

Migration and Informal versus Formal Business Creation in Mexico

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Migration and Informal Versus Formal Business Creation in Mexico

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### **Abstract**

The following thesis examines the relationship between migration and informality in Mexico.

Since the 1980's migration has become increasingly important to the Mexican economy, as the flow of remittances alone add 26 billion dollars per year to the Mexican economy (World Bank 2006). Similarly, the informal sector has become more important, as an estimated 62% of Mexicans work in the informal sector (Arias et al. 2010). Despite the prevalence of both little is known about their interaction. This thesis attempts to ameliorate that gap by specifically examining migration and the formation of formal versus informal businesses. The household data come from the Mexican Migration Project, while the community level data come from the Mexican census. Multilevel modeling techniques (random effects) were used because of the previous literatures suggested influence of community level factors (Lindstrom 1996).

Additionally, multinomial or multi-risk models were run to see which factors predicted involvement in each respective sector. Community level factors seemed to be more important for informal businesses, while previous capital attainment and socio-economic status were more important for formal businesses. The results indicate that through migration Mexico saw a proliferation of informality, as households used migration to overcome capital constraints. In addition, this research indicates that migration does not seem to attenuate inequality through business formation. Future research needs to be completed on the influence of these informal businesses on broader, community level development.

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## Chapter I

### Introduction

In the past two decades migradollars, the transfer of money from foreign workers back to their native countries, has evolved into an enormous and crucial flow of capital from the developed to the developing world. The term migradollars includes both remittances, money transferred while the migrant is abroad, and savings acquired while abroad and brought back home. In 2001, global remittances totaled 131.5 billion dollars. By 2006, global remittances had increased to 291 billion dollars—a 114% increase over only 5 years (World Bank 2006, 12). The World Bank estimates that in 2006 global remittances reached almost 300 billion dollars, thereby becoming the second largest source of funding for the developing world, behind only direct foreign investment and ahead of official development aid (World Bank 2006, 13). The World Bank and others now estimate that approximately seventy percent of all migrants send remittances home (Massey, Durand and Pren 2010, 23; World Bank 2006). Additionally, savings accumulated by the migrants while abroad then brought back home are substantial. Migrants can return with more savings than their remittances totals (Massey and Parrado 1994). For the rest of this thesis remittances and any savings brought back by the migrant will be combined and referred to as “migradollars.” Migradollars are now one of the fastest growing and crucial flows of capital to the developing world (World Bank 2006).

Although the transmitting of migradollars has escalated dramatically, their macro-economic effects on economic development are not fully understood, specifically at the community level (Binford 2003; Jones 1998). Results differ with methodologies and migration corridor examined (Airola 2007; Binford 2003; Kapur 2004; Massey and Parrado 1994; World

Bank 2006; Zachariah, Nair and Rajan 2003). Some of the literature is optimistic regarding the developmental potential of remittances (Massey and Parrado 1994; World Bank 2006), whereas other studies assert that remittances can withhold broader community level development (Kapur 2004, 23; Reichert 1981). Few communities dependent on migration and remittances have demonstrated substantial economic growth. When communities become inundated with outside capital and do not demonstrate economic growth, there must be something withholding the growth. Perhaps the current modeling is inadequate and requires a new perspective to completely understand the influence of migradollars on a community's economy.

One of the potential factors that could be inhibiting economic development in these migration-dependent communities is how migration and migradollars may propagate large prevalent informal economies. Informal economic activities are simply any economic activity that occurs without licensing, or economic activities that occur beyond regulation (Fernandez Kelly 2006; Tokeman 1992). Migradollars may facilitate informal economies in two ways: first through spending patterns as when the migradollars are overwhelmingly spent on immediate consumption, and second, and more importantly for the context of this research, through the creation of small scale, informal businesses (Massey and Parrado 1998). Some have argued that informal economies inhibit economic development--an argument to be presented in more depth below (De Soto 2002).

The migration corridor between the United States and Latin America provides an extraordinary opportunity to study the relationship between migration and informality. The United States and Mexico share the longest contiguous border between a "First World" or a developed country and a "Third World" or a developing country (Doty 2009, 345). The physical proximity as well as the prevalence of economic opportunity makes the United States desirable

for Mexican migrants. Current estimates assert that there are more than eleven million Mexican migrants in the United States, 76% percent of whom send remittances back to Mexico (Massey, Durand and Pren 2010, 25). In addition, after oil and manufacturing, remittances are the third greatest single source of income for the Mexican economy. In 2006 remittances to Mexico totaled over 26 billion dollars. However, the true influence of remittances on development in Mexico is often debated (World Bank 2006). In addition to being highly dependent on remittances, Mexico has a well-documented informal sector. In 2009 it was estimated that sixty two percent of all Mexican workers did not contribute to social security (an often used indicator of informal labor) (Arias et al. 2010, 36). The combination of high rates of migration, informality, and data regarding both make Mexico an ideal location to analyze the relationship between migration and informality.

This thesis will focus exclusively on urban areas in Mexico. The scope of this analysis will be limited to urban Mexico for three reasons. First according to Massey and Parrado (1994), the largest flows of migradollars were to urban areas where the subsequent multiplier effects were greatest. These multiplier effects had the utmost impact on businesses according to Massey and Parrado (1994), who conclude that migradollars were most often spent in the commercial sector in urban areas. The widely documented spending patterns suggest that migradollars would further increase demand for businesses. However, it is unclear who is meeting this demand for these new markets. Could it be non-migrant households or return migrants? Is the demand met by formal or informal businesses? The second reason for examining only urban areas is that the businesses opened in rural areas are overwhelmingly informal. Rural areas have much less regulation and the regulation is much less likely to be enforced than urban areas (Arias et al. 2010). There may also be less demand as well as less room for new businesses in rural areas

than urban ones. Future research could examine how migradollars are often used to accelerate agriculture as is often asserted by the New Economics of Labor Migration. Finally, Mexico experienced a tremendous growth of urban informality during the 1980s through the 1990s (Arias et al. 2010; Davis 2007). Although the causal factors of this growth have been widely examined (and discussed below), there has been little research regarding how migration and migradollars may have accelerated the growth of informality in these urban areas.

In addition to a better understanding of migration and informality, this thesis will attempt to develop a working understanding of the relationship between migration and business formation in general. In the developing world, businesses tend to develop at the household and community level (Sage 1989). Businesses can additionally create economic independence and mitigate future reliance on migration. Although migration and business formation in Mexico has been examined before (Massey and Parrado 1998), an additional aim of this thesis is to gain a better understanding of the relationship between migration and business formation specifically in urban Mexico. Tremendous potential exists between migration and development, and this thesis will attempt to examine how it can better be maximized.

The thesis will be organized as follows. In the second chapter, I will explore the relationship between the use of migradollars and economic development specifically in Mexico. Additionally, I will discuss the previous research conducted on the relationship between migradollars and return migration on business formation around the globe and again specifically in Mexico. Chapter Three will provide the theoretical framework for the analysis. First, I will discuss the theories of migration and how they can be related to business formation. Then I will discuss the theoretical perspectives on informality and how informality relates to the broader concept of development. The Fourth chapter will describe the data and methods for analysis:

event history analysis and multilevel modeling and multinomial modeling techniques. The Fifth chapter will present the results of the analysis. Chapter Six will discuss the implications of the results and provide a discussion of the entire thesis.

## **Research Objectives**

The primary objective of this thesis is to gain a better understanding of the relationship between informality and migration in Mexico. More specifically, this thesis will analyze which variables predict the creation of an informal business compared to a formal one. As asserted by (Lindstrom 2003), statistical analysis of migration must include multiple levels of analysis. This analysis will thus include three levels: household head, household level, and finally, community level data. Below I will list the seven main research objectives that I will attempt to accomplish in my thesis.

1. Examine the relationship of the household head's migratory experience and the creation of businesses. Does migratory experience matter? Does current migration predict business formation or does previous migratory experience?
2. Explore the impact of other aspects of the household, including educational attainment, the influence of children, and how the stage of life cycle matters in terms of business formation.
3. Explore contextual, community level variables and how they are related to business formation--specifically the prevalence of migration in the community. Are communities with more migrants more predisposed to business formation? How do the multiplier effects associated with migration influence businesses? How do other community level factors, such as community wide informal and formal economies matter for informal and

formal business creation, respectively. In other words, I am going to examine how migrants form informal versus formal businesses and how they vary across places, according to community characteristics. For emphasis, my thesis will examine how place matters in differentiating formal versus informal businesses.

4. Through competing risk models, analyze which household and community level-factors predict involvement in the formal versus informal sector.
5. Improve on past modeling of business formation (Massey and Parrado 1998) by using multilevel modeling techniques.
6. Gain a better of informality, a topic most often examined through qualitative techniques through quantitative modeling.
7. Through a cross-level interaction term, examine the influence of a household-level migratory experience on an established community-level formal economy.

## Chapter II

### Migradollars and Development

A major debate for those who study international migration is the economic developmental implications of migradollars. The absolute size of the flow of migradollars from the developed to developing world is astounding, reaching over 300 billion dollars in 2010. However, because migradollars are overwhelmingly spent on immediate consumption rather than invested their developmental, potential is partially abated. There are two major ideologies on the relationship between migradollars and development. One that asserts that migradollar flows lead to economic stagnation and dependency, or the so called “migrant syndrome” (Kapur 2004; Reichart 1989), whereas the other suggests that migradollars often spur development through to a lesser extent, direct usage as well as indirect or multiplier effects (Durand, Parrado and Massey 1996). Most agree that when migradollars are used productively, for example to start a business, they have greater developmental potential for both the household and community (Durand, Parrado and Massey 1996; Massey and Parrado 1994; World Bank 2006; Zachariah 2001).

This chapter will be broken up into four sections. First I will provide a general overview of migradollars to Mexico. Second I will discuss the contemporary migradollars usage patterns in Mexico and the debate regarding their developmental implications. Third, I will discuss the global relationship between return migration and business formation. The final section will discuss the previous research conducted specifically in Mexico regarding return migration and business formation.

### **Migradollars to Mexico:**

In 2006, the flow of remittances to Mexico was estimated at 26 billion dollars. Following the export of oil and manufacturing, migradollars are the third greatest source of income in the Mexican economy. The total of 26 billion dollars makes Mexico the third largest recipient of migradollars behind only India and China (World Bank 2006). However, since the global recession, remittances have declined along with migration in general (Rendall, Brownell and Kups 2010). Despite their decline, remittances make up roughly 2% of Mexico's GDP (World Bank 2006).

Since Mexico entered into the North American Free Trade Agreement, the country has experienced stable economic growth. Before the creation of NAFTA, Mexico's GDP was growing at about 2% per year; after NAFTA the growth of the GDP increased to roughly 4% a year (World Bank, 2006). Over this time period remittances have increased at an even greater level, more than 10% annually (Coronado, 2004). One of the greatest causes of the increase in migradollars was the increase in monetary transfer companies. In 1995, there were five money transfer companies in the United States and Mexico (Coronado 2004). By 2007, there were more than one hundred (Coronado, 2004). The proliferation of money transfer companies has caused transaction costs to decrease by more than 50% since 2000 (Coronado 2004). Through competition and advertising, corporations have become a major factor in the burgeoning growth of remittances. Although migration may be more difficult than in the past, it is now easier and cheaper to send money than ever (Coronado 2004, Western Union 2011).



## **The Implications of Migradollar Usage**

Once migradollars get back to Mexico, they are not typically invested, saved, or spent on ways that decrease future dependence on migration or migradollars. Rather, migradollars are spent overwhelmingly on “family maintenance” (immediate consumables, such as living expenses, food, clothes, utilities and basic bills) or “superfluously” (Massey and Parrado 1994), such as on a party. In addition remittances are often spent on housing, overwhelmingly on adding a room to the house. This trend of remittance spending can often lead to household and community level dependence and has therefore become known as “migrant syndrome” (Kapur 2004, Portes 2007). Migrant syndrome may be too harsh a term because it suggests that those receiving the migradollars may not be spending the money wisely and that it is a disease that hurts the household and community. However, people who receive migradollars are making rational decisions. It would be ridiculous to criticize the spending patterns of a mother raising a family and living off of migradollars sent home from the father or the children. It would be illogical for a household to invest in the community’s economy before fulfilling its own needs. The purpose of this section is not to attack spending patterns but rather to attempt to explain why economic development is not occurring on a broader scale. In summary, the literature regarding remittance spending is overwhelmingly congruent: migradollars are not usually spent in a manner that could lead to economic growth or mitigate future dependence on migration.

Most of the money from migradollars is not spent on “any productive asset that would generate a source of income that could eventually replace migration” (Roberts 1997; 267). Instead, remitted finances are spent on simply living, housing, housing maintenance, other consumer goods, or even parties (Roberts 1997). In rural Mexico, Roberts (1997) estimates that

only 5% of migradollars were used to increase the migrant's agricultural property value (Roberts, 1997).

A study of the town of Huercio, Mexico, found that almost 67% of migradollars were spent on living expenses or housing (Taylor et al. 1996). The Bank of Mexico asserts this may be an underestimate. In a 2006 report concerning remittance expenditures, the author suggests that on average, 86.4% of migradollars was spent on sustaining family life or housing maintenance (Bank of Mexico, 2006). The author did, however, assert that 6.3% of migradollars are spent on household education (Bank of Mexico 2006). Increasingly migradollars are invested in human capital. However, this human capital does not always end dependence on migration. According to Durand, Parrado and Massey (1996), migradollars are increasingly spent on English education for assumed future migration.

In a nation-wide study of Mexican remittance spending, Airola (2007) reached similar conclusions. He found that migradollars were being spent even more on living expenses than in the past (Airola, 2007). Surprisingly, he also found that migradollars are increasingly likely to be spent on medical supplies. This may indicate that migration may be spurred by household economic burdens, such as emergency surgery or a leak in the roof (Airola, 2007), as well as by a search for a job and general life improvement. His results correspond with much of the other literature regarding migradollars: more likely than not, migradollars are not invested; rather, they are spent quickly on the basic necessities. But also that migradollars are used more productively in times of necessity.

In perhaps the most representative sample of Mexican migrants, Massey and Parrado (1994; 24) found results that were congruent with the research mentioned above. They

concluded that on average 65.3% of migradollars were spent mostly to support a family (Massey and Parrado, 1994, 24). They also claimed that 14.2% of migradollars were spent in other ways (for example, to pay off debt, buy cars, or for another reason) (Massey and Parrado, 1994). Their research asserts that almost 80% of migradollars were spent on consumption while only 6.5% were spent on “productive” activities (Massey and Parrado, 1994; 24). Of the productive investment, only 4.2% was spent on the formation of business. Their research did, however, find that when migradollars were saved, they were much more likely to be spent on “productive” activities and investments. However, just 1.6% of migradollars are saved (Massey and Parrado, 1994; 24). These savings have more profound effect on business formation and return migration. Similar to the savings from remittances, the authors found that the lump sum of money accumulated while abroad then brought back are more likely to be used productively. Massey and Parrado conclude that 17% of savings were spent in a productive manner, however only 21% of all migradollars are savings, whereas 79% are remittances (Massey and Parrado 1994; 24).

While the ability to accumulate savings is often crucial to the formation of a business, like remittances, not all savings are used productively. Upon return to India, migrants from the Gulf come back with substantial relative wealth (Zachariah et al. 2001). The acquired wealth allows them to live comfortably for years (without another job). However, other remittance-dependent communities across the globe, the acquired wealth has not led to community-wide development. Zachariah et al. explain: “almost all their foreign savings have been used up for subsistence, buying land, constructing houses, paying dowries, paying back debt etc... What little was left was invested in self-employment projects which in practice yielded little in terms of income” (Zachariah et al. 2001; 6). The unproductive spending by the return migrants may indicate that Indian migrants face the “migrant syndrome” also seen in Mexico (Jones, 1998; 11).

In India, few return migrants use the savings accumulated to start retail establishments (Zachariah et al. 2001). However, in Mexico, savings have been demonstrated to be used more productively (Massey and Parrado 1994).

Compounding the problem, research has also demonstrated that migradollars are more likely to be spent on international imports rather than domestically-produced goods (Puri and Shivani, 1999). This study is dated and may need replication specifically in Mexico. The demand for foreign goods could be a result of an international lifestyle. American amenities become necessities for the returning migrants.

Migradollar (specifically remittances) spending also affects household labor output. Mexican households that are dependent on migradollars are less likely to see full employment output (Airola, 2007). When a family member is working abroad, the rest of the family is not as likely to work compared to a family that receives no migradollars (Airola, 2007). This is especially true when the household head is male and is working abroad (Airola, 2007). The other family members could be working to raise the household's total income, but they do not because they can simply live off of the migradollars. The high wages earned abroad and sent back provide little incentive to work. This can constrain an entire community's labor pool. Communities most heavily dependent on migradollars are less able to create other sources of capital because of the inactivity of the workforce (Kapur 2004).

The International Labor Organization (ILO) suggests that remittance flows are “deceptive” and can lead to the perpetuation of migration of the working-age population (Puri and Shivani, 1999; 8). They conclude that the consistent migration flow of the working age population discourages investment because workers are thought of as “unreliable” (Puri and

Shivani, 1999; 9). The wages earned abroad can raise the relative wages at home, which can further discourage investment. The World Bank concurred and concluded that “the data on income differences may influence expectations of future earnings by migrants and their children which would undoubtedly generate much larger migration” (World Bank, 2006; 59). This suggests that remittances not only could immediately discourage investment, but they could discourage investment for generations. Even with the relaxed trade tariffs of NAFTA, why set up a factory when the workers could earn higher wages abroad? The migrant networks are usually more socially engrained than a new localized job opportunity, which may provide lower wages than work abroad.

The studies on remittance usage overwhelmingly indicate that migradollars are not spent productively, at least in terms of broader economic development. Instead of being spent on assets that could lessen the household’s dependence on migradollars, they are spent on consumer goods and household maintenance, and they perhaps have the unwanted side effect of discouraging the family from seeking employment. Devish Kapur, a researcher from the Harvard Center for Global Development, described the consequences of unproductive spending of migradollars. He explained that migradollars have been transformed from a “consequence of migration” into “the principle driver” (Kapur, 2004; 13). Local economies are not being diversified; instead, they are becoming reliant on migradollars as the exclusive source of capital. Kapur argued further that migradollars increase material wealth, while “undermining their (the migrants’) long term future” (Kapur, 2004; 13). When migradollars are not spent productively, a culture emerges that is dependent on migration, a “culture of dependency” (Kapur, 2004; 13) which is similar to the “migrant syndrome” discussed two decades before. Cultures of dependency and the migrant syndrome illustrate the same phenomenon. If migradollars are to

be turned into productive long-term economic gains, the funds should be invested in diversified infrastructure that will promote economic independence and end, or at least mitigate, migration.

Although migradollars are overwhelmingly spent on consumption and may discourage investment, they also attenuate poverty levels (Acosta et al. 2007). While the impoverished may not be able to find work at home, they are able to find work abroad. The higher wages earned abroad facilitate remittance transfers back home. Similarly, remittances undoubtedly abate poverty in economically poorer areas by raising the per-capita income in receiving areas (Acosta et al. 2007). Households that receive remittances are boosted out of poverty into the lower middle class. In Mexico, the poorer states demonstrate a greater per capita increase in income due to remittances than the other states (Taylor et al. 2005). Not all the impoverished are able to migrate; however, the families that do receive remittances see their income increase dramatically (World Bank 2006). In Mexico the migrants who see the greatest benefits are the unskilled who are largely the uneducated and impoverished. However, the first people to migrate out of the communities may be the middle class (Acosta et al. 2007), a phenomenon which is discussed below. Unskilled labor in America pays much more than it does in Mexico—a difference that helps lift a family out of poverty (World Bank, 2006). Even if migration may lead to dependency, it provides an opportunity to raise households and communities out of poverty.

As previous research suggests, remittances are overwhelmingly spent on consumption. However, not all research indicates that these spending patterns lead to the detrimental “migrant syndrome” or formation of “communities of dependency.” Rather Durand, Parrado and Massey (1996) stress the power of economic multiplier effects from migradollars. They suggest that even the overwhelming pattern of consumption is beneficial for both the community and national economy. For example, they discuss how even when migradollars are spent on beer (a

supposedly non-productive investment), manufacturing jobs are created as the demand for beer increases. Massey and Parrado similarly suggest the power of the economic multiplier effect (1994; 25). If estimates have stayed consistent over time with Massey and Parrado's 1994 estimates, it can be estimated that an additional 16.97 million ( $26 \times .653$ ) dollars worth of demand was created through the multiplier effect of remittances. More specifically, for the context of this research, Massey and Parrado suggest that the multiplier effects are the greatest in urban areas, especially in the commercial sector. Additionally, Durand, Parrado and Massey (1996; 430) found that migrants from urban areas also remit more than their rural counterparts. This could indicate that urban areas are especially healthy for business formation, especially the cities with high concentrations of migrants (Riosmena 2009).

Durand, Parrado and Massey (1996) claim that the economic multiplier effects of migradollars are not captured by just the sum of their total. They assert: "The multiplicative effect can only occur if some of the funds are channeled into income-producing activities that raise total income above the amount of the original transfer" (Durand, Parrado, and Massey 1996; 440). Specifically, they discuss how international migradollars were combined with internal migration to create light manufacturing in Western Mexico (Durand, Parrado and Massey 1996). Additionally, to illustrate how migradollars can act as a multiplier that can create businesses, they discuss how during the winter when the migrants are home, many businesses are formed to meet the increased demand (and increased dollars brought into the economy). The migrants feel more obligated to spend their wages to demonstrate their status and support the local economy. They conclude that migradollars being spent overwhelmingly on consumption does not lead to migrant syndrome but rather that consumption (and the associated multiplier

effects) can be a “powerful catalyst to economic development” (Durand, Parrado and Massey 1996; 441).

In summary, the only widely agreed upon aspect of migradollar consumption patterns is that they are overwhelmingly spent on consumption. Some say that consumption only breeds dependency, whereas others argue that through multiplier effects, migradollars can facilitate economic development. The results most likely vary from household to household and community to community, place matters. Another widely agreed upon aspect of remittances and development is that when migradollars are used in a more productive manner, such as starting a business, broader development can be achieved and future dependence on migration can be mitigated (Sage 1987, Massey and Parrado 1994). The following section will discuss the previous research completed regarding the relationship between migration and business formation.

### **Return Migration and Business Formation**

Increased levels of global migration come with an increase in return emigration to the country of origin (Weeks 2008). The vast majority of Mexican-US migration is not permanent but rather temporary, as many migrants return to their communities of origin (Massey, Alarcon, Durand and Gonzalez 1987). Similar to migradollars, the developmental implications of return emigration vary with the methodology employed and the region studied. More simply, there is no conclusive relationship between return migration and economic development. Even within regions and migration corridors, the implications of return migration on development can vary dramatically (Gubert and Christophe 2008). Despite the lack of empirical evidence, many believe that return migration has incredible potential for development. This potential spurred by return migration is believed to be so high due to the capital gained by the migrant while abroad.



However, capital transfers and accumulation are not the only means that development can be spurred; return migrants can also start businesses.

The return migrant not only brings economic capital that would enable business formation, they also may have gained human and social capital during migration which could facilitate the creation and maintenance of a business (Gubert and Christophe 2008, Stark and Bloom 1985). Aside from remittances, migrants often return to their origin communities with substantial savings accumulated abroad. The subsequent section will introduce the literature regarding the developmental potential of return emigration, specifically their formation of businesses at the global level, then discuss return migration in Mexico before finally discussing the implications of return migration on business formation in Mexico.

The economic potential of return migrants to the developing world is enormous. Numerous countries on different continents have implemented programs that attempt to harness the potential of return migration on development, specifically through business creation. For example, to take advantage of this capital, the Chinese government has created programs that facilitate return migrant business creation to ameliorate the economic dichotomy between the industrialized and urban East and the rural West (Murphy 2000). According to Massey and Parrado (1994), returning migrants' savings are more likely to be used in a more "productive manner" than remittances transferred while the migrants were abroad. In addition to the economic capital, migrants also return with considerable human capital gained while abroad. This includes but is not limited to work training and experience, managerial training, increased confidence in the financial system and education. These transfers of economic and human capital are not limited to South-North migration, but have also been documented in South-South migration (Diatta and Mbox 2002). More importantly for the context of this research, return

migration can facilitate the creation of businesses by return migrants. Obviously, these new businesses have the potential to ameliorate future migration dependence and foster economic independence at both household and community levels.

### **Global Return Migration and Business Formation Trends**

In general, households with migration experience are more likely to start businesses than non-migrant households. This trend is apparent regardless of continent or migration corridor. For example, Dustman and Kirchamp (2001) find that 50% of all Turkish migrants that return from Germany start a business within four years of their return. Researchers are unsure if migrants are more entrepreneurial to begin with or if the migration experience actually facilitates business creation (McFalls 2007). However, globally, specific trends have emerged that predict the business formation by international return migrants. The first and seemingly most important predictor of business formation is migration duration (Gubert and Christophe 2008; Ilahi 1999; Lindstrom 1996). The longer the migration, the more likely return emigrants are to form a business upon their return. The trend of increased migration duration leading to business formation has a few explanations. The first and most apparent in the literature is that longer migration durations facilitate a greater amount of savings; these accumulated savings can then be invested in a business. The second is that migrants gain human capital while abroad through education or specific skill training, then upon their return they can use their increased human capital to start a business. More simply, longer durations may lead to greater human and economic capital accumulation by the migrant. In addition, longer durations leading to increased savings, Galor and Stark (1990) demonstrate the migrants who have a higher probability of

return save more than their native counterparts or migrants who permanently reside in the destination. These additional savings can then be invested in a business upon return.

In Ghana, the relationship between migration duration and business formation is prevalent. However, unlike elsewhere, the migrants would fund and form businesses while abroad through remittances then come back once the business was stable and needed management (Black, King and Tiemoko 2003). For return emigrants to Pakistan, the trend is similar as Ilahi (1999; 1) asserts: “Accumulated savings are a critical determinant of non-farm self-employment.” An increased duration of migration for the Pakistanis facilitates increased savings. In Tunisia and Algeria return migrants from France come home back with savings and start businesses. When asked what the largest barrier to entry was to starting a business, the majority of return migrants cited “capital constraints” (Gubert and Christophe 2008). For them, migration and savings accumulated during migration are a means of overcoming capital constraints that would have prevented the formation of a business without migration (congruent with the New Economics of Labor Migration discussed below (NELM)).

The importance of savings accumulated while abroad is further apparent in the difference in business formation between internal and international migrants. International migrants are often able to accumulate larger sums of money during their migrations, making them more likely to start a business (Ilahi 1999). In multiple migration corridors on multiple continents, migration duration is not as important for internal migrants as for international migrants (Lindstrom and Lauster 2001, Ilahi 1999, Zachariah et al. 2001). Through the savings acquired during migration, the return migrants are able to overcome “local market failures,” which is congruent with the theory of NELM discussed below. The ability to accumulate

savings during migration is a crucial factor in business formation across the globe, and especially in Mexico.

In addition to migration duration, a major global predictor of business formation is the type of work done while abroad. Intuitively, managerial experience gained abroad is strongly associated with the formation of a business upon return. When the migrants work as managers they are able to gain the human capital and experience to run a business upon their return. Conversely, skilled workers or waged workers are much less likely to begin a business upon their return; rather, they are more likely to do similar jobs in the origin as they did in the destination. In Pakistan Ilhai (1999), argues that skilled workers do not start businesses because they get paid more, with less risk and more familiarity with their work. In Ghana the division between management and skilled labor while abroad continues upon return. Similarly, some of the most successful factories in rural China were started by return migrants with management experience gained during migration in the urban East (Murphy 2000). The inability for occupational change after return emigration is a challenge in India, where skilled laborers return home to find no work at their skill level. Instead, they are forced to work under their skill-level and the salary they earned while abroad (Zachariah et al. 2001). Little research has been completed regarding occupational trajectories for Mexican migrants to the United States.

Migration does not fundamentally alter someone's occupational choice; rather, return migrants do similar work at home as they did abroad. Additionally, managerial experience may be interrelated to savings accumulated abroad, as managers often get paid more than waged workers. It is unknown if migrants are more entrepreneurial than the general population, as most of the research regarding return migration and business formation only studies migrants, not the

entire population. However, the analysis below includes the entire population to see the difference between migrants and the outstanding population.

Another major predictor across the globe of business formation by return migrants is the economic conditions of the community of origin. As discussed in Lindstrom (1996) communities in Mexico that are economically dynamic see more investment from migration, while communities that are economically stagnant see less investment in the creation of businesses (the influence of community-level variables will be discussed in depth below). In Pakistan, migrants from rural areas are not likely to form businesses, while migrants from urban areas (with thriving markets and demand), have an increased probability of business formation. Furthermore, savings have no influence on rural workers in Pakistan wanting to start a farm. On a global scale, most of the businesses created by return migrants are in economically dynamic urban areas. The migrants are acting rationally, as they see greater potential for investment in economically dynamic communities and invest their accumulated savings in these businesses. In summary, capital accumulation while abroad, work experience, and migration duration have all been documented to be associated with business by return migrants.

### **Return Migration and Business Formation in Mexico**

Congruent with global trends, migration from Mexico is often temporary, often fluctuating by season. In fact, most migrants are seasonal and/or temporary (Durand, Massey and Zenteno 2001). Often the migrants return during the winter or for their community's religious holidays (Rendall, Brownell and Kups 2010). Most migrants return within a year (Reyes 2001). Although return migration is common, the longer a migrant stays in the United States the lower the probability of return to Mexico (Ruiz-Tagle and Wong 2009). Like

migration, return migration and relocation follows a cost-benefit model (Borjas 1999). The substantial return migration by hundreds of thousands of individuals to Mexico every year allows for the potential for development and business formation. As with global return migration trends, return migrants to Mexico often bring with them substantial accumulated human and social capital.

Upon return, it can often be difficult to get a job, as social capital and connections may have been lost during the migration. Glitter, Glitter, and Southgate (2008) assert that return migrants often have lost these connections during their migration and have less human capital than non-migrants from the same community. They conclude that return migrants often have a more difficult time finding a job than non-migrants. Not being able to find a job may force them into the informal sector, engage in future migrations, or to start a business. Although, unlike the alternatives, migrants who start a business may have been determined to start a business before their return and even before their migration.

As with global trends, in Mexico, an increased duration of migration has also been documented to predict the formation of a business. Lindstrom (1996) found that migrants from more “economically dynamic” communities were more likely to have emigrated for longer. He attributes the increased savings to the longer duration of migration, which then could be invested in the economically dynamic communities, most likely in a business. Conversely, migrants from less dynamic communities stayed for shorter periods, albeit more frequently. In addition to the association between longer migration durations and business formations is the fact that return emigrants who start a business are much less likely to migrate again after the formation of a business. However, future research needs to examine if migration can occur with the specific objective to save a fledgling business. Contrary to those who form businesses, return migrants

who do not start a business are more likely to migrate again (Lindstrom 1996). Repeat migration demonstrates that the migrants may have different motivations before they even migrate. Those who stay for longer durations want to save for an investment, whereas the migrants who stay for shorter are continually dependent on migration as a source of income rather than being concerned with starting a business upon their return. Future data should ask migrants their motivation before migration to see how many specifically want to start a business. In summary, length of migration is an important predictor of business formation due to the amount of savings acquired during the migration. Portes and Bach (1985) maintain that a major determinant of time spent abroad is a specific “target” savings amount. Once this target savings is reached the migrants return home. These migrants may have the objective of business formation: when they save enough to start a business then they can return. The notion of a target savings amount is congruent with the longer migration durations of migrants from more economically dynamic communities (Lindstrom 1996). Furthermore, Massey and Parrado (1998; 24) claim that the most important factor for business formation is the “quantity of migradollars at their disposal and the extent of their migratory experience.”

In one of the most comprehensive reviews of the relationship between migration and business formation in Mexico, Massey and Parrado (1998) conclude there is a positive association between migration and business formation as well as migradollars and business formation. They discuss how migrants use their accumulated capital from their migration to form businesses. Additionally, they discuss how the house can be used as a base for business operation, so migradollars spent on housing are not necessarily unproductive (Massey and Parrado 1998; 9). They also found that married household heads are more likely to start businesses than single men. Congruent with Lindstrom (1996), the authors find that the

economic conditions of the community of origin clearly matter for business formation. They find a strong positive association between communities where more businesses are being formed and business formation as well as the community level of minimum wage earners. Similarly, Durand, Parrado, and Massey (1996) suggest that the productive use of remittances is determined by “access to productive resources.” Massey and Parrado (1998; 11) also found that national economic conditions matter. For example, Massey and Parrado found that when inflation and interest rates increase so do the odds of business formation. They assert that during years of hyperinflation households are “forced into entrepreneurial activities in order to bolster sagging family incomes” (Massey and Parrado 1998; 11). However, they do not examine whether these businesses which resulted from the years of hyperinflation were formed in the formal or informal sector.

Massey and Parrado find that households currently engaged in migration were less likely to form business when the head was engaged in migration. However, over time the accumulation of migradollars increases the odds of business formation. Communities with larger flows of remittances see greater probability of business formation. This means that even those who do not engage in migration in the communities can benefit from migration as the inflow of migradollars can allow for more business formation. To further illustrate the strong relationship between migration and business formation, Massey and Parrado (1998; 12) state “on average 21 percent of businesses in our sample were capitalized with US earnings.” They also assert that “the strongest effect influencing this propensity (of business formation with US earnings) is migrant status itself: among household heads who initiated a business those working in the US were most likely to finance it with US earnings” (Massey and Parrado 1998; 12). This seems like common sense--the people who start businesses with US dollars are former migrants.



Woodruff and Zenteno (2001) come to similar conclusions, suggesting that remittances provide the capital to start roughly one in five businesses in Mexico. The research in general suggests that there is a substantial relationship between migration and business formation at both the global level and in the United States-Mexico corridor. In summary, the previous literature asserts that migrants are more inclined to start a business upon their return. However, it remains unclear if they are starting formal or informal businesses.

### **The Influence of the Community of Origin on Migradollar Usage and Business Formation**

One of the most influential predictors of business formation has nothing to do with any household level characteristics but rather with the economic conditions of the community in which they live. Migrants from economically prosperous communities are more likely to start a business than migrants from poorer communities.

Communities with more vibrant economies often see more productive usage of migradollars as the returning migrants seek successful investments. Lindstrom (1996) examined this relationship when he included community level variables to predict the migration duration of international migrants. In his study he assumed that longer migration durations are associated with more productive usage of migradollars. Lindstrom found that communities that were more economically vibrant (quantified by female labor force participation), saw greater migration durations, and thus, more productive usage of migradollars. However, Lindstrom just had proxy measurements for productive use of migradollars (U.S. migration duration). Below I will look at business formed, a widely considered “productive use” (Lindstrom 1996, Massey and Parrado 1994).

Congruent with Lidnstrom, in his book on rural development in Mexico, Grindle (1988; 90-92), describes how economic opportunities influence the use of migradollars. Tepozteca, a small village outside of Mexico City, had little economic potential and most of the citizens were pessimistic toward the future economic prospects of their own town. In Tepozteca, the remittances are overwhelmingly used for either construction or subsistence. Moreover, Teposteca dramatically lacked infrastructure, which further attenuated the developmental potential (94). Grindle discusses how the roads are shoddy at best, and their poor condition impedes the economic potential of the agricultural sector by limiting export capacity. In Tepozteca, remittances were used only to live rather than be invested in enterprises or the community. Conversely, Union de San Antonio, a prosperous town because of a dairy industry, has seen more productive use of remittances (Grindle 1988, 112). In San Antonio, remittances have been used to further augment the strong economy. For example, they are often used to build factories specifically geared to profit off of the strong dairy industry, for example, cheese factories (Grindle 1988, 113). Additionally, in Union de San Antonio, the community has pooled saved remittances for infrastructural projects, despite the fact that their economy was booming, and not limited by a lack of infrastructure like Tepozatca (Grindle 1988, 114).

In this way, poorer communities like Tepozatca become increasingly dependent on migradollars. This increased dependence is known as the economic phenomenon of Dutch disease. Dutch disease explains how resources are increasingly diverted exclusively towards one resource, in this case labor and migration. Jaffee (2007) illustrates the process of Dutch disease and migration in Southern Mexico. After a few bad harvests, communities in Southern Mexico that were once dependent on coffee exportation slowly grew more and more dependent on the higher wage potential of migration and the subsequent remittances (Jaffee 2007). Over time,

there was no labor left to work in the coffee fields, as virtually all the resources had been diverted toward migration. Massey and Parrado (1994) further illustrate Dutch disease as they discuss how numerous communities in Mexico have evolved to become completely dependent on remittances as a source of external capital. In these communities, migradollars are hardly invested productively; rather they are spent on consumables used for basic staples. A feedback loop of dependence on migration is thus created as the communities become more and more dependent on migration and migradollars. However, these communities inundated with remittances should also see economic multiplier effects as discussed in Massey and Parrado (1994). The substantial relative flow of remittances should increase the demand for both consumer goods and construction. If Massey and Parrado 1994 are correct, the increased capital flowing in as remittances should lead to some business creation even in the poorest most migration dependent communities. However, it is unclear if this demand is met by businesses started by return-migrants or if these businesses are located in the formal or informal sector.

## Chapter III

### Theoretical Perspectives of Migration and Business Formation

The formation of businesses by return migrants is congruent with some of the most prominent theoretical perspectives on migration. However, this section will only explore the micro-level and origin theoretical perspectives, rather than the aggregate and destination perspectives (ie World Systems, Dual Labor Market Theory, etc). First, I will discuss the neoclassical theory and target income theory, and then I will discuss the social network theory and cumulative causation, before finally discussing the most used theoretical perspective when it comes to migration, the new economics of migration. Furthermore, I will examine how each theoretical perspective relates to the previously discussed literature on business formation.

The Neoclassical economic theory of migration asserts that wage differentials are the drivers of migration. It assumes that migrants are rational individual actors. If a large enough gap between the wages at the origin and destination exists, migration will occur with the objective of maximizing lifetime earnings (Lindstrom and Lauster 2001; Massey et al. 1993). This simplistic economic theory has been widely critiqued and altered.

One manifestation has been the target income theory, which assumes the same push-pull factors as the neoclassical view and still retains the economic perspective. It asserts that migrants do not want to leave their origin and when they do they spend as little time away as possible. Migration durations are determined by a target saving: when the migrants have equaled their savings objective they return home (Hill 1987). The idea of target saving is congruent with most of the literature of business formation which asserts that migrants that have a target savings, which once met could be used to start a business (Portes and Bach 1985). Additionally, the neoclassical theory of migration discusses how poorer communities should see more migration

than richer communities, which may be the case for certain Mexican communities. But the literature conversely demonstrates that migration still occurs from economically dynamic communities and the result of the accumulated savings are usually more productive and dynamic themselves. The neoclassical theoretical perspective of migration does not explain business formation well, as it focuses exclusively on wage differentials as a motivation rather than how these accumulated wages are used upon return.

The social network (or network) theory asserts that social networks perpetuate migration. It stresses the power of social networks for each stage of the migration process. Social networks help facilitate large-scale migration all across the globe. They make migration easier from the origin and destination. For example, research has shown that having a family member abroad not only makes migration more likely but also more profitable (Brown and Bean 2006; 360). In essence networks create economies of scale for migration, which perpetuates large-scale migration. Migrants move to communities where other migrants have already moved; they receive information on the destination (e.g., how to get there); and they receive support from these networks when they get there (including where to find a job) (Massey et al. 1993). Once these networks are set up they are self-perpetuating, each migrant adds to the network and makes it easier, more desirable and even more profitable for subsequent migrants (Brown and Bean 2006; 365; Massey et al. 1993).

Networks add momentum to migration and over time migration comes to sustain itself, something Massey (1990; 1993) has referred to as “cumulative causation.” Massey et al. (1993; 451) explain: “Causation is cumulative in that each act of migration alters the social context within which subsequent migration decisions are made, typically in ways that make additional movement more likely.” These networks and cumulative causation lead to some communities to

become more dependent on migration than others. For example, Chivanda Mexico is dependent on migradollars for all of its external funding (Massey and Parrado 1994). However, the relationship between these migrant-dependent communities and business formation is not completely understood. It has been well documented that migrants from communities with better economies are more likely to start businesses, but communities that are dependent on migration in general may also see increased business formation.

Both the network theory and cumulative causation stress relative deprivation. Relative deprivation may also lead to business formation as households could see other households migrate and improve their standard of living (Massey et al. 1993; 452). Observing this improvement in standard of living motivates the other households to migrate. Additionally, these households could observe the return migrants come home and start a business further increasing their income. Observing this success and feeling more relatively deprived, could motivate migration for the specific motivation of business formation. Specific communities could see not only the cumulative causation of migration, but the cumulative causation of business formation. Similarly, those migrants with greater social networks might be more inclined to start a business because they would have a greater customer base.

The theoretical perspective of New Economics of Labor Migration (NELM) has the both the most potential and greatest success in explaining the relationship between migration and business formation (Stark and Bloom 1985; Massey et al. 1993; Lindstrom and Lauster 2001). NELM contrasts with the neoclassical view which stresses that as long as a wage gap persists between individuals migration will continue to occur. For the proponents of NELM, migration is not just a method to increase wages it is a method of accumulating capital, diversifying risk and overcoming capital constraints (Massey et al. 1993; 436; Brown and Bean 2006). Unlike in

developed countries, where household income risk is attenuated by insurance or well-structured social programs, in developing countries households lack such insurance. Migration helps offset the risk. For example, households dependent on agriculture can minimize their risk by sending a household member abroad. If the crops drop in price or there is a drought, they can count on remittances to make up the difference. This diversification of risk has also been demonstrated on an aggregate level. Remittances have been demonstrated as being “countercyclical,” increasing during times of economic hardship and decreasing during economic booms (Acosta et al. 2007; 2).

In addition to minimizing risk, migration is also a way to overcome “market failures” and capital constraints as well as inability to access credit markets (Massey et al. 1993; 436). For the context of business creation, these market failures may inhibit the development of a business. In developed countries, loans are more accessible through “a sound and efficient banking system” (Massey et al. 1993; 438). In developing countries, loans are more difficult to get and usually come from moneylenders who charge high rates of interest. Not being able to get loans to start a business may force a household to engage in migration to earn enough capital to start an enterprise. Lindstrom and Lauster (2001; 1236) explain: “in the absence of well developed capital markets, the same conditions encourage temporary migration as a means for acquiring capital to finance entrepreneurial activity.” More than any of the other theoretical perspectives, the NELM best explains how migration may be a means to start a business.

## Chapter IV

### The Informal Economy and its Implications for Mexico

In the latter half of the twentieth century the growth of the informal economy in the developing world has been unprecedented economically and socially the world has never changed so drastically so quickly. In 2003, the United Nations estimated that 1 billion people worked in the informal economy (*The Challenge of Slums* 2003). This number has most likely increased dramatically. Latin America in particular has seen especially tremendous growth since the 1980s (Davis 2007). Despite this growth, the causal factors of informality and the influence of migration are incompletely understood. Similarly, the implications of informality on development are often debated. This chapter will discuss the research on informality in Mexico and how it relates to migration. First, this chapter will discuss the prevalence of informality in Mexico and how it has grown dramatically over time. Second, I will attempt to define informality and discuss how the definition has changed over time. Third, I will discuss the means in which neoliberalism directly caused the incredible growth of informality in Mexico. Fourth, I will discuss how Mexico's system of business regulation exacerbates informality, through taxes, often making it too expensive for small businesses to become licensed. Fifth, I will outline the debate regarding informality and development by first discussing the benefits of informality, then how informality may inhibit development. Then I will describe the ideas of one the most outspoken theorists regarding informality, Hernando De Soto, his perspective on informality and the critiques of De Soto. Finally, I will discuss the little research already completed regarding the interplay between migration and the informal economy in Mexico.



### **Prevalence of Informality in Mexico:**

Since the early 1980s, the informal economy has grown dramatically in Latin America and Mexico specifically. Current estimates assert that one third to one half of the entire Latin American population works in the informal economy (Portes and Hoffman 2003, 24). Moreover, in Mexican urban areas, there are an estimated 900,000 informal street vendors who sell over 13 billion dollars' worth of goods per year (this number has probably increased dramatically since the estimate) (Merill and Miro 1996). Past estimates assert that the informal economy is worth 146 billion dollars (which was more than all of Mexico's exports) and comprised 46% of all urban area jobs (Franco 1999). Some estimates peg the total number of informal workers at 20 million, almost one fifth of Mexico's entire population (Cevallos 2003). Krajnyak, Magnusson, Gash, and Palomba (2010) claim that more than half of all workers in Mexico work for small, informal firms (which may be an overestimate).

Despite the tremendous prevalence of the informal economy, indications are that it will continue to grow (Centeno and Portes 2006, 35). Arias et al. (2010) maintains that the number of laborers not covered by social security (a proxy measurement for informality) are still increasing. More specifically for the context of this research, the proportion of the Mexican population in urban areas that is covered by social security is also declining (Arias et al. 2010). As the informal economy continues to expand and gain both social and economic importance, understanding the developmental implications also becomes more crucial (Centeno and Portes 2006, de Soto 2002). Moreover, as migration continues to gain social and economic importance it becomes increasingly important to understand the relationship between migration and the informal sector.

## **Defining Informality**

The informal economic sector has been notoriously difficult to measure, quantify, and define (Fernandez-Kelly 2006). Like most academic terms, the definition of the informal economy has changed over time while also being contingent on the current academic milieu (Centeno and Portes 2006). The concept originated with a study in Africa that differentiated self-employment and wage employment: self-employment being defined as “informal” (Hart 1973, Centeno and Portes, 2006). Then informality was described as the “underemployment” that characterized the workers who could not work in the “modern” economy and were forced to work for themselves (Centeno and Portes 2006). Hernando de Soto further asserted that the creation of informal economies was a response to the strong “mercantile” regulatory laws in Latin America, which forced people to work in unregulated areas of the economy (de Soto 1989).

Today, a definition of informal economy has become more commonly accepted and agreed upon. Most simply, informal economic activities are activities that occur beyond governmental regulation or control (Portes and Castells 1989, Feige 1990, Centeno and Portes 2006). Everything from unlicensed businesses, pirate video sales, to lemonade stands can be considered informal economic activities. Simply put, if an economic activity lacks governmental licensing or oversight it should be considered informal. One of the greatest indicators of informal economic activity is the payment of taxes or social security contribution for labor. The payment of taxes and social security contribution indicates *formal* economic involvement. By definition, informal economic activities and the government will always be in conflict (Centeno and Portes 2006, 26). Moreover, Fernandez-Kelly (2006, 2) asserts that: “Without formal laws defining the relationship between employers and workers, the informal economy cannot exist.”

However, the informal and formal sectors are not mutually exclusive as often they are interrelated on a macroeconomic and microeconomic level (Ratner 2000). For example O'Higgins (1985) asserts: "The size of the hidden economy is positively related to the size of the measured economy and to inflation....(it is a) structural rather than cyclical phenomenon (which) explain the growth of the hidden economy." For example, when the formal economy falters, more workers are pushed to work in the informal sector. Moreover, at a household level informal economic activities usually depend on the formal economy. Informal workers will often buy tools in the formal economy and then use them for their informal labor (Ratner 2000). Mobility from one sector to the other has been widely documented, especially among poorer workers (Arias et al. 2010, 45).

It is important to stress that, *informal* activities need to be differentiated from *illegal* activities, as illegal activities also often occur beyond governmental regulation. Centeno and Portes (2006) differentiate between illegal and informal activities by asserting that illegal activities deal with goods that are illicit (such as drugs, arms, and stolen goods), whereas informal activities deal with licit goods. Likewise, some formal economic activities can occur illegally, for instance corruption. So it is unfair to exclusively assume that informal economic activities have a stronger relationship with illegal ones.

Informal economies have flourished in the third world where there is an absence of both will and capacity for widespread economic regulation. For example, in Sub-Saharan Africa 78% of all economic transactions are unregulated (UN Committee on Economic, Social and Cultural Rights 2000). However, developing countries *could* allow for a more formal economy, if they reduced barriers for entry. Conversely, they could propagate a movement toward the informal sector by increasing regulation, making it more difficult to engage in formal work. Governments

thread a fine line. The informal sector does not exclusively occur in the third world and is increasingly prevalent in developed countries (Ratner 2000).

In summary, the definition of informal economies has changed dramatically over time. Informal economic activities can be defined as economic activities that occur beyond the scope of governmental regulation. But it is important to differentiate between informal and illegal activities, as the way in which we define these activities has a tremendous influence on not only how the government interacts and attempts to control them, but the social and economic structures by which the businesses actually operate.

### **Neoliberalism and the History of Informality in Latin America**

As discussed above, a considerable proportion of Latin American workers are employed in the informal sector. This did not occur suddenly, but rather it was a result of macro-economic restructuring, more specifically the economic restructuring that accompanied neoliberalism. Neoliberalism facilitated the proliferation of informality in Latin America in the following four ways: first by blurring the line between formal and informal economic activities; second through the privatization of formerly formal government-run public employment; third through exacerbating economic and social inequality and poverty; and fourth by helping to propagate a massive rural to urban migration. In the following section, these four methods of change will be discussed along with how they helped create the massive informal sector in Latin America.

The first way that neoliberalism propagated informality was by blurring the distinction between formal and informal work. Before neoliberalism, there was both an economic and social distinction between formal and informal labor. Itzigsohn (2006) suggests that not only were wages higher in the formal sector, but the formal sector also had greater job security. The

formal sector was a desirable place to work due to these higher wages and benefits. Conversely, those who worked in the informal economy were generally less educated and paid less. After the macro-economic shifts brought on by neoliberalism, the wages in the formal sector declined as did the job security (Centeno and Portes 2006, 40). For example, it is estimated that formal factory wages in Mexico paid 60% less after neoliberalism than before. Likewise, real wages in general declined to be 57% in 1998 what they were in 1980 (Gonzalez de la Rocha 2001 243). Suddenly, after the austerity measures brought about by the debt crisis, there were few if any benefits of working in the formal economy. The economic and social distinctions between the formal and informal economies were blurred. Furthermore, many have asserted that the shift toward neoliberal policies has actually made informal work more “desirable” (Centeno and Portes 2006, 40). More specifically, Izigoshn (2000) asserted that informal work in the Caribbean is much more desirable to that “formal” manufacturing work in Special Economic Zones (SEZ’s). Despite the lower wages, informal workers have much greater pride in their production as well as well as greater comradely between fellow workers (Izigoshn 2000).

By dismantling governmental labor standards and regulations, neoliberalism has “weakened labor standards,” which again suggests that the once firm distinction between formal and informal work became blurred. Although the informal economy used to be considered for the poor, thanks to the macroeconomic and regulatory changes of neoliberalism, not only has the distinction between formal and informal work has been blurred, but the informal economy has become a desirable, often better place to work. Itzigsohn (2006, 84) also claims that the blurred distinction caused by neoliberalism has led to conditions where “formal income does not provide capital for informal enterprises, and formal workers have very little capacity for consumption of informal products.” In summary, aspects of neoliberalism led to a blurred distinction between

formal and informal work, while at the same time often making the informal sector a more desirable sector to work in.

The second manner in which neoliberalism propagated the rise of informality in Latin America was through the privatization of formerly government provided services. As former government services were privatized, jobs were taken away from citizens. Additionally, the austerity measures brought on by the Mexican debt crisis forced large budget cuts eliminating even more government jobs. Merrill and Miro (1996) describe how during the 1980s the Mexican government diverted resources away from the public services and stress that “the government used its control of employment opportunities and the labor union movement to hold down wages throughout the 1980s in an effort to reduce inflation.” Centeno and Portes (2006, 38) concur and suggest that neoliberalism led to a reduction of public employment which was the “backbone” of Latin America’s middle class, who lost their jobs due to the governmental budget cuts. The erosion of the “backbone” of the Latin American middle class employment is evident in that unemployment rates increased dramatically from 1982 until 1997 (Shefner 2006, 244). The loss of these formerly secure jobs forced many to turn to self-employment in the informal sector (Centeno and Portes 2006, Davis 2007, Merrill and Miro 1996). Furthermore, the reduction of government jobs increased inequality by eroding the middle class who formerly depended on government jobs (Centeno and Portes 2006, Walton 2004). Additionally, the decline in government got rid of the social support system that the citizens were used to, forcing them to rely on new informal systems of social support (Itzigsohn 2006).

Neoliberalism has been widely documented to exacerbate inequality on a global and local scale (Cammack 2009, 298). In Latin America, the increase in inequality, and the erosion of the middle class (discussed above) forced much of the middle class into poverty. Many turned to the

informal economy as their only option for economic survival. From 1982 (the first year of the Mexican debt crisis) until 1997, real wages dropped between 7 to 12% annually. The decrease in wages among the bulk of the population increased the economic inequality within the country. Gonzalez de la Rocha (2001, 82) explains: “the richest 10 percent of the population earned 55 percent more in real terms in 1992 than in 1977 while the real income of other social groups declined.” Similarly, Michael Walton (2004) from the World Bank, who discusses how beneficial neoliberalism was for Latin America, agrees that, inequality increased dramatically during the shift towards neoliberalism. He also asserts that there was an increase in the demand for qualified tertiary workers (which somehow offsets the increase in poverty). By increasing interest rates in Mexico, the middle class was further eroded, increasing inequality (Shefner 2006, 245). The increased inequality through the erosion of the middle class forced many out of their middle class jobs, and forced them into the informal economy because they had no other economic options. Neoliberalism has led to the inability of the government to provide social services, coupled with the increase in both poverty and inequality. Gonzalez de la Rocha (2006, 98) says that the recent transition has shifted the resources in poverty to the poverty of resources. The poverty of resources has thus facilitated the growing impoverished population to become increasingly reliant on the informal economic sector as the primary source for survival.

Although the rural to urban migration is not necessarily a direct result of neoliberal policies (some have argued it is see: Davis 2007), it undoubtedly helped to facilitate the growth of the informal economy in Latin America, specifically in urban areas. From 1970 until the 1980s there was a major redistribution of the impoverished from rural Latin America to the urban areas (Davis 2006). Specifically from 1980 to 1986 Latin American urban poverty increased by 50% (Davis 2007, 157). Industrialization was supposed to absorb a large segment

of the rural population and give them formal jobs (Itzigsohn 2006, 83). But the industry was unable to employ all of the rural migrants, and large informal economies (as well as informal housing) were subsequently developed by the urban poor who migrated to the city in the hopes of finding well paying formal jobs. Over time, the urban factories, which used to employ a majority of the workers, couldn't compete with Asian manufacturing, and the workers were forced into the informal economy for survival. Guadalajara, a city that was once reliant on small-scale manufacturing, was especially decimated by East Asian imports (Davis 2007, 158). Once again, the previously employed formal employees were thrust into the informal sector due to economic restructuring beyond their control.

Additionally, the structural adjustment programs (SAPS) forced upon Latin America because of the debt crisis unintentionally facilitated a mass migration to the cities, despite their "anti-urban bias" (Davis 2007). The SAPs reduced or eliminated agricultural subsidies, forcing farmers to compete globally. The farmers often could not compete with the more mechanized first world agribusiness (Davis 2007, 152). With a loss of their former livelihood, many farmers were forced to search for work in the cities, and when they could not find formal work (due to the restructuring discussed above), they were forced into the informal economy. The shift from internally-oriented development to external neoliberal policies facilitated both the rural to urban migration and the subsequent rise of the informal sector in urban areas. Arias et al. (2010, 37) concurs, stating that the proliferation of informal labor in Mexico is due to the rural to urban migration.

In summary, the macroeconomic restructuring of Latin America of the 1980s facilitated the proliferation of the informal sector in urban areas. The rise of the informal sector was an unintended consequence of the "Washington Consensus," economic liberalization policies and



austerity measures brought on by the debt crisis (Cammack 2009). Moreover, these same policies propagated both migration and remittance dependence as government support to citizens was eroded. Just like informality, migration may have been a means of economic survival. However, the relationship between migration and informality remains unclear. Did migration occur to overcome capital constraints, which then facilitated informal business formation? More specifically, what role did migration play in conjunction with the neoliberal reforms of the 1980s to the proliferation of informality in Mexico. The analysis below will explore this relationship. Although neoliberalism has been widely documented to facilitate informality in Latin America, the Mexican government has also pushed many businesses into informality with its strict regulation policies.

### **Informality, Regulation, and Businesses in Mexico**

Informality is always a “response to a flawed regulatory system” (Arias et al., 2010; 5). Mexico has strict and numerous regulatory laws enacted for formal businesses. These laws were enacted to make Mexican businesses more competitive internationally. However, some have argued that the laws have backfired, discouraging the creation of formal licensed businesses and encouraging informal businesses (Arias et al. 2010). In 2001 Mexico was estimated to have the highest Index of Labor Rigidity, making it one of the most difficult places to engage in formal economic business ownership in the world (Arias et al. 2010, 9). There are not only numerous bureaucracies, but it is expensive for formal businesses to operate due to high forced contributions to social security as well as laws making it difficult to hire or fire workers and resolve capricious labor disputes in courts (Arias et al. 2010, 12). In fact, Tokeman (1992, 62) asserts: “The businesses that do fulfill their obligations are faced with total costs that vary between 28 and 50% of their profits.” By deciding to locate in the formal sector, businesses can

hurt their profit margins. This encourages informal or unlicensed competitors to flourish. Tokeman (1992, 72) suggests that the economic sanctions accompanied with regulation, “encourages evasion.” More specifically, Tokeman suggests that informal businesses may flourish during times of economic downturn, as the profits are being hurt already, so it would be illogical to cut profits further through registration.

Furthermore, the enforcement of contracts by the Mexican government is extremely ineffective. The policies directly make doing business in Mexico more expensive (Arias et al. 2010, 10). To avoid these expenses, Mexico has turned a blind eye toward a proliferation of informal businesses and informal labor (Arias et al. 2010). The burgeoning growth of the informal sector in Mexico decreases productivity and investment by reducing taxes and capital accumulation thereby making the economy less productive and efficient (Arias et al. 2010).

Arias et al. (2010) like de Soto, suggests that regulation and taxation inhibit capitalistic entrepreneurship and should be eliminated in Mexico. Ironically, these ideas echo the principles of neoliberalism, which helped to facilitate informality in Mexico. Arias et al. (2010), also suggest that the reduction of taxes and regulation would: “attract more firms into formality and raise the public resources to invest in its infrastructure.” There is no doubt that unnecessary regulation can cause a shift toward informality. However, the elimination of all regulations and taxations would not necessarily move everyone to the formal sector, nor would it lead to substantial economic development. Apparently Mexico has experienced the “perfect storm” for informality. Not only has macro-economic restructuring forced much of the population into the informal sector, but strict governmental regulation and taxation forces many businesses into the informal sector. Although the causes of informality are well understood, their implications for development are more murky.

## **The Implications of Informality on Development**

Like informality itself, the implications of informality on development are not well understood. Recently, the perception of informality has become negative thanks to the popular and widespread work of Hernando De Soto. However, informal economies in developing countries do have their economic and social benefits. In this section I will first discuss the economic benefits of informality, before discussing how the informal economy may hurt a country as it attempts to develop. Many have described the benefits of informality, mainly asserting that the informal sector is “functional” in the sense that it provides employment and economic opportunities for those who otherwise would have none (Centro and Portes 2006, 33). In other words, informal economies provide employment for a large proportion of the population that would otherwise be jobless or have no access to any capital. Aside from providing extra jobs, the production and services provided by the informal sector decreases costs for the entire economy, both labor and goods. For example, a formal company that hires someone off the books can save money by not having to have to pay the benefits of formal employment. The off-books employee receives compensation. Similarly, informal markets can bring down costs of formal markets by charging less due to the fact that they did not have to pay for licenses or other taxes to the government, reducing costs for everyone in the economy. Informal economies can mitigate inflation.

In fact, without the informal economy, it would be significantly more expensive to live in the developing world, as costs for both labor and goods would be much higher (Centeno and Portes 2006). The informal economy creates an arbitrage between markets, lowering both prices and costs. Centeno and Portes (2006, 34) conclude that the informal economy acts as a “de

facto” system of welfare, providing economic and social opportunities for the lower class and most impoverished.

The benefits of the informal sector are not exclusively economic. Itzigoshn (2006) has described the social benefits of the informal sector. He asserts that those engaged in the informal sector depend on each other for economic success, as they face similar economic challenges. Their collaboration is especially impressive considering they have no formal leader, as well as the challenge of organizing meetings between everyone engaged in the markets. Recent research asserts that social support in the informal sector is most common in the formation of new businesses. Similarly, trust is a crucial aspect of informality; despite a lack of regulation, informal factories have received global contracts for export because of a highly regulated system of working control and pooled effort (Itzigoshn 2006, 87). Through the promotion of collaboration between workers, informal businesses have been able to “expand (their) markets” (Itzigoshn 2006, 87). For example, artisans who were tired of the high prices charged by middlemen worked together to sell their products (lessening their dependence on middlemen) while expanding their markets (Itzigoshn 2006, 87). Itzigoshn (2006, 89) indicates there are two causes of the formation of these social networks of trust: the ability to increase profit and a shared social and economic identity. These social networks have also been demonstrated to help those involved find formal work (Ratner 2002).

Another often overlooked benefit of the informal economy is that it deters involvement in illegal activities. Ratner (2002) discovered that rural women in Appalachia who augmented their work in the informal sector were less likely to turn to illegal activities (Ratner 2002). Without the informal economy in Mexico, the drug violence could be even worse. The prevalent collaboration evident in the informal economy helps to unite the impoverished to better

themselves economically and socially without turning to drug gangs. The benefit of this collaboration at a community scale is not well understood.

Another benefit of informality may be that trying to formalize previously informal businesses has been disastrous. In Chicago, the successful Maxwell Street market was formalized to increase taxes for the city government. The businesses were forced to get licenses. But only half made the transition. The Maxwell Street market could not survive and many lost their source of income, both those who formalized and those who did not. The Maxwell Street market transition is not an isolated phenomenon, as numerous attempts to formalize businesses across the world have “floundered” (Williams and Windebank 1998). Attempting to formalize businesses does not necessarily lead to development; in fact, they can exacerbate poverty.

In summary, after the macro-economic restructuring brought on by neoliberalism, the development of informal industry and economy has become a necessity for the impoverished in the developing world. For those who lack formal economic opportunities, it provides a safety net to find work. Similarly, for the most impoverished it lowers prices, making life affordable. In Mexico it is also beneficial that workers can turn to the informal sector rather than working for the increasingly powerful and violent drug cartels. Without the informal sector, millions would live in destitute poverty with no other options for work. Although what the informal market provides is obviously beneficial, there are some detriments to informality, specifically in the area of economic growth.

### **Costs of informality**

As demonstrated above, the informal economy does help support some of the most impoverished in Mexico. There are clearly benefits from the existence of the informal economy.

However, the prevalence of informal markets may inhibit economic growth on a broader scale, at both the community and national level. The following section will address how informal markets may inhibit economic development.

First, a widespread informal economy weakens the public's perspective on the effectiveness of regulation in specific industries and in government more generally. Centeno and Portes believe that the only reason why the informal sector exists is because of the government's failure to regulate the economy. Since the state cannot enforce its economic laws, it seems weaker in all aspects, weakening the public perceptions of the state's ability to both govern and protect. In essence, the prevalence of informality perpetuates a sense of "underdevelopment and political backwardness" (Centeno and Portes 2006, 34).

Similarly, without the protection of the government, entrepreneurs engaged in informal work must find their own methods to enforce fairness in transactions. Without regulation, and contracts specifically, the informal market is less reliable and safe. The lack of reliability can sometimes increase transaction costs, as sellers are forced to rely on middlemen or "enforcers" who can increase the costs of transactions (Centeno and Portes 2006, 34). Moreover, some have asserted that the system of regulation "favors larger businesses and discriminates against smaller ones." The lack of regulation discourages the creation of more efficient and profitable institutions, perpetuating both poverty and underdevelopment for the most impoverished while forcing them into the informal sector (Centeno and Portes 2006, 35). The cards seem stacked against everyone in the informal sector, creating a cycle of inescapable poverty and informality.

A strong association has been demonstrated between economic inefficiency and informality; this economic inefficiency can slow development (Arias et al. 2010, 30). The

association does not mean that informality causes economic inefficiency, but rather that less productive businesses choose not to be licensed (or lack the means to become formal) and are thus informal (Arias et al. 2010, 33). De Soto, suggests that informal businesses are withheld by regulation and taxes. However in reality informal businesses have been documented as often being less productive than formal businesses to begin with (Arias et al. 2010). That is not to say that being informal makes them less productive, but rather that smaller businesses choose not to get licensed. In fact, some have suggested that the only reason that informal businesses are able to stay open is due to the fact that they are in essence subsidized by the funds they save by not paying taxes (Arias et al. 2010; La Porta and Shleifer 2008). However, La Porta and Shleifer (2008) also suggest that the economy will eventually work out the informal businesses as it becomes more efficient. But that view seems unrealistic compared to the recent proliferation of informality in Latin America. In addition to economic inefficiency, human capital accumulation may be slowed by work in the informal economy. Research has indicated that “returns to work experience are lower in the informal sector” (Arias et al. 2010, 34). Formal workers in Mexico see much higher returns to work (almost over 1% higher in 2006). However, like economic inefficiency, this could be self-selection, as those with the most to gain from a human capital standpoint most likely work in the formal sector, whereas those who work in the informal sector are often lack human and economic capital.

Despite the fact that neoliberalism has blurred the distinction between the formal and informal economic sectors, the prevalence of the informal sector has perpetuated social and economic inequality. Centeno and Portes (2006, 37) assert: “In a sense, the functionality of the informal sector for the state and firms in the formal economy depends precisely on the continuing vulnerability and poverty of those laboring in underground activity.” They argue that

the high prevalence of informality will create a divide between the minority wealthy, formal elite and the overwhelming majority of poor who work in the informal sector. Similarly, the Marxist perspective on informal economies maintains that workers in the informal sector are being exploited, but through less direct and explicit methods (Bonacich and Light 1991). The divide between formal and informal work is furthering the divide between rich and poor, leading to a bimodal distribution of the wealth. Some have argued that bimodalization of wealth is a direct result of neoliberalism, just like informality (Harvey 2005). Economic hierarchies exist in the informal sector just like the formal economic sector, and these hierarchies further promote inequality (Ratner 2002).

Inequality may not have as drastic effect on economic development as government tax collection. Informal economic activities remain largely if not entirely untaxed. Although, formal firms may save money by avoiding taxes, as they continue to grow they face increasing costs of evasion (Arias et al. 2010; 32). The reduced taxes inhibit local or state governments from accessing the money and reinvesting it in the community. Lewsi (2004) suggests that informal businesses are not only less productive than formal ones, but that by not paying taxes they act as parasites for the entire community. Not only do they do not contribute taxes, but they also steal the market share from the more productive, taxpaying formal businesses. The lack of tax dollar reinvestment can be particularly devastating for communities dependent on remittances. For example, Grindle (1988) discusses how the developmental potential of remittances is often withheld by a lack of infrastructure. He claims that when communities have better infrastructure remittances are more likely to be used productively (Grindle 1988). However, when communities evolve to become dependent on remittances, a positive feedback loop emerges. The community becomes increasingly dependent on remittances. With no tax



dollars, the community cannot build infrastructure to offset dependence on remittances. In addition, when remittances are used to create informal businesses, this cycle of dependence is further exacerbated. Similarly, neither remittances nor informal businesses contribute to the social benefits of formal pay, most importantly government-operated retirement programs can falter because of informal economies. By not paying taxes, the government must look elsewhere for funds to support social services, the same social services that those who engage in informal work depend on. So, workers in the informal sector contribute little to no taxes and depend on the government for services (Centro and Portes 2006, 35). Finally, to compound the problem, the government has trouble taxing the elite as they have the power to avoid tax collection.

### **Hernando De Soto and the Costs of the Informal Economy**

One of the most prominent and outspoken theorists regarding the relationship between the informal economy and economic development is Hernando De Soto. Most contemporary developmental theories have a pessimistic outlook on the prospects of global development. Ever since failures of developmental initiatives in Latin America and Africa, few developmental theories have been welcomed. Because of all the failure in developmental policy, few economists have created new policies. Recently, however, a more optimistic paradigm in development has been slowly emerging. Hernando De Soto a finalist for the 2002 Nobel Peace Prize in economics has become the face of this new focus. Bill Clinton called De Soto “The world’s greatest living economist” (Davenport 2004; 2). Both American political parties have embraced his suggested policies regarding the selection of areas of the economy to receive aid (Davenport 2004). Gravois (2001; 1) explains: "For the left, de Soto has formulated the most seemingly practical ideas for reducing global poverty. For the right, de Soto offers the most compelling way to market capitalism to the poor.”

De Soto and his theoretical perspective on informality and development have gained traction for the following reasons. First, although De Soto has a negative view of informality, he has a very positive perspective on the prospects of broader economic development. Second, most theories regarding development in the Third World are complex, De Soto's perspective is relatively simple and easy to understand. He argues, most simply that the incredible prevalence of informality in the developing world is withholding economic development.

De Soto claimed that the informal economy prevents the 3<sup>rd</sup> world from accessing 9 trillion dollars of fungible assets (Goldman, 2007). He refers to informality as "dead capital." This "dead capital" thus reduces the developing world's economic growth potential. De Soto observed that the unregulated informal economies withhold usable capital (De Soto 2002). For example, because of homeownership licenses in America, we use our houses as collateral to receive loans. These loans also help facilitate bank growth, which in turn helps increase savings and other loans that can be used for what De Soto called "economic entrepreneurship." (De Soto 2002; 40). In fact, Americans most often use their house as collateral to start a small business. De Soto compared the dead capital to energy: once the energy is infused into the economy, there will be a multiplier effect (De Soto 2002; 43). The capital is presently dormant, withheld by a lack of effective formalization policy, but once it is energized, the new funds will facilitate the economic growth of the third world (De Soto 2002; 45). More specifically, De Soto is concerned with homeownership: by making third world citizens into homeowners their increased assets will facilitate more entrepreneurial activities (such as formal business creation), which will lead to economic entrepreneurship, abating poverty on a global scale. Through formalization policies De Soto thinks he has a silver bullet for global poverty.

Given that the majority of migradollars are spent on consumption, housing, and land, we can apply De Soto's perspective to see the benefits of formalization policy on migradollar spending. One of De Soto's key points is that the formalization of land and housing through increased licensing or titles would "make assets fungible" (De Soto, 2002: 57). He argued that formalization, specifically of housing, would make the assets "easily combined, divided, mobilized and used to stimulate business deals" (De Soto 2002; 56). The once dormant capital suddenly becomes: "Fungible able to be fashioned to suit practically on any transaction." (De Soto 2002; 56). With the newly fungible assets, owners become attached to their assets (De Soto 2002; 58). Homeowners would see migradollars spent on housing turn into an investment. These attachments to investments create economic networks. Because of the increased political and economic power, these networks would demand infrastructure, such as utilities and transportation routes (De Soto 2002; 60). Roads may be built that create new trade opportunities, schools that provide education, and police stations that lessen crime and corruption could all be the result of the economic networks that would be created by formalization policy. Likewise, infrastructure would be able to be built with new taxes gathered by formalizing the informal. This infrastructure is desperately needed by the remittance-dependent states of Mexico and could create new economic industries that would lessen the reliance on migradollars and informality, reversing the "culture of dependency" (Kapur 2004; 13).

Similar to a positive feedback, the demand for infrastructure would lead to more economic growth through the creation of new jobs and new industries to meet the new economic network's needs. These jobs would attract laborers who once might have looked for work abroad, lessening the financial dependence on migradollars. Finally, increased formalization of land rights and businesses would also protect transactions. The buyers and sellers would have

increased confidence in the economic system. Economic confidence is desperately needed in the developing world. The confidence would increase economic transitions in the formal economy. New industries would be created to not only aid the protection of transactions, but other industries would be created by the spinoff effects of the benefits of an increasing formal economy. The property would become more than just paper; it would become the backbone of a new capitalistic based society (De Soto, 2002: 65).

This potential growth due to formalization in the developing world would be comparable to the economic benefits that the “Fordism” policies, enacted by the United States in the 1950’s had on the American economy (Porter and Sheppard 2006: 410). Through the subsidization of construction in the 1950s, new industries were created. A transportation network grew in demand as the suburbs emerged. Automobiles became more necessary. The government not only changed the economic framework of the United States, it changed the American lifestyle.

The objective of this thesis is to explore the relationship between migration and business formation. As discussed above, some migradollars go toward the foundation of small enterprises. These spending patterns can lead to more economic opportunities. They can facilitate small enterprises, family businesses, or small-scale agriculture. Licensing could also benefit these small businesses. Formalization would provide some regulatory standards that could increase quality and international demand. After creating an infrastructure that met European quality standards, new markets have grown around Lake Victoria in Tanzania based on the exportation of the Nile Perch (Darwin’s Nightmare 2004). Licenses turned a small, informal, subsistence-based fishing industry into a million dollar international industry (Darwin’s Nightmare 2004).

Another example of formalization policy transformation comes from Thailand. Tuk-Tuk taxis of Bangkok were once considered unsafe and were used only by locals. Through formalization processes such as registration, licensing, and testing, the Tuk-Tuk's experienced widespread demand. The regulation increased tourist confidence, perceptions of safety, and standardization (Tourism Authority of Thailand; 2006). A Tuk-Tuk ride has become a staple of a trip to Bangkok, and the once small business has seen profits skyrocket (Tourism Authority of Thailand 2006). An increase in formalization policy concerning businesses could facilitate greater gains with migradollar spending.

As a condition to accession to the European Union in the 1990s, Poland was forced to completely formalize its pork industry. For generations many people in rural Poland lived as subsistence pork farmers (Dunn 2003). As a condition of accession, the entire pork industry was formalized and standardized to meet the stringent safety standards of the European Union. The economic and social effects were dramatic. The substance farming processes suddenly became unhygienic and unacceptable for international trade. The livelihoods of millions had to change. To meet the formalization standards the pig production was corporatized and reorganized in old communist collective processing plants. As the plants slowly were transformed to meet the European Union's quality standards, pork became profitable and the export of pork escalated dramatically in the European market (Dunn 2003). Former informal subsistence production became a transnational rationalized industry. The formalization of the pork industry displaced millions of rural livelihoods, but it also helped to modernize and integrate Poland's economy into the global economy (Dunn 2003). However, it is important to note the small-scale farmers were forced out of the market and black markets for pork erupted.

If Mexico wants to engage in formalization, the country needs to be simple and accessible to the whole public. For example, in Peru it takes a citizen 207 steps in 52 different government offices and over \$1,000 to be granted the title to build on state-owned land (De-Soto 2002). Sociologist Max Weber described such systems as “irrationalities generated by rational systems” and as the “Iron Cage of Rationality”(Ferrante 2005; 195). He said that the iron cage of rationality is applicable to any modern bureaucracy. In the developing world Weber noticed that the trained specialization of each branch creates “red tape” and unnecessary steps to be completed. Employees familiar only with what they are trained to do and not familiar with other branches of governmental policy, create numerous superfluous steps that lead to inefficiency in the government and an inability of the populace to understand the system. Economist Thorstein Veblen described this phenomenon of organizational ineffectiveness as “trained incapacity” (Ferrante 2005; 197). The process of applying for licenses and other formalizations must be easier in order to facilitate formalization. In essence, the iron cage of rationality, must be simplified and made more rational for “dead capital” to be made “fungible.”

Although De Soto may be the most outspoken author and theorist regarding informality, his perspective on the developmental implications of informality has become widely critiqued. De Soto’s suggested policies seemingly assert that overtly complex regulations withhold economic growth (often in the form of bureaucracy). The idea that regulation and government withholds economic growth is not original; in fact, it echoes the very principles of neoliberalism. As discussed above, the diffusion of neoliberal policies both promoted and facilitated the growth of informality in Latin America. Ironically De Soto’s policies which are seemingly a response to the latent consequences of neoliberalism the growth of the informal, share the same ideology of.

According to De Soto, informality impedes economic growth throughout the developing world and formalization will act as a silver bullet which will allow an escape from poverty. His silver bullet plan does not take into account the economic and social differences between third world countries or the wider structural constraints that have withheld development for centuries (Porter and Sheppard 1998).

Despite the limitations of his theoretical framework, the very results of De Soto's policies have been documented as being ineffective at best and disastrous at worst. For example, in his home city of Lima, Peru, the policies of implementing formal property rights only lead to a 24% financing rate, almost none of which was from private banks. This is the opposite of what de Soto predicted (Gravois 2006). Most of the financing in fact was supplied by the state and did not necessarily connect those engaged in informal work with the formal economy. Moreover, the residents were much more likely to use local resources or the government rather than borrow from the bank (Gilbert 2002, 16). The most impoverished are much more likely to use their own local resources to get loans rather than a formal bank, even with titles (Gilbert 2002, 17). Gilbert (2002) has demonstrated that sources of loans in Bogata, Columbia, are similar, despite having a title.

For De Soto, the modest success in Lima is a success story, as the granting of property rights has actually hurt the most impoverished in other countries. For example in Phnom Phen, Cambodia, slum dwellers were allowed to formalize their property near the center of the city. Their land was bought by wealthy speculators, who purchased the formal property rights and then developed the area. The slum dwellers were then displaced to a location outside of the city. The slum dwellers could no longer afford to commute to work into the city as their wages were less than the cost of a commute (Gravois 2005). The formalization policies clearly did not

benefit the most impoverished; rather they benefited the elite in Phnom Penh, exacerbating both poverty and inequality. Phnom Penh illustrates that through the formalization of property rights, the most impoverished might be forced out of their homes off of their land, or out of business.

Since Latin America is De Soto's home, and the focus of this thesis, the implications of De Soto's policies in Latin America should be discussed. In Latin America, most informal residential areas are actually either paid for or protected by a politician (Gilbert 2002). So they are rarely in danger of demolition or destruction (like in Phnom Penh). However, this state of informal housing does often lack infrastructure and services, something that licensing could improve. Similarly, Gilbert (2002, 8) says: "It is much less expensive to issue property titles than to provide settlements with services." Many have asserted that the provision of infrastructure can facilitate development (Portes 2006). So, by providing licenses instead of services, informal neighborhoods could remain in poverty rather than escape it as De Soto suggests. De Soto also suggests that having a title facilitates house improvement (Gilbert 2002). But research in Latin America has demonstrated that titles do not facilitate housing improvement; rather housing improvements (or investment in housing) motivate the residents to get titles (Gilbert 2002). Another aspect of the Latin American housing market to De Soto's argument is the lack of residential mobility in urban Latin America. Most residents in informal areas are place bound--in fact there is a "virtual absence of a housing market" (Gilbert 2002, 13). How can licenses help anyone if the residents cannot sell their houses? Finally, and perhaps most damaging to De Soto's argument, is that "a legal title makes little or no difference to the availability of formal finance" (Gilbert 2002, 14). Even with titles, banks have not loaned to the most impoverished as they still have to demonstrate a form of income. In a vicious circle of poverty, the poor cannot readily demonstrate a source of income. Furthermore, banks are



hesitant about loaning to the poor due the fact that they fear defaulting on loans, and most importantly, low profitability of these loans (Gilbert 2002, 15). In summary, in Latin America there is neither a desirable housing market nor a supply of formal loaning institutions, making titles for informal housing almost irrelevant for development, which is congruent with what Hirschman (1984) concluded.

Although De Soto's perspective on informality has been widely critiqued and his policy implementations have largely been ineffective (like most developmental policies), he has brought attention to the increasingly important informal sector. His policies may not be effective, but his perspective could eventually influence some effective policies. Similarly, he may overestimate the influence of housing and not look enough at informal businesses. Through simplifying the registration process and lowering taxes on businesses, households that engage in migration could more easily formalize their businesses. This may propagate further investment in the business as well as lead to the other benefits mentioned by De Soto. Although his policies (specifically with housing) have been unsuccessful in the past, formalizing the increasing number of businesses started by return migrants may have substantial developmental potential.

### **Migration and Informality:**

There has been little research conducted regarding the relationship between the influence of migration on informality. Most likely, the relationship is endogenous, with migration propagating informality and informality also propagating migration. As remittances and capital accumulated while abroad are overwhelmingly not taxed in the home country they can be considered informal. So in essence, communities have incredibly substantial flows of informal capital into their economies. What is the influence of so much informality on the community?

Additionally, what is the influence of the flow of capital on future migration? There has been very little research linking migration to informality in Latin America.

By removing some of the poorest segments of the population from Mexico to the United States, migration may be taking away a substantial proportion of the informal labor force. In some communities, the choice remains either to migrate or to work in the informal sector. Most individuals can gain greater returns through international migration, so they decide to migrate. However, the informal sector can be maintained through the consumption patterns of migradollars (Macias 2009) migrants and their families spend their remittances in the informal sector, perpetuating its existence.

The objective of this thesis is to examine the relationship between migration and business formation. Past research has indicated that return migrants most often start “petty retail establishments” (Massey and Parrado 1998). Although this suggests that migrants are more likely to start businesses in the informal sector, no research has specifically examined the relationship between how migrants contribute to the informal sector through business formation. The next section will actually examine the theoretical perspectives with quantitative methods.

## Chapter V

### Data and Methods

In this chapter, I describe the nature of the data examined in this investigation and the analytical procedures implemented to answer the study's research. Beginning with the data, I examine the two major sources, the Mexican Migration Project and the Mexican Census. In addition, I will explain my rationale for inclusion of particular figures and acknowledge limitations of these data points in the context of the investigation. In the next major section, I examine the analytical methods that are used in this research. I explain and justify the implementation of multilevel binary and multinomial logistic regression techniques on time varying data that help to distinguish the formation of formal and informal businesses by a previously developed criteria.

#### **Data**

The two sources of data used in this investigation are the Mexican Migration Project and the Mexican census, which contain data at various scales. The household-level data for the analysis come from the Mexican Migration Project (MMP), whereas the community-level data come from the Mexican census: *Instituto Nacional de Estadística, Geografía, e Informática* (INEGI). The MMP is a combined effort between the University of Princeton and the University of Guadalajara (Massey et al., 1990). The data are made available without cost to anyone with an Internet connection. The MMP has data from 128 Mexican communities selected because they represent a broad array of socioeconomic and urbanization characteristics. The first four were selected to analyze areas that had not yet been analyzed by other studies, had an existing out flow of migrants, and represented four categories of urbanization (Massey et al. 1987). After

the communities were selected, maps were drawn of all the dwellings in the community, each dwelling was numbered, then through a random number generator roughly 200 dwellings to be interviewed were selected (Massey et al. 1987). Each year since 1987, four to six additional communities are added, making the data base increasingly “historically rich” (Massey et al. 1987). The communities were selected “to cover a wide spectrum of urbanization and socioeconomic conditions” (Riosmena 2009; 327) and not because of their high migration prevalence, though most communities have at least some history of U.S. migration.

The variables in the MMP describe business and property ownership, labor, marriage, migration histories, and numerous other important variables (Massey et al., 1990). The MMP not only has data on migrants, but also contains data on households not engaged in migration, which allow for the comparison between the factors that predict business formation in migrant and non-migrant households. The data from the MMP were collected by employing a semi-structured interviewing technique called the ethnosurvey to collect quantitative data (Massey et al., 1990, 14). The ethnosurvey technique involves open-ended questions by trained interviewers (Massey et al. 1990, 15). The data are then coded, quantified, tested for errors, and put on an online database accessible to the public (see <http://mmp.opr.princeton.edu>).

The household-level MMP data were merged with the second source of data, the community-level Mexican census data (INEGI). The INEGI data were used for the community variables collected; the INEGI is used by governmental demographers and researchers alike. Since the Mexican census data are collected only once every ten years, I assumed that the growth or decline between decades was constant. Although this may be a faulty assumption considering the economic turmoil caused by the economic crises of 1982, 1988, and 1994, I simply did not have better data.

Although the MMP is a tremendous resource for analyzing the broader social process of migration from Mexico to the United States, it has often been critiqued for not being representative. Since communities with specific characteristics are continuously selected, a bias exists regarding the communities sampled. Specifically, the procedure may have led to an over representation of migrant-heavy communities in western states (Massey and Zenteno 2000). However, when the data were compared to that coming from a nationally-representative sample, the ENADID (Encuesta Nacional de la Dinamica Demografica), MMP data were not substantially different. Massey and Zenteno (2000; 789) assert: “Although the ethnosurvey design of the MMP over-represents migrants from Mexico’s western states and from mid-sized communities, this fact appears to matter little when it comes to constructing an accurate profile of the population of Mexico-U.S. migrants.” More importantly for the context of this research, the migration characteristics were “remarkably consistent” (Massey and Zenteno 2000, 789) between the MMP and ENADID. However, it is not necessarily clear if the businesses formed in this sample are representative of all businesses formed in Mexico during the time of the survey. All data sets are somewhat problematic; however the MMP was selected because of its extensive data regarding both migration and business formation variables, which no other survey includes. In addition, given my interest in understanding the role of place in informal and formal business formation, MMP data are also useful as they are representative at the community level, a scale that other surveys oftentimes do not accurately represent.

As discussed previously, most entrepreneurial opportunities in rural areas are informal, whereas there is more differentiation in urban areas. The analysis will thus focus on urban areas alone, meaning all communities in the sample in localities with a population of under 2,500 were eliminated. Further, all communities where the interviews were conducted before 1998 were

also eliminated, because questionnaire re-design in 1997 renders communities surveyed before and after this year less comparable (the MMP contains communities that have been interviewed since 1987, so 11 years worth of ethnosurveys were eliminated). This sample selection yielded 9,460 households in 54 communities. I used the business history on the MMP for business formation information. If a business was in the retrospective 25-year window used, it was coded as a 1: however, they were differentiated into two groups: formal and informal. Out of the 1,104 businesses formed in the sample, 919 were coded as informal businesses and 185 were coded as formal businesses according to criteria described below and shown in Table 1.

Table 1 demonstrates the distributions of the household-level variables (including the dependent variable, informal business creation. Migration will be examined in two ways. First, a dummy variable was created to examine current migration. If the head is currently in the United States for the year they receive a 1. All years they are home are coded as 0. Then, after the head has returned, a new variable is coded 1 as a measure for migration experience. During 4% of the household years, the head is currently in the United States, while for 8%, the head has returned. The vast majority of the sample had no migration experience. Two variables were included to control for previous capital attainment, the number of new houses purchased and the number of new properties purchased specifically for a new business. Once again, a vast majority of the sample did not purchase new property during the sampling frame. To examine the life cycle stage of the household, the age of the head was included. Head age is often used as a proxy measurement for life cycle stage. Household educational attainment was also controlled for, using the average number of years of education per person in the household (controlling for age). Finally, the number of children in different age groups were included in each group to examine the influence of children on informal business creation. Some like Davis (2007), have

asserted that children are often used as labor in informal businesses. All of these variables were coded to change over time, so as the head aged, he was given years of age, just like the children. Right censoring occurred after the *last* (most recent) business was formed or the year of the survey. After the removal of data, the household year selection yields a total of 91,159 household years.

Table 1. Mexican Household-Level Descriptive Statistics, 1980-2010

Type of Business	Percentage	Number		
Formal	2%	185		
Informal	10%	919		
None	88%	8356		
Migration Experience	Percentage of Household Years			
Return Migration	8%			
Current Migration	4%			
No Migration	88%			
Property	Percentage of Households			
Business Properties	with new property			
New Business Property	2%			
No New Business Property	98%			
Housing Properties				
New Housing Property	14%			
No New Housing Property	86%			
	Mean	Std. Dev.	Min	Max
Head Age	43.1	13.5	11	101
Years of Household Education	6.5	3.9	0	21
Number of Children				
0 to 4	0.51	0.75	0	5
5 to 12	0.93	1.15	0	8
13 to 17	0.60	0.91	0	6
General Descriptive Statistics				
Households	9460			
Communities	54			
Household Years	91159			

Source: Mexican Migration Project

### *Household-Level Scale*

The variables at level one of analysis are at the household level. In an analysis of migration generally and especially its influence on business formation, the household remains by

far the best scale for analysis for the following three reasons. First, Massey et al. (1987) found that migration decisions in Mexico are most often determined at the household level. Second, the theoretical perspective of the New Economics of Labor Migration (Stark and Bloom 1985) asserts that the household rather than the individual makes migration decisions, and the household can use migration as methods to combat capital failures (such as inadequate access to capital) and gain capital to start a business. Finally, as demonstrated by Tokeman (1992), businesses, especially informal businesses, often use family members as labor. For these three reasons, the scale of this analysis will be at the household level.

*Dependent Variable: Type of Business Created*

Although the MMP contains detailed information regarding any businesses formed by a household, it does not contain information as to whether they are licensed or not (in other words it lacks an explicit designation of them being formal or informal). Therefore, I had to differentiate businesses into categories based on criteria from previous research. The criteria employed to differentiate informal from formal businesses are based on previous research by Tokeman (1992), whose objective was to examine which types of businesses were located in the different sectors of the Mexican economy. Tokeman (1992) was able to describe the characteristics of these businesses while also creating criteria for differentiation between formal and informal businesses in urban Mexico. Although his findings are dated, they are instructive because they match up well with questions asked regarding the businesses in the MMP.

Tokeman (1992) identified three specific criteria to differentiate between formal and informal businesses. First, the utilization of family members is a crucial variable that differentiates between formal and informal businesses. Obviously, informal businesses are much



more likely to employ family members than are formal businesses. Second, just as a high prevalence of family workers is reflective of an informal business, a larger number of workers in general suggest that a business is located in the formal economy. Larger businesses are much more likely to comply with regulation than are smaller businesses; they also have the capital to survive the costs of taxes and registration (Arias et al. 2010; Tokeman 1992). Third, businesses that were capitalized with a loan from a bank are labeled in the formal sector, because banks will often not lend to informal businesses “due to the risks associated with microenterprises” (Tokeman 1992, 66). Conversely, businesses capitalized with loans from friends were labeled as informal.

In this investigation, slight alterations were made to Tokeman’s (1992) criteria to make the differentiation more conservative in terms of informal businesses. First, the labeling of type of business was considered. I labeled street vendors as informal and all of the other businesses were determined based on an adaptation of Tokeman’s (1992) other criteria. Tokeman (1992), suggested that the second alteration was in the number of workers employed. He specified that businesses with fewer than 15 workers are most often informal, but in this research the criterion was set at 5. Third, although Tokeman (1992) stressed the importance of family labor, the criteria I employed stated that the number of workers was more important. So if the business had over 5 workers, all in the family, it was labeled as formal. Tokeman (1992) also suggested that much of the manufacturing should be considered informal: however, this analysis only labeled street vendors as informal. Despite the conservative differentiation, informal businesses made up the overwhelming majority, 919 compared to 185. Previous research has indicated that informal businesses do make up the majority of businesses, specifically in urban Mexico (Arias et al. 2010; Meril 1996), indicating the criteria established in this research are reasonable. For the

majority of the criteria, more conservative categories were used. The entire set of criteria is presented below in Table 2.

Table 2, Informal Business Differentiation Criteria

Type	Type of Business	Labor Characteristics	Method of Capitalization	Number of Businesses (N) Total =1,104
Formal	Any	More than 5 workers	Loan from bank	185
Informal	Street vendor	Family Labor > Nonfamily Labor, Less than 5 workers	Loan from friends	919

As this analysis uses binary (event history) logistic modeling techniques, the groups are mutually exclusive. In other words, if the business fit any of the characteristics, it was considered informal. In reality, businesses might switch from group to group and therefore not fit so neatly into one criterion. However, I deemed this scheme to be the best method to differentiate between formal and informal businesses given the data as well as Tokeman’s classification scheme. The next section will discuss the independent variables and what they are attempting to analyze. To try to further examine the differences, multinomial models were used to examine the risks between businesses being formed in each respective sector.

*Household-Level Independent Variables*

The following section will discuss the variables added, how they were coded, and their theoretical justification for inclusion in the model. When analyzing how migration leads to business formation it becomes crucial to control for any previously attained capital. Households with more capital should be more readily able to create a business; as such, two capital control variables were included. More capital may be a result of the household being wealthier and/or

better acclimated to the financial system. The first capital control variable is the presence of a property specifically dedicated to a business. Most informal businesses are run out of the home or on the street where they do not need dedicated property (Tokeman 1992; Davis 2007). However, having a property may make them more likely to be formal due to their larger scale operations. By including this variable in the subsequent models I am able to examine the relationship between business property ownership and formality and address the emphasis that some theorists, including De Soto (2003), have put on this relationship. The figures in Table 3 demonstrate that not many households actually own properties for businesses, but I hypothesize that all of the households that own a property for their business will be located in the formal economy.

Table 3, Number of Business Properties for Mexican Households 1980-2010.

Number of Properties	Frequency
0	91,247
1	214
2	7

*Source: Mexican Migration Project*

The second capital control variable is the number of house properties owned by the household. Owning more houses obviously demonstrates more acquired capital and wealth. A better measurement may have been rooms in the house, as migrants often spend their migradollars on room additions upon return to the homeland (Massey and Parrado 1994). However, despite having that data in the MMP, the variable was not designated with reference to time and thus precludes a determination of when the rooms were added in relation to either migration or business formation. As demonstrated below in Table 4, there was substantial variation between the numbers of properties owned, as some households owned up to five properties for housing. The business and house properties were coded by time, so the data could

be examined for number of properties over time. Having the number of businesses and house properties change over time combats the problem of endogeneity. If properties did not vary by time, the relationship between capital and business formation would be endogenous, making it impossible to tell if the capital was leading to businesses or the businesses were leading to more capital. By using time varying data, I can distinguish whether the additional properties are bought prior to the formation of a business. In summary, through the inclusion of the number of household properties and business properties I am better able to control for capital attained prior to business formation.

Table 4. Number of Housing Properties for Mexicans from 1980 to 2010.

Number of Housing Properties	Frequency
0	90,112
1	1,194
2	129
3	15
4	15
5	3

*Source: Mexican Migration Project*

Although the previous two variables controlled for capital, the next three variables are more important, allowing the examination of how household-level characteristics influence business formation. First, to examine how household characteristics are associated with business formation, I included the age of the household head. Age of household head serves as a proxy measurement for stage in the lifecycle of the household. It is important to examine when in the life cycle households are forming business and how it relates to migration timing. The head's age serves as the best proxy measurement for life cycle, as it is strongly associated with other life cycle variables such the number and ages of children as well as spouse age. The age variable makes it possible to examine how age of the head is related to business formation. Second, I

examine the average education achieved by the members of the household. Education has been demonstrated across migration corridors as a significant predictor of business formation. Instead of looking just at the head's attainment, I include a variable representing the education of all members, averaging the years of education by member while controlling for age. Including this variable allows for comparison between models to see the influence of household-level education on the type of business formed. The final household-level characteristic included were dummy variables for each respective age group. Some previous research has indicated that informal businesses are especially inclined to use household labor, specifically the work of children (Tokeman 1992). Yet the presence of children in the family may also hinder the development of a large-scale business, making it worthwhile to determine the association between presence and age of children and the creation of both formal and informal businesses.

Plotting the hazard function of the average household education, demonstrates how important education is between formal and informal businesses. Figure 1 below demonstrates the influence of education on informal businesses. Education seems to have a linear relationship with informal business creation, as each year increases the probability of starting a business. For formal business, it becomes how important education is, as the probability of starting a business increases dramatically, especially for the households with the highest levels of educational attainment (specifically university or 15+ years). The hazard increases dramatically for households that have the highest levels of education, while for informal businesses the relationship is more linear and even drops off with a high amount of earned education. It is important to note that this relationship controls for age by using the average number of years of everyone in the household.

Figure 1. Average Household Education Hazard Function and Informal Business Creation

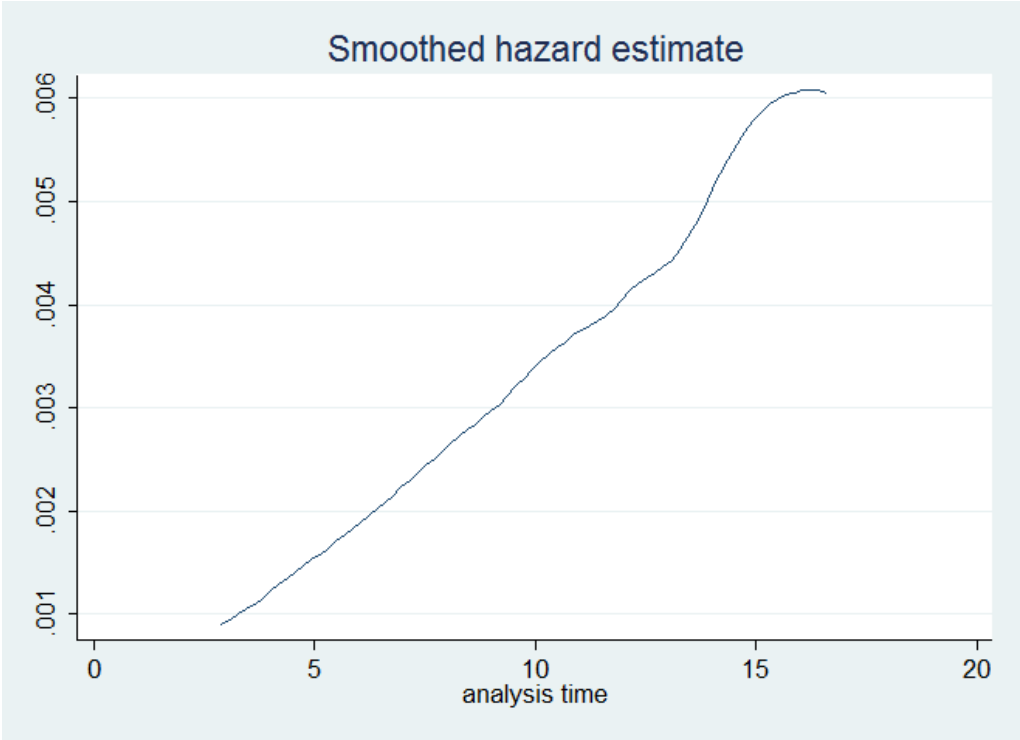
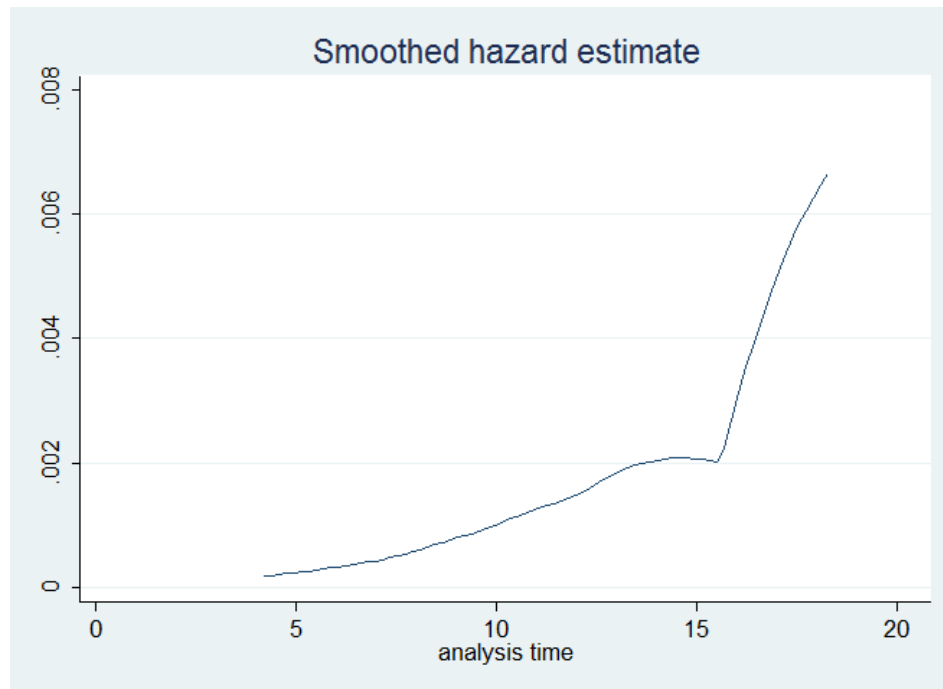


Figure 2. Average Household Education Hazard Function and Formal Business Creation



As the objective of this analysis is to study the influence of migration on business formation, two migration dummy variables are included. The first variable is whether or not the head was currently in the United States. In years that the head was in the US, the years are coded as 1. When the head was at home, the years are coded as 0. This variable serves as a proxy measurement for the household receiving remittances, as the head in particular has been demonstrated to overwhelmingly send remittances (Massey and Parrado 1994; Massey, Durrand and Pren 2010). By including this variable, I am analyzing the influence of remittances on business formation, and specifically whether remittances help create businesses (specifically formal or informal). Moreover, it measures how migration by the head might limit or facilitate business formation by the household in Mexico. A major limitation of this particular variable is the yearly scale. Often migration is only temporary or seasonal: however, for the case of this analysis, even a one month or three month migration is generalized as a yearlong migration. In

the future, a finer resolution on duration of migration could improve the veracity of the analysis. Of the 91,159 household years, the head was engaged in migration in 3,564 of the, roughly 4% of the entire analysis.

Rather than examining current migration, the second dummy variable for migrant status focuses on the household head's, international migration experience. Before migration, and even while the head is in the United States, the variable is coded as a 0, whereas upon return from migration and until censoring the head has a value of 1. If the head returns to Mexico and then migrates again to the United States the value goes to 0 during migration and then 1 upon return. This variable serves as a proxy measurement for the influence of migration, specifically return migration on business formation. Implicit in this thesis is the recognition that there are numerous factors that help migrants to create a business upon their return. Previous literature has demonstrated that return migration is much more important to business formation than are remittances, and I would anticipate this trend continuing; however, remittances may be used more often to start informal than formal businesses. It is also important to note that the head's migration experience is centered, this makes the cross level interaction term easier to interpret. One major limitation of this variable is that it does not weight the years closest to return. In the future, it would be interesting to weight more heavily the years closest to the return to see *when* migrants are starting businesses in relation to their return. Of the 91,468 household years, the head had returned for 7,313 years or 12.51% of all household years.

In event history analysis, it is crucial that the data vary accurately by time. All these variables were coded to vary over time in accordance with their recollection of yearly events. When the children were in school, the average educational attainment changed accordingly. By using the birth year of the children, they moved through the different age groups as the years



changed. Finally, every year one year is added to the household head's age. Although the household variables are important, recent research has indicated the importance of community-level factors on migradollar usage and business formation. Their interaction may be the most important aspect of this research.

### *Community-Level Data*

Increasingly, researchers stress the importance of the contextual community level for migration decisions and use of migradollars (Lindstrom 1996; Riosmena 2009; White and Lindstrom 2006). In addition, Massey and Parrado (1998) concluded that communities with better economies generally saw the formation of more businesses. For more information regarding the importance of the contextual community-level variables, see the section above regarding the community influences on migradollar usage. Massey and Parrado (1998) also concluded that national economic factors such as inflation matter for business creation. The analysis of this research does not include national level data; however, it contains four community-level variables as well as a cross-level interaction term between a community-level variable and a household-level variable.

Unlike the household-level data, which are from the MMP, the community-level data come from the Mexican Census (INEGI). In this investigation, the census data have been merged with the household file. However, the Mexican census is only taken every ten years, for which I to assume monotonic growth from decade to decade. In Mexico, during the period of analysis, these indicators were fluid and dynamic, fluctuating dramatically from year to year and in some cases from month to month. Unfortunately, I lacked more precise temporal data that would capture these fluctuations. Another major limitation of linking the households with the

community-level data is the source did not take into account internal migration. The households in the community in which the interview took place were linked to that respective community, even if they were recent migrants to the area and had previously lived in another community. This supposition of residential stability is obviously a flawed assumption, especially if respondents were drawn from rural areas to more economically dynamic urban ones. Moreover, if they started a business in their previous community, it would be attributed to the community where the survey was taken. Although not having data regarding the community in which households previously lived is a substantial limitation, there simply were no data regarding past communities of residence. Despite these two major limitations regarding community-level variables, the benefits of understanding how the economic context matters in terms of which types of businesses are formed is significant. Four community variables are included, and their importance will be discussed below. Their respective descriptive statistics are also presented after they have been explained in table 4 below.

The first community-level variable included is female labor force participation. Lindstrom (1996) used this measure to analyze the economic conditions of the community of origin. He asserted that a higher proportion of female employment is indicative of better economic conditions. Similarly, according to Jafee (2007), females in less economically advantaged communities rely on remittances for basic living expenses, whereas those from economically vibrant communities are more likely to work in the labor force rather than simply live off of remittances. Even in communities that are highly dependent on male migration and remittances, female labor force participation remains an excellent proxy measurement for the economic conditions of the community.

As female labor force is a proxy measurement for economic conditions of the community of origin, I measured community-level migration dependence by the proportion of the male migrants in the community. Obviously, communities more engaged in migration would have a higher proportion of male migrants. Data on the female migration ratio did exist, and it was highly correlated with both the male migrant ratio and the female labor force participation variables. As the majority of the migrants from Mexico are male, it should be an acceptable variable to quantify community-level migration dependence. Similarly, more male migrants should indicate greater flows and greater dependence on remittances as a community. Thus, the variable serves as a way to measure both community-level migration and the influence of remittances. The average proportion of male migrants for all the urban areas was 18%. In other words, roughly one in five Mexican urban men have migrated during the census period. Like the other measures, tremendous variance existed as the minimum value was 0 and the maximum was almost 70% (see the descriptive statistics below). Clearly, some communities are more dependent on migration than others, and the community-level influence of migration on business formation needs to be explored.

To assess community-level prevalence of informality, I included the community-level variable of self-employment. Higher levels of self-employment indicate a greater degree of community-level informality. A high proportion of informality could have two possible divergent effects. First, the market could be saturated with businesses, not allowing for new businesses, or when new businesses are started, are short lived due to the substantial competition. Davis (2007) espouses this theory. Another possible effect of a large informal sector would facilitate new businesses. Just like the theory of cumulative causation suggests with migration, households could see their peers start a business and make money. Viewing their success, the

household would then attempt to form their own business. Migration might be interrelated with this process, in that when the household views another engage in migration, gain capital, start a small informal business, the household aspires to similar upward social mobility.

In addition, the proportion of self-employed allows an analysis of which communities are already more informal and how this proportion influences formal business creation. Some migration theorists have suggested that formal businesses often cannot compete with a large informal sector where the prices and labor are cheaper. By including this variable, I am able to examine the influence of a prevalent informal sector on the creation of a formal business. Finally, this variable serves as a proxy measurement of which communities have been most substantially influenced by the reforms of neoliberalism, which forced many citizens into the informal sector. Tremendous variance exists within the proportion of self-employed, as the minimum community has only 8% while the maximum has almost 60%, with the average being around 25% (see Table 4 below). The analysis helps to address the question of whether migration is a means of overcoming capital constraints and culminating in the formation of an informal business in a market with many informal businesses.

The final community-level variable included in this analysis is the proportion of large-scale business owners in the community. Like the self-employment variable, this proportion does not explicitly indicate whether or not businesses are in the formal or informal sector: however, the owner business variable most likely indicates ownership of a formal business. Thus, it serves as a measure of the strength and prevalence of the formal economy in the respective community. As demonstrated below in Table 5, formal business owners make up incredibly small proportions of the community in terms of population, with the average at just 2.5%, with the largest proportion at 6.6%. Despite the low overall community proportions,

more owners could have a multiplicative effect on formal labor. More formal ownership indicates a greater number of people working for formal businesses in the community. Surprisingly, community-level ownership is not highly correlated with the self-employed variable, and both can be included without problems related to multicollinearity. However, they are both indicative of community-level entrepreneurship. Having a variable to measure the formal sector is important to contrast with the informal proportion of workers. The inclusion of the variable helps to address the question of whether the presence of more formal businesses in communities is associated with a higher proportion of people that work in the formal sector and whether this variable is associated with other economic measures.

All four measures provide specific community-level information that are worth examination, especially in relation to business formation and sector. The descriptive statistics for all four community level measures are demonstrated below in Table 5.

Table 5. Mexican Community Level Proportions, 1980-2010

	Mean	Std. Dev.	Min.	Max.
Female Labor Force	23.7	8.8	7.0	40.7
Male Migrant	18.4	12.8	0.0	69.1
Self Employed (Informal proxy)	25.2	10.4	9.0	59.2
Owner (Formal proxy)	2.4	1.2	0.3	6.6

*Source: Mexican Census*

## Methods:

As mentioned before, the MMP data are retrospective in nature. The period of observation is restricted to the 25 years prior to the survey to minimize recall bias by the

interviewee. Additionally, the period of observation is restricted to the year of formation of the household head's current union (if this is more recent than the 25 year limited observation) as the business formation history is supposed to pertain to the sampled household. Because I am attempting to examine the influence of migration on the business formation, I need to include time. Obviously the migration would need to occur before the business was formed to increase the likelihood of establishing causality. According to Bhrolchain and Dyson (2007), temporal ordering is a crucial aspect in asserting causality. The data used has year of business formation and no additional temporal gradations. Due to this rather crude temporal scale, this analysis will use discrete event history analysis (by way of logistic regression) rather than continuous-time proportional hazards models. Other aspects of the data set support the use of the discrete event history analysis. The other time varying variables are represented by year and are not on a finer continuous measurement. Given the temporal scale of this investigation, discrete modeling is arguably the best technique (Singer and Willet 2003; 313). According to Singer and Willet (2003; 371) the objective of discrete event history analysis asks: "What is the relationship between the risk of the event [business formation] occurrence in each time period and predictor?"

Since the data are coded in a discrete time model, basic logistic modeling techniques can be employed (Yamaguchi 1991, 19). Logistic regression measures binary outcomes, in this case whether or not a business is formed each year. As discussed previously, the year for the dependent variables are coded as  $t + 1$ , with 1 if the business is actually formed and 0 if a business is not formed. If a business is formed, the household is then censored. In addition to the censoring employed, censoring also occurred at the year of survey even if the household did not start a business during the time the data were collected. The majority of the population did

not start a business, or some may have started the business after the survey. Out of the 91,159 household years, businesses were formed in 1,104 years or 1.2% of all household years. Those who did not start a business were censored at the year of the survey according to the process outlined by Singer and Willet (2003; 317). When the data are censored because the event did not occur, or the household did not form a business, it is known as *right censoring*. As discussed previously, a distinct start date was given which for the most part prevented any issues associated with left censoring. Although censoring may lead to some modeling problems, Singer and Willet (2003; 318) assert: “in research on event occurrence: censoring is inevitable.”

The dependent variable, type of business formed, is a binary outcome, which is perfect for both event history analysis and consequently logistic regression. In event history analysis, logistic regression is used to estimate the probability of the hazard occurring. For this analysis, the probability of a business being formed is known as the “hazard.” The upper and lower bounds of the hazard are 0 and 1, and with logistic regression techniques, the results are in conditional probabilities, or the probability that the event or hazard has occurred (Singer and Willet 2003; 364). Only looking at the probability or odds can often be problematic: however, using the logit transformation fixes all the problems associated with considering probability alone. The logit transformation also makes the distance between values more comparable over time, making values similar and allowing modeling of time varying data (Singer and Willet 2003; 365). Finally, the logit transformation is necessary for logistic regression as it transforms binary data into a normal distribution.

Instead of simple event-history logistic regression techniques, as seen in Massey and Parrado (1998) this analysis uses multilevel modeling techniques. Multilevel modeling techniques were employed for empirical, theoretical, and statistical reasons. Including both

community and household-level variables makes the analysis more robust to both ecological fallacies and atomistic fallacies. In addition to avoiding critical ecological fallacies, multilevel modeling was employed for theoretical reasons, the following paragraph will explain why the previous research stresses the implementation of multilevel techniques. Previous research has stressed the importance of community-level factors to business creation (see above). Previous qualitative and quantitative research has indicated that communities with strong economies are more likely to see migrants start businesses than communities with weaker economies. This research attempts to examine specific community level economic and social factors and examine how they influence the distinction between formal and informal businesses. These community level factors are included in addition to the household level variables.

Theoretical reasons are not insufficient to employ multilevel modeling. However relatively, high Median Odds Ratios provide one statistical justification for employing multilevel modeling. The Median Odds Ratio (MOR) is the equivalent of the intra-class correlation coefficient (ICC) for Ordinary Least Square multilevel models for multilevel logistic models. According to (Merlo et al. 2006, 263): “The MOR can be conceptualized as the increased risk that (in median) would have if moving to another area with a higher risk.” The closer to 1, the lower the difference in communities, a value of 1.44 indicates relatively large community differences and more importantly that multilevel logistic modeling is methodologically an appropriate technique to be employed for the subsequent analysis. Table 5 below depicts the calculation of the MOR with the community level variance of the null model. According to Merlo et al. (2006) the null model is used to calculate the MOR. The relatively high MOR for all the dependent variables suggests that considerable variation exists between communities in terms of business creation. The high MOR values, and considerable variation between the dependent



variables between communities provide empirical reasons for the implementation of multilevel modeling. Finally, the equation for the MOR, based on the equation from Merlo et al. 92006) is demonstrated below.

**Median Odds Ratio Formula:**  $EXP(\sqrt{2 * \text{community level variance}}) * 0.6745$

Table 6, Median Odds Ratio by Business Type (calculated with the null model):

Dependent Variable	Median Odds Ratio Value
Informal Business	1.44
Formal Business	1.44
Any Business	1.41

Another major statistical justification of implementing multilevel modeling techniques is the data structure of the data used in this analysis. The MMP data are “nested,” in different communities. As demonstrated by the MOR, households in the same communities are more similar to one another than households from different communities, especially when it comes to business formation. For example, it would be a safe assumption that a Mexican migrant from a small community is more similar to someone in their community compared to someone from a larger community. These intra-community similarities lead to problems with “the structural properties of the data” (Luke 2004; 21). Nested data violates a major assumption of traditional models, that the observations and error terms are independent (Luke 2004; 21). When level two variables are included, the observations are no longer independent as their level two variables are the exact same if they are from the same community. Also, the observations are similar to one another when they are from the same community. When observations are “nested,” there is a strong possibility that the independent observation assumption is violated, creating correlated errors. These correlated errors can decrease the standard errors, leading to an increased

probability of committing a Type One Error (Luke 2004; 22). Multilevel models relax this assumption allowing for more accurate and robust models, by not punishing correlated errors (Luke 2004; 22). Massey and Parrado (1998) did not use multilevel modeling techniques despite their nested data which may have biased their results. Using multilevel modeling techniques in addition to event history analysis is a substantial methodological improvement over their 1998 study for methodological and theoretical reasons.

Because the subsequent models are logistic, they are considered *generalized* hierarchical linear models (generalized multilevel models). Just as for event history analysis, for binary outcomes in multilevel modeling, the data must be transformed using the logit link function. When the logit transformation is employed, the density of the predicted probability becomes close to a normal distribution, allowing for modeling. In multilevel modeling, the link function is known as the *canonical link* function (Luke 2004; 55). One major limitation of this transformation is that level one variance is determined by the population mean and cannot be estimated (Luke 2004;54). The inability to estimate the mean makes it impossible to estimate the Intra Class Correlation, although the MOR is a suitable alternative (Merlo et al. 2006). Now that the general framework and methodological justifications for multilevel discrete event history analysis has been discussed, I will discuss each model employed in the order that is used in the following analysis.

The logit transformation is on the left of the equation demonstrated below, as all the data must go through this transformation (Singer and Willet 2003; 371).  $T$  is the conditional probability of business formation contingent on still being in the sample at that point.  $X_i$  is the risk associated with the values at the respective time. On the right there, are two groups. The first a values represent the hazard in the particular time period (Singer and Willet 2003; 371). The

second parameters, or b values, are the typical regression covariates. However, since I am using multilevel modeling techniques, the equation must be slightly modified. As demonstrated below for the multilevel event history analysis, an additional term is included, random effects at the second or community level (j). It also assumes that the level one (b) coefficients are fixed effects. In the subsequent paragraphs I will justify my implementation of multilevel modeling and further discuss the modeling techniques employed.

$$\text{logit} (\Pi_{ijt}) = \alpha_j + \mathbf{X}_{ijt} \beta + \mathbf{X}_{it} \gamma + \mathbf{X}_{it} \cdot \mathbf{X}_{ijt} \theta + \varepsilon_{ijt}$$

Three types of generalized multilevel models are employed in this analysis. The first type of model employed is the unconstrained or the null model. The null model which is used to calculate the ICC or MOR contains no level one or level two predictors. In addition to calculating the ICC or MOR, it also sets the foundation for more complex modeling and the inclusion of level one and level two predictors (Luke 2004; 13).

The second type of model employed is known as a random intercepts model. It only includes level one predictors, in this case household-level variables. This model allows the researcher to examine the influence of the relationships between the level one variables and the dependent variable. However, unlike in traditional models, random intercepts models: “assume that level-1 intercepts vary across level-2 units, but not the level-1 slopes” (Luke 2004; 14). For logit multilevel models, there is no level one error term; in essence the first level model only calculates the intercept, which is the average probability of business formation for each variable (Luke 2004; 57). The random effect is the variability of business formation across all households (Luke 2004; 56).

The third and final type of model is employed for the final two models; it includes level two terms or community level data. Furthermore, it has a random slope in addition to random intercepts. Unlike the other two types of models employed above, it assumes that intercepts vary across level two units. (Luke 2004; 15). I use this type of model when I include the community-level variables as well as the cross level interaction term. When the cross-level interaction term is added, the slopes become random as well. As discussed above the objective of including the cross level interaction term is to examine the influence of migration on a strong established formal sector, two divergent effects. For emphasis, the final two multilevel models that I include had both random effects. I include a cross-level interaction term in the random effects model to see what the influence of an established formal sector is on migration status.

Allowing slopes to vary across level-2 units facilitates the key differences and aspect of multilevel modeling and reflects the idea that intercepts and slopes are outcomes of level-2 predictors. Another important aspect of multilevel modeling is that it is comprised of both random and fixed effects. In multilevel modeling, random effects are similar to error terms in other modeling techniques; however, they have two sources of variability as they are tied to both level one and level two variables (Luke 2004; 9).

The final type of modeling employed in this thesis is multinomial or competing risk modeling. Multinomial modeling allows the researcher to examine the competing risks of business formation. I can directly examine which factors predict business formation and the differentiation between business type. They allow me to analyze which factors are most important in differentiating between formal and informal business creation.

Like any methodology, there are some major limitations with the analysis employed below and the methods selected. First, I have not seen many multilevel event history analyses in the literature and I am not sure how statistically sound the modeling techniques are. Nevertheless Henry, Schoumaker and Beauchemin (2004) used event history analysis and multilevel modeling. The second limitation of this analysis was the ratio of events to person years. Slightly over 900 informal businesses were formed in over 91,000 person year's worth of data, with this imbalance making it difficult to find predictors and have robust models specifically for formal business creation models.

## Chapter VI

### Results

In this chapter I describe and discuss the results of the models employed in this analysis. Three sets of models are presented. First, I examine the results of the multilevel models that predict informal business creation. Second, I review the results of the models that predict formal business creation. Third, I examine the results of the multinomial competing risk models, which further differentiate between formal and informal businesses and the variables associated with each respective business type. Finally, I discuss the overall results of the project and the implications for relevant literature.

### **Informal Business Models**

To briefly review, the processes in traditional multilevel modeling four models were computed (Zhao and Cao 2010). First, the null model was run to provide the MOR (or ICC) as well as to set the foundation for future more complex modeling. Second, household-level variables were included in the model with random effects. Third, community-level variables were added to the random effects models. Fourth, a cross-level interaction term was added. The results of each model are examined in turn and are demonstrated in Table 7.

Table 7. Multi-Level-Event History Analysis, *Informal* Business Models

	Odds Ratios			
	Model 1	Model 2	Model 3	Model 4
<b>Household Level</b>				
Migratory Experience				
Head Abroad		0.83	0.80	0.80
Head Returned		1.85 ***	1.80 ***	1.73 ***
New Business Properties		3.33 **	3.28 **	3.31 **
New Housing Properties		1.67 ***	1.66 ***	1.65 ***
Head age		0.99 *	0.99 *	0.99 **
Average Household Education		1.05 ***	1.05 ***	1.05 ***
Dummy: Children from 0-4		0.68 **	0.71 **	0.71 **
Dummy: Children from 5-12		0.82 **	0.83 *	0.84 **
Dummy: Children from 13-17		1.05	1.16	1.15
<b>Community Level</b>				
Female Labor Force Participation			1.05 ***	1.05 ***
Proportion Of Adult Male U.S. Migrants			1.02 ***	1.02 ***
Owner Proportion			0.76 ***	0.76 ***
Self-Employed Proportion			1.02 *	1.01 *
Owner Proportion and Migration Experience Interaction				1.18 *
Intercept	0.01 ***	0.00 ***	0.00 ***	0.00 ***
<b>Model Evaluation</b>				
Community Level Variance	0.14	0.13	0.17	0.16
Logged Likelihood	-5111	-5026	-5013	-5002
Median Odds Ratio	1.44	1.42	1.42	1.41

† p < 0.1 \* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

Sources: *Mexican Migration Project and INEGI*

Notes: Model 1 is the null model. Model 2 includes random effects on household level variables. Model 3 includes community level variables. Model 4 includes the cross-level interaction term.

The null model demonstrates the MOR of 1.44, which as discussed above, justifies statistically the implementation of multilevel modeling. Additionally, it sets the foundation for comparison between future models. Two variables were used for model evaluation. The logged likelihood of the null value is -5111.

The second model used random intercepts, but only included household-level variables. The importance of previous capital becomes apparent. Both capital-control variables had strong

positive associations with business formation. Each additional housing property owned by the household multiplied the odds of informal business formation by a factor of 1.67. Not surprisingly, owning a property specifically for a business had an even stronger association, as each additional property owned increased the odds of informal business formation by a factor of 3.33. Clearly, previous capital attainment is important to business formation.

In addition to controlling for previous economic capital, other household metrics were included. To analyze the life cycle of the household, a proxy measure, the age of the head, was entered into the equation. There was a relatively weak negative association with head age and informal business creation, each additional year older the head was, the odds decreased by about 1%. However, this measure assumes a linear relationship, when in reality the association may be closer to a quadratic one. Future models should include an age-squared measure to see if the relationship is actually quadratic. As some research has suggested the importance of young children in labor variables, the number of children was included. The number of children in specifically young-age groups had a negative association with informal business formation. This finding contradicts research that has asserted that young children can help facilitate businesses. This finding asserts that young children generally discourage business formation.

Household-level education had a positive association with business formation. Each year of additional education increases the odds of business formation by a factor of 1.05. For informal business creation, education seems to matter. Figure 1 above further demonstrates this association, as a seemingly linear relationship exists between household level education and the probability of business formation. This linear association will be contrasted with the relationship between education and formal business formation below.



As the major objective of this research was to examine the relationship between migration and informal business formation, two migratory variables were included. First, a variable that measures when the head is currently in the United States was included in the analysis. This is a proxy measurement for the household receiving remittances, while also exploring the influence of the household head being away. Despite the strong negative association, the relationship is not statistically significant. The other migratory variable describes when the head has returned from migration. Each year after the return was coded as 1. If they have yet to migrate, never migrated, or are away on migration, the household years were coded as 0. A strong positive association becomes apparent between migrant experience and business formation. Households where the head has migratory experience are almost twice as likely to form a business than households where the head has not migrated (1.85). Migratory experience is important for business formation. When the household-level variables are controlled for, the community-level variance drops from .14 to .13. The logged likelihood and AIC (not shown) both drop substantially, indicating improved model fit.

The third model includes community-level characteristics. First I will describe the results of the community-level variables before briefly discussing their influence on the household-level variables. Finally, I will examine the model diagnostic measures.

All of the community-level variables are statistically significant predictors of informal business formation. This pattern of results is congruent with the increasing body of research that stresses the importance of community-level factors in both migradollar usage and business formation by migrants and non-migrants alike. Female labor force participation has a relatively strong positive association with business formation. Each additional percentage of females who work in the labor force increases the odds of business formation by roughly five percent.

Congruent with Lindstrom's (1996) hypothesis, economically advantaged communities see more businesses formed as the migrants see greater returns on their investments. However, future research should further examine the businesses success in these communities.

Although having lots of females in the labor force participation has a strong association with business formation, the percentage of the community that owns their own formal business has an extremely strong negative association. Each additional percentage of the community that owns their own formal business decreases the odds of informal business creation by roughly 24%. This might seem like an incredibly powerful relationship; however, the range is quite constrained (min:.23% max: 6.57%), leading to seemingly inflated odds ratios. Nevertheless, the association remains, and communities with strong formal economies are more likely to see new informal businesses created within them. This strong association needs further examination and will be combined with migratory experience in the final model.

In contrast to the strong association demonstrated by the formal economy proxy value, the informal proxy measure (self-employed), demonstrates a positive association. Each additional percentage point of the economy that owns their informal business increases the odds of business formation by roughly 2%. Communities with more established and prevalent informal economies seem to see more informal businesses created. When the models were examined with a squared term to see if there was a point of saturation, the squared term was not statistically significant. More businesses may create economies of scale, or integrate with one another, thereby facilitating other business formation.

Although the weakest of all the community-level associations, having a higher proportion of migrants is associated with a higher likelihood of businesses formed. For each additional one

percentage increase in males in the community with migration experience, the odds of starting an informal business increase by 2%. Communities that are more engaged in migration may be more entrepreneurial to begin with, or migration could enhance the entrepreneurial nature through migration. Another likely (and congruent) explanation is that the economic multiplier effects of remittances lead to businesses being formed with an increase of funds flowing into the community. One clear finding of this thesis is the clear association between migration and informal business formation. Household and community-level migration experience both have relatively strong positive associations with informal business creation.

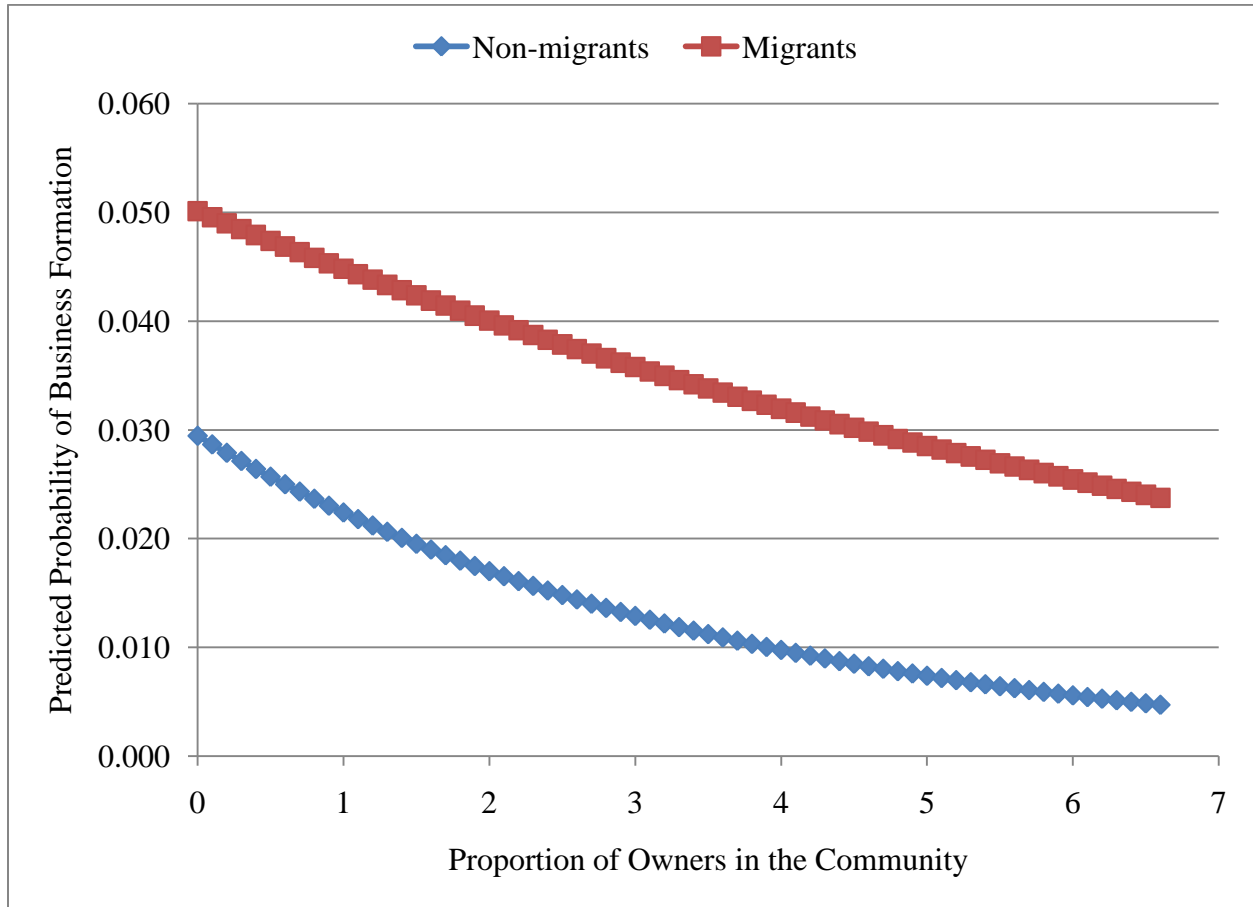
Adding the community-level variables increases the model fit. The logged likelihood increases from -5,026 to -5,013, demonstrating significant improvement in the fit of the model. In summary, increasing the community-level variables in the model makes the model more robust. It is also important to note that when controlling for community-level variables, some of the household-level variables are altered slightly. Specifically, the strength of the influence of migration decreases by 11%; however, it still remains substantial at 1.76. Moreover, the association of owning a property specifically for a business is reduced by 5%. All of the other changes to the variables are trivial.

The final model for informal business creation includes a cross-level interaction term. Two of the strongest associations in the model were migration experience and the percentage of formal business owners in the community. Additionally, one of my major research questions was how the influence of community-level factors influence informal business creation. One aspect in particular worth examination is how a strong, prevalent formal economy would be influenced by migration experience. After centering both variables, I created an interaction term between household migration experience and community-level formal business ownership. The

new variable was then added to the model with the household level variables and the community-level variables.

When added to the model, the cross-level interaction term between head migratory experience and community-level formal business ownership is strong and statistically significant. The positive association of the cross-level interaction term suggests that household-level migration in essence mitigates the influence of the negative association of a more prevalent formal economy. Put another way, migrants are still likely to start a business in a community with a strong formal economy, especially compared to non-migrants. Migrants are starting informal businesses even in communities with strong formal economies, while the non-migrant population would have a much lower probability of starting a business. This relationship becomes further evident, as the odds of non-migrants starting an informal business in a community with 1% ownership is .76, but for migrants it is .89, 13% higher. In summary, although an incredibly strong negative association exists between formal business creation and informal business creation, migration experience attenuates this negative relationship. Migration experience is extremely important for informal business creation. Figure 3 below further depicts this relationship. It becomes apparent with the calculated predicted probabilities that migrants are more likely from the start to start a business and their slope does not decline as quickly as non-migrants. In summary, migration experience makes a substantial difference for informal business creation, and households with migration experience are starting businesses in places where they most likely shouldn't be.

Figure 3. Predicted Probabilities Comparing Informal Business Creation Between Migrant and Non-Migrant Households.



**Formal Business Models**

The formal business models are also presented below in Table 8. Due to the rare occurrence of formal businesses (105 in over 91,000 household years), fewer variables were statistically significant, even with the p-value extended to 0.1. I will not examine these models as thoroughly as the informal business models, but rather I will discuss some of the key findings within the models. One of the major findings in the models is the exceptionally strong relationship between owning a property for a business and then starting a formal one. Each additional property owned specifically for a business multiplies the odds of business formation

by a factor of 9.74. It seems that households purchase land for businesses before they start their formal businesses. Although this relationship is mitigated when community-level variables are controlled for as the association declines by over 100%. Another key result is the strong association between household educational attainment and formal business formation. Each additional year of education in the household multiplies the odds of business formation by a factor of 1.19. When community-level variables are controlled for, the relationship is strengthened by roughly one percent. Of all the household-level variables in any of the models, education is the only one whose association increases when community-level factors are controlled for. Congruent with informal business formation, migratory experience is associated with increased odds of formal business creation. In households where the head has migratory experience, the odds are multiplied by a factor of 1.82. But, when community-level characteristics are controlled for, the effect of head migratory experience drops by 17% to 1.65. The household factors were less able to predict formal business formation; however the capital control variable, education, and migratory experience still had relatively strong positive associations with formal business formation.

Unlike informal businesses, formal businesses seem to be less dependent on the economic and social characteristics of their community. The only community characteristic that predicted formal business creation is the proportion of males in the community with migratory experience. Each additional percentage point of males with migration experience multiplies the odds of formal business formation by a factor of 1.01. Once again, migration at both the household and community level is beneficial for business formation. It is interesting to note that neither of the proxy measurements for strength of the formal or informal economy is statistically significant predictors for formal business creation in the communities. Finally, the cross-level

interaction term is not statistically significant and does not warrant further discussion; moreover the cross level interaction decreased model fit.

Table 8. Multi-Level-Event History Analysis, *Formal* Business Models

	Odds Ratios			
	Model 1	Model 2	Model 3	Model 4
<b>Household Level</b>				
Migratory Experience				
Head Abroad		0.43	0.38	0.40
Head Returned		1.82 **	1.65 *	1.62 *
New Business Properties		9.74 ***	8.71 ***	8.79 ***
New Housing Properties		0.48	0.46	0.46
Head age		0.98 **	0.98 **	0.98 **
Average Household Education		1.19 ***	1.20 ***	1.20 ***
Dummy Children from 0-4		0.69	0.67	0.68
Dummy Children from 5-12		0.94	0.93	0.93
Dummy Children from 13-17		0.67	0.66	0.66
<b>Community Level</b>				
Female Labor Force Participation			0.98	0.98
Proportion Of Adult Male U.S. Migrants			1.01 *	1.01 †
Owner Proportion			0.95	0.94
Self-Employed Proportion			0.99	0.99
Owner Proportion and Migration Experience Interaction				1.21
Intercept	0.01 ***	0.00 ***	0.00 ***	0.00 ***
<b>Model Evaluation</b>				
Community Level Variance	0.09	0.06	0.00	0
Logged Likelihood	-1331	-1255	-1251	-1250
Median Odds Ratio	1.44	1.26	1.01	1

† p < 0.1 \* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

Sources: *Mexican Migration Project and INEGI*

Notes: Model 1 is the null model. Model 2 includes random effects on household level variables. Model 3 includes community level variables. Model 4 includes the cross level interaction term. The Logged likelihood increased by less than one from Model 3 to Model 4.

## Competing Risk Models

To further explore the differences in predictors between formal and informal business creation, multinomial or competing risk models I employed. Multinomial modeling allows the comparison between distinct groups. In this case, starting an informal business was compared to a formal one. All the observations in these models had started a business; however, through multinomial modeling, I am able to examine which factors predict involvement in each sector relative to the other. The same household and community-level variables as in the multinomial models were included, except for the cross-level interaction term, which was removed. The results of the multinomial model (or competing risk model) demonstrate the odds of starting an informal business relative to starting a formal business. They are demonstrated in Table 9.

Table 9. Multinomial Model with Informal Business Set  
as Base Outcome Relative to Formal Business Creation

<b>Household Level</b>	
Migratory Experience	
Head Abroad	1.09
Head Returned	1.95
New Business Properties	0.32 *
New Housing Properties	3.63 †
Head age	1.01
Average Household Education	0.88 ***
Dummy Children from 0-4	1.01
Dummy Children from 5-12	0.87
Dummy Children from 13-17	1.71 †
<b>Community Level</b>	
Female Labor Force Participation	1.05 **
Male U.S. Migrants	1.00
Owner Proportion	0.86
Self-Employed Proportion	1.02

† p < 0.1 \* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

Sources: Mexican Migration Project and INEGI



One of the more interesting findings in the competing-risk models has to do with the divergent relationships of the capital-control variables. Each additional increase in housing properties multiplies the odds of starting an informal business relative to a formal one by a factor of 3.63. Conversely, each additional business property decreases the odds of being in the informal economy relative to the formal economy by 68%. As apparent from the above multilevel models, owning a property for a business has a tremendously strong association with formal business creation. Additionally, previous literature has demonstrated that some informal businesses are run out of the household's house, which becomes apparent in the multinomial models. The only other household-level variable that was statistically significant was household-level educational attainment. Each additional year of average household level education decreases the odds of starting an informal business relative to a formal one by 12%. Not surprisingly, the more educated individuals are starting formal businesses. Also, as suggested in some literature such as Davis (2007) households do seem to be using older children as labor in informal businesses. Families which have a child aged 13-17 are almost twice as likely to start an informal business (1.72) relative to a formal business. It would seem that households are using their children as labor. Finally, it is important to note that migrants were not more likely to start businesses in either sector, despite being more likely to start a business relative to non-migrants.

The only community-level variable with a significant relationship was female labor force participation. Each additional percentage point of females engaged in the labor force increases the odds of starting an informal business relative to a formal one by 4.5%. This relationship is

fairly intuitive, as females are often more likely to work in the informal economy, so businesses started could use their labor. Business owners could see a workforce, then start a business, knowing they would be able to find employable labor. Additionally, the proportion of people engaged in the informal sector is almost significant at the 0.1 level. Again, it demonstrates a slight positive association; however it is barely insignificant.

## Chapter VII

### Discussion

This research has contributed to the growing body of literature demonstrating a positive influence of migration on business formation. This section will describe the key findings of this research. First although there have been similar studies analyzing the influence of migration on business formation in Mexico (Massey and Parrado 1998), the analysis of these investigations used event history analysis and as such their data was nested within communities, leading to potential type one errors by minimizing standard errors (Luke 2004).

In addition to methodological improvements over past research regarding business formation, this research has helped to further describe the relationship between migration and the proliferation of informality in Mexico. International migrants from Mexico have seemed to use migration as a method to accumulate enough capital to start a business. Congruent with the new economics of labor migration perspective, migration has been a means of overcoming both community-level market constraints and failures. This research has also added to the theoretical perspective of the new economics of labor migration. Specifically, this thesis has stressed community level factors and how they relate to business formation. When households see community level economic opportunity they are more inclined to migrate for longer durations so that they can acquire enough capital to start a business. While the NELM theoretical perspective stresses migration as a means to overcome capital constraints, it does not discuss motivation. This thesis has illustrated that those from more economically prosperous would be more likely to start a business than communities with poorer communities. This may also explain how some communities become so dependent on remittances, a process that has become known as “migrant

syndrome.” The communities where businesses are started are most likely better off economically and socially. This process creates positive feedbacks for both types of the communities. The communities that are better off are more likely to see migradollars invested in businesses while those that are worse off do not see businesses started and become increasingly dependent on migradollars economically and socially.

For both types of communities the businesses created seem to be overwhelmingly in the informal sector (see the descriptive statistics). That is not to say that migrants are only starting informal businesses, but through migration Mexicans are able to gain the capital, which has facilitated business formation and subsequently the proliferation of urban informality. The majority of Mexicans work in the informal sector, and after the economic restructuring of neoliberalism, it would seem that many used migration to gain capital to invest in businesses. Even in communities where the barriers to business formation are seemingly the highest (those with large established formal sectors), migrants are more likely than non-migrants to start informal businesses.

Community-level migration is also beneficial for the creation and perpetuation of businesses. Communities with higher migration were more likely to see informal and formal businesses. In fact, community-level migration was the only community-level variable associated with business formation. Migration experience remains a strong predictor of business formation at the community and household level. The economic multiplier effects associated with remittances also seem to allow the perpetuation of the businesses. When communities become inundated with remittances, they may become increasingly dependent on remittances; although, they also may see a economic shift toward business creation, even if the majority of the remittances are spent “unproductively.” Migration seems to be driving the formation of

numerous businesses; however, the influence these businesses have on economic development remains unclear.

Community-level demographic and economic characteristics are seemingly more important for informal than formal businesses. Lindstrom (1996) suggested that migrants from better economic communities have longer durations to gather savings; this research has asserted that they in turn are most likely starting informal businesses. The people starting informal businesses seem more likely to examine market conditions before they start their business, whereas the formal business owners will start them regardless of community-level conditions. However, it is also important to note that the community level variables were not as important to formal businesses as informal businesses. One relationship that was found was that the size of the city mattered. In larger cities formal businesses were more likely to be created. But, due to issues with multicollinearity I left the magnitude of the city out of the models to prioritize the community level social and demographic characteristics. Perhaps an additional reason why the community level characteristics were not significant is because formal businesses were a relatively rare event, so it could also be an issue of magnitude. In summary, community-level characteristics seem to be more important for informal businesses than formal businesses, but this relationship could simply be an issue of modeling and not an exact pattern on the ground.

Another interesting finding is that communities with larger informal sectors are more likely to see more informal businesses. As demonstrated by past research (see above), workers in the informal sector are more likely to work together, integrating with one another and creating economies of scale. Instead of the almost “Darwinian” competition for survival, the strong stay in business the weak fold asserted by Davis (2007), we see communities cooperate economically. The opposite is also true of communities with stronger formal economies, where a strong

negative association exists. In these communities with an established formal sector it seems difficult for the informal businesses to compete with the larger businesses. In summary, the community-level economic conditions are more important for informal, small-scale businesses than for large businesses.

Whereas informal businesses seem dependent on community-level factors, the households that start formal businesses are most likely to be from higher SES backgrounds, better educated and wealthier, with more capital before they even form their business. More simply, the rich are starting businesses in the formal sector, whereas the poor or middle class are starting informal businesses. The dichotomy between the informal and formal sector parallels the increasing inequality seen in Mexico. Migration in general does not seem to attenuate inequality through business formation, as the poorer households typically do not start large businesses, but they are still entrepreneurial and businesses can elevate their economic status. Additionally, we only have the business information at the year of the survey, so it could have grown or decreased since the survey date. One of the major limitations of this data is the inability to track how the businesses change over time. Perhaps some do evolve from smaller street vendors to larger, formal businesses. However, with the current data there is no way to tell if these changes are occurring.

Another major finding of this thesis is the importance of owning property specifically for formal business creation. Households overwhelmingly buy property before they start a formal business. They have extra capital before they even form their business; however, the importance of owning property for a business seems to be outstanding. A future policy implication of this result is that one way to encourage households to register their businesses is to get them registered land before they start their business. Another possibility is to offer registered land to

return migrants in exchange for them agreeing to start a licensed business. Through incentives, return migrants may be more inclined to start licensed businesses.

Migrants may not be the principal drivers of development; however, they are clearly entrepreneurial and willing to take risks with the capital they accumulated abroad rather than simply living off of it as some have argued. Similarly, community-level migration seems beneficial for all types of businesses, as the economic multiplier effects argued by Massey and Parrado (1994) seem to be a great driver of business formation.

It remains unclear how these businesses formed by return migrants or perpetuated by the multiplier effects of community-wide migration were affected by the recession. With the loss of substantial capital due to the decreasing flow of remittances, these businesses may be closing rapidly with the decrease in demand for their products. Could the recession force numerous businesses to close as the flow of capital drops dramatically? How are informal businesses dealing with the recession compared to larger formal businesses? If informal businesses often offer lower prices than formal businesses could they be more robust to economic downturn? This avenue of research might be especially fertile for qualitative research to examine how large scale versus smaller businesses are coping with the decline in community wide remittances. I would anticipate that the informal sector might be more robust because they are more used to the fluctuations in the economy. Furthermore, as the economy continues to improve, are new businesses being formed?

Another major avenue of research is how American retail is influencing these businesses. As of March 31<sup>st</sup> 2011, there were 1,752 Wal-Marts in Mexico (Walmart 2011). Wal-Mart is able to create economies of scale and often have lower prices than the surrounding businesses.

America has already seen how Wal-Mart can devastate urban economies, forcing small businesses to close. Is the same process occurring in Mexico? Moreover, Puri and Shiavo (1999) documented that migrant households often have a greater preference for international goods than domestic ones. Wal-Mart might be able to better accommodate for this demand, for cheaper than smaller informal businesses. To make matters worse, businesses are started in communities with a higher prevalence of migrants, who might be more accustomed to shop at wal-mart and be more likely to purchase the international goods that Wal-Mart supplies. For a follow up project to this thesis, I would like to get data on when Wal-Mart were added to these communities and see if they even discourage business formation in the first place.

In summary, this thesis has contributed to the existing literature regarding the relationship between informality in Mexico and migration. The two are related, as households use migration as a means of overcoming capital constraints and forming an informal business. Similarly, this research has helped to differentiate which variables have led to different types of businesses being formed and why. Finally, this research has helped to improve the methodology employed for business formation, because despite the inarguable influence of community-level factors, no research has used multilevel modeling techniques before.

As with any research, this work raises more questions than answers. I will offer three possible ways to extend this work. In the future, it would be beneficial to analyze not only if migrants are starting businesses, but also how successful they are. Especially with the prevalent community-level variables, it would be interesting to examine which community-level factors predict successful versus unsuccessful businesses. Additionally, it would be interesting if an urban household member may migrate specifically to save a fledgling business, as rural households often do (Stark and Bloom 1985). Similar multilevel event history analysis



techniques could be employed to different data. Another similar avenue for future research is how businesses progress and grow and potentially switch between sectors over time. Do the businesses shift sectors over time? The most successful ones might grow and register becoming formal, while the majority might stay stagnant or fizzle out. Once again, it would be interesting to examine which community-level factors propagate such movements across economic sectors.

Another possible avenue of research would be to interview potential migrants regarding their economic motivations for migration. Do they migrate specifically to accumulate enough capital to start a business or return with a surplus of capital and then decide a business is the most productive investment for their acquired capital? This may be an area specifically for qualitative researchers. Another crucial follow-up question from this thesis is the influence of clusters of informal businesses in communities on broader economic growth. Are they entirely dependent on the multiplier effects of remittances and migration more broadly or over time, such that they lead the communities away from economic dependence on migration towards economic independence? Finally, this would be difficult to acquire data for but it would be fascinating to examine the genetics of migrants and the prevalence of their risk-taking genes. Then once that data would be gained, migrants who start businesses could be examined for heritability factors and the kinds of businesses they form. Are all migrants with particular advantages more entrepreneurial or is it a select few with risk-taking genes?

This thesis has contributed to the literature which has demonstrated the association between migration and business formation. This research has diverged from other research by specifically examining the influence of migration on the informal versus formal dichotomy in Mexico. Additionally, this research has implemented relatively new techniques, multilevel and event history to the problem of business formation. The overall findings of thesis is that

migration like informality may have been a response to neoliberalism, and through migration the informal economy in Mexico proliferated.

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