investment. The key difference, however, is that the European Union is a political, as well as an economic union (Fernández-Kelly and Massey 105). Unlike NAFTA, the EU member states have an invested interest in the well being of each other that extends beyond economic ties due to a shared ideology and government. NAFTA could benefit from a stronger arbitration board that is impartial and more able to levy sanctions on any member for any misconduct such as the violation of labor rights.
Table 3

NAALC’s Labor Principles

<table>
<thead>
<tr>
<th>GROUP AND PRINCIPLES</th>
<th>EXTENT OF ENFORCEABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GROUP I</strong></td>
<td></td>
</tr>
<tr>
<td>1. Freedom of association and protection of the right to organize;</td>
<td>Enforceable by discussion of National Administrative Offices, Secretariat, and Ministerial Council</td>
</tr>
<tr>
<td>2. The right to bargain collectively; and</td>
<td></td>
</tr>
<tr>
<td>3. The right to strike.</td>
<td></td>
</tr>
<tr>
<td><strong>GROUP II</strong></td>
<td></td>
</tr>
<tr>
<td>1. Prohibition of forced labor;</td>
<td>Enforceable by discussion as indicated for Group I plus evaluation by an Evaluation Committee of Experts.</td>
</tr>
<tr>
<td>2. Minimum employment standards pertaining to <em>overtime pay</em>;</td>
<td></td>
</tr>
<tr>
<td>3. Elimination of employment discrimination;</td>
<td></td>
</tr>
<tr>
<td>4. Equal pay for women and men;</td>
<td></td>
</tr>
<tr>
<td>5. Compensation in cases of occupational injuries and illnesses; and</td>
<td></td>
</tr>
<tr>
<td><strong>GROUP III</strong></td>
<td></td>
</tr>
<tr>
<td>1. Labor protections for children and young persons;</td>
<td>Enforceable by discussion as for Group I, evaluation as for Group II, and sanctions determined by an Arbitral Panel.</td>
</tr>
<tr>
<td>2. Minimum employment standards pertaining to <em>minimum wages</em>; and</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bolle
How the Minimum Wage Falls Short

According to WageIndicator.org, the minimum wage in Mexico in 2014 is 67.29 Mexican pesos per day (approximately 5.15 USD). In 2012, La Jornada released an article that stated that “six times the minimum wage is required in order to aquire the basic basket of necessary goods, which are the average goods that a family of five consumes” (Muñoz, Saldierna, Miranda, and Alfonso). Although NAALC does allow the imposition of sanctions for any violations of the minimum wage laws, it does not ensure that the minimum wage actually serve to provide for the basic necessities of the average worker. This negligence towards the minimum wage’s importance in effect creates a difficult scenario for the minimum wage earner and can provide the motivation to seek employment in the United States where the federal minimum wage is $7.25 per hour, which for an eight hour workday equates to $58, over eleven times that of the Mexican minimum wage. Carolyn Tuttle conducted research in Nogales, a city on the Mexican-American border, one of the regions most affected by NAFTA. In order to measure the purchasing power of the minimum wage in Nogales, she compared a basket of goods consisting of household necessities “such as milk, poultry, rice, and beans” to the weekly earnings of the average maquiladora worker (Tuttle 47). The weekly wage “averaged 480 to 500 pesos,” and the basket of goods cost 431.59 pesos per week leaving “only 48.41 to 68.41 pesos for...purified water, nonpotable water, a tank of gas, telephone, electricity, and school supplies for children” (Tuttle 48). Nogales presents a clear example of the minimum wages’ inability to provide for the basic needs of Mexican workers. Such a deficiency creates a need to earn higher wages for the well-being of oneself and one’s family, and that need can provide motivation for migration.
All in this Together

There exists particularly between Mexico and the United States, a strong interdependence that was heightened by NAFTA. As seen in the economic crises in the history of Mexico, migration tends to increase as the state of the Mexican economy worsens, usually through unemployment. After NAFTA, however, changes in the U.S. economy would also affect the Mexican economy for better or for worse. As Mexico's largest trading partner to whom Mexico sent $277.7 billion in exports in 2012, the United States' own crises do affect trade with Mexico (Villarreal and Fergusson 11). If the United States were to decide to employ other cheap labor or purchase cheaply constructed parts from China or another country, that would severely decrease the amount of imports demanded from Mexico. Similarly, a recession such as in 2001 and 2009 (see Figure 2) decreases the amount of Mexican imports demanded and purchased by the U.S. (Villarreal and Fergusson 11). This slows the economic growth of Mexico, which may cause unemployment as companies begin to reduce their number of employees to cut costs. Mexico can indeed share in the economic success of the United States due to its market liberalization under NAFTA establishing a stronger connection between the two economies. This relationship, however, lacks sustainable growth especially for workers who are at the mercy of large corporations dependent on American demands. If Mexico were given the time and the means to develop independently, it should use the time and resources to establish certain economic and legal protections for their workers. Mexico would then be contributing to a reduced rate of migration to the United States by improving conditions for its workers. If before NAFTA, Mexico had already set a precedent for the protection of its own workers,
NAALC itself would have been more effective, and its principles would have continued to protect Mexican workers. Although NAFTA and NAALC have paid poor attention to Mexican labor conditions and rights, they present an opportunity to Mexico and the other members of NAFTA. Mexico can reduce the incentive of its citizens to migrate by protecting its workers rights and increasing the minimum wage. Not only would Mexican citizens enjoy a more just work environment, but they would also receive a greater return for utilizing their human capital within Mexico as opposed to utilizing it in the United States effectively reducing the “brain drain” effect on the Mexican labor force.
Because of their deficiencies, however, NAFTA and NAALC have contributed to the push and pull factors that drive immigration, which this thesis will discuss in the following chapter.
Chapter 4
Push and Pull Theory

The theory of this thesis will view migration as a function of the health, education, employment, and the standard of living taking into account the previous literature about the economics of immigration as well as the migratory increase caused by NAFTA. Borjas’ immigration bid theory is crucial to the hypothesis of this thesis because a comparison of the host and donor countries is an essential prior consideration to migration. The comparison of the immigration bids will determine whether the economic force is a push or a pull factor. In order to establish whether a factor push or pull, one must consider whether it is the donor or host country’s bid and whether the bid is comparatively weaker or stronger. For example, if the education in the donor country is of inferior quality to that of the host country, this is a push factor (as it “pushes” or compels individuals to seek the superior bid). As the main focus is Mexican migration to the United States, the push factors will be the economic conditions that compel Mexican citizens to immigrate to the United States due to an inferior immigration bid, and the pull factors will be the economic conditions that draw people to the United States due to a superior immigration bid. This chapter will also link the other previous literature in the survey of literature to the hypothesis of this thesis justifying the empirical model explained in the econometrics chapter.

Human Capital

Workers utilize their human capital in order to earn wages, and migration is one of the ways in which they can increase their human capital and wage-earning ability (Ehrenberg and Smith 290). The human capital theory supports the use of two of the independent variables in the model: unemployment and education
expenditure. Unemployment is the state in which individuals cannot utilize their human capital to earn wages. If the individual is unable to utilize his or her human capital in the donor country, he or she will be compelled to seek the opportunity to earn wages in another country: thus constituting a push factor. Although Bailey views education as a characteristic that influences the length of a migrant's sojourn, this thesis treats education as a product of a country's economy that promotes its citizens' ability to earn wages. Bailey's use of education determined whether an individual would be successful after migration (Bailey 324). This thesis, however, uses education expenditure as a measure of a country's investment in its citizens' human capital. If a country's government invests more in education, then individuals within that country should have the potential to earn more wages. Although migrants might not necessarily be able to take advantage of the human capital gain that education would provide, Caponi's paper explains that migrants may make the decision to migrate so that their children can benefit from the human capital gains from education (Caponi 208). If individuals migrate to a country with a higher quality of education, their children can benefit from that higher quality education, increase their human capital, and earn higher wages. The quality of education constitutes both push and pull factors. The comparative inferiority of the quality of Mexican education to U.S. education would be a push factor in any observed years. Jenkins' work with push and pull theory purports that immigration tends to increase "when economic conditions decline" within Mexico in relation to the U.S. (Jenkins 179). Because it affects human capital, education is an economic factor, and therefore a push and pull analysis will need to take it into account. Although not directly mentioned by previous literature, the overall health within a
certain country affect whether individuals within a country can utilize their human capital and enjoy the benefits of it. If citizens of a country are generally healthy, they are more able to work and can enjoy the benefits of their wages. When compared to the U.S., a poorer overall quality of health in Mexico would constitute a push factor. The pull factor counterpart would be higher quality of health in the U.S. Table 4 illustrates the push and pull factors by showing the country level data of both Mexico and the United States in 2012. For example, GDP per capita constitutes a push and pull factor. The Mexican statistic is a push factor as $8,545.38 is less than $45,335.90, the U.S.’s GDP per capita and represents a lower standard of living compared to the U.S.

Table 4 2012 Mexico – U.S. Push and Pull Factors

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP Per Capita (USD 2005 Constant)</th>
<th>Education Expenditure (% of GNI)</th>
<th>Unemployment Rate (%)</th>
<th>Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>45335.90</td>
<td>4.79</td>
<td>8.10</td>
<td>78.74</td>
</tr>
<tr>
<td>Mexico</td>
<td>8545.38</td>
<td>5.13</td>
<td>4.90</td>
<td>77.14</td>
</tr>
</tbody>
</table>

Source: The World Bank

Graph 1 shows the age-earnings profile of individuals with an elementary level of education. Mexican education is compulsory through elementary school, and children cannot work until the age of 14 (as illustrated by the beginning of the earnings curve at that age). Below zero are the “out of pocket costs” of education including school fees, school books, uniforms, transportation, etc. An individual can migrate for his or her own benefit or a combination of that self-benefit and altruistic motives. The immigration threshold represents the minimum amount of wages an individual will have to earn in the host country in order to immigrate there. If the
individual expects his or her wages will be below the threshold, he or she will not have enough incentive to leave the country of origin and forego any potential earnings there. The graph also accounts for the altruistic rationale behind immigration through the familial benefit threshold. This threshold is lower than the immigration threshold because individuals with families are willing to receive less personal benefit from wages as long as their families will benefit (either through remittances, an increased standard of living, or educational opportunities for example). This graph also incorporates the role of health in immigration as the healthy are able to earn higher wages than those in poor health (represented by the red lines). Healthier individuals are better able to use their human capital to earn wages.

Graph 2 illustrates how age and education level effects human capital and the ability to earn wages. As one continues further in education, the out of pocket costs such as school fees and cost of books increases as illustrated in the area below the origin. It is important to note that each educational level has a higher level of forgone earnings as one’s level of education increases as shown in the shaded areas. It is also noteworthy that the slope of the earnings curve increases as the level of education increases again illustrating the improved ability to increase wages. The increase in earnings with education levels also creates a greater difference between workers in good health and workers in poor health. This further illustrates that education enables individuals to earn higher wages and that the loss of wages due to poor health also increases. Consider the area between the college graduate and high school graduate earnings curves. That area represents the returns to a college education, which far exceeds the out of pocket costs, again shown below zero. It is
also important to note that for a college graduate, the immigration and familial benefit thresholds are much higher due to the individual’s highly increased earning ability in the donor country. This illustrates the fact that immigration is greatly decreased among college graduates who can earn higher wages in Mexico and have less of a need to migrate, and even have a higher opportunity cost to migrating because of their ability to earn more in Mexico over a lifetime.

Changes in Economic Policy and Crises

The empirical model of this thesis used GDP per capita to represent the standard of living. As Durand, Massey, and Parado demonstrated, new economic policies and crises can either increase or decrease GDP per capita and can thus influence the standard of living of a country’s citizens. Durand, Massey, and Parado stated that the crises of the 1970s and 1980s lowered the standard of living for the affected individuals due to lower earnings and higher unemployment (Durand, Massey, and Parado 520). Such policies constitute push factors. By combining the human capital model with Borjas’ immigration bid theory to consider macroeconomic causes of migration, this thesis will collect data on the proposed macroeconomic factors to create an empirical model to test their effect on migration from Mexico to the United States.
Graph 1
Age Earning Profiles for Immigrants:
Elementary School Graduates

Net Earnings

Out of pocket costs

Immigration Threshold
Familial Benefit Threshold
Poor Health
Chapter 5
Testing the Push and Pull Theory

Considering the push and pull forces on immigration that both the implementation of NAFTA and the economies of Mexico and the United States have created, this thesis will now utilize regression to empirically test the push and pull theory. The ultimate goal is to assess the significance and the expected effect that the push and pull factors have on immigration. After the empirical assessment of the push and pull theory, this thesis will then be able to provide policy recommendations based on the results with the aim of improving the Mexican economy to effectively and sustainably control the direction and flow of migration.

Choosing Variables and Collecting Data

The data on the number of legal immigrants from Mexico to the United States appeared in the Statistical Yearbook of the Immigration and Naturalization Service (INS). The Department of Homeland security began to maintain the yearbook of immigration statistics after it absorbed the INS in 2003. The Statistical Yearbook of 2012 records the number of immigrants calling the statistic “Persons Obtaining Legal Permanent Resident Status” and arranges the data by the country of birth. It is worth noting the change in language over the years used to name this variable. The data from year 1976-1985 calls this variable “immigrants admitted by country or region of birth,” but they are inherently the same variable. The Department of Homeland Security defines this variable as the number of “foreign nationals who, during a fiscal year, were granted lawful permanent residence” (“Yearbook of Immigration Statistics”). The number of legal immigrants from Mexico to the U.S. as reported by the Statistical Yearbook will serve as the dependent variable for the model.
The independent variables of the Mexican model represent the macroeconomic components of the Mexican economy that affect the decision-making process, the push factors. The human capital theory supports the use of education and health as they represent the individual’s quality of human capital and his or her ability to use it to earn wages respectively. The model similarly uses the unemployment rate to represent the individual’s ability to use his or her human capital in the donor country. The GDP per capita variable represents the standard of living and monetary benefit that an individual receives from working in either country. This standard of living connects to both the human capital theory and Borjas’ immigration bid. This thesis asserts that an individual will choose to rent out his or her human capital in the labor market from which he can earn the most monetary benefit and achieve a higher standard of living. Per Borjas’ theory, the country that can offer a higher standard of living will have a stronger immigration bid attracting more workers from the donor country. The variables accounting for health, quality of education, and standard of living are life expectancy at birth (measured in years), percentage of the gross national income spent on education, and GDP per capita (measured in US dollars constant 2005 value) respectively all downloaded from the World Bank’s Databank. Unemployment data from the International Monetary Fund measures the percentage of the population that is willing and able to work, but cannot find employment. The models use these variables to describe the “push” factors that would drive Mexican citizens to move to the United States. The “pull” factors are the same variables using U.S. data. The pull factor model will model the ability of the U.S. economy to attract immigrants from Mexico.
Life expectancy at birth measures “number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life” (“Life expectancy at birth, total (years)”). Accurate data on education expenditure measured in dollar amounts is scarce and intermittent with several years between observations at times. The World Databank does have a consistent measure of the “operating expenditures in education, including wages and salaries and excluding capital investments in buildings and equipment” as a percentage of the country’s GNI per year (“Adjusted savings: education expenditure (% of GNI”). GDP per capita is the country's “gross domestic product divided by the midyear population” (“GDP per capita (constant 2005 US$)

Unemployment and GDP per capita were lagged (e.g. Mexico’s unemployment rate for 1981 was actually .9%, but the unemployment rate for 1980, 1.2% was used instead). Citizens make their decisions to emigrate from or remain in their native country based on the economic conditions of that country as seen in the previous year. Yearly GDP per capita and unemployment rates are a summary of the entire year’s economic activity and are not available until the entire year’s data is available. People do not all immigrate at the end of the year and thus must make their decisions based on the economic conditions that they have seen thus far. Therefore, the lags account for the nature in which people make the decision to emigrate or remain.

**Descriptive Statistics**

Close examination of the descriptive statistics lays the foundation for the model that this paper tests. Tables 5 and 6 display the descriptive statistics for Mexico and the U.S.. The observations of the number of Mexican immigrants to the
United States have a maximum of 946,167 individuals in 1991 as seen in Table 5. That observation is more than five times the mean, a clear outlier in the data that the paper discusses further in conjunction with the policies of the Reagan administration.

**Table 5: Mexico Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>37</td>
<td>1994</td>
<td>10.82</td>
<td>1976</td>
<td>2012</td>
</tr>
<tr>
<td>Immigrants</td>
<td>37</td>
<td>167427.80</td>
<td>173509.70</td>
<td>44646.00</td>
<td>946167.00</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>36</td>
<td>71.63</td>
<td>3.74</td>
<td>64.47</td>
<td>76.91</td>
</tr>
<tr>
<td>Education Exp.</td>
<td>36</td>
<td>3.85</td>
<td>1.07</td>
<td>2.07</td>
<td>5.26</td>
</tr>
<tr>
<td>Unemployment(t-1)</td>
<td>33</td>
<td>3.78</td>
<td>1.28</td>
<td>.90</td>
<td>6.23</td>
</tr>
<tr>
<td>GDP Per Cap.(t-1)</td>
<td>37</td>
<td>6777.81</td>
<td>770.30</td>
<td>8119.21</td>
<td>8119.21</td>
</tr>
</tbody>
</table>

*Sources: Immigration Yearbook of Statistics, World Data Bank, IMF World Economic Outlook Database*

**Table 6: U.S. Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>37</td>
<td>1994</td>
<td>10.82</td>
<td>1976</td>
<td>2012</td>
</tr>
<tr>
<td>Immigrants</td>
<td>37</td>
<td>167427.80</td>
<td>173509.70</td>
<td>44646.00</td>
<td>946167.00</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>36</td>
<td>75.75</td>
<td>1.58</td>
<td>72.86</td>
<td>78.64</td>
</tr>
<tr>
<td>Education Exp.</td>
<td>36</td>
<td>5.37</td>
<td>.91</td>
<td>4.49</td>
<td>7.04</td>
</tr>
<tr>
<td>Unemployment(t-1)</td>
<td>33</td>
<td>6.46</td>
<td>1.59</td>
<td>3.97</td>
<td>9.71</td>
</tr>
<tr>
<td>GDP Per Cap.(t-1)</td>
<td>37</td>
<td>33579.97</td>
<td>6776.24</td>
<td>22395.86</td>
<td>43635.59</td>
</tr>
</tbody>
</table>

*Sources: Immigration Yearbook of Statistics; World Data Bank; IMF World Economic Outlook Database*
The Models

The first model of this thesis uses the U.S.’s GDP per capita, unemployment rate, education expenditure, and life expectancy to measure the effect on the pull factors of the U.S. economy on the annual number of Mexican migrants.

*The U.S. Pull Factor Model*

\[
\text{Number of Mexican Immigrants to the U.S.} = \beta_0 + \beta_1 \text{lagged GDP per capita U.S.} + \beta_2 \text{lagged Unemployment rate U.S.} + \beta_3 \text{Expenditure on Education U.S.} + \beta_4 \text{Life Expectancy U.S.} + \varepsilon
\]

The pull factors of the United States only represents half of the decision making process of the migrant. The individual must also consider whether the domestic conditions create enough of an incentive to seek more favorable economic conditions and benefits in another country. The Mexican Push Factor Model serves this purpose.

*The Mexican Push Factor Model*

\[
\text{Number of Mexican Immigrants to the U.S.} = \beta_0 + \beta_1 \text{lagged GDP per capita Mexico} + \beta_2 \text{lagged Unemployment rate Mexico} + \beta_3 \text{Expenditure on Education Mexico} + \beta_4 \text{Life Expectancy Mexico} + \varepsilon
\]

Results

As seen in Table 7, the pull factors of the U.S. have no significant effect on the number of immigrants entering from Mexico. From the point of view of the migrant, this result does, however, have merit. When an individual decides to migrate, the decision making process is comparative. The individual will not necessarily have
more knowledge about the potential host country than about the donor country, however. That is to say that Mexican citizens will be more familiar with the economic conditions in Mexico because these are the conditions in which they have grown up and lived since birth. U.S. pull factors are less likely to affect them as they have not lived in or are as familiar with them. That is not to say that potential migrants have accurate, numerical measures for the push factors in their home country. The pull factors’ effect may be more indirect and may provide a perception of comparatively better conditions, whereas the push factors directly influence the lives and shape the reality of the potential migrants. This is due to the fact that the push factors are the educational opportunities, overall health, employment opportunities, and the standard of living that Mexican citizens experience first-hand and are therefore tangibly present in their lives.

**Table 7: U.S. Pull Factors**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Estimated Coefficient</th>
<th>(St. Er.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td>-4927050</td>
<td>(9939805)</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>88846.83</td>
<td></td>
</tr>
<tr>
<td>Unemployment (t-1)</td>
<td>-46030.56</td>
<td>(36703.89)</td>
</tr>
<tr>
<td>GDP Capita US (t-1)</td>
<td>-28.51</td>
<td></td>
</tr>
<tr>
<td>Education Expenditure</td>
<td>-72863.88</td>
<td>(52354.18)</td>
</tr>
</tbody>
</table>

**Adj. R² : .06**

**Denotes significance at the 1% level.* Denotes significance at the 5% level.

In Table 8, Mexico’s push factors are almost all significant except for GDP per capita. As shown in Table 8 below, all of the variables’ observed signs are the same.
as their expected signs. Despite the fact that one might assume that a higher quality of health within a country would actually decrease the number of people emigrating out of it, the human capital theory provides an alternate explanation. As life expectancy and overall health increases, an individual’s ability to utilize their human capital increases. Therefore, provided individuals are dissatisfied with the economic conditions of their home country, they will desire to seek more agreeable conditions elsewhere provided they are healthy enough to make the journey and earn wages once there. Also contrary to what one might believe about education as it affects migration, the empirical results support Caponi’s work in that as the quality of education increases within Mexico, Mexican citizens will be less likely to migrate due to the higher opportunity costs. It is important to note, however, that this thesis uses education data in the aggregate and does not separate migrants by level of education. Unemployment’s sign may be unexpected, however, Bailey’s finding that national unemployment actually lowered migration rates (Bailey 324). This is due to the fact that unemployed individuals will be less able to pay for the costs of migration such as travel and provisions than employed individuals.

**Heteroskedasticity and Autocorrelation**

The White Test for heteroskedasticity yielded no heteroskedasticity (with a probability of .3559). And the Durbin Watson test yielded a test statistic of 1.445319, out of the range for autocorrelation for 31 observations.

**Further Research**

The results for the model raise questions about the political and economic conditions of Mexico that created the large influx of immigrants from 1989-1991. Preliminary research shows that the Immigration Reform and Control Act (IRCA)
along with the Legally Authorized Worker (LAW) program and the Special Agricultural Worker (SAW) program were passed during a period of substantially higher inflation and unemployment in Mexico (Durand, Massey, and Parado 523).

As previous literature has pointed to the agricultural sector as a main supplier of immigrants, future models may also focus on the same factors (unemployment rate, education quality, standard of living, and health) for this particular section in order to evaluate how each affects the migration of Mexican agricultural laborers.

**Table 8: Mexico Push Factors**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Estimated Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-3235703**</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>70106.54**</td>
</tr>
<tr>
<td>Unemployment (t-1)</td>
<td>-56857.41**</td>
</tr>
<tr>
<td>GDP Capita US (t-1)</td>
<td>-122.73</td>
</tr>
<tr>
<td>Education Expenditure</td>
<td>-152735.70**</td>
</tr>
</tbody>
</table>

Adj. R² : .36

** Denotes significance at the 1% level. * Denotes significance at the 5% level.

**Conclusion**

These models have tested whether the relative macroeconomic measures of the United States and Mexico significantly affect the number of Mexican immigrants to the United States each year. The pull factors of the United States had no significant effect and no observed attracting effect according to the empirical analysis. The push factors, however, behaved as the previous literature about immigration have predicted, except for the unemployment rate as it was insignificant (though the expected sign).
The data on the number of immigrants in the years 1989 – 1991, as shown below in Graph 3, revealed a phenomenon that merits further research to explain the drastic increase compared to the other years’ observations. This result gives reason for further investigation of the effects of the policies involving immigration, labor, and amnesty within the United States as well as the effects that they had on the macroeconomic state of the Mexican economy thus providing a substantial “push” to immigrate. As Durand, Massey, and Parado state in their article, the unemployment and inflation in the years prior to 1989 created a dissatisfactory economy and a “push” to cross the border to the United States. Future models will include inflation to test its “push” effect on Mexican citizens.

The issue of immigration is by no means simple and accordingly requires a comprehensive solution. However, the solution must pay special attention to the economic impetuses of movement across the border. Francisco Alba admits in his chapter on Mexico’s 1982 crisis that the “IRCA was not an answer to the events triggered by the 1982 economic crisis” and was more a political rather than economic solution promoting tighter border restrictions without economic reform (Alba 1225-1226). Immigrants, as economic agents performing cost-benefit analyses driven by push and pull factors, respond to their surrounding economic conditions. Therefore, any policy hoping to improve the immigration situation between Mexico and the United States must take the economic issues into account.
Graph 3

Immigration from Mexico to the U.S. 1976-2012

Mexican Immigrants from 1976 - 2012

Sources: Statistical Yearbook of the Immigration and Naturalization Service and the Yearbook of Immigration Statistics
Politically, immigration continues to be a controversial issue often a point of contention between the left and the right. On an individual level, immigration is a decision to react to one's environment in order to better one's economic situation and to provide for one's family. This thesis has identified and analyzed the economic push and pull factors that incite movement across the Mexican-American border. As these factors govern the direction and magnitude of immigration across the border, policy hoping to control the flow of immigration cannot ignore them. Without understanding the economics behind migration, U.S. immigration policy may continue to wastefully spend money on deterrence rather than stimulus and growth that can remove the motivation to migrate.

This thesis has explained theories from economic literature pertaining to immigration in order to support its main argument and theory. Beginning with the human capital model, this thesis presented immigration as an economic decision to increase one's opportunity and ability to earn higher wages. This theory prompted the inclusion of the data of education expenditure and unemployment in the empirical model. Education expenditure, representing the quality of education, directly affects the human capital of a country's citizens. The higher the quality of education, the more the human capital of those citizens rises and the more wages they can earn. Unemployment represents the citizens' ability to utilize their human capital to earn wages. Immigration is a comparative decision, which takes into account the economic conditions of a donor and a host country. In terms of the human capital theory, potential immigrants will choose the country with more
opportunities to increase their human capital and more opportunities to earn wages using their skills and knowledge.

Bailey applied the theory of selectivity to analyze the migration of young, American adults from 1978 – 1982 who migrated between different states in the United States. The theory of selectivity states that there are certain characteristics that make individuals more likely to immigrate. Focusing on the frequency of immigration as the dependent variable, Bailey found that education had a significant effect on migration. The more educated individuals tended to migrate less having found the “critical mix of skills” and knowledge to be successful in a new economic setting. Thus, more education decreases the frequency of migration. Bailey found that the national unemployment rate reduced the frequency of migration because without work, individuals cannot pay for the costs of travel and other associated costs of immigration.

Caponi focused on the relationship between education and Mexican migration to the United States. As Mexican citizens become more educated, their human capital increases. As human capital is difficult to transfer across borders, the decision to migrate becomes less attractive due to the foregone wages, an opportunity cost that increases as one reaches higher levels of education. Caponi found that two groups of Mexican citizens tended to migrate more: those with the lowest level of education and those between an elementary and high school education. He then analyzes the effectiveness of the Oportunidades program, which targets the former group. By incentivizing parents to send their children to school and increase their human capital, the government is removing migratory pressure while making a more educated citizenry.
Borjas expands on the individual’s decision by introducing the immigration bid that a country offers to potential migrants. Borjas also describes immigration as a comparative process in which the individual performs a cost benefit analysis taking into account the host and donor country’s economic conditions. The immigration bids and cost benefit analysis performed before migration begin to provide the basis for the use of the push pull theory in this thesis. The push factors are the inferior immigration bids of the country of origin that motivate people to immigrate to another countries. The pull factors are the superior immigration bids of the host countries that attract people to immigrate there.

Jenkins tested the push and pull theory of immigration to explain the causes of Mexican migration to the United States. As the agricultural sector of Mexico tends to provide most immigrants to the United States, he uses data on the wages, commodity prices, and productivity of that sector as the push factors (the Mexican data) and the pull factors (the U.S. data). Jenkin’s actually found the push factors to be more significant than the pull factors, just as this thesis’ empirical model does. He tested models using variables that influenced undocumented immigration whereas this thesis focuses on the macroeconomic factors that influence documented migration. Jenkins’ findings, however, still supports this thesis’ use of push and pull theory and provides supports the fact that the Mexican government’s land policies negatively affected the agricultural sector and contributed much to the movement across the Mexican – American border.

One policy that had a large impact on Mexican migration to the United States was the signing of NAFTA. The U.S., Mexico, and Canada signed the agreement with good intentions: to promote economic cooperation, to increase growth through
foreign direct investment, and to expand a common export market. On the macroeconomic scale, NAFTA did indeed deliver on its promises. The automotive, manufacturing and textile industries flourished under the agreement, but the citizens of Mexico did not particularly benefit from NAFTA. The key deficiency of NAFTA that caused the current Mexican migratory situation was the lack of attention paid to the laborers that would fuel the agreement. This stems from the classical economic thinking that free trade would incite enough economic activity in order to create work for the laborers within the free trade area. In Mexico, NAFTA spawned the creation of *maquiladoras* that would employ Mexican labor. The dissatisfactory work conditions and the agricultural unemployment caused in Mexico have provided Mexican citizens greater incentives to immigrate to the United States.

The regression analysis has shown that the education, employment opportunity, and life expectancy in Mexico have a significant effect on migration flows from Mexico to the United States. The human capital theory and the works of Bailey and Caponi support the result for education. Education is a way to increase one’s human capital and earning potential. This explains the expected negative relationship between education expenditure demonstrated by the regression results. If a country spends more on education and increases the quality of education, that country’s citizens will experience an increase in their human capital generally making them less likely to immigrate because of their inability to utilize that human capital in a new country and the foregone wages in their country of origin. Both the human capital theory and Bailey’s work suggest that among migrants, the more educated individuals more easily adapt to their new
environment and will migrate less frequently. Their skills and knowledge gained from their education will allow them to be more productive and earn higher wages. The economic success of the more educated makes that group less likely to migrate a second and third time. Education’s effect on migration in the aggregate does not provide specific detail on how the level of education will affect the individual’s decision to migrate for which this thesis defers to Caponi.

As the GDP per capita increases in Mexico, Mexico’s standard of living and immigration bid becomes stronger creating less of an incentive to migrate to the United States according to Borjas’ theory. Unfortunately, the empirical results do not find the standard of living as measured by GDP per capita to be significant. This may be due to the fact that GDP per capita divides a country’s GDP by the entire population. This measure of standard of living assumes equal income distribution, which is not the case in Mexico. GDP per capita includes the income of Carlos Slim, the richest man in the world, as well as that of a maquiladora worker. Also, sectors such as the agricultural sector were more affected by the push factors than others due to the policies that appropriated the land of agricultural workers. Therefore, another statistic to measure the standard of living for those populations, such as the agricultural sector, may better serve to explain migratory direction and magnitude.

Unemployment’s significance and sign may be unexpected, but they actually coincide with the results of Bailey who found unemployment to cause an inability to pay for the costs of immigration. Although the Mexican government may not directly affect the immigration flow through unemployment (as no government would want to intentionally cause unemployment to reduce emigration), job creation should occur in conjunction with efforts to increase education and target the populations
most prone to immigrate such as those in the agricultural sector and those with less than an elementary level of education.

The human capital theory supports both the inclusion and the empirical results of life expectancy to represent health. The better a person's health, the better he or she can utilize human capital to work for wages. The chance for higher wages or the opportunity to utilize human capital to earn wages increases as one's health increases. Therefore, immigration becomes more attractive and financially feasible for those in good health and the overall return to migration increases. Effective immigration reform must consider these economic impetuses that affect migration.

**Effective Policy Reform**

This thesis through its review of economic literature and empirical work has explained the forces that drive people to leave their home country for a new host country. Policy attempting to control migration, however, has focused on immigration as a kind of invasion and raising stronger fortifications against it.

The focus on fortification owes much to the tragedy of 9/11. Much of the political language used to describe immigration focuses on the “politics of division, an ‘us’ and a ‘them’” using terms such as “invasion, porous border, illegal, etc.” (Branton, Cassese, Jones, and Westerland 664). After the twin towers fell, there was an overwhelming paranoia and xenophobia that infected American media, which found its way into immigration policy.

For example, from 1990 to 2013, the budget for Border Patrol has grown from $262, 647 to $3, 466, 880 demonstrating an increasing focus on deterrence to reduce immigration. Table 9 presents U.S. immigration policy since 1924, the inception of Border Patrol. There is an obvious focus on the use of deterrence to
reduce migration to the United States. For example, the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 increased the fencing along the Mexican-American border, reduced the social benefits that both documented and undocumented immigrants could take advantage of, and increased the penalties for attempting to cross without documents. This made crossing as an undocumented migrant much more costly and dangerous as the increased security caused migrants to cross in the deserts where new fences were not constructed. This did not, however, decrease the flow of migrants as it failed to address the push factors that caused migration to the United States. It simply redirected undocumented migration to another geographic area. In 2003, the Department of Homeland Security, created to prevent another 9/11, began to manage immigration applying the xenophobic mentality and focus on security. This emphasis on security has further increased Border Patrol’s prevalence and the expenditure on defense-oriented technology such as drones and more secure fencing. Again, this policy did not address the push factors that caused the migratory flow, but it served to deport undocumented migrants.
Table 9  A History of U.S. Immigration Policy

<table>
<thead>
<tr>
<th>Policy</th>
<th>Purpose/Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1924</strong> U.S. Border Patrol is established</td>
<td>to stop a smuggling business that grew out of Prohibition, which outlawed the manufacturing and transport of alcoholic beverages.</td>
</tr>
<tr>
<td><strong>1929</strong> National Origins Act</td>
<td>bars Asian immigrants and reduces the annual immigration limit to 150,000 as the U.S. struggles with the Great Depression. The act stipulates 70 percent of admissions should come from northern and western Europe, while the rest should come from southern and eastern Europe.</td>
</tr>
<tr>
<td><strong>1942</strong> Bracero Program</td>
<td>instituted by the U.S. and Mexico, establishes a guest-worker treaty for Mexican farm workers in the U.S.</td>
</tr>
<tr>
<td><strong>1948</strong> Displaced Persons Act</td>
<td>adopted during World War Two, allowing entry of 400,000 people displaced by the war.</td>
</tr>
<tr>
<td><strong>1954</strong> Operation Wetback</td>
<td>a drive to deport undocumented immigrants primarily from Mexico, is launched.</td>
</tr>
<tr>
<td><strong>1964</strong> Bracero Program ends</td>
<td>after sponsoring more than four million Mexicans to work U.S. fields.</td>
</tr>
<tr>
<td><strong>1965</strong> Immigration and Nationality Act</td>
<td>ends the nationality quotas but caps the number of immigrants welcomed from the eastern and western hemispheres.</td>
</tr>
<tr>
<td><strong>1980</strong> Refugee Act</td>
<td>creates a system to process refugees separately from other immigrants. The immigration ceiling is separately capped at 270,000 people.</td>
</tr>
<tr>
<td><strong>1986</strong> Immigration Reform and Control Act (Reagan Administration)</td>
<td>gives undocumented immigrants a chance to gain legal status. Nearly three million are granted amnesty. The act also intensified efforts to crackdown on U.S. employers hiring undocumented workers and increased the annual limit on immigration to 540,000 people.</td>
</tr>
<tr>
<td><strong>1990</strong> National Immigration Act</td>
<td>creates the “diversity” lottery system to encourage immigration from underrepresented countries, and increases the annual immigration ceiling to 700,000.</td>
</tr>
<tr>
<td><strong>1996</strong> Illegal Immigration Reform and Immigrant Responsibility Act</td>
<td>boosts border enforcement and calls for construction of fences along heavily trafficked areas of the U.S.-Mexico border. Social programs for legal immigrants are reduced and virtually eliminated for undocumented immigrants. Congress</td>
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<tr>
<td>Year</td>
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<td>2001</td>
<td>September 11, 2001 terrorist attacks</td>
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<td>2001</td>
<td>U.S. Supreme Court Case Zadvydas v. Davis</td>
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<td>2003</td>
<td>Department of Homeland Security is created</td>
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<td>2004</td>
<td>“Minuteman Project”</td>
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<td>2007</td>
<td>Secure Borders, Economic Opportunity and Immigration Reform Act</td>
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<td>2012</td>
<td>Executive Order</td>
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<td>2006</td>
<td>The Secure Fence Act</td>
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<td>2013</td>
<td>U.S. Congress debates the Border Security, Economic Opportunity, and Immigration Modernization Act</td>
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Source: *Voice of America*

Caponi assesses the effect of two restrictive policies: increased Border Patrol and fines for employers of illegal immigrants. With regards to the increased Border Patrol effort, he finds that migration “among the high school educated Mexicans”
decreased by 21.77% and that among “the non-educated...[migration] decreased by [only] 9.47%” (Caponi 228).Restrictive policy does largely affect migration for high school educated Mexicans, but Mexicans with the lowest levels of education, one of the groups most prone to immigrate are not as affected. Tighter, more restrictive policy ultimately serves to reduce the human capital of migrants as the deterrence tends to lower the number of more educated migrants (Caponi 228). This occurs because those with a lower level of education tend to have a higher economic need and are therefore more willing to risk capture, arrest, and/or deportation. The fines imposed on employers affect immigrants of all education levels. The fines on the employers, according to Caponi transfer to undocumented migrants as a reduction in benefit from migration affecting migrants with lower levels of education. This manifests in the reduction of the wages of undocumented migrants due to the risk of higher costs through the fines. Migrants with a higher level of education also suffer because the restriction on illegal immigration increases the demand for visas adding a greater waiting period (Caponi 229). Caponi praises the Oportunidades program for reducing the incentive to migrate and comments that restrictive policies “need to be continuously implemented by the destination country” to be consistently effective (Caponi 230). He cites that restrictive policies have no long run effect due to their inability to affect education distribution, which he believes to be a stronger determinant in immigration decisions. Caponi’s findings and conclusions support policies such as the Oportunidades program to improve the economic conditions within Mexico as a more powerful, longer lasting solution.
The *Oportunidades* program is effective because it aids citizens with the lowest level of education, who have the greatest tendency to migrate, by incentivizing them to increase the human capital of their children. In the same vein, education presents myriad opportunities for the Mexican, U.S., and Canadian governments to improve the quality of education as well. For example, rather than give direct monetary aid to Mexico, the United States and Canada could provide tax breaks to universities that send professors and teachers to Mexico to teach in universities, high schools, and elementary schools. The U.S. particularly would benefit from this effort as the increased human capital in Mexico would increase its citizens’ ability to earn higher wages and overall productivity. The jobs created and innovation stimulated by the increase in the quality of education would drastically reduce the flow of Mexican immigrants to the United States, as more lucrative work opportunities would be more available in Mexico. One notable example is that of the rise of the aerospace industry in Mexico. In 2011, Mexico’s aerospace exports “reached $4.3 billion,” and the Mexican government hopes that number to exceed “12 billion by 2020” (Taylor). Although foreign companies are behind the growing industry, the improvement of Mexican education could create a more skilled workforce ensuring that more Mexican citizens reap the economic benefits from the industry’s growth.

**Mexican Development vs. U.S. Restriction**

The uneducated population and the agricultural sector provide many of the immigrants that cross the Mexican-American border without documentation. As Caponi demonstrated in his paper, improving the human capital earning capacity of Mexican citizens within Mexico would reduce the incentive to migrate. This would in
turn lower the number of visas requested by Mexican citizens as well as reduce the need for border security. According to the human capital theory, if the Mexican government could target the groups with the greatest incentive to migrate, job creation and educational programs to allow them to utilize and increase their human capital would best serve to decrease migration. According to Borjas’ theory, such policies would improve the Mexican immigration bid relative to that of the U.S. causing less pressure on its citizens to migrate to the United States. Improving the Mexican economy while paying special attention to the agricultural sector and the most affected educational groups would also reduce the strength of the push factors compelling people to move across the border. This development should have happened in Mexico before the signing of NAFTA in order to ensure equal footing with the United States. With the signing of the agreement, Mexico entered into a dependent relationship with the United States. The large number of Mexican exports sent to the U.S. market has made the Mexican economy sensitive to any recessions or any American companies contracting cheaper labor elsewhere. Strengthening its own industries, human capital, and labor force, Mexico can become more self-sufficient if it focuses its efforts to helping the migrating population. In order to do this, Mexico may need to sacrifice some of the macroeconomic benefit of foreign direct investment (FDI) by large corporations, but this would be difficult to promote as one of the main goals of NAFTA was to stimulate the Mexican economy through FDI. Mexico has to enforce stricter employment policies, as neither NAFTA nor NAALC protect workers’ rights. Although this will deter corporations from investing in Mexico and using Mexican labor, the government should prioritize its own workers. This may reduce its reliance on the United States and also prompt the
growth of Mexican corporations, so long as they abide by good labor practices. In terms of education, as in the United States, the quality and length of free, compulsory education would have a large long-run effect on Mexican migration as it would increase the human capital and reduce the incentive to immigrate for Mexican citizens. In this endeavor, a renegotiation of NAFTA can help by requiring the United States and Canada to contribute to the development of the Mexican economy. This does not necessarily have to occur through purely monetary means. Programs such as Doctors without Borders exist for the purpose of aiding developing countries, and the Canadian and U.S. government could turn to organizations such as Teach for America to aid the development of Mexican education. Finally, NAFTA and NAALC could attempt to create a single labor market between the three countries. In so doing, the permeable borders would allow labor to travel to where it is needed and where there is work. This provision is one of the most problematic because fears of crime and drug violence leaking over into the U.S. and Canada would make such a proposition a political nightmare. In order for this provision to be feasible, the United States and Canada would first have to contribute to the lessening of drug violence and the strengthening of security within Mexico, but already combined efforts by the U.S. and Mexico have proven the war on drug violence difficult. Despite the difficulties that surround immigration, there is still hope to minimize the push factors that stimulate it by improving the Mexican economy. By creating economic conditions that improve the education of its citizens and create jobs for them to utilize that education, Mexico can improve its migratory situation and increase the benefits enjoyed by its citizens and their children.
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