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Mexican Immigrant Self-Employment across the Business Cycle, 1994-2013

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Abstract: Analysts have examined the extent to which self-employment fosters immigrant incorporation. Such research provides mixed results. However, the existing scholarship neglects the effects that the business cycle has on Mexican immigrants' propensity for self-employment. This article therefore fills this gap by analyzing Mexican immigrant business formation and collapse over the 1994 to 2013 period. It finds that Mexican immigrants are pushed into self-employment as co-ethnic unemployment rates rise. These effects filter throughout various subcategories and control variables, including gender, period of entry, and citizenship. These findings are consistent with disadvantaged theories of self-employment.

Mexican Immigrant Self-Employment across the Business Cycle, 1994-2013

Self-employment is an important mechanism for immigrant economic advancement (Portes and Yiu 2013). Many immigrant groups, however, enter the United States as labor migrants and subsequently seem to forgo setting up businesses. Despite the relatively large size of the foreign-born population and high labor force participation, low self-employment rates are especially true for Mexican immigrants. Their employment often concentrates in occupations and industries that meet the unstable part of demand, which makes them especially susceptible to unemployment during business cycle downturns. Migrants who find themselves in secondary sectors may use self-employment not to get ahead but as a survival mechanism until wage and salary work becomes available (Light and Rosenstein 1996; Light 1979). In order to understand how self-employment relates to immigrant economic advancement, therefore, it is important to understand the conditions in which immigrants set-up businesses. The goal of this paper is to understand whether Mexican immigrants are "pushed" into self-employment as an economic survival mechanism or "pulled" into self-employment by the lure of higher wages relative to wage and salary work over the 1994 to 2013 period.

My specific objectives are three-fold. First, using the Current Population Survey (CPS), I provide the most recent and comprehensive analysis of Mexican immigrants and self-employment across the business cycle. Unlike past cross-sectional analyses on this topic that rely on the decennial census or the American Community Survey, the 20 years of data I assembled covers all economic fluctuations associated with the business cycle: expansions, contractions, recessions and peaks. The data will allow me to determine how the relationship between Mexican immigrants and self-employment has changed over time. Second, because transitions in and out of self-employment may occur over relatively short periods, I create a

panel dataset to capture trends in individual-level change of self-employment. Past quantitative studies on self-employment rely on a binary measure indicating who is self-employed and who is not. These measures combine those who have recently become self-employed and those who have been self-employed for a long time. This will obscure the conditions in which immigrants set up businesses. My two-year panel data, therefore, measures within-individual variation in self-employment rates that enables me to understand the relationship the business cycle has on enterprise formation and collapse. However, Mexican immigrants are a heterogeneous group and I therefore disaggregate this group by gender, period of migration, and citizenship.

The analyses discussed above highlight theoretical accounts of Mexican immigrants and self-employment rates. My third objective is to understand whether Mexican immigrant self-employment follows a body of research associated with an ethnic enclave hypothesis or a disadvantaged hypothesis. The ethnic enclave hypothesis suggests that immigrants become self-employed to get ahead while the disadvantage hypothesis suggests that immigrants become self-employed to get by. Therefore, using the Merged Outgoing Rotation Groups (MORG) of the Current Population Survey (CPS), I develop a model for business formation and collapse among Mexican immigrants.

Enclaves, Disadvantage, and Self-Employment

There is a complex relationship between immigrants and their relative propensity for self-employment. As described above, immigrants may use self-employment to foster their own socioeconomic well-being; or immigrants may use self-employment as a survival strategy for those who cannot find any other means of earning an income. The former underscores the possibility that individuals with business know-how – and specific knowledge of their co-ethnic

groups' needs and desires - take advantage of self-employment for their own economic advancement. The latter stresses the idea that different groups hold relative disadvantages in the labor market such as high unemployment rates that "push" them into self-employment.[1]

The Ethnic Enclave Hypothesis

One body of research associated with the "ethnic enclave hypothesis" suggests that immigrant self-employment is largely a function of spatial and industrial ethnic concentration that provides social and economic resources that allows one to become self-employed. *Ethnic enclaves* arise when groups cluster in distinctive areas that allow ethnic entrepreneurs with intimate knowledge of the group to gain access to this market (Portes and Bach 1985; Portes and Jensen 1989; Wilson and Portes 1980). These individuals – who are often members of the group themselves – have middle and upper-middle class backgrounds in their home countries with the high human and financial capital that is needed for self-employment. They rely on social capital in areas of high co-ethnic concentration where bounded solidarity and enforceable trust give the self-employed a competitive edge in ethnic markets (Sanders and Nee 1996; Waldinger et al. 1990; Evans 1989). Moreover, immigrants in ethnic enclaves move through a variety of jobs and acquire social ties and human capital (Bailey and Waldinger 1991). This allows immigrants to use an ethnic economy as a stepladder towards self-employment. The ethnic enclave hypothesis, therefore, suggests that immigrants are "pulled" into self-employment by the promise of higher relative economic gains to their human capital. However, comparative advantage in self-employment among individuals need not rely on highly concentrated areas of co-ethnics since

[1] These theories emerge out of Bonacich's (1973) middleman minority theory. However, I ignore this sojourning theory since research has shown this to be incomplete in describing the self-employment experience of immigrants and minorities (e.g., Aldrich and Waldinger 1990; Light and Rosenstein 1995; Portes and Rumbaut 1990; Sanders and Nee 1996; Waldinger et al. 1990).

the pull mechanisms just described may operate in broader ethnic economies as well (Light et al. 1994). That is, individuals with business know-how do not necessarily need to rely on co-ethnic workers, a core tenant of enclave hypotheses, but may rely on other groups for employment. This explains why seemingly disadvantaged groups, such as Mexicans, have a large number of self-employed individuals (although small as a proportion to their size) despite the absence of an enclave economy (Light et al. 1994; Portes and Yiu 2013).

Nevertheless, those with business experience and high human capital often pursue exit strategies in the onset of crises by selling the businesses before complete collapse (Bates 2005; Grilli 2010). At times of high unemployment, self-employed individuals face a lower market demand that in turn reduces incomes and increases the risk of bankruptcy. To avoid venture failure, individuals with business know-how, or those who have been pulled in to self-employment exit before complete collapse. Thus, pull hypotheses, such as those put forth by ethnic and ethnic enclave hypotheses, suggest that individuals with business know-how are pulled into self-employment when economic times are good and pulled out of self-employment when economic times are bad. This leads to the predictions that self-employment may operate pro-cyclically or independently of the business cycle.

The Disadvantage Hypothesis

Other research suggests that immigrants are "pushed" into self-employment as a survival strategy when demand for wage and salary work declines. The *disadvantage hypothesis* holds that immigrants and other minorities face general labor market disadvantages (e.g., unemployment, underemployment, etc.) that may encourage a higher propensity for self-employment during recessions (Light 1979, 1980; Aurand 1983). Disadvantages may take two

forms: resource and labor market. Resource disadvantages occur when groups lack capital (Coleman 1988) that allows for better employment prospects. Labor market disadvantages occur when groups are susceptible to discrimination and therefore lack access to good paying jobs (Light and Rosenstein 1995). Immigrants who face these disadvantages tend to gravitate towards secondary sectors since they enter the labor market in less traditional ways, and have less labor force attachment than working class natives (Piore 1979).

Disadvantaged status that pushes immigrants into self-employment may be further aggravated in times of recession when people look for a victim to blame (Brubaker 2011). Perceived increases in economic insecurity, such as rising unemployment, generates fear by the native-born as preexisting antiforeigner sentiments deepen (Burns and Gimpel 2000). The native-born may then limit (intentionally or unintentionally) job access to immigrants that leads to disadvantage. But Mexican immigrants – the focus of this article – face further disadvantages in that increased border control has forced the permanent settlement of this population (Massey et al 2003). Beginning with the Immigration Reform and Control Act (IRCA) in 1986, command-and-control policies have implemented punitive measures on employers and immigrants that eroded working conditions and drove down wages (Massey et al 2003). As a result, post-IRCA undocumented waves became susceptible to labor market insecurities such as wage theft, sporadic employment, and long working hours with unsafe working conditions and no benefits (Valenzuela 2001). The disadvantage hypothesis, therefore, predicts that immigrants will become self-employed when faced with high unemployment rates that may be compounded with harsh policies at the national level. That is, recessions will "push" immigrants into self-employment as a defensive strategy to unemployment (Evans and Leighton 1989).

These two hypotheses of self-employment – enclave and disadvantage – are not mutually exclusive, and may operate in a number of ways depending on the stage of the business cycle, but may provide insight into the origins and routes to ethnic business formation more genenerally. Recent research testing the relationship between self-employment and unemployment suggest mixed results. In cross-national studies, Blanchflower and Oswald (1990, 1998) and Blanchflower (2000) find a negative relationship between self-employment and unemployment suggesting a pro-cyclical trend. In the United States, Steinmetz and Wright (1989) find no relationship between unemployment and self-employment between 1947 and 1985 using data from the Current Population Survey. Moreover, Portes and Zhou (1996) argue that positive outliers are found disproportionately among the self-employed that log-linear models do not account for. Portes and Zhou show that in models that do not log earnings that self-employed workers make more than their wage and salary counterparts thus suggesting pull mechanisms are in play. These studies suggest that self-employment rates operate pro-cyclically or independently of the business cycle as defined by the enclave hypothesis.

In contrast to the above studies, however, most researchers view ethnic self-employment as a survival strategy. Economists and some sociologists tend to view ethnic self-employment as a rational response to labor market obstacles like employer discrimination that face different groups (Nee and Sanders 2001; Clark and Drinkwater 2000). For instance, Min (1984) suggests that labor market disadvantages are the most important reason Koreans go into business for themselves – and Valenzuela (2001, 2002) makes a similar case for immigrant day laborers in Los Angeles. Further qualitative data shows that women are more likely to become self-employed if their husbands become unemployed (Valdez 2011) that point to the push dynamics mentions above. Moreover, in a cross-national quantitative study, Tubergen (2005) finds that

immigrants who enter a country with a high native unemployment rate are more likely to undertake self-employment. In addition, Clark and Drinkwater (2000) show that ethnic minorities who live in areas with a high percentage of their own group (the enclave effect) are less likely to be self-employment in England and Wales. Finally, in the most recent study, Fairlie (2012) finds that immigrants who have become unemployed are more likely to report self-employment through the Great Recession using monthly files of the Current Population Survey. However, he looks at immigrant status broadly defined, while this article focuses more specifically on a very important group of immigrants, those from Mexico. Whether immigrants are "pushed" or "pulled" into self-employment may depend on the historical context in which immigrants enter or leave the labor force. That is, business cycle downturns may transform the labor market in such a way as to foster higher self-employment rates for some groups, while simultaneously lowering the propensity for self-employment for others.

Supply and Demand of Self-Employment

Prior research shows that supply and demand characteristics are particularly important in the determination of self-employed behavior (Light and Rosenstein 1995; Portes and Rumbaut 1990; Thornton 1999). Whereas supply-side explanations stress inequality in people's entrepreneurial resources (whether material or psychological) and their unequal responsiveness to the attractions and rewards of self-employment, demand-side explanations stress the response to opportunity structures such as monetary rewards of structural characteristics that raise or lower self-employment rates. Those who are self-employed, therefore, must have both motivation and opportunity to set up ethnic enterprises.

Supply-side characteristics often include human and social capital as important determinants of self-employment. Human capital measures such as education, training, and English attainment make business formation in the United States easier. Borjas (1990) points out that there is a strong positive correlation between self-employment rates and educational attainment. He suggests that higher education and training that is associated with age corresponds to higher wealth, which means individuals are able to obtain or have the financial necessities needed for starting a business. It also increases an individual's ability to anticipate services needed by a consumer. Those with English skills are also able to speak with suppliers and non-ethnic customers, which will expand the market that they are able to cater to (Sanders and Nee 1996).

Social networks, however, also aid in business formation. The ability to command information within certain networks and broader social structures will be invaluable to someone who is self-employed who may seek employees and financial capital. Immigrant men are often advantaged in social networks compared to women since men often hold weak ties to several individuals compared to women who are often dependent on strong ties (Hagan 1998). Thus, men, who can draw on these networks, are able to become self-employed at higher rates than women. However, the family is also an important form of social capital that immigrants may draw on for unpaid labor and pooling of resources (Sanders and Nee 1996; Nee and Sanders 2001; Borjas 1986). Those who are married with their spouse present and those with children are able to draw on employees who are concerned with the economic welfare of the family and that gives rise to dependence and expectations that lead to reduced malfeasance (Sanders and Nee 1996; Nee and Sanders 2001). Thus, groups must have the supply of adults that contain the

capital and motivation needed to become self-employed for their propensity to increase. However, they must also have the opportunity to undertake self-employment

Demand-side characteristics underscore the idea that the self-employed make decisions within social settings over time. Opportunity structures exist within environments that make available (or unavailable) the resources needed for business start-ups (Aldrich 1990; Thornton 1999). The opportunity structures that are made available depend on the city-level policies, the health of the labor market, and the groups that demand certain services from these potential entrepreneurs (Evans 1989; Light and Karageorgis 1994). However, the "local industrial mix" (Light and Karageorgis 1994:655) influences the demand for self-employment where industrial structures impose capital constraints (Waldinger 1986). For instance, manufacturing tends to be dominated by large firms that require high financial costs as opposed to the services sector, which is characterized by small firms that require relatively lower amounts of capital for start-up. Therefore, the demand side stresses the contextual variables in which immigrants enter the United States that allow them to form (or not form) ethnic enterprises. However, supply and demand theories do not explain the macroeconomic events that may signal the need for self-employment.

Immigrants and other minorities often have social ties within their communities and industries in which information about jobs is obtained. The employment and unemployment of an individual's co-ethnic social network may signal the need (or lack thereof) to become self-employed. If many people within a recently unemployed individual's co-ethnic social network hold steady jobs, he or she may feel confident in his/her ability to obtain another job. In contrast, if many people in the social network are unemployed, the recently unemployed individual may gauge this as a bad economic time and therefore choose self-employment. Furthermore,

employers often exploit immigrant networks for future employees (Waldinger and Lichter 2003). If an individual's social network is unable to provide the networks for employment she or he may have greater need for self-employment. However, individuals' social networks often extend well beyond the local labor market and thus they may weigh their employment prospects in other labor markets while simultaneously making decisions within their local labor market. Social networks among immigrants also extend beyond their co-national group making co-ethnic unemployment the best measure of disadvantage for Mexican immigrants. That is, employment of friends and family in labor markets, broadly defined, may signal good or bad economic times. Thus, in addition to supply and demand theories of self-employment, theories of the macro-economy are also important. The above theories develop certain hypotheses and subsets of hypotheses. I outline the major hypotheses and then categorize them according to Mexican immigrant subpopulations that they relate to.

H1: The ethnic enclave hypothesis predicts that self-employment will operate pro-cyclically or independently of the business cycle. Concretely, this implies that:

a. Mexican immigrant self-employment rates have no relationship to co-ethnic unemployment irrespective of subgroups

H2: The disadvantage hypothesis predicts that self-employment will operate counter-cyclically to the business cycle. Concretely, this implies that:

a. Mexican immigrant self-employment rates have a positive relationship to co-ethnic unemployment irrespective of subgroups.

Data and Methods

Data come from the Merged Outgoing Rotation Groups (MORG) of the Current Population Survey (CPS) for various years.[2] The CPS collects monthly data on 60,000 households to determine employment and unemployment in the United States. The CPS is unique compared with similar surveys such as the American Community Survey (ACS) in that it samples in a rotational scheme that allows one to examine changes in labor market status in a one-year period. The CPS interviews households on a rotational basis where, in any given month, eight different rotation groups are surveyed. Each household in the CPS is given four monthly interviews, leaves the survey for eight months, and is given four more monthly interviews before permanently leaving the sample. The rotation groups differ in the month they first enter the survey. Thus, a household entering the CPS in January of year one (month in survey = 1) will leave the survey in April (month in survey = 4) and then enter the CPS in January of the next year (month in survey = 5). Rotations four and eight are considered the "outgoing rotation groups" since they leave the sample or there is an interruption in their sampling. The MORG data combines all the outgoing rotation groups throughout the year. In this dataset, an individual appears once in a file year, but may reappear in the following year. The matched dataset, therefore, follows individuals from one year to another and excludes those without data in the two years.

Since the CPS is a survey of households and not individuals, occupants of a household may leave (for whatever reason), and will *not* be followed by the survey. Rather, the new occupants of the household will be interviewed. While this potentially creates an attrition bias in the sample, in most instances there are low to negligible statistical effects of attrition (see, e.g., Neumark and Kawaguchi 2004). Further specifications of the matching strategy can be found in Appendix A.

[2] All datasets downloaded from the National Bureau of Economic Research (www.nber.org/cps).

The CPS gathers information on individuals who identify themselves as self-employed (incorporated or not incorporated) on their main job every month (Robles and Cordero-Guzman 2007). Workers count as self-employed after they respond to the question: *Were you employed by government, by a private company, a nonprofit organization, or were you self-employed (or working in a family business).*[3] The CPS also provides a rich set of demographic, familial, occupation and industry characteristics that makes it well suited to elucidating the patterns of self-employment among America's immigrant workforce.

In this paper, I focus on Mexican immigrants. The CPS provides information on Mexican immigrants through two recession periods – the dot-com crash of 2001 and the Great Recession of 2008 – and two periods of strong economic growth – 1994-2000 and 2002-2007. The purpose of honing in on Mexican immigrants, as opposed to Hispanic immigrants more generally, is to control for national origin and other features that this population shares (e.g., rural origin; an economically driven flow, as opposed to refugee flows from El Salvador, Guatemala, and Cuba), which differentiates it from other Latin American populations.

The analysis is described in two parts. First, I use logistic regression models to estimate annual Mexican immigrant self-employment vis-à-vis native white non-Hispanics for each year, 1994-2012. All other co-racial/ethnic groups are included in the analysis, but not reported. I separate men from women and also provide a pooled sample that is presented in Figure 1. The probabilities inform theories that predict whether Mexican immigrant self-employment propensities rise or fall as unemployment increases or recessions begin. I use the full CPS matched MORG files (before matching) from 1994 to 2012 and control for demographic and

[3] The parenthetical part is only asked in households in which a family business was identified at the beginning of the interview in order to identify unpaid family workers. If the person responds self-employed, they are then asked: *Is this business incorporated?*

structural variables such as experience, gender, education, occupation, industry, region, metropolitan status and a host of other control variables defined in Table A2 in the appendix.

The second analysis takes advantage of the longitudinal aspect of the CPS to determine changes in labor market status (defined in Appendix A). Using a matching scheme of the MORG files, I report the odds of Mexican immigrants to enter and leave self-employment from one year to the next. As described above, the matching process creates two-year panel data where changes in self-employment can be calculated. I limit the dataset to individuals aged 18 to 65 who are not self-employed in time 1 but are in the labor force of all co-racial/ethnic backgrounds.[4] I run logistic models predicting the odds that an individual becomes self-employed by the second data point in year 2. [5]

The analysis controls for time one variables like marital status, industrial, occupational, and geographic characteristics. The geographic characteristics include region and dummies for metropolitan residence. Models also control for sex, education, and potential experience and potential experience squared.[6] I also add a measure of disadvantage: the co-ethnic unemployment rate for the year described above. That is, Mexican immigrants and Hispanic non-Mexican immigrants are assigned the Hispanic immigrant unemployment rate each year. The respective unemployment rate is also assigned to African Americans, white immigrants, black immigrants, Hispanic-origin natives, other immigrants, and other nonimmigrants. By

[4] For these analyses, I define an individual as self-employed as someone who reports being self-employed has worked at least 15 hours in the previous week to avoid looking at occasional workers or those who desire self-employment, but have not been able to translate this desire into true work. However, as a sensitivity check, I also ran the models without the 15 hour restriction since it remains possible that individuals are making fair attempts at business ownership despite lack of work. I found substantively similar results.

[5] An individual may be wage and salaried, become unemployed and then become self-employed – or any combination thereof. It is impossible to capture labor market transitions that occur between the two time periods due to the rotational sampling of the CPS, which is why I do not distinguish between unemployed and wage and salaried workers in time 1. As mentioned earlier, households leave the sample for eight months and therefore labor market statuses remain unknown (but could potentially inform decisions to become self-employed).

[6] Recent files of the CPS do not report years of schooling. Thus, educational attainment is used to calculate experience by taking age minus midpoints of educational levels.

controlling for time one variables only, a lag is inherently built into the model where co-ethnic unemployment (and other control variables) predicts the job change in the following year. Year dummies are added to control for time-varying factors affecting self-employment that remain uncaptured in my model.

An interaction term is included between the ethnic categories and the co-ethnic unemployment rate to determine whether unemployment has an effect on the odds of self-employment. I run separate analyses for men and women since their labor market participation differs. I then run a pooled model. I interpret positive and significant interaction effects when determining the odds of becoming self-employed as evidence that Mexican immigrants are pushed into self-employment. However, I also present the net odds of becoming self-employed at varying levels of co-ethnic unemployment rates for Mexican immigrants relative to native white non-Hispanics to provide a better understanding of how unemployment affects these propensities.

Mexican immigrants, however, are a heterogeneous group and I therefore disaggregate the Mexican immigrant variable. Again, I run three analyses: one for men-only, one for women-only, and a pooled analysis. I first isolate Mexican citizens from noncitizens; second, I isolate Mexican immigrants based on period of migration. The period of migration model is broken into sub-periods based on major border crackdowns. These periods include those who immigrated before IRCA (pre-1986); between IRCA and the Clinton administration's "prevention through deterrence" strategy of 1994 (1986-1993); between 1994 and 2001; and 2001 and beyond when border buildup intensified due to the September 11th attacks. All models use control variables defined above; and Table 1 presents sample sizes and weighted descriptive statistics from the MORG-matched samples.

[INSERT TABLE 1 HERE]

Table 1 reports that the percent of men who work in industries that are hard hit by business cycle downturns is large. For instance, 10.61 percent of men in the sample work in the construction industry compared to 1.26 percent of women. Heavy concentration among men in these industries leads to higher unemployment rates than women. This is why the recession of 2008 was commonly referred to as a "mancession" (Hout et al. 2010). Women, on the other hand, are largely concentrated in services industries which may (or may not) be more recession proof. Nevertheless, the number of self-employment transitions that occurs in the sample is small, and I therefore interpret the findings cautiously.

Results

Figure 1 presents the odds that a Mexican immigrant is self-employed vis-à-vis a native white non-Hispanic from the male-only, female-only, and pooled samples. The point estimates use the MORG files and are run for each survey year for which immigrant status is available. The annualized averaged unemployment rate for Hispanic immigrants is also presented. Models used to estimate the point estimates include all persons and include all variables outlined in Table A2.

[INSERT FIGURE 1 HERE]

Figure 1 shows that Mexican immigrants' propensity for self-employment has been increasing over time relative to native white non-Hispanics. This overall upward trend may be a reflection of compositional differences in the immigrant workforce, structural shifts in the economy, political shifts vis-à-vis immigration, or a number of other reasons. The upward trend, however, appears to become more pronounced after the dot-com crash and September 11th attacks. These events, however, had a muted response on Mexican immigrants' self-employment

rates (Wang and Lofstrom 2009). In the years that witness large unemployment increases, there is also a sharp rise in Mexican immigrants' propensity for self-employment. This counter-cyclical trend – where the propensity for self-employment increases as the economy sours – is especially true for Mexican immigrant men. As shown, in the years of upward Hispanic unemployment, the propensity for a Mexican immigrant male to be self-employed compared with a similarly situated native white non-Hispanic male rises. The largest jump for men occurs between 2007 and 2008 when the Hispanic immigrant unemployment rate began to skyrocket due to the Great Recession of 2008.

Mexican immigrant women, however, appear to show the same trend as men, albeit with greater variation from year to year. There is a sharp increase in the propensity to be self-employment for Mexican immigrant women compared with similarly situated native white non-Hispanic women between 2005 and 2007 (the years leading up to the Great Recession). This trend may be due to a delayed response to the dot-com recession or women found the barriers to self-employment to be lowered in economically good times. Invariably, the point estimates in all samples are significantly lower than the reference group, but the closing gap suggests that Mexican immigrants are becoming self-employed at an increased rate.

Figure 1, however, only suggests a positive relationship between self-employment and unemployment during poor economic times and it obscures any effect unemployment has on these trends. As described earlier, the CPS-Matched MORG dataset allows one to estimate the odds of joining and leaving self-employment in a one-year period. By focusing on those who become self-employed and those who leave self-employment, we can better understand what circumstances Mexican immigrants open and close shop. Table 2 presents the odds of becoming

self-employed in a one-year period for selected race/ethnic immigrant categories and control variables for three samples: male-only, female-only, and pooled.

[INSERT TABLE 2 HERE]

The "becoming self-employed models" for each sample in Table 2 report the odds of becoming self-employed and the interaction models of each sample adds an interaction effect between the race/ethnic immigrant categories and the co-ethnic unemployment rate. In the becoming self-employed models Hispanic immigrants who are not of Mexican origin (which includes many refugee migrations such as those from Cuba, El Salvador, and Guatemala) are more likely to become self-employed in a one-year period than native white non-Hispanics. In contrast, Mexican origin native-born men hold 28.7 percent lower odds of becoming self-employed compared to a white native non-Hispanic male, and Mexican origin native women hold 43.7 percent lower odds of becoming self-employed compared with a similarly situated native white non-Hispanic female. Moreover, net of other factors, Mexican immigrants hold 21.7 percent lower odds of becoming self-employed relative native white non-Hispanics in the pooled sample. Mexican immigrant men and women are also less likely to become self-employed in a one-year period compared to native white men and women respectively. These results are consistent with the idea that Mexican immigrants hold lower odds of self-employment, while other Hispanic origin immigrants have equal or higher odds of self-employment than the native born (see, e.g., Light and Karageorgis 1994).

Meanwhile, the pooled sample shows that men are more likely to become self-employed in a one-year period than women. Furthermore, those in the construction industry, agriculture, trade, and services are also more likely to become self-employed than those in the reference group of manufacturing in all samples. While women show large odds of becoming self-

employed in the construction and agriculture industries, Table 1 reports that female concentration in these industries is low. The large odds ratios for women in these industries are therefore unlikely to translate into any meaningful gains in self-employment. Men, on the other hand, also exhibit high odds of becoming self-employed in the construction and agriculture industries than those in manufacturing. These odds are likely to produce large effects of men's overall odds of becoming self-employed given the large concentration of men in these industries.

The interaction models add an interaction effect between the immigrant race/ethnic categories and the co-ethnic unemployment rate. The interaction effects indicate that Mexican immigrant men are more likely to become self-employed than native white non-Hispanic men as their co-ethnic unemployment rates rise. In contrast, there is no statistically discernible interaction effect between Mexican immigrant women compared to native white non-Hispanic women suggesting that the propensity for becoming self-employed as the economy worsens is largely a male phenomenon. However, since the interaction and main effects are not intuitive from Table 2, I calculate the net odds of joining self-employment at different co-ethnic unemployment rates. Figure 1 above shows that the annualized averaged Mexican immigrant unemployment rate ranges between roughly four and twelve percent. Therefore, Table 3 presents the net odds of becoming self-employed relative to a native white non-Hispanic in a one-year period at four, six, eight, ten, and twelve percent co-ethnic unemployment rates.

As noted above, the interaction effect for Mexican immigrant men shows that as co-ethnic unemployment rates rise, Mexican immigrant men's' propensity to become self-employed increases compared with native white, non-Hispanics. Table 3 reports that this is the case. When the economy is performing relatively well (like in 2006 when Hispanic immigrant unemployment rates were at 4.3 percent), the net odds of becoming self-employed for Mexican

immigrant men are lower than their native white male counterparts. However, in times of higher unemployment (such as during the mid-1990s when Hispanic immigrant unemployment was between eight and nine percent) Mexican immigrant men are more likely to become self-employed than native white men. In fact, Mexican immigrant men hold 17.8 percent higher net odds of becoming self-employed at eight percent co-ethnic unemployment ceteris paribus white non-Hispanic native-born men. The net odds of becoming self-employed for Mexican immigrant men become even more dramatic at ten and twelve percent co-ethnic unemployment rates (which were seen during the Great Recession of 2008). Mexican immigrant men hold 38.4 percent higher net odds of becoming self-employed at ten percent co-ethnic unemployment and hold 62.7 percent higher net odds of becoming self-employed at twelve percent co-ethnic unemployment. The effects for Mexican immigrant women, however, are neither statistically significant nor as dramatic as Mexican immigrant men. Mexican origin natives show lower odds of joining self-employment than native white non-Hispanics in all levels of co-ethnic unemployment in all samples with the exception of the males at twelve percent unemployment.

[INSERT TABLE 3 HERE]

Table 4 reports the odds of becoming self-employed by citizenship and period of entry and controls for the variables described in Table A2. As in Table 2, the becoming self-employed models report the odds of becoming self-employed in a one year period and the interaction models adds an interaction effect between the race/ethnic categories and the co-ethnic unemployment rate. The becoming self-employed models shows that both Mexican immigrant citizen men and Mexican immigrant citizen women hold lower odds of becoming self-employed in a one-year period than native white non-Hispanics all else equal. A similar picture is portrayed for Mexican immigrant noncitizens in the pooled and female-only models. Moreover,

net of other factors, Mexican immigrants who immigrated before IRCA are significantly less likely to become self-employed relative to native white non-Hispanics in all samples. Interestingly, those entering after IRCA show no statistically discernible difference than native whites in joining self-employment. However, the interaction effects between the race/ethnic subcategories and co-ethnic unemployment reveal similar trends as in Table 2.

[INSERT TABLE 4 HERE]

Table 5 reports the net odds of self-employment at four, six, eight, ten, and twelve percent co-ethnic unemployment similar to Table 3. Mexican immigrant noncitizen men hold 15.8 percent lower net odds of becoming self-employed at four percent co-ethnic unemployment compared to native white non-Hispanic men. Meanwhile, at ten percent co-ethnic unemployment, Mexican immigrant noncitizen men hold 39.7 higher net odds of becoming self-employment and at twelve percent unemployment hold 65.4 percent higher net odds of becoming self-employed than native white men. High net odds of becoming self-employed when there is a high co-ethnic unemployment rate also holds true for Mexican immigrant citizen men, although these effects fail to achieve conventional significance levels. As in Table 3, the effects of citizenship do not transfer into the female-only sample. These results suggest that Mexican immigrant men, who may face several barriers to entry in the labor market (especially if they are undocumented), become self-employed as co-ethnic unemployment rises.

[INSERT TABLE 5 HERE]

As mentioned earlier, physical barriers may also hamper Mexican immigrants' ability to adjust to the business cycle by returning Mexico. This is especially true of recent arrivals and those who have not naturalized. Mexican immigrant men who entered the United States after the Clinton administration's "prevention through deterrence" policy of 1994, and those who have

entered after 2001 show greater net odds of becoming self-employed ceteris paribus native white non-Hispanic men at eight, ten, and twelve percent co-ethnic unemployment. Again, this is not true of women. Recent arrivals often struggle with language and customs in the receiving country (Portes and Rumbaut 1990) and they may be more likely to be undocumented that may make them more susceptible to the business cycle. Unfortunately, the CPS does not allow one to measure English attainment or documented status. However, border control tightening inhibits individuals' ability to adjust to the business cycle, and self-employment appears to be an alternative to unemployment for these individuals.

Finally, in unreported results (but available upon request) the odds of leaving self-employment in a one-year period, when the sample is limited to only self-employed individuals, show that almost invariably, the race/ethnic immigrant categories are more likely to leave self-employment in a one-year period than their native white counterparts in all samples. I suspect this is largely due to the self-employed being unable to find markets that would make their enterprise viable. However, this is no relationship between co-ethnic unemployment and leaving self-employment compared to native white non-Hispanics. This may be most likely due to Mexican immigrants being unable to find wage and salary jobs during recessions so they remain self-employed. In all, the results above suggest that Mexican immigrants – and Mexican immigrant men in particular - respond to business cycles by becoming self-employed. This is consistent with the idea that Mexican immigrant men are pushed into self-employment as a last resort to unemployment.

Discussion/Conclusion

As shown above, the business cycle has consequential effects when determining entry into self-employment among Mexican immigrants. My analyses provide the most comprehensive and recent account of Mexican immigrant self-employment to date. I also clarify which theories of self-employment best capture business formation and collapse in the United States for various subgroups. My results suggest that in most cases Mexican immigrants are more likely to be self-employed in economically bad times than in good times. While Mexican immigrants – and Mexican immigrant men in particular – are significantly less likely to become self-employed when their co-ethnic unemployment rates are at four percent; they are significantly more likely to become self-employed when their co-ethnic unemployment rate is at eight, ten, and twelve percent compared with similarly situated native white non-Hispanics. This suggests that Mexican immigrant male business formation is largely a response to business cycle downturns – a finding consistent with the disadvantage hypothesis (Light 1979). However, this effect does not occur for women, thus providing some evidence for pull hypotheses mentioned above.

My analyses also highlight the important role that co-ethnic unemployment plays in contributing to business formation – especially among men. As mentioned earlier, co-ethnic unemployment may serve as a signal of the need to become self-employed. If many people within a recently unemployed individual's co-ethnic social network are unemployed or if they have recently become self-employed, he or she may find value or necessity in becoming self-employed. However, these effects do not appear to hold for women. The relationship between Mexican immigrant female business formation and collapse appears to operate independently of the business cycle. This result may be likely due to female concentration in the service industry and dependence on strong ties (Hagan 1998). Although impossible to analyze with the current data, future research should analyze local labor market conditions since parts of the country may

be experiencing hard economic times while other local economies are growing (Fairlie 2012; Hoynes 2000). Thus unemployment may not only be group specific, but also geographic specific.

However, the gap between Mexican immigrant male and females' propensity for self-employment vis-à-vis native white non-Hispanics has been decreasing since 1994. This perhaps corroborates other research (e.g., Evans 1989; Light and Karageorgis 1994; Waldinger 1986) that stress demand-side characteristics of self-employment. The demand for low-skilled workers has been diminishing over time due to deindustrialization in the United States. City-level policies and groups that demand certain services have also become more favorable to self-employment. The industrial mix (Light and Kargeorgis 1994) and opportunity structures may be changing in such a way so as to foster higher propensities for self-employment among Mexican immigrants.

Meanwhile, Mexican immigrants' citizenship appears to influence the propensity to become self-employed. Noncitizen Mexican immigrant men report high net odds of becoming self-employed at ten percent co-ethnic unemployment. Noncitizens may be vulnerable to business cycle downturns since their precarious status may lead to informal employment. However, Mexican immigrant citizens also hold higher net odds of becoming self-employed at ten percent unemployment. This should suggest that citizens should have greater access to resources that will allow them to enter sectors that are affected little by business cycle downturns. However, self-employment behavior for both citizens and non-citizens follows the hypotheses laid out by the disadvantage theory.

Noncitizens, on the other hand, have the option to adjust to the business cycle by moving back to their home countries. However, punitive border control laws have imposed a caging effect that has forced the permanent settlement of this group (Massey et al. 2003). While reports

from the Mexican Migration Project suggest that the probability of return migration increased in the wake of the Great Recession, these probabilities remain low in the broader historical context.[7] My results suggest that increased border control has compounded the necessity to become self-employed in high co-ethnic unemployment times (especially after the Clinton administration's "prevention through deterrence" program in 1994 and the military build-up after 2001). Mexican immigrants who have entered the United States before the main border build-up, however, do not show these effects. This may be due to cases of selection where immigrants in older cohorts that wanted to return home did so before border control intensified. Those who remained in the US may have found suitable employment (which may include self-employment) that may have made them less susceptible to unemployment. These differences may also reflect the idea that migrants who entered the United States before the border build-up were more likely to have legal residence than those who entered after the border build-up. Unfortunately, this is impossible to capture in the CPS, but should be looked at in future research.

My results, however, do not speak to specific mechanisms that may push immigrants into self-employment. On one hand, immigrants may become unemployed (and weigh their options for finding employment in the local labor market and perhaps elsewhere) and decide to try their hand at self-employment. On the other hand, many Mexican immigrants (especially undocumented) hold wage and salaried jobs but are also self-employed after working hours and on weekends. During business cycle downturns and times of high unemployment, individuals may lose their wage and salary jobs leaving them with their side-job as their primary job. In both situations, individuals must shift their primary labor market focus from being an employee to working for oneself. This forced shift may or may not have negative impacts on individuals and the group as a whole.

[7] http://mmp.opr.princeton.edu/

Nevertheless, self-employment is considered a form of non-standard employment characterized by the "bad" job characteristics of low remuneration and long working hours (Kalleberg, Reskin, and Hudson 2000). Factors that lead to a rise in self-employment may carry implications for the economic incorporation of different race/ethnic populations. Scholars interested in the relative advantages that self-employment confers for immigrant incorporation must therefore take into consideration the effect of the business cycle. The disadvantaged status of Mexican immigrants that was uncovered in my analyses suggests that in high co-ethnic unemployment times individuals enter into survival or involuntary self-employment. Without such understanding debates around the relative advantages of self-employment will likely continue to yield mixed results.

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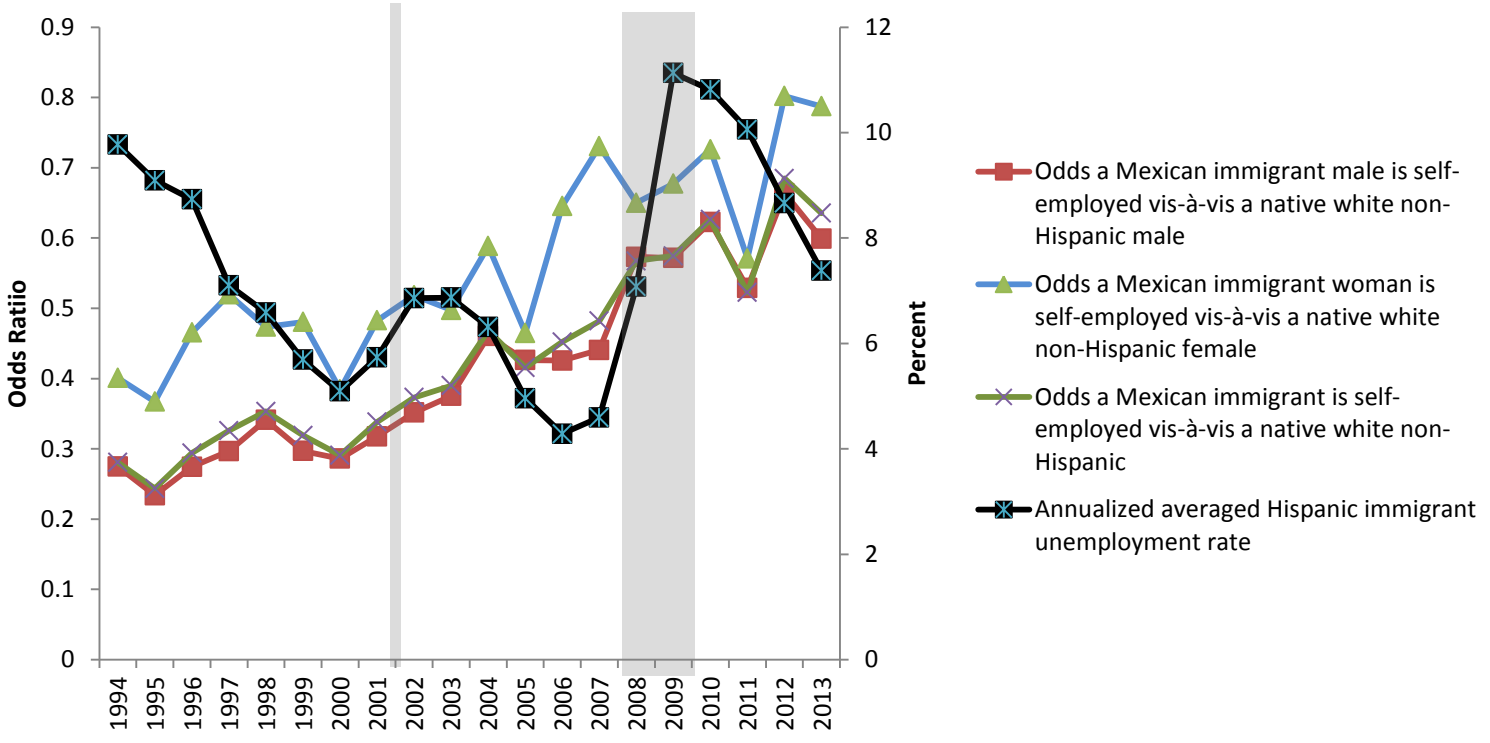
Figure 1: Odds that Mexican immigrant is self-employed and the Hispanic immigrant unemployment rate, 1994-2013



Note: The gray bars indicate approximate recession dates. The point estimates are from the MORG files before matching and control for the variables defined in Table A2. In the years prior to 2003, the other industry category is combined with the services industry category due to low cell count in the other industry category

Table 1: Descriptive statistics of the CPS-MORG-Matched files, 1996-2013. Non-Self-Employed 18-65 year old workers in the labor market (percent).

	Male-only sample	Female-only sample	Pooled sample
Unemployed	5.15	4.05	4.62
Wage and salaried	94.65	95.31	94.96
White non-Hispanic nonimmigrant	68.53	69.10	68.80
White non-Hispanic immigrant	2.74	2.54	2.64
Black nonimmigrant, non-Hispanic	8.34	11.05	9.64
Black immigrant, non-Hispanic	1.08	1.17	1.12
Hispanic nonimmigrant, non-Mexican	2.09	2.09	2.09
Hispanic immigrant, non-Mexican	2.60	2.21	2.41
Hispanic nonimmigrant, Mexican	3.87	3.67	3.78
Hispanic immigrant, Mexican	5.25	2.59	3.98
Other nonimmigrant, non-Hispanic	2.19	2.23	2.21
Other immigrant, non-Hispanic	3.30	3.33	3.32
Male	-	-	52.16
Married (spouse present)	63.08	57.46	60.39
Experience	26.65	27.04	26.84
Less than high school	11.20	7.17	9.27
High school	31.88	29.59	30.79
Some college	27.25	31.59	29.33
College degree or higher	29.67	31.63	30.61
Occupation			
Professional/managerial	30.10	36.95	33.38
Production/craft/Repair	38.14	7.86	23.65
Service occupations	29.78	54.41	41.56
Other occupations	1.98	.78	1.04
Industry			
Manufacturing	16.14	7.27	11.89
Construction	10.61	1.26	6.14
Agriculture/mining/forestry	3.16	1.02	2.14
T.C.U	10.80	4.52	7.79
Wholesale/retail trade	18.97	18.18	18.59
F.I.R.E. and services	30.81	60.24	44.89
Public administration and other	9.51	7.51	8.55
Co-racial/ethnic unemployment rate	5.69 %	5.78 %	5.74 %
Number of individuals in transition categories			
Number becoming self-employed in time 2	16,876	12,467	29,343
N	462,757	447,151	909,907

Source: Merged Outgoing Rotation Groups of the Current Population Survey, various years
Note: Estimates use the appropriate weight. The matched files begin in 1996 due to a lack of geographic identifiers in the 1994 and 1995 files.

Table 2: Odds of becoming self-employed in a one-year period, 1996-2013

	Male-only sample		Female-only sample		Pooled-sample	
	Becoming self-employed model	Interaction model	Becoming self-employed model	Interaction model	Becoming self-employed model	Interaction model
Immigrant Ethnicity/Race (native white non-Hispanic reference)						
Hispanic nonimmigrant, non-Mexican	.838 (.682, 1.031)	.848 (.510, 1.412)	.782+ (.606, 1.010)	1.112 (.587, 2.104)	.804** (.685, .944)	.943 (.636, 1.398)
Hispanic immigrant, non-Mexican	1.195* (1.033, 1.382)	1.232 (.836, 1.815)	1.220* (1.019, 1.459)	1.204 (.754, 1.922)	1.185** (1.059, 1.327)	1.246 (.925, 1.679)
Native-born Mexican	.713*** (.594, .857)	.755 (.483, 1.181)	.563*** (.447, .708)	.547* (.326, .919)	.639*** (.554, .738)	.329** (.452, .875)
Mexican immigrant	.877+ (.765, 1.006)	.618** (.454, 1.420)	.717** (.587, .876)	.563* (.334, .947)	.783*** (.699, .876)	.532*** (.408, .693)
Co-racial/ethnic unemployment rate	.978 (.941, 1.071)	.906** (.845, .974)	.974 (.928, 1.022)	.764 (.414, 1.407)	.977 (.948, 1.007)	.904** (.858, .953)
Interaction between immigrant race/ethnic categories and co-ethnic unemployment rate (white native non-Hispanic reference)						
Hispanic nonimmigrant, non-Mexican x unemployment		1.033 (.967, 1.102)		.984 (.904, 1.070)		1.014 (.964, 1.067)
Hispanic immigrant, non-Mexican x unemployment		1.19 (.962, 1.080)		1.022 (.955, 1.094)		1.019 (.976, 1.064)
Native-born Mexican x unemployment		1.026 (.966, 1.091)		1.030 (.961, 1.104)		1.036 (.991, 1.083)
Mexican immigrant x unemployment		1.084** (1.035, 1.135)		1.055 (.981, 1.135)		1.082*** (1.042, 1.123)

Table 2 continued

	Male-only sample		Female-only sample		Pooled-sample	
	Joining self-employment model	Interaction model	Joining self-employment model	Interaction model	Joining self-employment model	Interaction model
Selected Variables						
Male	-	-	-	-	1.357***	1.357***
					(1.316, 1.399)	(1.316, 1.399)
Industry (manufacturing reference)						
Construction	4.315***	4.311***	4.548***	4.539***	4.325***	4.319***
	(4.008, 4.645)	(4.004, 4.641)	(3.904, 5.298)	(3.897, 5.288)	(4.055, 4.614)	(4.049, 4.608)
Agriculture/mining/forestry	3.009***	3.002***	4.547***	4.538***	3.338***	3.329***
	(2.687, 3.369)	(2.681, 3.361)	(3.853, 5.365)	(3.846, 5.356)	(3.041, 3.663)	(3.034, 3.654)
F.I.R.E. and services	1.983***	1.984***	1.773***	1.770***	1.909***	1.892***
	(1.837, 2.141)	(1.838, 2.141)	(1.573, 1.998)	(1.571, 1.995)	(1.792, 2.034)	(1.792, 2.033)
N	462,757	462,757	447,151	447,151	909,908	909,908
McFadden's R^2	.04	.04	.05	.05	.04	.04

+.05<p<.1, *p<.05, **p<.01, ***p<.001 (two-tailed)

Source: Current Population Survey – Merged Outgoing Rotation Groups, various years.

Note: The models presented control for all variables outlined in Table A2. Odds ratios from the suppressed coefficients are available upon request. The suppressed coefficients include five immigrant race/ethnic variables; six demographic variables including marital status, experience, experience squared and educational attainment; three occupational dummies; three other industrial categories; and year, region, and metro fixed effects. Models run with appropriate weight. Robust 95% confidence interval in parentheses.

Table 3: Net odds of becoming self-employed at four, six, eight, ten, and twelve percent co-ethnic unemployment rates relative to native, white non-Hispanics

	Male-only sample					Female-only sample				
	Odds of joining self-employment at co-ethnic unemployment rates of:					Odds of joining self-employment at co-ethnic unemployment rates of:				
	4%	6%	8%	10%	12%	4%	6%	8%	10%	12%
Mexican native-born	.837	.881	.927	.976	1.027	.613	.653	.693	.735	.779
Mexican immigrant	.853	1.003	1.178	1.384	1.627	.697	.776	.864	.962	1.070

	Pooled-sample				
	Odds of joining self-employment at co-ethnic unemployment rates of:				
	4%	6%	8%	10%	12%
Mexican native-born	.379	.407	.437	.469	.503
Mexican immigrant	.729	.854	.999	1.169	1.370

Source: Author's calculations based on the interaction models from Table 3. The net odds are calculated by multiplying the desired unemployment rate to the interaction coefficient and then adding the main effect coefficient to this number. The final number is then transformed into an odds ratio.

Table 4: Odds of becoming self-employed in a one-year period, 1996-2013

	Male-only sample		Female-only sample		Pooled sample	
	Becoming self-employed model	Interaction model	Becoming self-employed model	Interaction model	Becoming self-employed model	Interaction model
Citizenship						
Main Effects						
Mexican nonimmigrant	.714***	.709	.564***	.547*	.633***	.634**
	(.594, .858)	(.464, 1.085)	(.448, .709)	(.362, .919)	(.548, .730)	(.456, .882)
Mexican immigrant non-citizen	.909	.601**	.750*	.720	.839**	.596**
	(.786, 1.051)	(.425, .848)	(.598, .942)	(.389, 1.332)	(.746, .945)	(.444, .799)
Mexican immigrant citizen	.779*	.539+	.651**	.306*	.700***	.439**
	(.633, .961)	(.285, 1.019)	(.485, .872)	(.118, .795)	(.591, .829)	(.259, .744)
Co-racial/ethnic unemployment rate	.978	.898**	.817+	.917*	.979	.913**
	(.941, 1.016)	(.839, .961)	(.665, 1.004)	(.841, .999)	(.951, 1.009)	(.866, .962)
Interaction effects						
Mexican nonimmigrant x unemployment		1.038		1.030		1.031
		(.981, 1.098)		(.961, 1.104)		(.986, 1.077)
Mexican immigrant non-citizen x unemployment		1.088**		1.026		1.073**
		(1.036, 1.143)		(.941, 1.118)		(1.029, 1.119)
Mexican immigrant citizen x unemployment		1.081+		1.129+		1.091*
		(.993, 1.176)		(.999, 1.277)		(1.017, 1.169)
N	462,757	462,757	447,151	447,151	910,481	910,481
McFadden's R^2	.04	.04	.05	.05	.04	.04

Table 4 continued

	Male-only sample		Female-only sample		Pooled sample	
	Joining model	Interaction model	Joining model	Interaction model	Joining model	Interaction model
Period of Entry Model						
Main effects						
Mexican nonimmigrant	.700***	.715	.562***	.546*	.632***	.626**
	(.582, .842)	(.468, 1.094)	(.447, .707)	(.325, .918)	(.548, .730)	(.450, .872)
Mexican immigrant: entered before IRCA	.757**	.633+	.596***	.571	.647***	.544**
	(.632, .907)	(.374, 1.071)	(.453, .785)	(.238, 1.371)	(.556, .753)	(.346, .854)
Mexican immigrant: entered 1986-1993	1.005	.869	.713*	.798	.858*	.746
	(.843, 1.197)	(.539, 1.402)	(.535, .949)	(.309, 1.716)	(.739, .995)	(.492, 1.131)
Mexican immigrant: entered 1994-2000	.802+	.437+	1.089	.457	.803*	.381**
	(.619, 1.039)	(.189, 1.006)	(.729, 1.627)	(.129, 1.730)	(.647, .996)	(.189, .769)
Mexican immigrant: entered 2001 and beyond	1.098	.527+	.792	.623	.960	.486*
	(.876, 1.376)	(.247, 1.124)	(.516, 1.216)	(.141, 2.753)	(.787, 1.171)	(.245, .965)
Co-ethnic unemployment	.984	.919*	.974	.920+	.862*	.914**
	(.947, 1.022)	(.858, .985)	(.928, 1.022)	(.844, 1.004)	(.757, .983)	(.867, .965)
Interaction effects						
Mexican nonimmigrant		1.027		1.029		1.032
		(.970, 1.087)		(.959, 1.103)		(.987, 1.078)
Mexican immigrant: entered before IRCA		1.050		1.027		1.051
		(.974, 1.132)		(.906, 1.164)		(.985, 1.120)
Mexican immigrant: entered 1986-1993		1.043		1.016		1.043
		(.975, 1.116)		(.904, 1.142)		(.984, 1.105)
Mexican immigrant: entered 1994-2000		1.109+		1.141		1.130**
		(.995, 1.238)		(.967, 1.346)		(1.033, 1.237)
Mexican immigrant: entered 2001 and beyond		1.117*		1.047		1.109*
		(1.021, 1.221)		(.875, 1.253)		(1.023, 1.203)
N	462,843	462,843	447,119	447,119	909,775	909,775
McFadden R^2	.04	.04	.05	.05	.04	.04

+.05<p<.1, *p<.05, **p<.01, ***p<.001

Source: Current Population Survey – Merged Outgoing Rotation Groups, various years

Note: The models presented control for all variables outlined in Table A2. Odds ratios from the suppressed coefficients are available upon request. The joining and interaction model in the pooled sample of the citizenship analysis and the male-only sample in the period of migration analysis is run with one dummy for occupation (professional/managerial positions versus everything else) following computational problems. These changes to the model do not appear to affect the ethnic/race immigrant categories in other models. Models were also run without weights and the full specification of occupation dummies. Results remain substantively similar. Models are run with the appropriate weight. Robust 95% confidence intervals are in the parentheses.

Table 5: Net odds of becoming self-employed at four, six, eight, ten, and twelve percent co-ethnic unemployment rates relative to native, white non-Hispanics

	Male-only sample					Female-only sample				
	Odds of joining self-employment at co-ethnic unemployment rates of:					Odds of joining self-employment at co-ethnic unemployment rates of:				
	4%	6%	8%	10%	12%	4%	6%	8%	10%	12%
Citizenship										
Mexican immigrant: citizen	.736	.860	1.005	1.174	1.372	.497	.634	.808	1.029	1.312
Mexican immigrant: noncitizen	.842	.997	1.180	1.397	1.654	.798	.839	.884	.931	.979
Period of Entry										
Mexican immigrant: entered before IRCA	.769	.848	.935	1.031	1.137	.635	.669	.707	.745	.786
Mexican immigrant: entered 1986-1993	1.028	1.119	1.217	1.324	1.440	.850	.878	.906	.935	.965
Mexican immigrant: entered 1994-2000	.661	.813	.999	1.229	1.512	.775	1.008	1.313	1.709	2.225
Mexican immigrant: entered 2001 and beyond	.820	1.024	1.277	1.593	1.988	.749	.821	.899	.986	1.081

	Pooled-sample				
	Odds of joining self-employment at co-ethnic unemployment rates of:				
	4%	6%	8%	10%	12%
Citizenship					
Mexican immigrant: citizen	.622	.740	.881	1.049	1.248
Mexican immigrant: noncitizen	.790	.909	1.047	1.206	1.388
Period of Entry					
Mexican immigrant: entered before IRCA	.664	.733	.809	.895	.988
Mexican immigrant: entered 1986-1993	.883	.960	1.045	1.137	1.236
Mexican immigrant: entered 1994-2000	.621	.793	1.013	1.293	1.651
Mexican immigrant: entered 2001 and beyond	.735	1.904	1.112	1.368	1.682

Source: Author's calculations based on the interaction models from Table 5. The net odds are calculated by multiplying the desired unemployment rate to the interaction coefficient and then adding the main effect coefficient to this number. The final number is then transformed into an odds ratio.

Appendix A

In order to create the matched datasets from the Merged Outgoing Rotation Groups of the Current Population Survey, a matching algorithm is adapted and described in Madrain and Lefgren (1999). After single-year data files were recoded and limited to 18-65 year olds workers and potential workers, the matching process was initiated where observations in the rotations in year *T* were matched to the corresponding rotation in year *T*+1. This was performed by first creating separate data files for year *T* and year *T*+1. The two files were then merged using state, household id, household number, and line number from the CPS. Individuals were then matched using sex, race, and age as identifiers between the files in time one and time two. If sex and race are different between the two time-periods, the individuals are dropped. If the person's age has increased by more than two years, the individual is dropped as well (if an individual's birthday falls near the interview date, their age may vary between 0 to 2 years). The years of interest were then appended into single files and the naive and valid merge rates are described in Table A1 and a list of the variables recoded is available in Table A2.

Table A1: Naïve and Valid Merge Rates from the MORG Matched Data.

Year	Naïve Merge Rate	Valid Merge Rate
1996	77.02	66.55
1997	76.03	65.63
1998	76.50	65.87
1999	76.92	66.16
2000	76.73	66.56
2001	76.82	66.24
2002	77.09	64.68
2003	75.85	65.70
2004	68.56	63.28
2005	75.97	65.24
2006	76.00	64.93
2007	77.44	66.67
2008	77.49	66.80
2009	77.38	66.45
2010	76.91	66.68
2011	76.63	66.66
2012	76.08	66.27

Table A2: Variables used in analyses

Race/ethnicity	*Occupation*
White non-Hispanic (reference)	Professional/managerial (reference)
Black	Production/craft/repair
Hispanic	Service occupations
Other Race	Other occupations
Male	*Industry*
Married (spouse present)	Manufacturing (reference)
Experience	Construction
Experience Squared	Agriculture/mining/forestry
Education	Wholesale/retail trade
Less than high school (reference)	FIRE and services
High school	Public administration and other
Some college	
College degree or higher	
Co-racial/ethnic unemployment rate	
Metropolitan Status	
In metro area (reference)	
In rest of SMSA	
Not in SMSA	
Missing	
Region	
Northeast (reference)	
Dummies for 3 regions	
Year Fixed Effects	
1996 (reference)	