Mexican-American Self-Employment: A Dynamic Analysis of Business Ownership

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Abstract

This paper analyzes causes of the low self-employment rate among Mexican-Americans by studying self-employment entry and exits utilizing panel data from the Survey of Income and Program Participation (SIPP). Our results indicate that differences in education and financial wealth are important factors in explaining differences in entrepreneurship across groups. Importantly, we analyze self-employment by recognizing heterogeneity in business ownership across industries and show that a classification of firms by human and financial capital "intensiveness", or entry barriers, is effective in explaining differences in entrepreneurship across ethnic groups.

Keywords: Self-employment, entrepreneurship, entry barriers, minority, Mexican, Hispanic

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1. Introduction

Entrepreneurship is frequently viewed as a route to upward economic mobility and has been argued to be an economic tool which may alleviate poverty (see for example Glazer and Moynihan, 1970 and Cummings, 1980). Policies to promote entrepreneurship and business ownership among disadvantaged groups are widespread and the presence of a large number of government programs intended to increase business ownership among minorities, such as set-asides and loans to minorities, shows policy makers' concern with lower minority self-employment rates. The existence of these policies, and a large number of non-profit organizations promoting entrepreneurship amongst disadvantaged groups, also suggests a perception of existing business ownership constraint that leads to some degree of economic inefficiency in the absence of market interventions (see, for example Bates (1993) for a discussion of some of the programs and their success). [1]

Business ownership is low amongst one important and fast growing minority group in particular - Mexican-Americans. The Mexican-American self-employment rate is about one-half of the self-employment rate of non-Hispanic whites, about 4.2 and 8.4 percent respectively, a similar difference in self-employment rates to the one between whites and African-Americans. Surprisingly, and unlike the issue of the low African-American business ownership, research on Mexican-American entrepreneurship is scant.[2]

[1] We use the terms business owner, entrepreneur and self-employed interchangeably in this paper.
[2] An important exception is Fairlie and Woodruff (2005).

Hispanics, and Mexican-Americans in particular, are of great interest for a number of reasons. For one, Hispanics is the fastest growing ethnic group in the U.S. and now represents almost 14 percent of the U.S. population, slightly greater than the proportion of non-Hispanics blacks (Statistical Abstracts of the U.S., 2006). The growth in the Hispanic population is primarily fueled by immigration from Mexico, making Mexican-Americans the largest Hispanic sub-group. Importantly, Mexican-Americans are a disadvantaged minority group who has experienced only limited success in the U.S. labor market. Given these factors this important ethnic group deserves separate attention.

Motivation for analyzing the Mexican-American-white self-employment gap includes, as mentioned above, the possibility that self-employment may improve market outcomes and possibly aid upward economic mobility. Recent evidence of self-employment acting as an avenue to economic improvement for Hispanics is found by Fairlie (2004) who reports that earnings among self-employed Hispanics males grow faster than earnings among their wage/salary counterpart. Also of importance, given the large proportion of Mexican-Americans who are foreign born, is Lofstrom's (2002) finding that self-employed immigrants do significantly better in the U.S. labor market than wage/salary immigrants.

Two potentially contributing factors to the low Mexican-American self-employment rate are the relatively low levels of educational attainment and limited access to financial capital. These constraints are likely to manifest themselves in differences across ethnic groups in the industries sought to enter. In this paper, we seek to address the role of industries and business start-up constraints faced by minorities in explaining the gap in self-employment rates between Mexican-Americans and non-

Hispanic whites. Since the self-employment rate is a function of the number of individuals who enter and exit self-employment, it suggests that to adequately understand differences in business ownership, as well as entrepreneurial success or failure, research needs to also address the dynamic dimension of self-employment. Hence, our analysis focuses on studying differences in self-employment entry and exit rates.

The data utilized in this paper, 1996 and 2001 Survey of Income and Program Participation (SIPP), suggest that the Mexican-American - white self-employment gap is primarily caused by differences in business ownership exit rates, as opposed to start-up rates. However, the data also reveal differences in the types of business owned (incorporated or non-incorporated) and industries of business ownership between Mexican-Americans and non-Hispanic whites. The difference in industry composition across groups is shown to be significant in explaining entrepreneurship differences between Mexican-Americans and non-Hispanic whites.

Importantly, we show that treating business ownership simply as a binary outcome (i.e. self-employment or not self-employment) hides significant complexities in entrepreneurship differences across ethnic groups. Our analysis indicate that Mexican-American are *more* likely than non-Hispanic whites to start-up new businesses in industries that can be described as low human and financial capital intensive. The majority, close to 70 percent, of Mexican-American business start-ups are in this low barrier industry group. In comparison, only 40 percent of non-Hispanic white business entries are low barrier industry start-ups.

Our results also indicate that education and family wealth are important contributors to the Mexican-American - white self-employment gap and that once

differences in industry groups are recognized, much of the observed differences in business ownership entry and exit rates between whites and Mexican-Americans can be attributed to observable characteristics and industry choices.

The paper is organized in the following way. In section 2 we review relevant entrepreneurship literature while in Section 3 we discuss potential minority business start-up barriers and the role of industries. The data are described in Section 4 and descriptive statistics are discussed in Section 5. In Section 6 we present the empirical results and analyze business ownership entry and exits by industry groups. Lastly, we conclude in Section 7.

2. Previous Research

To address the issue of the low Mexican-American self-employment rate and to identify possible constraints, and determinants, we build on the entrepreneurship literature addressing the business ownership choice as well as research addressing minority-white self-employment gaps.

A major focus of the literature is on the role of access to financial capital in business creation and whether liquidity constraints are binding. This is often assessed by investigating whether individual's own financial wealth impacts the decision to become a business owner, holding other relevant factors constant. These studies typically find evidence of binding liquidity constraints in business start-ups (e.g. Evans and Leighton, 1989; Evans and Jovanovic, 1989; Lindh and Ohlsson, 1996). An exception is Hurst and Lusardi (2004) who only find a positive relationship between wealth and business entry at the top of the wealth distribution. Furthermore, Holtz-Eakin, Joulfaian and Rosen

(1994a) find that greater assets, measured as inheritances, lead to a higher probability of business survival, again suggesting that liquidity constraints are binding and not only affects business start-ups. Moreover, Bates (1990) finds that owner educational background is a major determinant of both business survival and the financial capital structure of small business start-ups. Other factors linked to the self-employment entry decision include managerial ability (e.g. Jovanovic, 1982) risk aversion (e.g. Kihlstrom and Laffont, 1979), non-pecuniary benefits of owning one's business (e.g. Blanchflower and Oswald, 1998) and intergenerational links, including parental wealth (Dunn and Holtz-Eakin, 2000).

These factors have also been linked to explaining low self-employment rates among minority groups, particularly African-Americans. Although differences in household net worth, education and family structure across groups have been found to partly explain differences in self-employment entry and exit rates (Fairlie, 1999; Hout and Rosen, 2000), differences in parental entrepreneurship and intergenerational self-employment links appear to explain a significant proportion of the gap (Fairlie, 1999 and Hout and Rosen, 2000).

Surprisingly, research addressing the low Mexican-American self-employment rate is scant. Relevant work includes the literature on ethnic entrepreneurship, which focuses on the role of characteristics and attributes of the ethnic group, including immigrant enclaves (e.g. Light, 1972 and Light and Bonacich, 1988). An early study of Hispanic self-employment from this perspective is Wilson and Portes (1980), who propose that enclaves may create, and/or increase, opportunities for immigrants to enter self-employment. The country-of-origin specific entrepreneurial opportunities stem from

a comparative advantage in serving co-national consumers' needs and demands. Furthermore, co-national entrepreneurs may also have an opportunity to take advantage of the limited labor market choices available to recently arrived immigrants, possibly due to language and cultural barriers. Wilson and Portes (1980) find evidence in support of the enclave hypothesis for a sample of Cuban immigrants living in Miami. Other research has proposed that disadvantaged minorities, including Mexican-Americans, may turn to self-employment as a survival strategy, possibly due to employment discrimination (Light and Roach, 1986).

We argue that to gain an understanding of the causes of the low Mexican-American self-employment rate it is important to focus on the dynamics, i.e. movements in and out-of self-employment. These transitions determine self-employment rates. None of the above discussed research has rigorously analyzed Mexican-American business start-ups and survival. An exception is a relatively recent paper by Fairlie and Woodruff (2005). They utilize matched Current Population Survey data, and find that differences in education and wealth are key factors in explaining the low self-employment rates among Mexican-Americans. Notably, Fairlie and Woodruff (2005) treat self-employment as a binary outcome, which we argue and show in this paper may fail to recognize some important policy relevant intricacies of business ownership. The work by Georgarakos and Tatsiramos (2008) also addresses Hispanic self-employment. They analyze the survival in entrepreneurship of immigrants to the U.S. and their descendants, but do not examine self-employment entry.

Although the above discussed studies are important contributions to the literature addressing minority and Hispanic entrepreneurship, we still do not have a very good

understanding of Mexican-American entrepreneurship and why Mexican-Americans are less likely to be business owners. In this paper, we propose that human and financial capital are indeed key factors in explaining the low Mexican-American self-employment rate. But unlike previous research we recognize that their roles differ by industries, and that industries can be characterized by entry "barriers". We define the concept of high- and low-barrier industry subgroups to explain self-employment dynamics. "Barriers" in this framework refer to the human- and financial-capital resources that self-employment entrants and business owners bring into their ventures. Utilizing this structure, we show that determinants of self-employment patterns differ across the high- and low-barrier sectors.

3. Industries and Potential Minority Entry Barriers

Existing literature indicates that minority self-employment is clustered into specific and traditional industries, such as retail trade and personal services, and that many ethnic entrepreneurs are marginal (Light and Rosenstein, 1995). One possible reason for the prevalence of minority entrepreneurs in these relatively less attractive industries is that it is more difficult for minorities to enter industries such as manufacturing and professional services. We hypothesize that the potential business ownership constraints faced by Mexican-Americans, due to low human capital levels and limited access to financial capital, manifest themselves in the choice of industry, or types of business, Mexican-Americans enter.

Regarding financial capital, if there are additional lending constraints faced by minorities, as found by Blanchflower, Levine and Zimmerman (2003) and Cavalluzzo,

Cavalluzzo and Wolken (2002), they are likely to impact the types of industries that minorities seek to enter, and hence affect the industry composition of the minority business community, as argued by Bates (1995). Given a greater difficulty obtaining credit, and/or facing higher credit cost, we hypothesize that Mexican-Americans are less likely to enter financial capital intensive industries compared to non-Hispanic whites.

Additionally, given the substantial observed difference in educational attainment between Mexican-Americans and whites, many Hispanics effectively do not have access to certain human capital intensive industries. Furthermore, Hispanics' stock of human capital may be valued and/or perceived differently from non-Hispanics, suggesting that education may play different roles for Mexican-Americans compared to non-minority whites. Evidence of different roles of education in the U.S. labor market, in terms of schooling's impact on earnings, between immigrants and natives is found in Betts and Lofstrom (2000). Due to the large proportion of immigrants among Mexican-Americans, this is relevant to the self-employment decision, which is at least partially based on expected earnings. Given the difference in human capital between Mexican-Americans and whites, we hypothesize that Mexican-Americans are less likely to enter human capital intensive industries compared to non-Hispanic whites.

Mexican-Americans are likely to live in geographic area with high proportions of other Mexican-Americans. As argued in the ethnic entrepreneurship literature, enclaves may generate business opportunities for Hispanic entrepreneurs (e.g. Wilson and Portes, 1980). This, combined with our hypothesis of Mexican-American difficulties to enter high-barrier industries, suggest that Mexican-Americans are expected to be entrepreneurial but that such efforts will be concentrated in low barrier industries.

Lastly, the roles of start-up barriers are not likely to operate independently and will jointly affect start-up decision differently across industries, as suggested by Bates (1995). This suggests that, for example, higher levels of education may be associated with a higher probability of starting up a business in some industries while lowering the probability of entrance into other industries. Clearly, a binary self-employment entrance model does not allow for this possibility and makes it clear that we need to focus on a model that categorizes entry into self-employment by industry groups.

It should be pointed out that entry constraints, if present, are also likely to have an impact on self-employment exits. Moreover, a binary analysis of self-employment transitions may not clearly reveal the effects of minority entry barriers. Firstly, the relatively low educational attainment level of Mexican-Americans is likely to restrict access to certain industries (such as professional services which includes physicians, dentists and lawyers) and constrain Mexican-American entrepreneurs to less selective, educationally speaking, industries. If industries that require relatively high schooling levels to enter also have relatively high business survival rates, we may not observe large differences in average business start-up rates but average exit rates will be higher for Mexican-Americans. Secondly, if Mexican-Americans enter certain types of less well funded businesses, or industries, due to capital constraints, this may reveal itself in higher business failure rates, even though the self-employment entry rates are not dramatically different.

In our analysis below we attempt to examine the role of Mexican-American entry barriers by analyzing self-employment entry and exits by specific industry groups. We define two industry categories based on human and financial capital requirements, or

barriers, to enter the industry. Clearly, any classification into industry categories of entry difficulty, or barriers, is somewhat arbitrary. Nonetheless, to determine whether an industry is a low or high-barrier industry, we utilize the 1997 Annual Capital Expenditure Survey (ACES) to determine average fixed private capital by 14 industries and the 2000 Census 5 percent Public Use Microdata Sample (PUMS) to determine entrepreneurs' educational attainment by industry.[3]

Based on the above data, we categorize Gardening/Landscaping, Construction, Retail trade, Personal services and Repair services as low-barrier industries since all these industries display relatively low average educational attainment levels (roughly around high school graduate or below) and average capital expenditures rank among the lowest (all are in the bottom 1/3) . The high-barrier category consists of firms in Agriculture, Transportation/ Communications, Wholesale trade, Business services, Entertainment/ Recreation services, Finance/Insurance/Real estate, Manufacturing and Professional/ Related services industries. These are industries in which entrepreneurs typically have at least some college education and/or average capital expenditures are in top 2/3 amongst our industries. We also perform sensitivity analysis of the industry group categories.

4. Data

Our data are derived from the 1996 and 2001 panels of the Survey of Income and Program Participation (SIPP) and cover the four year period from 1996 to 1999 and the three year period from 2001 to 2003. The 1996 and 2001 SIPP surveys are rotating panels made up of 12 and 9 waves of data respectively for the 1996 and 2001 panels. The surveys are conducted every four months for approximately 37,000 U.S. households in

[3] These are 14 industries that can be identified in the individual level data utilized in our analysis.

each panel. Both the 1996 and 2001 panels over-sampled low-income households and hence sampling weights are used throughout our analysis, making the data nationally representative. As with previous SIPP panels, each wave contains both core questions, common to each wave, and topical questions that are not updated in each wave. In addition to the core variables, we use information from two topical modules: immigration (which includes information on country of origin as well as year of arrival) and assets and liabilities (containing wealth and asset data, collected each year in waves 3, 6, 9 and 12).

The sample utilized is restricted to Mexican-Americans and non-Hispanic whites between the ages of 20 and 64 in the survey period. We do not restrict our sample to only full-time working individuals since a significant proportion of business entries are from non-employment.[4] Furthermore, we restrict our sample to individuals for whom immigration status and wealth information are available. The sample restrictions yield a total sample of 67,011 individuals. For the analysis below, the sample is further divided into two separate samples, one for the entry analysis which is made up of 61,699 individuals who were initially not self-employed (potential entrants), and one for the exit analysis consisting of 5,312 individuals who were observed self-employed in the first sample period (potential leavers). Lastly, we define an individual to be self-employed if he reported owning a business in the sample wave and worked at least 25 hours per week in that business.[5]

[4] Also, paths into self-employment may differ across groups (Raijman and Tienda, 1999), suggesting that restricting the analysis to wage/salary workers and the self-employed may not provide a complete picture of self-employment transitions, particularly with respect to differences across ethnic groups.

[5] In an earlier version of this paper we did not use an hours per week restriction of the definition of self-employment and found similar results to the ones presented here. Clearly, the less restrictive self-employment definition yields higher self-employment rates and transitions.

5. Descriptive Statistics

Table 1 shows sample means for the two groups, separately for potential entrants and leavers. The self-employment entry rate is defined as the probability of entering self-employment during the first 9 sample waves, i.e. three years, conditional on not being self-employed in the initial sample period.[6] Similarly self-employment exit rates are conditional movements from business ownership in the initial period to non-business ownership during the three year sample period.

Table 1 indicates that Mexican-Americans have lower entry and higher exit rates, 4.4 percent and 53.6 percent respectively, compared to whites whose entry and exit rates are 5.2 percent and 40.3 percent respectively. This suggests that both entry and exit differences contribute to the observed Mexican-American lower self-employment rate, although the lower Mexican-American business survival rate, or exits, appears to be the main cause. Importantly, Table 1 shows that educational attainment among Mexicans is considerably lower than among whites. Among potential self-employment entrants, 46 percent Mexican-Americans are high school dropouts while only 8 percent of whites did not finish high school. The table also shows that more than 4/5 of Mexican-Americans are concentrated in four states, California, Texas, Arizona and Illinois. Lastly, the data show, as previous research also indicates, that Mexican-Americans have substantially lower annual earnings and financial wealth relative to whites.[7]

The type of business ownership is also of interest and related to potential barriers to enter self-employment. The SIPP data contain information on what type of business the individual owns, as well as business equity. These characteristics are shown in Table

[6] We restrict our analysis to three years for consistency since the 2001 SIPP sample period is three years.
[7] Wealth is defined as the sum of financial assets and equity in home, vehicle and owned business.

2. The table shows that self-employed Mexican-Americans are substantially less likely to own an incorporated business than non-Hispanic whites. Furthermore, mean business equity is found to be considerably lower among Mexican-American owned businesses than white owned businesses. Although, these observed characteristics may be the outcome of different selection into business ownership between minorities and whites (see e.g. Kawaguchi, 2005), they are also consistent with Mexican-Americans facing additional capital constraints, relative to whites, as well as possibly being the result of group differences in educational attainment.

The distributions of industries entrepreneurs operate in are substantially different for Mexican-Americans compared to non-Hispanic whites. Table 3 shows the industry distribution for business owners, as well as mean years of schooling and business equity by these industries. The table shows that Mexican-Americans business owners are most likely to own a business in the construction industry, about 21 percent of Mexican-American entrepreneurs, which is also an industry with relatively low educational attainment and business equity. The construction industry is the second most common industry to own a business in among whites, but by roughly 4 percentage points fewer business owners. A large proportion of non-Hispanic whites own businesses in the professional services industry, close to 20 percent. Only about 12 percent of Mexican-Americans own a business in this industry of the most highly educated entrepreneurs, where business owners have about 16 years of schooling on average. Overall, the industry distributions of entrepreneurs differ across the two groups and it appears that Mexican-Americans are over-represented, relative to whites, in industries with lower educational attainment levels and business equity.

The observed difference in the self-employed industry composition suggests that it is important to address the role of industries which vary in the human and financial capital requirements, as argued by Bates (1995), in analyzing self-employment differences between Hispanics and non-Hispanic whites. Of course, we would expect that entrepreneurs belonging to a group with lower educational attainment would be more likely to operate in industries with lower schooling levels. Nonetheless, we address the issue in the analysis below.

6. Empirical Models of Self-Employment Entry and Exit

The objective of our study is to investigate the determinants of the low Mexican-American self-employment rate by analyzing entry into and exit out-of self-employment. To analyze differences in self-employment rates, it is useful to model the decision to enter and exit a business venture. We assume that individuals choose to enter, or exit, self-employment based on expected utility in each state (self-employment, wage/salary work or possibly to not work), as well as constraints faced by the individual.[8]

The review of the relevant literature suggest plausible individual self-employment factors to be included in our empirical models, such as age, education, gender, family composition, geographic location, nativity and personal wealth. It also indicates that area characteristics such as the proportion of Mexican-Americans and the proportion Spanish

[8] Including individuals who are not observed working in the analysis may appear counter to some existing entrepreneurship literature. However, the approach taken in this paper to include non-working individuals does not imply that individuals are not comparing job opportunities to self-employment opportunities. For example, non-working individuals are assumed to compare both of the potential opportunities in the wage/salary sector and self-employment. An individual opts to enter self-employment only if it is deemed a superior choice compared to the job opportunities offered, and to possibly continue to not work. Nonetheless, in a sensitivity analysis, we restrict or sample to working and self-employed individuals and find no differences in the results that would alter our conclusions. The results are not shown but available upon request.

speakers are possible factors influencing earnings and opportunities of both self-employed and wage/salary workers (Spener and Bean, 1999 and Lofstrom, 2002). To incorporate these potential area factors we include variables for the proportion of Mexican-Americans and the proportion Spanish speakers. These variables are calculated based on the 2000 Census 5 percent Public Use Microdata Sample (PUMS). For the 97 Metropolitan Statistical Areas (MSA) which can be identified in SIPP, we generate MSA specific proportions of Mexican-Americans and Spanish speakers. For individuals who reside outside of an MSA, we utilize state specific proportions, also generated from the 2000 Census.

In the analysis below we attempt to investigate the minority business start-up barrier issue by estimating multinomial logit models of self-employment entry. In this setting, we view the self-employment and industry choices as simultaneous. This implies that when an individual decides to start-up a business, the person simultaneously makes the entry decision and what industry to enter. Viewed slightly differently, the entry decision can be seen as a single decision where entry and industry are inseparable decisions. For example, a person who opens up a restaurant made the decision to become a restaurant owner, which we view as a simultaneous decision of entry and industry choice. An appropriate econometric model, given either perspective, is a multinomial logit model. We also estimate separate self-employment exit models by industry group. [9]

[9] Given the structure of the data analyzed, one observation per individual per decision, empirical specifications controlling for individual unobserved heterogeneity, are not feasible. A Heckman selection type model may be feasible but no valid exclusion restriction, or suitable instruments, are available. Similarly, an alternative approach is to estimate jointly a bivariate model relying on a non-linear distributional assumption for identification. Given the strong identification assumptions required, we did not pursue these approaches.

Self-employment Entry

We start by showing the sample period self-employment entry rates by industry group separately for Mexican-Americans and whites in Table 4. The table reveals several interesting points. The probability that Mexican-Americans will enter self-employment during the three year sample period is close to 4 percent, while it is slightly higher among whites, 4.67 percent. However, the probability a Mexican-American will start-up a business in the low-barrier industry group over the sample period is 2.62 percent, while it is only 1.9 percent for whites. That is, although Mexican-Americans are less likely to enter self-employment than whites, by approximately 0.7 percentage points, they are 0.7 percentage points *more* likely to start-up a business in a low-barrier industry than whites. The picture is quite different when we analyze entry into the high-barrier industry group. The probability that a Mexican-American will start his own business during the sample period in the high-barrier industry group is 1.35 percent, less than ½ the self-employment entry rate in this industry group among whites, 2.78 percent.

The self-employment entry rates by industry group show that Mexican-Americans are quite likely to start their own business. However, the business start-ups are concentrated in the least difficult industries to enter, as measured by human capital and financial resource requirements. Table 4 shows that about 2/3 of Mexican-American business start-ups are in low-barrier industries while only about 2/5 of white business entries are in these industries. It is quite clear from Table 4 that the types of businesses started up are quite different for Mexican-Americans and non-Hispanic whites.

To address the role of entry barriers, and the role of industries, in the business start-up decision, we estimate multinomial logit models with three choice categories; no entry, entry into a low barrier industry or entry into a high barrier industry.

We present the estimated gaps based on different specifications in Table 5.[10] The table shows that without any controls for observable factors, Mexican-Americans are more likely to enter business ownership in a low barrier industry than whites, by about 0.7 percentage points. However, Mexican-Americans are about 1.4 percentage points less likely to enter a high barrier industry compared to whites. Although the unadjusted differences are quite informative, in that they point out that the types of business start-ups for Hispanics and whites are very different, they may be due to differences in individual factors such as education and wealth.

The remaining columns in Table 5 attempt to address the specific roles of education and financial capital in explaining the observed differences across groups. In the specification with controls *only* for schooling levels, there is no statistically significant difference between Mexicans and whites in entry rates to the low barrier industry category. This is due to the negative relationship between business start-up in the low barrier category and higher levels of educational attainment. The results also indicate that the lower entry rate into high barrier industries is to a large extent due to the lower schooling levels of Mexican-Americans. The white-Mexican-American business start-up gap drops by about 35% for this industry category. Although our estimates for the entry rate gaps into these industry categories appear to be affected by differences in wealth, these effects are not as strong as the impact of education.

[10] Multinomial logit marginal effects for the most general specification are shown in appendix Table A1.

The last two columns in Table 5 show the industry groups entry rate gaps when all observable characteristics are included. It shows a statistically significant gap of 0.7 percentage points remaining for Mexican-Americans in the high barrier industry categories. In other words, about 50% of the observed entry rate gap in to the high barrier industry groups is due to differences in observables, with education being the largest contributor to the gap. Overall, these results suggest that Mexican-Americans entrepreneurs are quite likely to start their own business but given their relatively low levels of education, these start-ups are to a large extent confined to low barrier industries, such as businesses in gardening/landscaping and construction.

Also of interest are the effects of the determinants on the entry probability, shown in Table A1. The results indicate, as expected, that education has a negative impact on entry into low barrier industries while higher levels of education are associated with a higher probability of entry into high barrier industries, consistent with the findings of Bates (1995). The estimates also show a stronger positive relationship between financial capital and self-employment entry into high barrier industries relative to business start-ups in less restrictive industries.[11] Interestingly, the estimated marginal effects also indicate that the gender gap in business start-ups is greater in low barrier industries than in high barrier industries. We find no significant effect of the proportion of Mexican-Americans or the proportion of Spanish speaker on self-employment entry. This however

[11] Note that endogeneity concerns are diminished since wealth levels and asset income are measured prior to entry. However, wealth may still be endogenous to the entry decision. This suggests that we need to be particularly cautious in interpreting the estimated marginal effects of wealth as causal.

may be due to measurement error in our MSA proportions yielding a downward bias toward zero.[12]

Lastly, our specification includes controls for immigrant status, warranting a closer look and further explanation of how to interpret our estimates. Importantly, the estimates indicate that immigrants are more likely to enter self-employment than natives but that this difference only holds for low-barrier entry. The literal interpretation of the estimated Mexican-American marginal effect in this specification, from the immigration perspective, is that it represents differences between Mexican-Americans and non-Hispanic whites of the same nativity status (i.e. comparing U.S. born Mexican-Americans to native born whites or Mexican born Hispanics to foreign born whites who have been in the U.S. equally long). The estimates indicate that there is no difference in the conditional low-barrier entry rate between Mexican-Americans and non-Hispanic whites of the same nativity status. However, they do suggest that Mexican born Hispanics who are otherwise observationally similar to U.S. born whites are more likely to enter low-barrier self-employment.

A comparison of the estimated marginal effect of the Mexican-American indicator variable with and without immigrant controls provides insight to the role of the composition, from the perspective of immigrant status, in explaining self-employment entry differences. The results presented in Table 5 suggest that the higher proportion of immigrants among Mexican-Americans is not directly a key factor – the estimated group differences do not change much in the full specification incorporating immigrant controls

[12] It is plausible that the MSA proportions do not accurately capture the distribution of Mexican-Americans and Spanish speakers within the MSA. For example, some MSAs with a relatively low proportion Mexican-Americans may include smaller areas with a large proportion of Mexican-Americans. If this is true, our MSA proportions can be viewed as being measured with error and the econometric consequence is a bias towards zero.

compared to when only education is included. This does not mean that immigration is not an important factor in explaining differences. The immigration effect is partly indirect through the relatively lower schooling levels among Mexican born Hispanics.

Self-employment Exit

The relatively higher Mexican-American entry rate into firms in the low barrier industry category may also partly explain the higher Mexican self-employment exit rate, as discussed above.

Table 6 shows that Mexican-Americans are more likely to exit business ownership over our three-year sample period than non-Hispanic whites, by about 13 percentage points. As with the entry analysis, the industry classification by entry barriers reveals differences across industries. Interestingly, although white owned businesses in the low barrier industries are approximately as likely to survive as businesses in high barrier industries, this does not hold true for Mexican-Americans. In fact, the exit rate difference between Mexican-Americans and whites increases with entry barrier. Given that the Mexican-American - white exit rate gap widens with the degree of industry barrier, it may not be surprising that potential Mexican-American entrepreneurs are more likely to start businesses in low barrier industries, relative to whites. We next discuss this further and look at the role of observables in explaining these differences.

Table 7 shows the estimated Mexican-American - white exit rates gap by industry categories. The results show higher unadjusted self-employment exit rates for Mexican-Americans in both industry categories and that the difference is particularly large for entrepreneurs operating businesses in the high barrier industries. In fact, the estimates

indicate that there is no statistically significant difference in the exit rate probability between the two groups in low barrier industries.

Again, we attempt to address the role of education and wealth in explaining these differences. Unlike the entry rate results, the Mexican-American - white exit rate gap appears to possibly be somewhat more of an issue of differences in wealth (measured as business equity and household wealth) and asset income rather than schooling levels. For example, the observed Mexican-American - white exit rate gap in the high barrier industry is approximately 24 percentage points. The estimated gap in this industry category, with only schooling level controls, drops to slightly less than 21 percentage points while the gap decrease to 19.5 percentage points with only wealth and asset income controls. This suggests the possibility that once Mexican-American entrepreneurs have started a business, they face additional capital constraints, compared to whites, which decreases the survival probability, even within industry group.

The results in Table 7 also show that when all our observable characteristics are included in our specification, a significant difference in the exit rate between Mexican-Americans and non-Hispanic whites entrepreneurs in high barrier industries still remains. The lower business survival rate among Mexican-Americans in the higher barrier industries also provides an additional potential explanation for the concentration of Mexican-American business start-ups in the low barrier industry group. That is, the lower survival rate in the high barrier industry makes these ventures more risky, even for an observationally similar Mexican-American entrepreneur, compared to a non-Hispanic white entrepreneur. [13]

[13] The estimated differences in exit rates between Mexican-American and white entrepreneurs are not sensitive to the inclusion of within barrier group industry controls.

A look at the estimated marginal effects, shown in Table A2, reveals that the only statistically significant effect of education on the probability of self-employment exit is for entrepreneurs in high barrier industries. The estimates also indicate that business equity has a stronger positive effect on the probability of survival for business owners in high barrier industries, relative to low barrier industry entrepreneurs.[14]

As with the entry results, a closer look at the role of immigrant status is justified. The estimated marginal effects suggest that recent low-barrier self-employed immigrants are less likely than observationally similar native born entrepreneurs to exit self-employment but that the difference dissipates with time spent in the U.S. Given the non-significant estimated low-barrier entry difference between Mexican-Americans and whites, the results also indicate that this holds for comparison between Mexican born Hispanics and native born Mexican-Americans, as well as between foreign born and native born whites. We do not find that immigrant high-barrier business owners have greater survival rates than natives. Furthermore, the effect of years in the U.S. on high barrier exits is quite small in magnitude for immigrants owning businesses in these industries.[15] Lastly, the high barrier exit results imply that both native born and foreign born Mexican-Americans are more likely to leave high barrier self-employment than either U.S. or foreign born white high barrier entrepreneurs.

[14] The estimated wealth and asset coefficients should be interpreted with caution since these variables are plausibly endogenous, especially with respect to the exit decision. One factor arguably alleviates these concerns to some extent - the estimated business equity effects are conditional on years in business.

[15] These results do not appear to be a consequence of the linear in years since migration specification since the results using a quadratic form does not lead to different conclusions. We also estimated the exit models based on one and two year exit periods. Although the estimated gaps between Mexican-Americans and non-Hispanic whites are as expected smaller, conclusions based on these results are generally the same. One slight difference is that the lower one-year low-barrier exit rate for recent immigrants, compared to natives, is not statistically significant.

The low-barrier business survival results appear to some extent contradict the results of Georgarakos and Tatsiramos (2008), who find a higher self-employment exit rate among Mexican immigrants, who tend to enter self-employment from unemployment or labor market inactivity and more likely to exit to employment in the wage/salary sector than natives. A closer look indicates that the difference in results is limited to relatively recent low-barrier immigrant entrepreneurs. The difference may be due to more complex dependent relationships between immigrant status, time spent in the U.S., years owning a business and the probability of self-employment exits (all three of these factors are assumed here to have only independent effects on business survival). A closer look at this possibility, combined with the roles of the pre-entry and post-exit labor market states is beyond the goal of this paper but of interest for future research on immigrant entrepreneurship. Note that such research should also pay attention to industry groups since our results indicate that business survival differs across industry groups not only with regards to education and business equity but also with respect to immigrant status. Lastly, our result suggest that, controlling for educational attainment and asset differences across group, differences in immigrant status across groups do not appear to explain much of the business survival differences between Mexican-Americans and whites.

Sensitivity Analysis of Industry Group Classification

Arguably our categorization of industries into groups based on potential start-up barriers is somewhat arbitrary. To address these concerns we generated the results presented in Tables 5 and 7 with alternative definitions of the two industry groups, as a

robustness check of our definition. First, we re-classify the highest of the low industries as high barrier group. This puts personal services in the high barrier category. Our second alternative industry group definition puts the lowest high barrier industries in the low group, which places transportation/communications in the low barrier industry group. A third classification defines retail trade as a high barrier industry. Although the re-definitions change the reported transitions and the Mexican-American - white gap somewhat, the qualitative results and conclusions discussed in the paper appear robust to these alternative industry groupings.[16] Furthermore, in a previous version of this paper we utilized a three level industry classification (low, medium and high) and found very similar results, although less precisely estimated due to the smaller sample size in each category.[17] Lastly, if differences in industry composition across groups are not important in explaining differences in self-employment entry and exit rates, i.e. sorting into industries is the same in both groups, we should not find differences across industry groups, no matter how they are defined. Hence, at the very least, our results suggest that ethnic group differences in the industries entrepreneurs operate within are important factors in explaining self-employment differences.[18]

7. Summary and Conclusions

This paper contributes to the entrepreneurship research literature by analyzing self-employment among Mexican-Americans, an important and fast growing minority group which has been relatively overlooked in the entrepreneurship literature. Our data,

[16] The results generated utilizing the alternative definitions are not shown but are available upon requests from the authors.
[17] IZA Discussion Paper No. 2101, April, 2006.
[18] We briefly discuss self-employment entry and exits among Hispanics of non-Mexican origin in Appendix B.

based on the 1996 and 2001 SIPP panels, reveal that Mexican-Americans are substantially less likely to be business owners, relative to non-Hispanic whites. We investigate the causes of the Hispanic-white difference in business ownership rates by analyzing self-employment entry and exit rates. We hypothesize that low levels of human capital and limited access to financial capital contribute to the Mexican-American – white self-employment gap and analyze the role of industries and potential minority barriers to business start-ups.

We observe relatively small differences in self-employment entry between the two groups. We argue that this should not be interpreted as Mexican-Americans do not face additional barriers to enter self-employment. We observe differences across groups in forms of businesses owned, i.e. incorporated or unincorporated, business equity and industry composition. Although these differences are partially due to differences in factors such as educational attainment, they are also consistent with minority business start-up credit constraints which lead to less well funded small business and/or selection into less capital-intensive industries. The data also reveal large differences in business survival, or exit, rates, and show that Mexican-Americans are substantially more likely to exit self-employment than whites.

We discuss and examine entry barriers, and the role of industries, in further explaining differences in entrepreneurship between Mexican-Americans and whites. Notably, we show that treating business ownership simply as a binary outcome (i.e. self-employment or not self-employment) hides significant complexities in self-employment differences across ethnic groups. We categorize firms into two industry groups based on human and financial capital requirements to enter the industry; low and high-barriers to

enter industries. This reveals that Mexican-Americans are more likely than whites to become business owners in the low-barrier industry group, the industry group where particularly Mexican-American business start-ups are concentrated.

We estimate multinomial logit models of self-employment by industry groups and find that the higher Mexican-American low barrier entry rate is due to lower schooling levels among Mexican-Americans. The observed difference in educational attainment is also an important determinant of the lower Mexican entry rate into high barrier industries.

The self-employment exit analysis by industry groups reveal that the higher Mexican-American self-employment exit rate is due to a higher exit rate in the high barrier industry group. The analysis also shows that financial capital, particularly asset income and business equity, are factors explaining exit rate differences between non-Hispanic whites and Mexican-Americans. Also, the results provide an additional rationale for the concentration of Mexican-American business start-ups in the low barrier industry group. The relatively lower Mexican-American survival rate in the high barrier industry makes these ventures more risky for Mexican-Americans than whites, and arguably less attractive.

The findings that the industry distribution differs between Mexican-Americans and whites and that Mexican-American business start-ups are primarily concentrated in low barrier industries are important from a policy perspective. The potential contributions to the economy are likely to be different for a landscaping company compared to a business developing new software. Hence, it is not simply a question of self-employment or not, it is also an issue of what *type* of self-employment individuals are involved in.

The results indicating that wealth and asset income have a greater positive impact on entry into (and a stronger negative effect on exits out of) high barrier industries than low barrier industries suggest that capital constraints may be particularly binding for high barrier industry start-ups, where financial capital is most needed. One important implication is that policies aimed at increasing the low Mexican-American self-employment rate through access to small business loans may be more successful by concentrating on business start-ups in these industries.

Although our results are consistent with the notion of minority capital constraints which limit business start-ups to low barrier industries, the findings stress the importance of education in explaining the low Mexican-American self-employment rate and particularly the concentration of Mexican-American start-ups in low barrier industries. The results strongly suggest that policies directed towards increasing schooling levels among Mexican-Americans, if successful, will also increase the overall Mexican-American self-employment rate and, importantly, Mexican-American business ownership in high barrier industries.

Lastly, while our findings shed light on the Mexican-American – white self-employment gap, they also point to the need for further research to more accurately assess, particularly, the lower business survival rates among Mexican-Americans. Our relatively small sample size makes the industry specific exit rate estimates somewhat imprecise and should be interpreted with the appropriate discretion. Nonetheless they are suggestive of some potential explanations.

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Table 1. Sample Means by Ethnicity/Race and Potential Transitions.

	Mexican American	White (Non-Hispanic)	Mexican American	White (Non-Hispanic)
	Potential Entrants (Not initially self-employed)		**Potential Leavers** (Initially self-employed)	
Self-employment Entry Rate (3 Year)	4.38	5.21	N/A	N/A
Self-employment Exit Rate (3 Year)	N/A	N/A	53.61	40.02
High School Dropout	0.46	0.08	0.40	0.07
High School Graduate	0.28	0.32	0.27	0.30
Some College	0.20	0.32	0.22	0.30
College Graduate	0.06	0.27	0.11	0.33
Age	36.03	40.67	41.29	44.17
Female	0.52	0.53	0.28	0.30
Married	0.61	0.64	0.68	0.76
Number of Children	1.52	0.80	1.26	0.89
Number of Persons in Household	4.30	2.98	3.90	3.05
Urban Resident	0.86	0.73	0.82	0.71
California	0.41	0.08	0.37	0.11
Texas	0.29	0.05	0.38	0.06
Arizona	0.06	0.02	0.05	0.02
Illinois	0.06	0.05	0.03	0.05
Proportion Mexican Hispanic (%)	24.27	5.79	27.27	6.55
Proportion Spanish Speakers (%)	23.94	8.07	26.86	8.99
Immigrant	0.50	0.03	0.45	0.04
Years Since Immigration	15.34	19.17	17.36	22.31
Annual Earnings	14,596	25,349	24,992	43,372
Hours Work/Week	28	32	50	52
Household Wealth	48,250	153,448	114,772	312,532
Annual Household Asset Income	129	709	552	1,498
Number of Individuals	5,437	56,262	239	5,073

Source: 1996 and 2001 Survey of Income and Program Participation.

Table 2. Business Ownership Characteristics, Sample Means, by Race/Ethnicity.

	Mexican American	White (Non-Hispanic)
Form of Business Ownership (%)		
Incorporated	9.6	31.7
Own Unincorporated	67.4	51.7
Unincorporated w/ Partner	12.1	11.6
Household Business Partner	9.6	15.6
Business Equity	32,396	77,011

Source: 1996 and 2001 Survey of Income and Program Participation.

Table 3. Business Ownership - Industry Characteristics and Distribution, by Race/Ethnicity.

	Industry Characteristics Sample Mean		Mexican American	White (Non-Hispanic)
	Years of Schooling	Business Equity ($)	Percent in Industry	
Construction	12.4	34,943	21.2	17.2
Retail trade	13.2	73,379	14.9	12.2
Gardening/Landscaping	11.2	17,266	6.0	1.1
Repair Services	12.0	14,298	9.3	3.6
Personal Services	12.8	30,137	10.9	6.4
Agriculture/Forestry/Fisheries	12.7	116,314	4.5	6.9
Transportation/Communications	12.5	65,333	5.6	4.3
Wholesale Trade	13.7	79,043	1.6	4.3
Business Services	13.9	43,751	6.9	8.5
Entertainment/Recreation Services	14.6	27,636	1.4	3.1
Manufacturing	13.5	68,859	2.6	5.3
Finance/Insurance/Real estate	14.6	66,381	2.8	7.0
Professional/Related Services	16.0	63,839	12.4	19.9
Other	13.5	125,103	0.0	0.3
Low Barrier Industry[i)]	12.6	43,097	62.2	40.5
High Barrier Industry[ii)]	14.4	67,859	37.8	59.5

Source: 1996 and 2001 Survey of Income and Program Participation.
Note: Low and high barrier industry classification is based on data from 1997 Annual Capital Expenditure Survey (ACES) and the 2000 Census 5 percent Public Use Microdata Sample (PUMS).
i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services
ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other

Table 4. Self-Employment Entry Rates by Industry Group, Three-Year Sample Period.

	Mexican Hispanic	White (Non-Hispanic)
Overall Entry Rate	3.97	4.67
Entry Rate by Industry Group		
Entry into Low Barrier Industry[i)]	2.62	1.90
Entry into High Barrier Industry[ii)]	1.35	2.78
Number of Individuals	5,437	56,262

Source: 1996 and 2001 Survey of Income and Program Participation.

i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services

ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other

Table 5. Entry Rate Gap by Industry Group, Three-Year Sample Period.

	Unadjusted	Adjusted		
		Education Only	Wealth Only	All*
Sample Period Entry Rate Gap (White - Mexican-American)				
Entry to Low Barrier Industry[i)]	0.007	0.003	0.007	-0.001
	(3.02)	(1.44)	(2.89)	(0.56)
Entry to High Barrier Industry[ii)]	-0.014	-0.009	-0.012	-0.007
	(8.30)	(4.69)	(6.30)	(3.37)

Note: Z-statistics in parentheses.

i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services

ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other

*) Estimated adjusted gap is based on a Multinomial Logit Model with covariates as in Table A1.

Table 6. Self-Employment Exit Rates by Industry Group, Three-Year Sample Period.

	Mexican American	White (Non-Hispanic)
Overall Exit Rate	53.61	40.02
Transitions by Industry Group		
Exit from Low Barrier Industry[i)]	45.9	40.1
Exit from High Barrier Industry[ii)]	64.6	39.9
Number of Individuals	239	5,073

Source: 1996 and 2001 Survey of Income and Program Participation.

i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services

ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other

Table 7. Exit Rate Gap by Industry Group, Three-Year Sample Period.

	Unadjusted	Adjusted		
		Education Only	Assets Only*	All**
Sample Period Exit Rate Gap (White - Mexican-American)				
Exit from Low Barrier Industry[i)]	0.057	0.042	0.025	0.035
	(1.27)	(0.91)	(0.53)	(0.63)
Exit from High Barrier Industry[ii)]	0.243	0.209	0.195	0.190
	(4.68)	(3.76)	(3.42)	(2.88)

Note: Z-statistics in parentheses.

i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services

ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other

*) Assets include business equity, household wealth and annual asset income.

**) Estimated adjusted gap is based on a Multinomial Logit Model with covariates as in Table A2.

Appendix A

Table A1. Marginal Effects, Multinomial Logit Models of Probability of Entry into Self-Employment by Industry Group, Three-Year Sample Period.

Variable	Industry Group	
	Low Barrier [i]	High Barrier [ii]
Mexican-American	-0.001	-0.007
	(0.56)	(3.37)
High School Graduate	-0.0012	0.002
	(0.84)	(0.83)
Some College	-0.002	0.007
	(1.19)	(2.43)
College Graduate	-0.009	0.017
	(6.23)	(4.91)
Age	0.003	0.003
	(9.08)	(8.10)
$Age^2/100$	-0.003	-0.004
	(9.22)	(8.36)
Female	-0.015	-0.012
	(14.13)	(10.57)
Married	0.001	0.002
	(0.92)	(1.75)
Number of Children	0.00002	0.003
	(0.03)	(3.09)
Number of Persons in Household	-0.0001	-0.003
	(0.18)	(3.58)
Urban Resident	-0.003	-0.005
	(2.92)	(3.71)
California	0.004	0.004
	(1.32)	(1.20)
Texas	0.012	0.001
	(2.88)	(0.32)
Arizona	0.004	0.006
	(0.99)	(1.41)
Illinois	-0.001	-0.003
	(0.50)	(1.27)
Proportion Mexican Hispanic	-0.0001	0.0001
	(0.50)	(0.53)
Proportion Spanish Speakers	-0.00003	0.00012
	(0.27)	(0.94)
Immigrant	0.007	-0.0004
	(1.78)	(0.10)
Years Since Immigration	0.0001	-0.00001
	(0.55)	(7.47)
Unemployed Previous Year	0.021	0.022
	(7.45)	(7.47)
NILF Previous Year	-0.002	-0.004
	(1.05)	(2.46)

Years at Job	-0.001	-0.002
	(6.65)	(10.38)
Years at Job^2/100	0.003	0.006
	(3.70)	(8.27)
Household Wealth ($100,000s)	0.001	0.001
	(3.55)	(6.34)
Household Wealth^2/100	-0.001	-0.001
	(1.42)	(2.78)
Annual Asset Income ($100s)	-0.00003	0.0001
	(1.41)	(3.23)
Annual Asset Income^2/100	0.000002	-0.00005
	(0.71)	(2.20)
2001 SIPP	0.0007	-0.0007
	(0.80)	(0.68)
Number of Observations	61,699	
Log Likelihood	-12,675	

Note: Z-statistics in parentheses. The reference group is "No Entry".

i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services

ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other.

Table A2. Marginal Effects, Separate Logit Models of Probability of Exit out of Self-Employment, by Industry Group, Three-Year Sample Period.

Variable	Industry Group	
	Low Barrier [i]	High Barrier [ii]
Mexican-American	0.035	0.190
	(0.63)	(2.88)
High School Graduate	-0.053	-0.054
	(1.37)	(1.29)
Some College	-0.035	-0.016
	(0.89)	(0.37)
College Graduate	0.022	-0.106
	(0.45)	(2.52)
Age	-0.034	-0.014
	(3.84)	(1.66)
$Age^2/100$	0.037	0.016
	(3.63)	(1.65)
Female	0.157	0.134
	(6.02)	(6.44)
Married	-0.008	-0.058
	(0.27)	(2.25)
Number of Children	-0.014	-0.034
	(0.80)	(2.25)
Number of Persons in Household	0.008	0.041
	(0.56)	(3.20)
Urban Resident	-0.015	-0.011
	(0.55)	(0.48)
California	-0.0003	0.022
	(0.01)	(0.43)
Texas	-0.026	0.084
	(0.40)	(1.46)
Arizona	0.065	0.086
	(0.78)	(0.98)
Illinois	-0.061	-0.009
	(1.00)	(0.19)
Proportion Mexican Hispanic	0.0002	-0.004
	(0.05)	(1.72)
Proportion Spanish Speakers	-0.0002	0.002
	(0.08)	(0.92)
Immigrant	-0.176	-0.027
	(2.72)	(0.29)
Years Since Immigration	0.009	0.001
	(2.56)	(6.24)
Years Owning Business	-0.016	-0.019
	(4.20)	(6.24)
Years Owning $Business^2/100$	0.041	0.043
	(3.51)	(4.87)

Business Equity ($100,000s)	-0.017	-0.030
	(1.47)	(3.19)
Business Equity^2/100	0.001	0.001
	(0.91)	(1.48)
Household Wealth ($100,000s)	-0.003	0.005
	(0.37)	(1.33)
Household Wealth^2/100	0.008	-0.003
	(0.55)	(1.35)
Annual Asset Income ($100s)	-0.002	0.0006
	(2.39)	(1.38)
Annual Asset Income^2/100	0.0003	-0.0001
	(1.71)	(0.63)
2001 SIPP	0.013	0.042
	(0.56)	(2.18)
Number of Observations	2,194	3,118
Log Likelihood	-1,402	-1,968

Note: Z-statistics in parentheses.

i) Gardening/Landscaping, Construction, Retail trade, Personal services or Repair services

ii) Agriculture, Transportation/communications, Wholesale trade, Business services, Entertainment/recreation services, Finance/Insurance/Real estate, Manufacturing, Professional/Related services or Other

Appendix B

Self-Employment Entry and Exits of Non-Mexican Hispanics

The above analysis excludes Hispanics of other than Mexican origin. The main reason for the omission of other-Hispanics is the limited sample size available in the SIPP, particularly for the exit analysis for well defined, i.e. relatively homogenous, groups. One possibility is to add in an aggregate "Other-Hispanics" group. The concerns are twofold. Firstly, even with this catch-all other-Hispanic group, the sample size is still limited. Secondly, this group is arguably too heterogeneous to be treated as one group – it includes groups with vastly different experiences in the U.S., such as Puerto Ricans and Cubans. Nonetheless, and keeping the above caveats in mind, entry and exit models were estimated including the available sample of other-Hispanics. We next summarize the key observations and results. [i]

In terms of observable characteristics, our sample of other-Hispanics is different from our Mexican-American sample. For example, and importantly, our SIPP data indicate that the schooling levels and financial capital of other-Hispanics is greater than those of Mexican-Americans but lower than those of non-Hispanic whites.

Other-Hispanics are about one-half percentage point more likely to enter self-employment than non-Hispanic whites. Although this Hispanic group is no less likely to become business owners in low-barrier industries than Mexican-Americans, they are substantially more likely to enter self-employment in high-barrier industries than their Mexican counterpart, and importantly roughly equally likely to do so as non-Hispanic whites. As with Mexican-Americans, the higher low-barrier entry rates, relative to whites, is due to lower Hispanic schooling levels - differences in financial capital does not appear to play much of a role in explaining the low-barrier entry difference.

[i] Results not reported but available upon request.

Overall business survival is higher among other-Hispanic entrepreneurs than Mexican-Americans but lower than whites'. Amongst low-barrier business owners, other-Hispanics are slightly more likely to exit than Mexican-Americans, but as with Mexican-Americans, the minority-white difference is not statistically significant, possibly due to the small sample.[ii] Interestingly, high-barrier other-Hispanic entrepreneurs are slightly more likely to exit than their non-Hispanic white counterpart but the difference is statistically insignificant.

Importantly, our estimates indicate that the unadjusted differences we observe between whites and other-Hispanics are driven by the same factors affecting the differences between Mexican-Americans and whites. However, when comparing observationally similar non-Mexican Hispanics and non-Hispanic whites, we find no statistically significant differences in the entry and exit decisions between the two groups. We suspect that the small sample size is an important contributor to these results.

[ii] Our sample contains 81 and 79 low- and high-barrier other-Hispanics, respectively.