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Mexican-American Entrepreneurship

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Abstract

Although business ownership has implications for income inequality, wealth accumulation and job creation, surprisingly little research explores why Mexican-Americans are less likely to start businesses and why the businesses that they start are less successful on average than non-Latino whites. We conduct a comprehensive analysis of Mexican-American entrepreneurship using microdata from the 2000 U.S. Census, the matched and unmatched March and Outgoing Rotation Group Files of the Current Population Survey from 1994 to 2004, and the Legalized Population Survey (LPS). We find that low levels of education and wealth explain the entire gap between Mexican immigrants and non-Latino whites in business formation rates. Nearly the entire gap in business income for Mexican immigrants is explained by low levels of education and limited English language ability. Using the natural experiment created by the Immigration Reform and Control Act (IRCA), we find that legal status represents an additional barrier for Mexican immigrants. A conservative estimate suggests that the lack of legal status reduces business ownership rates by roughly seven-tenths of a percentage point for both men and women. Human and financial capital deficiencies are found to limit business ownership and business success among second and third-generation Mexican-Americans, but to a lesser extent. These findings have implications for the debates over the selection of immigrants and the assimilation of Mexican-Americans in the U.S. economy.

1. Introduction

Mexican-Americans represent almost 10 percent of the U.S. population, and if current trends continue will become the largest ethnic or racial group in the United States within a decade. Roughly two-thirds of working age Mexican-Americans were born in Mexico, representing 28 percent of all working age immigrants residing in the United States. The rate of assimilation of Mexican immigrants into the U.S. economy and society has been the subject of an active debate among economists. An emerging literature examines why Mexican-Americans have lower wages, incomes, wealth and other economic outcomes (see Trejo 1997, 2003, Blau and Kahn 2007, and Cobb-Clark and Hildebrand 2004 for example).

The economic assimilation question, however, has not previously been addressed through the lens of business ownership and performance, an area that has received little attention in the literature. Business ownership is the main alternative to wage and salary employment for making a living, and thus has important implications for earnings and wealth inequality. Self-employed business owners earn more on average than wage and salary workers (Borjas 1999). The pattern of higher average earnings among business owners than wage and salary workers also holds in almost every industry for both men and women (see Figures 1 and 2). Not only do business owners earn more, they also have higher saving rates and accumulate more wealth (Bradford 2003). Although self-employed business owners represent less than 12 percent of the population, they hold nearly 40 percent of total U.S. wealth (Bucks, Kennickell, and Moore 2006).

The importance of business ownership for economic advancement is especially critical for less-educated workers. Recent empirical evidence from longitudinal data indicates that low-income self-employed workers have more upward income mobility than low-income wage and salary workers (Holtz-Eakin, Rosen and Weathers 2000), and business owners from some minority groups also experience faster earnings growth on average than wage and salary workers after a few initial years of slower growth (Fairlie 2004). Consistent with this, we find that business owners comprise nearly a three times higher share of the Mexican-immigrant workforce earning $50,000 or more than the workforce earning less than

$50,000.[1] Understanding how liquidity constraints, informational barriers, lending discrimination, customer discrimination, or other barriers act as constraints to business ownership is important because their existence suggests some efficiency loss. Although it would be difficult to assign a cost to these losses, barriers to entry and expansion faced by minority-owned businesses are potentially costly to U.S. productivity, especially as minorities represent an increasing share of the total population.

The scarce literature on business ownership among Mexican-Americans contrasts with a much more extensive literature focusing on why African-Americans have low business formation rates and own less successful businesses on average.[2] This difference is surprising given that Mexican-American business ownership rates and performance are only slightly better than African-American rates and performance. Estimates reported below indicate that only 5.1 percent of Mexican-American men are business owners, compared to 4.4 percent of African-American men and 12.6 percent of non-Latino white men. Perhaps of more concern, the businesses owned by Mexican-Americans tend to be much smaller and less successful than either African-American or white-owned businesses. For example, Mexican-American immigrant men earn $32,251 annually on average, half the level of non-Latino white men ($64,138) and well below the mean earnings of African-American men in business ($42,499). Average sales are less than one third of those of white owned businesses, $137,980 annually compared to $437,870 (U.S. Census Bureau 2006b).

We test three hypotheses related to business formation and performance. First, we examine whether human capital constraints explain why Mexican-Americans form fewer and lower-performing businesses. Lower education levels and English language ability have been shown to be the main explanatory factors for the lower earnings of Mexican wage and salary workers (Trejo 1999). Do these

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[1] The economic success of earlier immigrant groups in the United States, such as the Chinese, Japanese, Jews, Italians, and Greeks, and more recent groups such as Koreans, has also been found to be related to their ownership of small businesses (See Loewen 1971, Light 1972, Baron et al. 1975, and Bonacich and Modell 1980, Min 1996). Promoting business creation among Mexican-Americans in high-growth areas may also be useful for job creation and economic development in poor neighborhoods (Bates 1993, Boston 1999, 2006).

[2] The lack of business success among blacks is partly due to relatively low levels of education, wealth and parental self-employment, lending constraints, and consumer discrimination (see Borjas and Bronars 1989, Bates 1997, Fairlie 1999, Hout and Rosen 2000, Blanchflower, Levine and Zimmerman 2003, Cavalluzzo, Cavalluzzo, and Wolken 2002, and Fairlie and Robb 2007).

same factors affect business formation and performance? Second, financial capital is needed for starting

the vast majority of businesses in the United States (U.S. Census Bureau 1997). Does limited access to

financial capital constrain Mexican-Americans from starting businesses? The median net worth of

Mexican-Americans is only slightly more than $6,000 which is similar to blacks, for whom capital

constraints are one of the most important factors limiting the ability to start successful businesses (Bates

1997 and Fairlie and Robb 2007). Finally, it is estimated that more than 50 percent of the Mexican

immigrant population residing in the United States is undocumented (Costanzo et al 2001, U.S.

Immigration and Naturalization Service 2003; Passel, Capps, and Fix 2004). The high percentage of

Mexican immigrants thought to be in the U.S. illegally raises the question of whether legal status has a

substantial impact on business formation. Legal status has previously been shown to be associated with

higher earnings of wage and salary workers (Kossoudji and Cobb-Clark 2002), but legal immigrants may

also have greater access to financial markets, government contracts, the legal system, and other

institutions. The net effect of these two forces on business ownership, however, is unknown.

Our aim is to provide a comprehensive analysis of the potential causes of low rates of business

formation among Mexican-Americans and the relative under-performance of their businesses. We use

data from the U.S. Population Census from 1980 to 2000, the matched and unmatched Current Population

Surveys (CPS), Annual Demographic Files and Outgoing Rotation Group Files from 1994 to 2004, and

the Legalized Population Survey (LPS). We use Blinder-Oaxaca and non-linear decomposition

techniques to examine whether human capital and financial capital constraints contribute to lower

business formation rates and less successful businesses among Mexican-Americans. To identify the

impact of legal status, we exploit the natural experiment created by the Immigration and Reform Control

Act (IRCA) of 1986, which allowed immigrants residing illegally in the United States continuously for

five years at the time of passage to obtain legal status. Synthetic control groups are created using Census,

CPS and the NLSY data for comparison to undocumented Mexican immigrants in the LPS data.

The analysis contributes to the scant literature on Mexican-American entrepreneurship. In recent

research, Lofstrom and Wang (2006) find, using the 1996 Survey of Income and Program Participation

(SIPP), that relatively low levels of education and wealth contribute to lower business-creation rates among Mexican-Americans, and Fairlie and Woodruff (2007) find that education differences contribute to lower business ownership rates using data from the 2000 Census.[3] Focusing on earnings, Fairlie (2004) finds evidence of faster earnings growth among self-employed Latino men than among male Latino wage and salary workers from the National Longitudinal Survey of Youth. Although the existing literature provides a start, a comprehensive analysis of Mexican-American entrepreneurship focusing on both business formation and performance using several large nationally-representative datasets is needed.

2. Data

We use data from the Census of Population, Current Population Survey (CPS) and Legalized Population Survey (LPS). The sample sizes for all three datasets are large enough to focus on Mexican-Americans. Microdata from the 1994 to 2004 CPS Annual Demographic Files (ADF) are used to estimate business ownership rates, defined as the percent of the population that owns a business. Business ownership includes all businesses that are owned as the person's main job activity, including incorporated, unincorporated, employer and non-employer businesses.[4] A major advantage of the CPS in addition to the large sample sizes is the availability of information on the birthplace of both parents. By examining whether individuals have parents born in Mexico we can distinguish between second-generation Mexican-Americans and third- (and higher-) generation Mexican Americans. Third-generation Mexican-Americans are identified by self-reported Hispanic ancestry. The birthplace of the individual is used to determine whether they are a first-generation immigrant.

Although the CPS files are primarily used as cross-sectional samples in the existing literature, one-year transitions can be identified by linking consecutive surveys. To estimate business formation rates we use the matched CPS data. Households in the CPS are interviewed each month over a 4-month period. Eight months later they are re-interviewed in each month of a second 4-month period. Thus,

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[3] Fairlie and Woodruff (2007) also find that low rates of Mexican immigrant business ownership are not driven by low rates of business ownership in Mexico. Mexico has one of the highest business ownership rates in the world.
[4] The focus on main job activity excludes small, side businesses owned by wage and salary workers.

individuals who are interviewed in March of one year are interviewed again in March of the following year. The rotation pattern of the CPS makes it possible to match the information from one survey to the following survey creating a one-year panel for up to half of all respondents in a given demographic file. To match these data, the household and individual identifiers provided by the CPS are used. False matches are removed by comparing race, sex, and age codes from the two years. The total match rate is 72.8 percent. Mexican-Americans have lower match rates than whites creating an under representation in the matched sample, but the difference is not large. More generally, minorities, immigrants, the less-educated, young adults and individuals residing in the West are underrepresented in the matched data.[5] Among Mexican-Americans, the matched sample is slightly older and more educated, and is slightly more likely to be born in the United States, self-employed and living in the West.

The primary sample that we use to examine net business income is the Public Use Microdata (PUMS) 5-Percent Samples of the 2000 U.S. Census of Population. The Census microdata include over 8 million observations for working-age adults. Even after conditioning on business ownership, the sample size is very large, allowing us to explore the causes of differences in net business incomes. One limitation of the Census relative to the CPS is that it does not include information on the birthplace of parents. We are thus limited to distinguishing between Mexican immigrants and U.S.-born Mexicans.

The Legalized Population Survey (LPS) is used to explore the impact of legalization. The LPS selected a sample of immigrants who had applied for legal status following the passage of the Immigration Reform and Control Act (IRCA) in 1987. Individuals were interviewed twice, once in 1989 just after they applied for legal status, and once in 1992, after legal status had been obtained. Those not granted legal status were not resurveyed in 1992, and budget limitations necessitated the elimination of an additional randomly selected subsample from the original 1989 sample. The full LPS sample size is 6,193 in 1989 and 4,012 in 1992. In addition to the 1,191 individuals dropped for the reasons given above, just under 20% of individuals were lost to the sample because of return migration, because they

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[5] The CPS is a sample of housing units rather than households. Households that move between waves of the survey are not followed. See Fairlie and Woodruff (2005) for more information on match rates across demographic groups.

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were not found in 1992, or because they refused to participate in the resurvey. More than 97 percent of the sample filed the initial application for legal status between May 1987 and June 1988. The 1989 survey asks respondents about their work status at the time of the survey and also at the time they filed their application for legal status. The final sample of Mexican immigrants aged 20-64 and employed at the time of application and in 1992 includes 837 men and 357 women.

DEFINITION OF BUSINESS OWNERSHIP

Throughout the paper, we measure business ownership based on the class of worker question referring to the respondent's main job or business activity (i.e. activity with the most hours) at the time of the interview. Business owners are those individuals who report 1) "self-employed in own not incorporated business, professional practice, or farm," or 2) "self-employed in own incorporated business, professional practice, or farm." This definition includes owners of all types of businesses—incorporated, unincorporated, employer and non-employer firms.

Male business owners are most commonly engaged in construction, automobile repair, and legal services. (See Appendix Table A1). Female business owners are most commonly found in childcare services, beauty salons, and real estate (Appendix Table A2). One might question whether those reporting themselves as self employed in some industries—child care, household cleaning services or taxi drivers, for example—should be thought of as business owners.[6] We note that these industries represent only a small fraction of those identifying themselves as self employed. For example, among men, taxi drivers only represent 0.7 percent of all self-employed business owners. Among women, childcare represents 10.9 percent of the total self employed, and personal services (including household cleaners) and services to buildings (including business cleaners) represent only 5.1 percent and 2.6 percent of all self-employed, respectively. Alternatively, one might identify industries where self-employed business ownership is of questionable benefit on the basis of earnings in the industry. Appendix Tables A1 and A2

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[6] Day laborers are not included among self-employed business owners. In fact, the CPS occasionally conducts a special Contingent and Alternative Employment Arrangements Supplement and includes day laborers in their wage and salary estimates.

also report the percentage of self employed and average earnings for the industries in which business owners report the lowest earnings. For male business owners, these are private household services, barber shops and childcare services. For female business owners, they are private household services, childcare services and toys and sport manufacturing. We include all industries in the main analysis, but also show that our results are robust to excluding private household services, childcare services, services to buildings, and taxi and limousine service from the sample. These industries generally have low earnings growth potential and represent self-employment activities that are somewhat atypical of business ownership.

3. Mexican-American Rates of Business Ownership and Performance

Using microdata from the CPS and Census, we examine business ownership rates, business formation rates and business performance among Mexican-Americans. Are Mexican-Americans less likely to start businesses than the national average? Are the businesses that they form less successful? Focusing on business formation separate from business performance is important for providing a comprehensive view of the state of Mexican-American business ownership. Racial and ethnic disparities in business formation and business longevity are underlying causes of differences in business ownership.

Business ownership rates among Mexican-Americans are much lower than the national average. Estimates of business ownership to population ratios by ethnicity and race from the 1994 to 2004 March CPS data are reported in Table 1. Only 5.1 percent of Mexican-American men and 2.6 percent of Mexican-American women own businesses. In contrast, 10.7 percent of all men and 5.6 percent of all women are self-employed business owners. Removing the influence of Mexican-Americans and other minority groups on total U.S. rates results in larger disparities. We find that 12.6 percent of non-Latino white men and 6.6 percent of non-Latino white women are self-employed business owners. To sharpen the findings for Mexican-Americans, we make comparisons to non-Latino whites in the following sections.

Mexican-American rates of business ownership are very close to those of African-Americans. The business ownership rate is 0.7 percentage points higher for Mexican-American men than for black men, and the business ownership rate is 0.3 percentage points higher for women. Another interesting finding is that Mexican-Americans are less likely to own businesses than are other Latinos. Comparing all major ethnic and racial groups in the United States, Mexican-Americans have the second lowest rates of business ownership. The only major group that is less likely to own a business in the United States is blacks. All of these differences across groups are statistically significant due to the large sample sizes in the CPS.

The comparisons are not sensitive to the measure of business ownership. In the remaining columns of Table 1 we limit the sample to i) those working 15 or more hours per week, ii) those working 15 or more hours in non-agricultural industries, and iii) those working 35 hours or more in non-agricultural industries. Business ownership rates increase after imposing these restrictions, but the key finding is that Mexican-American rates do not change substantially relative to white rates.[7]

Self-employed business ownership is defined for the individual's main job activity, thus removing the potential for counting side businesses. The insensitivity to changes in hours worked also rules out the possibility that the results are being driven by individuals reporting disguised unemployment, underemployment, or casually selling goods and services as self-employed business ownership (Carter and Sutch 1994). To investigate this question further, however, we also estimate business ownership rates removing industries in which the self employed activities are generally not scalable, and hence might not be classified as businesses. In particular, we remove private household services, childcare services, services to buildings, and taxis. Estimates of business ownership rates are very similar. The business ownership rates for Mexican-American men and women are 5.0 and 2.4 percent, respectively. The resulting non-Latino white business ownership rates are much higher at 12.5 percent for men and 6.4

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[7] Mexican-American business ownership rates remained fairly constant over the sample period for men and increased only slightly for women. These results suggest that the well publicized estimates of rapid growth in the number of Hispanic businesses in the United States by the Census Bureau are due primarily to population growth (U.S. Census Bureau 2006a).

percent for women. Disparities in business ownership rates do not appear to be driven by self-employment activities that do not clearly fit the common idea of owning a business.

The rates of business ownership reported in Table 1 include both the immigrant and U.S.-born population. A distinctive characteristic of the Mexican-American working-age population is that 60 percent were born in Mexico. By comparison, only 4 percent of non-Latino whites are foreign born. Does the large percentage of immigrants affect business ownership among Mexican-Americans? In particular, are Mexican-American business ownership rates different for immigrants and the native born, and do they converge to non-Latino white rates across generations?

A couple of factors may lead to increasing rates of business ownership across generations in the United States. First, returns to human capital in business may be higher for the U.S. born than those born in Mexico. Second, immigrants may lack access to or knowledge of institutions that are important to entrepreneurs, such as financial markets and the courts. Access to these institutions is greater among the native born, in part because they all reside in the country legally. Various estimates indicate that half or more of the Mexican-born population residing in the United States in 2000 lacked legal documentation. (See Costanzo et al, 2001; U.S. Immigration and Naturalization Service, 2003; Passel, Capps, and Fix, 2004). Working in the opposite direction, however, Trejo (2003) finds large gains in wage and salary earnings from first- to second-generation Mexican Americans, but small gains in earnings from second- to third-generation Mexican-Americans. The large initial gains in earnings arise from intergenerational improvements in education, English-language ability, and returns to human capital. The higher returns to human capital for U.S.-born Mexican-Americans in the wage and salary sector should place downward pressure on business ownership rates for this group, all else equal. Given all of the potential factors operating in opposing directions, it is unclear whether we should expect business ownership rates to be higher or lower among immigrants compared to U.S.-born Mexican-Americans.

Using CPS data from 1994 to 2004, Table 2 reports business ownership rates for first-, second- and third- (and higher-) generation Mexican-Americans and non-Latino whites. The rate of business ownership is notably lower for first-, second-, and third-generation Mexican Americans than for whites of

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the same generation.[8] There is some convergence in the rates across generations, however. The

convergence is driven both by falling business ownership rates among non-Latino whites and rising

business ownership rates among Mexican-Americans from the first to the second generation.[9]

Convergence from the second to third generation is driven primarily by falling rates of business

ownership for non-Latino whites because Mexican-American rates do not change substantially. These

estimates indicate that business ownership among first-generation Mexican-Americans is particularly

lagging relative to whites.[10]

BUSINESS FORMATION

The low levels of business ownership among Mexican-Americans may be explained by lower

rates of entry, higher rates of exit, or a combination of the two.[11] We first examine business formation

rates. Focusing on business formation reduces the problems of including potentially endogenous

variables, such as asset levels, in a static model of business ownership.[12] A positive relationship in a

cross-sectional analysis may simply reflect the possibility that business owners accumulate more wealth

instead of wealth increasing the likelihood of owning a business.

Table 3 reports one-year business formation rates for non-Latino whites and Mexican-Americans

from matched CPS microdata.[13] The business formation rate is defined as the percentage of non-business

owners in one year who own a business in the following year. All generations of Mexican-Americans

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[8] Business ownership rate estimates are very similar for men and slightly smaller for women for all reported groups after removing private household services, childcare services, services to buildings, and taxis.

[9] Using 1990 and 2000 Census data and information on year of entry into the United States, we did not find evidence of large changes in business ownership rates across Mexican immigrant entry cohorts.

[10] Low rates of business ownership among Mexican immigrants do not appear to be caused by individuals who plan to return to Mexico. Estimates from the Northern Border Migration Survey (EMIF) indicate that returning migrants to Mexico are roughly as likely to have been business owners in the United States as the business ownership rates reported here.

[11] The steady-state rate of business ownership can be expressed as $E / (E+X)$, where E is the business entry rate and X is the business exit rate.

[12] Several previous studies have followed this approach of estimating the relationship between personal wealth and self-employment by modeling the decision of wage and salary workers or other non-business owners to switch into self-employment over a fixed period of time (see Evans and Jovanovic 1989, Evans and Leighton 1989, Meyer 1990, Holtz-Eakin, Joulfaian, and Rosen 1994, Fairlie 1999, and Dunn and Holtz-Eakin 2000.

[13] Examining business formation probabilities over the wage distribution, we do not find clear evidence of negative or positive selection into business ownership among Mexican-Americans (see Fairlie and Woodruff 2005).

have substantially lower levels of business formation than non-Latino whites. For men, business formation rates decline across generations whereas for women rates increase slightly. Only 1.8 percent of third-generation Mexican-American men start a business annually compared to 3.3 percent of non-Latino white men. Mexican-Americans are clearly much less likely to start businesses than non-Latino whites.

BUSINESS PERFORMANCE

Mexican-Americans are less likely to start businesses than whites, but are the businesses they start also less successful? To address this question, we focus on two performance measures -- business exit rates and net business income. The matched CPS data are used to examine annual business exit rates. Business exit rates provide a complement to the business formation rates discussed above, but racial and ethnic disparities should be interpreted with caution. The CPS does not provide any information on the reason for exit, and many exits can be considered successful and do not represent business closures (Headd 2003). Estimates from the 1992 Characteristics of Business Owners (CBO) indicate that 20 percent of businesses changing ownership were sold or transferred to another person and more than one third of all businesses that are not operating are reported as being "successful" by the owner (U.S. Census Bureau 1997). Hispanic owners are less likely to report selling their business or to report that their businesses were successful. Therefore, we focus on a second measure of business performance, net business income. The 2000 Census provides information on net business income after business expenses.

Table 3 reports estimates of business exit rates from the matched CPS data. Mexican-Americans of all generations have substantially higher exit rates than non-Latino whites.[14] The patterns hold for both men and women. Although estimates of business exit rates differ somewhat across generations the relatively small sample sizes make it difficult to compare rates. The high rates of business exit combine with low rates of business formation to create the low rates of business ownership among Mexican-Americans noted above.

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[14] Examining the survival dynamics of immigrant business owners using 4-year panel data from the 1996 SIPP, Georgarakos and Tatsiramos (2007) find that Mexican immigrant men have lower business survival rates than non-Latino white men. Unfortunately, sample sizes are relatively small for Mexican immigrant men (107 self-employment spells).

Table 4 reports net business income from the 2000 Census by race and ethnicity. The average net income among Mexican immigrant business owners is substantially lower than the national average. For Mexican-immigrant men, mean business income is roughly one half the level of non-Latino white business income. The U.S.-born of Mexican descent have average business incomes which are higher than the Mexican-born, but substantially lower than non-Latino whites.[15] Removing the disproportionate number of very successful white business owners does not change the conclusion. The median business income of Mexican-Americans, especially immigrants, is much lower than the median business income of non-Latino whites.

The estimates reported in Table 4 are based on business owners who work at least 15 hours per week and 20 weeks during the year. Either relaxing these work restrictions to any hours and weeks or increasing them to working full-time, full-year does not change the business income differentials. Another concern is that the differences may reflect an overrepresentation of Mexican-Americans in self-employment activities that do not represent "true" business ownership as discussed above. Removing childcare providers, household and business cleaning services, and taxi drivers, however, results in little change in the business income differentials for men. Average business income is now slightly higher for each group leaving the racial and ethnic differences unchanged. For female business owners, especially among Mexican immigrants, the exclusion of these industries results in larger increases in average business income. The ethnic and racial differentials are now smaller, but remain substantial. Overall, we find that Mexican-American business owners earn substantially less than non-Latino white business owners with foreign-born Mexicans having the lowest levels of earnings. These results appear to be robust to changes in the business owner sample.

Although most of the previous research has focused on the lack of business success among African-Americans, Mexican-immigrant business owners actually have much lower business income levels. For men, the average business income of Mexican immigrant owners is $10,000 less than the

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[15] We find similarly large earnings disparities for wage and salary workers. Mexican immigrants earn roughly 1/2 white levels U.S.-born Mexicans earn 70-80 percent of white levels. For all groups, business income is higher than wage and salary earnings.

average for black business owners. Moreover, U.S. born Mexican-Americans have only slightly higher business incomes than blacks among men and actually have slightly lower income levels among women. Thus, the businesses owned by Mexican-Americans generally underperform black-owned businesses.

Business exit rates and business income are the only information on business performance available from nationally representative public-use microdata with large enough sample sizes of Mexican-Americans. Published estimates from the 2002 Survey of Business Owners (SBO), however, provide information on two additional business outcomes -- average sales and receipts, and employment levels. Estimates from the SBO indicate that Mexican-owned businesses have substantially lower levels of average sales and receipts, and employment than non-Latino white-owned businesses. For example, the average sales of Mexican-American firms are $137,980 compared to $437,870 for white firms (U.S. Census Bureau 2006b).

All of the estimates reported here present a consistent story -- Mexican-American businesses are less successful than white businesses with levels of performance that are not better than African-American businesses. The relative lack of success among Mexican-American business owners combined with low business formation rates suggests that a comprehensive analysis of Mexican-American entrepreneurship is needed.

4. Explanations for Business Formation and Performance Patterns

We next turn to the broader literatures on entrepreneurship and immigration to search for potential explanations of the relatively low business formation rates and performance among Mexican-Americans. We are particularly interested in identifying barriers to business formation and performance related to access to human capital (education and language ability), financial capital, and legal status. The standard theoretical model of entrepreneurship posits that human capital and access to financial capital are two of the most important determinants of the entrepreneurial decision (Evans and Jovanovich 1989). Human capital, financial capital and legal status are clearly inputs in the production process, and thus potentially affect business performance. Indeed, the empirical studies in the rapidly expanding literature

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on entrepreneurship generally find that education and wealth increase business creation, ownership and performance.[16] English-language ability is also found to increase business ownership and earnings (Fairlie and Meyer 1996, Lofstrom 2002). We therefore test the hypotheses of whether human capital is important in limiting Mexican-American business success as found for Mexican-American wages (Trejo 1997) and whether limited access to financial capital is important as found for black entrepreneurs (Bates 1997 and Fairlie and Robb 2007) in this section. We test the legal status hypothesis in the following section.

EXPLAINING DIFFERENCES IN BUSINESS FORMATION

We first examine the underlying causes of differences in business formation rates. One of the largest differences found between Mexican-Americans and non-Latino whites is education. Figure 3 shows educational distributions for first-, second- and third-generation Mexican-Americans compared to non-Latino whites. Mexican-Americans—especially Mexican immigrants—have substantially lower education levels than whites. Given previous research indicating that the owner's education level increases the likelihood of starting a business, these differences are likely to contribute to lower business formation rates among Mexican-Americans. But, we do not know how much of the total Mexican/white gap in business formation rates is explained by education and other measurable differences.

To explore this question and identify the explanatory power of ethnic and racial differences in other observable characteristics we first estimate logit regressions for the probability of business formation using the matched CPS data. The logit regressions include controls for education, age, home ownership, asset income, marital status, number of children, central city status, region, and survey year. All variables are measured in the first survey year. The estimates from these regressions are generally similar to those from previous studies. We find that education, home ownership, asset income, age, and marriage are associated with higher levels of business formation.

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[16] See Aaronson (1991) and Parker (2004) for reviews of the literature.

To identify the separate contributions from group differences in the included explanatory variables, we employ a variant of the familiar technique of decomposing inter-group differences in a dependent variable into those due to different observable characteristics across groups and those due to different "prices" of characteristics of groups (see Blinder 1973 and Oaxaca 1973). The technique that we use takes into account the nonlinearity of the logit regressions (see Fairlie 1999, 2005 for more details).

Tables 5 and 6 report estimates from decomposing the gaps in business formation rates between Mexican-Americans and non-Latino whites for men and women, respectively.[17] We discuss the results for men first. Lower levels of education among Mexican-Americans explain nearly 40 percent of the gap in business formation rates.[18] The findings are even more striking when we focus on Mexican immigrants, who represent roughly two thirds of all Mexican-Americans (see column 2). Nearly 80 percent of the lower business formation rate for this group is explained by differences in education alone. The low levels of education reflected in Figure 1 represent a sizeable barrier to business entry for this group. The level of education is higher among second-generation Mexican-Americans than among the Mexican born, and higher among third-generation Mexican-Americans than among the second generation (columns 2 and 3). Even for second-generation Mexican-Americans, however, education accounts for slightly more than 20 percent of the gap in business formation rates between second-generation Mexicans and non-Latino whites. Education explains only 10 percent of the gap in business formation rates among third-generation Mexican-Americans. The interpretation of results for the third generation is more problematic, because third generation Mexican-Americans are self identified rather than being determined by information on their place of birth or their parents' place of birth. One concern is that among third and higher generation Mexican-Americans, there is a negative correlation between assimilation in the United States and self-identification as being of Mexican descent.

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[17] The decomposition estimates use coefficient estimates from a pooled sample, and standard errors are approximated using the delta method following Oaxaca and Ransom (1994, 1998) and Fairlie (2005).

[18] Using the 1996 SIPP for all Mexican-American men, Lofstrom and Wang (2006) find that education differences explain 111 percent of the gap in business entry rates. The larger estimate of the education effect may be due to the inclusion of nativity in the decomposition and its large negative contribution (-164 percent). We do not include nativity and instead report separate estimates by generation of Mexican-Americans.

Another measure of human capital – age or potential work experience – is also found to be important for first and second generation Mexican-Americans. The relative youth of Mexican immigrants and Mexican-Americans and the strong positive relationship between age and business formation explains 12.0 percent of the business formation gap for first-generation Mexicans and 19.3 percent of the gap for second generation Mexicans.

Access to financial capital may also be an important limiting factor for business formation among Mexican-Americans. Previous research indicates large disparities in wealth between Latinos, especially Mexican-Americans, and non-Latino whites (U.S. Census Bureau 2001and Cobb-Clark and Hildebrand 2006 for example). Estimates from the Survey of Income and Program Participation (SIPP) indicate that the median levels of net worth among native-born and foreign-born Mexicans are $27,929 and $6,792, respectively, compared with median net worth for non-Latino whites of $79,220 (Cobb-Clark and Hildebrand 2006). Relatively low levels of wealth among Mexican-Americans and the existence of liquidity constraints in U.S. financial markets may limit the ability of Mexican entrepreneurs to raise capital to start businesses. Personal wealth of the entrepreneur can be leveraged as collateral to obtain business loans and personal/family savings are the most common source of startup capital among businesses in the United States (U.S. Census Bureau 2006).[19] Related to this issue, Mexican entrepreneurs may face discrimination in the lending market, limiting their ability to invest in their businesses (Cavalluzzo, Cavalluzzo, and Wolken 2002 and Blanchflower, Levine and Zimmerman 2003). Several recent studies find that baseline asset levels (e.g. net worth or asset income) increase the probability of entering self-employment during the following year.[20] The standard interpretation of this finding is that entrepreneurs face liquidity constraints; however, there is some recent debate over this interpretation for the average entrepreneur in the United States (Hurst and Lusardi 2004). Given the

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[19] Using data from the SSBF and Survey of Consumer Finances (SCF), Avery, Bostic and Samolyk (1998) find that the majority of all small business loans have personal commitments. The common use of personal commitments to obtain business loans suggests that wealthier entrepreneurs may be able to negotiate better credit terms and obtain larger loans for their new businesses. Cavalluzzo and Wolken (2005) find that personal wealth, primarily through home ownership, decreases the probability of loan denials among existing business owners.
[20] For example, see Evans and Jovanovic (1989), Evans and Leighton (1989), Meyer (1990), Holtz-Eakin, Joulfaian, and Rosen (1994), Fairlie (1999), and Dunn and Holtz-Eakin (2000).

alarmingly low levels of personal wealth and limited experience with lending institutions, Mexican-American entrepreneurs may be especially liquidity constrained.

Using the matched CPS data, we include home ownership, interest income, dividend income and rental income as measures of wealth. Disparities in wealth between Mexican-Americans and whites are large. For example, first generation Mexicans have average annual interest income of $113 and only 52 percent own homes. In contrast, non-Latino whites have average annual interest income of $822 and 82 percent own a home. The relative differences in asset income (measured as a ratio) are similar to the relative difference in net worth from the SIPP. These large disparities in asset levels translate into differences in business formation rates between Mexican immigrants and whites. More than one-third of the gap in business formation rates is explained by wealth differences. These findings are consistent with the hypothesis that Mexican immigrants face barriers to entry due to their limited ability to use personal wealth directly or as collateral for startup capital. Findings from the SIPP using net worth as a measure of wealth also indicate a large contribution from wealth differences.[21]

Asset income and home ownership rates for U.S. born Mexicans remain substantially lower than for non-Latino whites. The large wealth disparities for second and third generation Mexican-Americans compared to whites contribute to the difference in business formation rates. For second-generation Mexican-Americans, nearly one quarter of the gap in business formation rates is due to assets and for third generation Mexican-Americans 12.5 percent of the gap is explained by assets.

First-generation Mexican-Americans apparently face two substantial barriers to business entry -- low levels of human capital and limited access to financial capital. *These two factors alone explain the entire gap in business formation rates.* For second generation Mexican-Americans education and assets explain nearly half of the gap in business formation rates. Even for third generation Mexican-Americans who have experienced improvements in both levels of education and wealth, these two factors account for nearly one fourth of the gap in business formation rates. As before, these results are not sensitive to

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[21] Lofstrom and Wang (2006) find that wealth differences explain 70 percent of the entry rate gap between Mexican-American men and white men.

excluding childcare services, household and business cleaning services and taxis. Indeed, an almost identical share of the gaps in each generation is explained when these industries are excluded.

Comparing the Mexican-American results to those for African-Americans (reported in column 5), we find that, for blacks, only 7.3 percent of the gap is explained by differences in education and only 14.2 percent is explained by differences in assets, contributions which are similar to previous findings using the PSID (Fairlie 1999). Although much has been written in the previous literature on the deleterious effects of low levels of education and limited access to financial capital for black-owned firms, these factors explain considerably less of the disparities in business formation rates among blacks than among those of Mexican descent.

Among the other included factors, only region of residence is important in explaining Mexican/white business formation gaps. The negative contributions indicate that Mexican-Americans are disproportionately located in regions of the country where business formation rates are relatively high. These areas are the West South Central, Mountain, and Pacific regions. This suggests that the formation rate gap would be even larger if Mexican-Americans had a similar geographical dispersion as whites.

The results are generally similar for Mexican-American women. We find that low levels of education and assets explain most of the gap in business formation rates for Mexican immigrants and a sizeable portion of the gap for second and third generation Mexican-Americans.[22] Regional differences are also found to work in the opposite direction.

EXPLAINING DIFFERENCES IN BUSINESS PERFORMANCE

To identify the underlying causes of differences in business performance we calculate similar decompositions with two measures of business outcomes – business exit and net business income. As noted above, the results for business exits should be interpreted with some caution. They are based on relatively small sample sizes, some exits may be considered successful, and there is more noise associated with the decision to stop owning a business. We discuss these results briefly before turning to a more

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[22] The importance of human and financial capital differences for gaps in business formation rates holds after removing childcare services, household and business cleaning services, and taxis.

thorough discussion of the results for net business income, which is our preferred measure of business performance.

Table 7 reports decomposition results for racial and ethnic gaps in business exit rates.[23] We combine second and third generation Mexican-Americans to increase sample sizes. Educational differences account for part of the gap in business exit rates between Mexican-Americans and non-Latino whites. The size of the contribution is large for immigrants, but relatively small for U.S. born Mexican-Americans. For business exits, the relative youth of Mexican-American business owners appears to limit their longevity in business compared with white owners. Low levels of assets also explain part of why Mexican-Americans have higher rates of business exits than whites. This result, however, is difficult to interpret because lower levels of wealth accumulation may simply be a result of less successful businesses instead of a determinant of business survival through limiting access to financial capital for startup, expansion or weathering negative demand shocks. Unfortunately, we do not have a more exogenous measure of access to financial capital in the matched CPS data.

Overall, education and asset differences explain less of the gap in business exit rates between Mexican-Americans and whites than the business formation rate gap. The determinants of business exit are not as well identified. Similarly, we do not find that these factors explain much of the black/white gap in business exit rates.

We now turn to identifying the underlying causes of differences between Mexican-Americans and non-Latino whites in business income. We estimate linear regressions for log net business income and calculate standard Blinder-Oaxaca decompositions. These are shown in Table 8. Estimates from the underlying regression models indicate that the owner's education level, English language ability and age are strong, positive determinants of business income. Because we are conditioning on business ownership, which represents roughly 10 percent of the population, we use the 2000 Census to ensure large sample sizes. As noted above, we can only distinguish between Mexican immigrants and U.S. born

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[23] The regression results indicate that education, home ownership and age are associated with a lower probability of business exits.

Mexican-Americans in the Census data. We discuss the results for men first. The single largest factor in explaining why Mexican immigrants and U.S. born Mexican-Americans have lower business income than whites is education. Lower levels of education account for more than half of the gaps in business income. In addition to having an effect on business formation, education is important for business success.

The second most important factor is language ability. The Census includes detailed information on English language ability. We include separate dummy variables for those individuals who report speaking English "very well," "well," "not well," and "not at all." The left-out category is individuals who report only speaking English at home. English language ability has a large effect on business income. Because Mexican immigrants, and to a lesser extent U.S. born Mexican-Americans, have relatively low levels of English language ability their businesses are less successful on average than white-owned businesses. For Mexican immigrant men, limited ability speaking English explains roughly one third of the gap in business income.

Overall, human capital differences are the major reason Mexican immigrant business owners have lower income levels. Education and language ability alone explain nearly 90 percent of the gap in net business income between Mexican immigrants and whites. For U.S.-born Mexicans, these two measures of human capital explain roughly 60 percent of the gap in business income. The relative youth of Mexican-Americans also contributes to lower business incomes, but the contribution of age is smaller. Mexican-Americans live in regions that have higher business incomes, all else equal, but the contributions are not large.

INDUSTRY DIFFERENCES

Businesses owned by Mexican-Americans may be concentrated in different industries than white-owned businesses. Following the literature, we do not control for industry differences in the main results because of endogeneity concerns. In particular, we are concerned that Mexican-Americans may face human and financial capital constraints that limit their selection of high-growth potential industries. Controlling for industries thus removes part of the outcome that we are trying to measure. With these

concerns in mind, however, we investigate this issue further. Appendix Table A3 reports the industry distribution of businesses owned by non-Latino whites, Mexican immigrants, and U.S.-born Mexicans. The data do not indicate large differences in industry distributions for men. For women, the differences are larger, but primarily reflect shifts in only a couple of industries. Another interesting finding is that Mexican-American owned businesses have lower average incomes than white-owned businesses in all industries for men and most industries for women (see Appendix Table A4). The only exceptions for women are found in industries with relatively low participation among Mexican-Americans. These estimates suggest that industry differences are not responsible for the substantial differences in business incomes between Mexican-Americans and whites.

To confirm this suspicion and ignoring concerns regarding endogeneity, we estimated a set of decompositions including industry indicator variables. Differences in industry explain only about 5 percent of the gap in business income for men, but have a larger contribution for women, explaining roughly 20 percent of the gap in business income. Even after including the industry controls, however, we continue to find that education and English language ability have large explanatory power for Mexican immigrants and education remains important for U.S.-born Mexicans. Thus, the results are not highly sensitive to the inclusion of industry controls.

We also estimate regressions and decompositions removing low earning industries and industries where self-employed business ownership does not clearly imply a business enterprise -- childcare providers, household and business cleaning services, and taxi drivers. We find that education and English language ability differences explain 59.2 and 30.4 percent of the gap in business income for Mexican immigrant men, respectively. For U.S.-born Mexican men, education differences explain 52.9 percent of the gap and English language ability differences explain 5.3 percent. These human capital contributions are nearly identical to estimates from the full sample of industries. For women, the business income gaps become smaller as noted above, but human capital differences remain the key explanation. For Mexican immigrant women, education differences explain 99.7 percent and English language ability differences explain 13.3 percent of the gap in business income. For U.S.-born Mexican women all of the gap is

explained by education differences whereas English language ability provides a negative contribution. These results provide strong evidence that the main results are not being driven by self-employment activities that do not fit the standard idea of what it means to own a business.

5. Legal Status among Mexican Immigrants

Estimates of business ownership by generation reported in Table 2 indicate that U.S.-born Mexicans are more likely to own businesses than are Mexican immigrants. For non-Latino whites, the pattern across generations is very different, with immigrants much more likely to be self employed business owners than the native born. These patterns indicate that the gap between Mexican-Americans and non-Latino whites is particularly large among the immigrant population. Although human and financial capital differences explain the entire gap in business formation rates and almost the entire gap in business income relative to the native-born population, other factors may help us identify the underlying causes of the larger differences between Mexican immigrants and non-Latino white immigrants. With this in mind, we address one issue closely related to migration: the impact of legal status.

The Bureau of the Census estimates that 3.9 million of the 7.8 million Mexican-born resident in the United States in 2000 were not registered with immigration authorities (Costanzo et al, 2001). Included in this number are many residents who are in the United States legally, but not yet reported in official immigration statistics. The INS places the number of undocumented Mexican immigrants in 2000 at 4.8 million, and Passel, Capps and Fix (2004) at 5.3 million. These estimates suggest that half or more of the Mexican born population resides in the U.S. without legal documentation.

Legal status may affect the decision to start a business for several reasons. First, legal status is a prerequisite for access to many institutions which are important to entrepreneurs. Legal residents have access to the court system, should disputes arise with employees or customers. Legal status may also be required for participation in government contracts. Legal migrants are more likely to own property which might be used as collateral, and hence have access to credit. These factors suggest that legal status should result in higher levels of business ownership. On the other hand, Kossoudji and Cobb-Clark (2002) find

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that Latino wage and salary workers gaining legal status through IRCA experienced wage increases, which increase the opportunity costs of starting a business. Hence, the association between legal status and business ownership is theoretically ambiguous.

We are unaware of any existing empirical evidence on how legal status affects rates of business ownership. The ideal estimate of the impact of legal status on business ownership would randomly assign legal status to one group of illegal immigrants while leaving another group without legal status. Such an exercise is obviously infeasible. Indeed, even ascertaining the legal status of immigrants is problematic in most circumstances. Given these challenges, we use a sample of undocumented immigrants from the Legalized Population Survey (LPS) and the Immigration Reform and Control Act of 1986 (IRCA) as a natural experiment to assess the impact of legal status on business ownership. The LPS surveyed a sample of immigrants applying for legal residency under IRCA in 1989 and again in 1992, obtaining job information from both before and after they obtained legal status through IRCA. Thus, the LPS identifies a group of individuals who transitioned from the status of illegal alien to legal resident over a short period of time.

IRCA allowed migrants residing illegally in the United States to apply for legal status if they met either of two criteria. The Legally Authorized Workers (LAWs) program required that immigrants show that they had arrived in the United States prior to January 1, 1982, and had resided in the country continuously between 1982 and the time of application.[24] The Special Agricultural Workers (SAWs) program eliminated the five-year residency requirement but required individuals to prove that they had worked in agriculture for at least 90 days during 1985 or 1986. Just over 3 million immigrants applied for legal residency under IRCA—1.8 million through the LAWs program and 1.3 million through the SAWs program. The number of SAWs applicants far exceeded U.S. Department of Agriculture estimates of 350,000 illegal immigrants employed in agriculture at the time of IRCA's passage (Martin 1994). Mexico

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[24] The specific cutoff date of the LAWs program suggests the possibility of using regression discontinuity to estimate the effects of the program. However, in addition to the usual concerns about endogeneity of the timing of the change in the law, there is some suggestion that many migrants who did not qualify under the residency / agricultural work criteria were able to fabricate evidence indicating that they did qualify, and many who in fact met the residency / agricultural work requirements were unable to prove that that to be true.

was by far the most common country of origin of applicants in both the LAWs and SAWs programs, with 1.4 million applicants in the former and almost 900,000 in the latter. The LPS survey gathered data only on those migrants applying through the LAWs program. For this reason, we exclude agricultural workers from all of the samples we use for comparison purposes.

The first wave of the LPS survey was undertaken between February and June 1989 by the INS for the purpose of gaining a better understanding of the characteristics of immigrants applying for residency. The survey asked applicants about their labor market experience at three points in time: during the first year in residency in the United States, at the time of application for legal residency (between June 1987 and May 1988), and at the time of the survey. The U.S. Department of Labor then re-surveyed the majority of the LPS sample in 1992. We use the data on employment at the time of application for legal status and in 1992 to examine changes associated with legal status.

The LPS data show a very large increase in business ownership rates subsequent to obtaining legal status. Among all immigrants outside agriculture, the percentage of males (females) owning a business increased from 5.3 percent (4.4 percent) at the time the migrant applied for legal status to 10.0 percent (5.6 percent) in 1992. Among those born in Mexico, the gain was no less impressive, from 3.1 percent to 5.8 percent for men and from 1.5 percent to 2.7 percent for women. These data provide suggestive evidence of a link between legal status and business ownership, but they should not be taken at face value for two reasons. First, macroeconomic circumstances may have changed between 1987 and 1992 affecting the incentives for opening or closing a business. Second, business ownership rates have been found to increase with age and, for immigrants, with length of time since migration. Between 1987/1988 and 1992, the individuals in the LPS sample became older and increased the length of residency in the United States by just over four years on average. At least part of the increase in business ownership rates in the LPS sample between 1987 and 1992 may be due to the increase in age and time-in-country rather than to the change in legal status.

Ideally, we would filter these factors out by identifying a comparison sample of individuals observed between 1987 and 1992, but not subject to changes in legal status. To study the impact of legal

status on wages, Kossoudji and Cobb-Clark (2002) use Hispanics in the NLSY as a comparison sample for the LPS. They argue that immigrants in the panel are almost certainly in the country legally, and hence not subject to any change in legal status over the period. The Hispanic subsample of the NLSY shows a much smaller increase in self employed business ownership between 1987 and 1992 or over an average 5-year period. Even controlling for other factors, such as age and education, in regression models as discussed in more detail below, we find a similarly small difference in predicted business ownership rates for the Hispanic sample in the NLSY. For males, the NLSY coefficients imply that a comparable sample of legal migrants would have had an increase in self employment of 1.0 percentage points between the time of application for legal status and 1992. For females, the NLSY sample suggests an increase in business ownership rates of 0.6 percentage points. Both of these changes are substantially smaller than the 2.7 percentage point and 1.2 percentage point changes found for males and females, respectively, in the LPS.

While informative, we note that the Hispanic sample in the NLSY is made up primarily of native-born Hispanics. As such, the full Hispanic NLSY sample cannot account for time-in-county effects, which are found to be important determinants of business ownership among immigrants in the United States. Unfortunately, the sample of Hispanic immigrants in the NLSY is too small to serve as a comparison sample. There are only about 125 males born in Mexico or Central America with data for 1988, and an even smaller number of females. To account for time-in-country effects, we use data on Mexican immigrants in the 1980 Census to create a synthetic comparison sample. We first estimate a regression on self employed business ownership using the Census data, with controls for age, education and time-in-country. We then use the coefficients obtained from this regression and the characteristics of individuals in the LPS both at the time of application for legal status and at the time of re-survey in 1992 to obtain predicted business ownership rates. This measures the predicted change in business ownership rates given the increase in age and time-in-country of the LPS sample. Because the 1980 data allow us to control for time-in-country effects, we believe these estimates provide a more accurate adjustment for

changes in individual characteristics between the two LPS sample periods than the matched NLSY sample does.

Table 9 shows the raw and adjusted changes in business ownership rates for males and females in the LPS sample. The unadjusted change in business ownership rates is 2.7 percentage points for men and 1.2 percentage points for women. Using coefficients from the probits from the 1980 Census sample, we estimate that the increase in age and time in the United States accounts for 1.3 and 0.3 percentage points of that increase for males and females, respectively.[25] In addition to addressing changes in the characteristics of individuals over time, we also need to take into account changes in macroeconomic conditions affecting business ownership between the time of application and 1992. Using CPS ORG microdata, we find that overall business ownership rates did not change for males and increased only slightly for females between 1987 and 1992. These estimates suggest that adjusting our estimates for macroeconomic effects changes the conclusions very little. The bottom half of Table 9 shows that incorporating macroeconomic conditions does not change the estimated effect of legal status for males, but increases the estimated effect to 1.2 percentage points for females.

The regressions use cross-sectional Census data while the LPS data are a single panel across time. The Census coefficient estimates may capture the effects of different cohorts of Mexican immigrants arriving in the United States instead of only the effects of time in the country. To check this, we estimate the same regressions using the 1994-2004 CPS samples, adding controls for different entry cohorts. Estimates for the CPS are reported in Table 10. The first set of estimates do not control for cohort effects. The predicted changes in business ownership rates are 1.6 percent for men and 0.6 percent for women, which are larger than the estimates from the 1980 Census, but roughly of the same magnitude relative to the much larger changes found in the LPS. In the second set of estimates using the CPS, we control for cohort effects. The predicted change in business ownership rates is slightly smaller for men and larger for women. In both cases, the predicted changes in business ownership rates are smaller than the changes in the LPS. As a final comparative sample, we conduct the same exercise using the 2000 Census (see Table

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[25] The underlying regressions on which these adjustments are based are available from the authors on request.

9). We find adjustments of 1.4 percentage points for males and 0.6 percentage points for females. The consistency of the results using data from widely divergent time periods, and the CPS estimates explicitly controlling for entry cohorts, suggests that cohort differences do not have a major effect on the estimates.

The ideal comparison sample would be composed entirely of illegal immigrants, the same as the baseline LPS sample. The 1980 Census (and the CPS and 2000 Census samples) includes both legal and illegal immigrants. This is likely to result in an overstatement of the effect of time-in-country for two reasons. First, there is likely a positive correlation between time-in-country and the likelihood an individual in the Census sample is legal. The coefficient on time-in-country is likely to absorb some of these effects. Second, the time-in-country effect is likely to differ for legal and illegal immigrants, and we would expect the effect to be larger for legal residents. To the extent that our estimates of time-in-country effects from the Census sample are overstated relative to the ideal comparison group, our estimate of the effect of legal status on business ownership is likely to be understated.

Finally, an important question is how well estimates based on the LPS data reflect likely outcomes in the 2000 Census or 1994-2004 CPS. Have the characteristics of migrants changed substantially since the LPS was conducted as to make the results of less relevance today? Appendix Table A5 compares the characteristics of the LPS sample with those of the 1980 and 2000 population Censuses. The average age and educational distribution in the LPS sample are very close to those in the 1980 Census. There are very few immigrants in the LPS sample who arrived in the United States within five years of or more than 20 years from the baseline survey. The former is an artifact of the residency requirements in the law. However, we find no differences greater than 0.1 percentage points in the adjustments when we re-run any of the estimates excluding those arriving within the previous five years—or alternatively excluding both those arriving within five years and more than 20 years prior to the survey date—from the sample. Finally, the education levels of Mexican migrants are notably higher in the 2000 Census. For both males and females in the LPS sample, we find that the change in business ownership rates is much larger for those with higher levels of schooling. Among males, those with 6 or fewer years of schooling have business ownership rates of 3.1 percent in 1987/88 and 5.3 percent in 1992;

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those with more than 6 years of schooling have business ownership rates of 3.1 percent in the earlier period and 6.5 percent in 1992. For females, the comparable changes are from 2.0 to 2.5 percent for those with low schooling and 0.6 to 2.9 for those with higher schooling. Given that three-quarters of the 2000 Census sample has more than 6 years of schooling, compared with less than half of the LPS sample, we might expect the impact of legal status to be larger than the LPS data suggest.

Thus, the LPS data suggest that legal status has an important impact on business ownership rates among Mexican immigrants. Given estimates that half or more of the Mexican-born population in the United States in 2000 was in the country illegally, we estimate that legal status accounts for at least 0.7 percentage points in the business ownership rate of male and female Mexican immigrants. The benefits of legal status for business ownership thus appear to outweigh the increased opportunity costs associated with higher wages as found in Kossoudji and Cobb-Clark (2002).

6. Conclusions

The comprehensive analysis of Census, CPS and LPS data provides several novel findings on Mexican-American entrepreneurship. First, measured characteristics account for the entire gap between Mexican-born immigrants and non-Latino whites in the rates of business formation and levels of business income. The lower rates of business formation among Mexican immigrants are entirely explained by low levels of education and wealth. Nearly the entire gap in business income for Mexican immigrants is explained by low levels of education and limited English language ability. Legal status represents an additional barrier for Mexican immigrants, a large percentage of which reside in the United States illegally. We find that the lack of legal status reduces business ownership rates by about seven-tenths of a percentage point among both men and women. Accounting for legal status as well, the data suggest that conditional business ownership rates are higher for Mexican immigrants than for the native born population.

Combined, the analysis suggests that the absent barriers created by human capital, financial capital and legal status, rates of business ownership among Mexican immigrants would be higher than

rates of the native-born population. This suggests that, like immigrants from Asia and Europe, Mexican immigrants of given characteristics are more likely to own a business than are native-born whites with the same characteristics. This runs counter to the sentiment that Mexican immigrants are likely to be less entrepreneurial because the cost of migration is lower than the cost of migrating to the United States from most other countries (Borjas 1987).

The fact that we are able to explain the gaps for Mexican immigrants, who make up two-thirds of working age Mexican-Americans, stands in sharp contrast with the inability of measured characteristics to explain differences between African-Americans and whites in business formation and performance. Even among second and third generation Mexican-Americans, education and wealth explain much more of the entrepreneurship gap than is the case for African-Americans. For example, among second generation Mexican-American men lower education levels explain more than twice the amount explained by lower levels of education among black men. Nevertheless, some portion of the gap remains unexplained, especially among the less-accurately identified third generation. This difference suggests that Mexican immigrants may be more entrepreneurial than the native-born population, but U.S.-born Mexicans are less so. We leave further exploration of entrepreneurship among U.S.-born Mexicans to future research.

These findings on Mexican-American entrepreneurship contribute to our understanding of ethnic and racial income inequality in the United States. Most research on earnings inequality ignores business owners. But, the low rates of business formation among Mexican-Americans and underperformance of Mexican-owned businesses contributes substantially to overall earnings inequality. We estimate that earnings inequality would drop by 16.4 percent if Mexican-American business ownership and outcomes improved to non-Latino white levels. Although more difficult to quantify, the relative lack of success in entrepreneurship is also likely to negatively affect wealth accumulation and job creation for Mexican-Americans (Bradford 2003 and Boston 1999, 2006).

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Lowest Earnings and Most Common Industries for Male Self-Employed Business Owners
Census 2000

Industry	Percent of Total Self-Employed	Within Industry SE Rate	Mean SE Earnings	Mean WS Earnings	Percent of Mexican Total SE
Most Common SE Industries					
Construction	23.9%	20.7%	$44,035	$34,634	29.8%
Automotive repair	3.6%	22.1%	$34,221	$29,787	6.1%
Legal services	3.6%	44.2%	$129,861	$92,051	1.4%
Crop production	3.5%	36.4%	$36,465	$21,815	3.2%
Real estate	3.2%	25.9%	$75,657	$47,940	1.6%
Truck transportation	3.2%	15.2%	$50,835	$36,351	4.6%
Landscaping services	2.8%	28.8%	$30,801	$21,761	11.2%
Restaurants and oth. food	2.5%	7.8%	$48,017	$21,963	4.2%
Animal production	2.5%	45.7%	$33,824	$24,255	0.9%
Mgt., sci. and tech. serv.	2.1%	28.9%	$95,720	$80,531	0.5%
Physician offices	2.0%	40.3%	$202,543	$119,925	0.7%
Insurance carriers	1.9%	15.6%	$88,364	$64,824	0.8%
Architectural services	1.6%	13.0%	$76,995	$55,443	0.8%
Artists	1.6%	38.7%	$44,711	$44,634	1.1%
Services to buildings	1.4%	22.8%	$37,372	$25,427	2.2%
Lowest Self-Employment Earnings					
Private household serv.	0.2%	29.5%	$21,828	$20,716	0.6%
Barber shops	0.5%	64.9%	$26,441	$21,636	0.6%
Childcare services	0.1%	14.4%	$27,366	$23,719	0.1%
Nail salon, oth. pers.care	0.2%	40.6%	$27,600	$23,284	0.1%
Taxis	0.7%	30.8%	$27,603	$25,174	0.5%
Footwear and leather gds rep.	0.1%	51.6%	$28,921	$23,967	0.0%
Pottery and cer. manuf.	0.0%	8.9%	$29,331	$35,017	0.0%
Pers. and HH goods rep. and maint.	0.7%	41.8%	$29,720	$28,918	0.8%
Landscaping services	2.8%	28.8%	$30,801	$21,761	11.2%
Newspaper publishers	0.2%	6.3%	$31,572	$40,415	0.2%
Used merch. store	0.3%	36.5%	$32,807	$24,424	0.4%
Misc. general merch. store	0.1%	9.8%	$33,352	$28,470	0.0%
Animal production	2.5%	45.7%	$33,824	$24,255	0.9%
Drinking places, alc. bevs.	0.2%	17.8%	$33,901	$19,704	0.3%
Automotive repair	3.6%	22.1%	$34,221	$29,787	6.1%

Notes: (1) The sample consists of men ages 20-64 who own a business with 15 or more hours worked per week and 20 or more weeks worked during the year. (2) All estimates are calculated using sample weights provided by the Census.

Appendix Table A2
Lowest Earnings and Most Common Industries for Female Self-Employed Business Owners
Census 2000

Industry	Percent of Total Self-Employed	Within Industry SE Rate	Mean SE Earnings	Mean WS Earnings	Percent of Mexican Total SE
Most Common SE Industries					
Childcare services	10.9%	29.2%	$14,544	$15,450	15.3%
Beauty salons	7.8%	39.5%	$18,908	$17,816	7.9%
Real estate	5.2%	18.7%	$51,341	$31,745	2.9%
Private household serv.	5.1%	40.8%	$13,292	$14,854	18.7%
Construction	3.9%	14.8%	$31,172	$27,438	2.6%
Restaurants and oth. food	3.4%	4.4%	$28,535	$15,102	5.8%
Services to buildings	2.6%	23.1%	$18,151	$16,109	6.0%
Mgt., sci. and tech. serv.	2.5%	20.1%	$59,858	$46,234	0.5%
Artists	2.4%	37.8%	$28,646	$28,226	0.7%
Legal services	2.2%	8.3%	$72,981	$36,860	1.2%
Accounting services	2.1%	14.9%	$35,868	$30,948	1.5%
Specialized design serv.	1.9%	43.9%	$35,227	$30,559	0.5%
Oth. sch., instr., educ.	1.6%	33.6%	$21,776	$24,522	0.4%
Business support services	1.6%	14.9%	$29,415	$22,393	1.0%
Other health practiioners	1.5%	28.9%	$47,042	$28,849	0.3%
Lowest Self-Employment Earnings					
Private household serv.	5.1%	40.8%	$13,292	$14,854	18.7%
Childcare services	10.9%	29.2%	$14,544	$15,450	15.3%
Toys and sport manuf.	0.2%	12.9%	$14,767	$25,008	0.2%
Pers. and HH goods rep. and maint.	0.8%	51.2%	$16,231	$18,400	0.6%
Knitting mills	0.1%	3.2%	$16,572	$19,543	0.0%
Oth. direct selling estabs.	0.8%	27.9%	$17,551	$19,012	0.8%
Pottery and cer. manuf.	0.1%	18.7%	$17,792	$23,001	0.0%
Barber shops	0.3%	46.6%	$17,873	$16,802	0.4%
Services to buildings	2.6%	23.1%	$18,151	$16,109	6.0%
Nail salon, oth. pers.care	1.5%	43.3%	$18,799	$16,972	0.7%
Beauty salons	7.8%	39.5%	$18,908	$17,816	7.9%
Newspaper publishers	0.4%	5.7%	$19,088	$27,193	0.3%
Car washes	0.1%	16.3%	$19,758	$15,763	0.1%
Glass and glass prod. manuf.	0.1%	4.3%	$19,867	$26,358	0.0%
Sewing, needlework stores	0.2%	16.8%	$20,025	$15,708	0.1%

Notes: (1) The sample consists of women ages 20-64 who own a business with 15 or more hours worked per week and 20 or more weeks worked during the year. (2) All estimates are calculated using sample weights provided by the Census.

Appendix Table A3
Industry Distribution of Businesses by Ethnicity/Race
Census (2000)

	Men			Women		
	White, non-Latino	Mexican Immigrants	Mexican U.S. Born	White, non-Latino	Mexican Immigrants	Mexican U.S. Born
Agriculture and mining	8.1%	5.9%	3.1%	3.0%	1.6%	1.0%
Construction	24.5%	30.4%	28.9%	4.3%	1.9%	3.5%
Manufacturing	5.2%	4.6%	4.6%	3.7%	4.9%	3.1%
Wholesale trade	3.9%	3.2%	3.0%	2.2%	2.0%	1.6%
Retail trade	9.0%	9.1%	8.5%	12.2%	12.0%	9.6%
Transportation	4.3%	6.0%	6.7%	1.5%	0.9%	1.3%
Information	1.5%	0.5%	1.4%	1.8%	0.2%	1.7%
FIRE	7.7%	1.9%	5.7%	8.5%	2.5%	8.1%
Professional services	18.2%	19.9%	17.8%	20.2%	13.0%	15.1%
Education, health and social services	5.9%	1.5%	4.2%	19.4%	17.4%	25.0%
Arts, entertainment and recreation	4.8%	6.6%	5.0%	7.1%	7.7%	7.5%
Other services	7.0%	10.6%	11.1%	16.2%	35.9%	22.6%
Sample size	313,620	8,022	4,933	138,545	3,326	2,506

Notes: (1) The sample consists of individuals ages 20-64 who own a business with 15 or more hours worked per week and 20 or more weeks worked during the year. (2) All estimates are calculated using sample weights provided by the Census.

Appendix Table A4
Average Net Business Income by Industry and Ethnicity/Race
Census (2000)

	Men			Women		
	White, non-Latino	Mexican Immigrants	Mexican U.S. Born	White, non-Latino	Mexican Immigrants	Mexican U.S. Born
Agriculture and mining	$36,947	$27,358	$32,395	$23,412	$27,358	$23,049
Construction	$45,396	$32,151	$41,452	$31,325	$21,704	$27,724
Manufacturing	$66,381	$37,093	$43,668	$31,141	$20,868	$39,222
Wholesale trade	$74,121	$39,004	$37,568	$41,773	$23,408	$39,264
Retail trade	$55,225	$28,543	$37,429	$27,527	$21,926	$24,678
Transportation	$50,322	$48,513	$46,738	$32,976	$22,954	$45,038
Information	$63,018	$34,448	$44,673	$36,478	$16,425	$28,580
FIRE	$89,098	$48,922	$64,386	$52,180	$57,728	$51,947
Professional services	$83,946	$24,880	$48,640	$43,373	$19,111	$32,879
Education, health and social services	$147,153	$125,980	$109,579	$29,088	$15,948	$23,000
Arts, entertainment and recreation	$48,056	$29,519	$37,638	$27,712	$21,027	$24,472
Other services	$36,151	$24,565	$32,163	$18,189	$13,531	$15,764
Sample size	313,620	8,022	4,933	138,545	3,326	2,506

Notes: (1) The sample consists of individuals ages 20-64 who own a business with 15 or more hours worked per week and 20 or more weeks worked during the year. (2) All estimates are calculated using sample weights provided by the Census.

Comparison of Legalized Population Survey and Census Samples

		Men Census 1980	Census 2000		Women Census 1980	Census 2000
	LPS			LPS		
Business ownership rate	2.9%	2.7%	5.5%	1.7%	0.7%	2.9%
Mean age	30.9	33.2	34.7	31.7	34.7	36
Education by category						
0 - 6 years	58.3%	52.8%	25.4%	59.2%	55.6%	25.5%
7 - 8 years	7.1%	10.6%	8.5%	8.9%	10.6%	8.3%
9-11 years	16.3%	13.4%	17.2%	17.9%	12.1%	16.2%
12 years	13.3%	13.6%	25.6%	9.8%	13.5%	24.8%
13-15 years	4.5%	6.7%	10.1%	3.0%	6.2%	11.2%
16 years	0.1%	1.1%	2.4%	0.6%	1.0%	2.7%
> 16 years	0.3%	1.8%	0.9%	0.6%	1.1%	0.9%
Time since arrival in U.S.						
0-5 years	1.0%	34.3%	24.3%	0.0%	30.0%	21.5%
6-10 years	59.1%	28.7%	17.9%	59.2%	27.4%	20.5%
11-15 years	28.9%	14.7%	19.1%	28.9%	16.1%	17.8%
16-20 years	7.0%	9.4%	13.6%	8.6%	11.2%	12.6%
> 20 years	3.9%	12.8%	25.1%	3.3%	15.4%	27.7%

Notes: (1) The sample consists of Mexican immigrants ages 20-64. (2) Agricultural workers are excluded.

Figure 1
Mean Self-Employed Business Earnings vs Mean Wage and Salary Earnings by Industry - Men
Census 2000
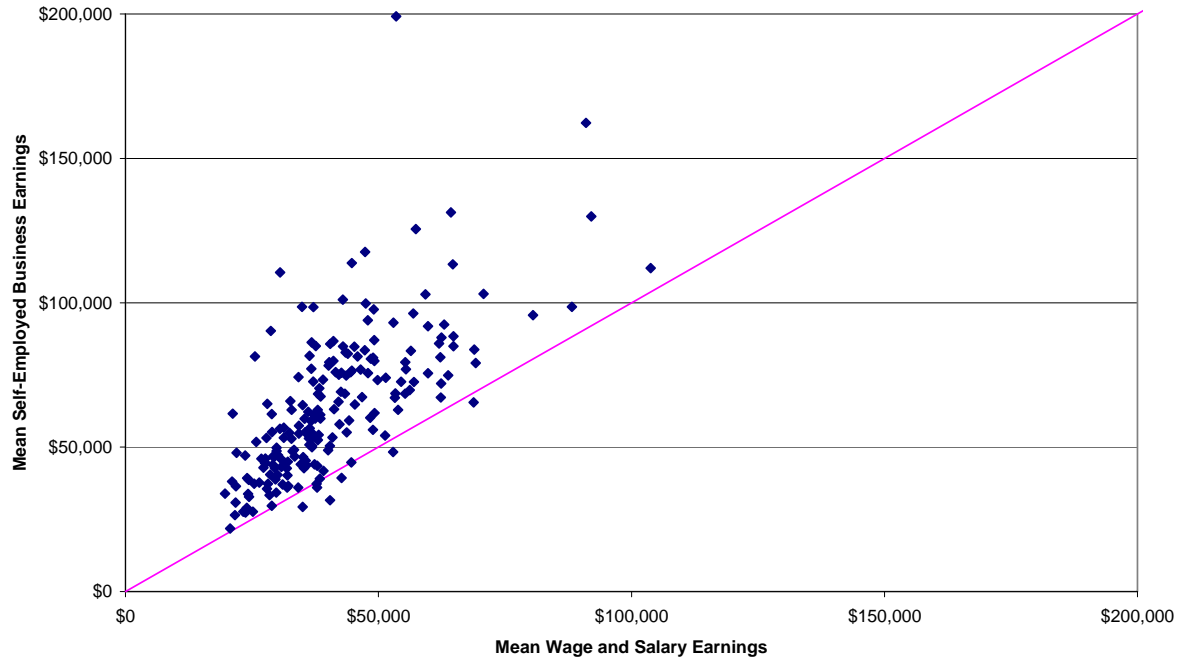
Figure 2
Mean Self-Employed Business Earnings vs Wage and Salary Earnings by Industry - Women
Census 2000

Table 1
Business Ownership Rates by Ethnicity/Race
Current Population Survey, Annual Demographic Surveys (1994-2004)

Group	Business Ownership Rate	Rate for Workers with 15+ Hours	Rate for 15+ Hours and Non-Agriculture	Rate for 35+ Hours and Non-Agriculture	Total Sample Size
Men					
Total	10.7%	12.7%	11.9%	11.6%	473,196
White, non-Latino	12.6%	14.5%	13.5%	13.1%	335,794
Black	4.4%	5.8%	5.8%	5.4%	42,316
Mexican-American	5.1%	5.8%	6.0%	5.6%	43,584
Other Latinos	6.9%	8.3%	8.3%	8.2%	24,973
Native American	6.8%	8.4%	7.7%	6.7%	5,462
Asian	11.0%	13.4%	13.2%	13.5%	18,806
Women					
Total	5.6%	7.1%	6.8%	6.1%	516,946
White, non-Latino	6.6%	8.0%	7.6%	6.8%	356,866
Black	2.3%	3.2%	3.1%	3.0%	57,839
Mexican-American	2.6%	4.3%	4.3%	4.0%	43,110
Other Latinos	3.5%	5.2%	5.1%	4.7%	28,911
Native American	4.0%	5.5%	5.5%	4.9%	6,215
Asian	5.8%	8.5%	8.4%	8.3%	21,541

Notes: (1) The sample consists of individuals ages 20-64. (2) The business ownership rate is the number of self-employed business owners divided by the population. (3) All estimates are calculated using sample weights provided by the CPS.

Table 2
Business Ownership Rates by Generation
Current Population Survey, Annual Demographic Surveys (1994-2004)

Group	Generation	Male - Business Ownership		Female - Business Ownership	
		Rate	N	Rate	N
White, non-Latinos	First	16.2%	12,809	7.5%	14,048
	Second	14.3%	19,065	6.8%	19,820
	Third	12.3%	303,920	6.5%	322,998
Mexican-Americans	First	4.9%	24,832	2.4%	21,877
	Second	5.3%	7,238	3.1%	8,090
	Third	5.2%	11,514	2.8%	13,143

Notes: (1) The sample consists of individuals ages 20-64. (2) The business ownership rate is the number of self-employed business owners divided by the population. (3) All estimates are calculated using sample weights provided by the CPS.

Table 3
Annual Business Formation and Exit Rates by Race/Ethnicity
Current Population Survey, Matched Annual Demographic Surveys (1994-2004)

	Business Ownership		Business Formation		Business Exit	
	Percent	N	Percent	N	Percent	N
Men						
White, non Latinos	14.0%	90,616	3.3%	77,369	22.5%	13,247
Mexican First Generation	6.2%	3,172	2.7%	2,981	34.5%	191
Mexican Second Generation	8.2%	981	2.4%	900	47.5%	81
Mexican Third Generation	6.2%	1,622	1.8%	1,513	30.6%	109
Women						
White, non Latinos	7.3%	97,086	2.3%	89,636	33.1%	7,450
Mexican First Generation	2.9%	2,993	1.4%	2,912	52.9%	81
Mexican Second Generation	3.6%	1,128	1.5%	1,091	59.6%	37
Mexican Third Generation	3.0%	1,892	1.7%	1,825	40.0%	67

Notes: (1) The sample consists of individuals (ages 20-64) in the first year surveyed for the business ownership rate. The business formation rate sample includes only individuals who are not business owners in year t, and the exit rate sample includes only individuals who are business owners in year t. (2) All estimates are calculated using sample weights provided by the CPS.

Table 4
Net Business Income by Ethnicity/Race
Census (2000)

Group	Mean	Median	Standard Deviation	N
Men				
Total	$61,591	$35,000	$77,645	366,118
White, non-Latino	$64,138	$38,000	$79,421	313,620
Mexican Immigrants	$32,251	$20,000	$47,568	8,022
Mexican U.S. Born	$45,431	$28,500	$58,480	4,933
Black	$42,499	$26,700	$56,496	11,825
Women				
Total	$31,655	$18,700	$47,363	168,100
White, non-Latino	$32,354	$19,300	$47,971	138,545
Mexican Immigrants	$18,391	$11,800	$31,125	3,326
Mexican U.S. Born	$26,779	$15,000	$43,358	2,506
Black	$27,727	$18,000	$40,525	7,742

Notes: (1) The sample consists of individuals ages 20-64 who own a business with 15 or more hours worked per week and 20 or more weeks worked during the year. (2) Net business income excludes business expenses. (3) All estimates are calculated using sample weights provided by the Census.

Figure 3
Educational Distribution by Generation
Current Population Survey (1994-2004)

Table 5
Decomposition of Racial/Ethnic Gaps in Business Formation Rates - Men
Current Population Survey, Matched Annual Demographic Surveys (1994-2004)

	Mexican-American	Mexican 1st Gen.	Mexican 2nd Gen.	Mexican 3rd Gen.	African-American
White/minority gap in entry rate	0.0102	0.0076	0.0090	0.0162	0.0153
Contributions: Education	0.0039	0.0059	0.0018	0.0017	0.0011
	(0.0006)	(0.0010)	(0.0004)	(0.0003)	(0.0003)
	37.9%	78.1%	20.5%	10.2%	7.3%
Age	0.0010	0.0009	0.0017	0.0003	0.0001
	(0.0003)	(0.0004)	(0.0003)	(0.0002)	(0.0001)
	9.4%	12.0%	19.3%	2.1%	1.0%
Marital status and children	-0.0003	-0.0006	0.0001	-0.0002	0.0002
	(0.0003)	(0.0004)	(0.0003)	(0.0003)	(0.0002)
	-3.3%	-7.7%	1.5%	-1.5%	1.5%
Assets	0.0024	0.0026	0.0021	0.0020	0.0022
	(0.0004)	(0.0004)	(0.0003)	(0.0003)	(0.0003)
	23.0%	34.8%	23.5%	12.5%	14.2%
Region	-0.0021	-0.0015	-0.0023	-0.0032	0.0002
	(0.0006)	(0.0006)	(0.0007)	(0.0008)	(0.0004)
	-20.4%	-19.8%	-25.6%	-19.5%	1.2%
Central city status	0.0005	0.0005	0.0007	0.0004	0.0003
	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0004)
	5.0%	6.4%	7.9%	2.4%	2.0%
Year effects	0.0001	0.0001	0.0001	0.0002	0.0002
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
	1.1%	0.9%	1.3%	1.0%	1.1%
Assets and education	0.0062	0.0086	0.0039	0.0037	0.0033
	60.9%	112.9%	44.0%	22.7%	21.5%
All included variables ("explained"	0.0054	0.0079	0.0043	0.0012	0.0043
part of the gap)	52.7%	104.6%	48.4%	7.1%	28.3%

Notes: (1) The sample consists of individuals (ages 20-64) who are not self-employed business owners in year t. (2) Contribution estimates are from non-linear decompositions. See text for more details. (3) Standard errors are reported in parentheses.
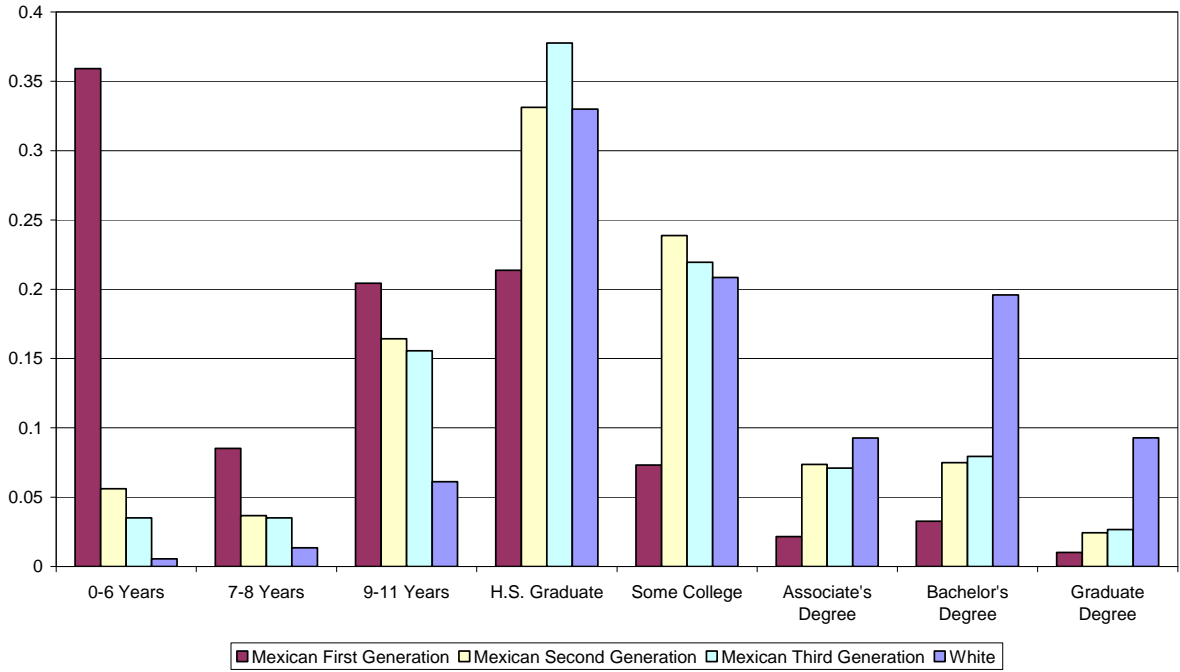
Table 6
Decomposition of Racial/Ethnic Gaps in Business Formation Rates - Women
Current Population Survey, Matched Annual Demographic Surveys (1994-2004)

	Mexican-American	Mexican 1st Gen.	Mexican 2nd Gen.	Mexican 3rd Gen.	African-American
White/minority gap in entry rate	0.0084	0.0099	0.0093	0.0053	0.0136
Contributions: Education	0.0027	0.0047	0.0012	0.0010	0.0004
	(0.0005)	(0.0009)	(0.0003)	(0.0002)	(0.0001)
	32.8%	47.2%	13.2%	19.2%	3.3%
Age	-0.0002	-0.0002	0.0003	-0.0004	-0.0001
	(0.0003)	(0.0003)	(0.0004)	(0.0002)	(0.0001)
	-1.8%	-2.1%	3.0%	-6.6%	-1.1%
Marital status and children	-0.0010	-0.0019	-0.0001	-0.0005	0.0021
	(0.0003)	(0.0004)	(0.0003)	(0.0003)	(0.0003)
	-12.4%	-19.0%	-0.9%	-10.1%	15.1%
Assets	0.0020	0.0024	0.0016	0.0015	0.0020
	(0.0003)	(0.0004)	(0.0002)	(0.0002)	(0.0003)
	23.5%	24.6%	16.9%	28.5%	14.6%
Region	-0.0029	-0.0026	-0.0028	-0.0035	0.0018
	(0.0005)	(0.0006)	(0.0006)	(0.0006)	(0.0003)
	-34.8%	-26.4%	-30.4%	-64.8%	12.9%
Central city status	0.0009	0.0009	0.0011	0.0007	0.0007
	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)
	10.9%	9.6%	11.5%	13.4%	5.4%
Year effects	0.0003	0.0004	0.0003	0.0002	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)
	3.6%	3.8%	3.0%	3.7%	0.4%
Assets and education	0.0047	0.0071	0.0028	0.0025	0.0024
	56.3%	71.8%	30.1%	47.6%	17.9%
All included variables ("explained"	0.0018	0.0037	0.0015	-0.0009	0.0069
part of the gap)	21.8%	37.6%	16.3%	-16.9%	50.5%

Notes: (1) The sample consists of individuals (ages 20-64) who are not self-employed business owners in year t. (2) Contribution estimates are from non-linear decompositions. See text for more details. (3) Standard errors are reported in parentheses.

Table 7
Decomposition of Racial/Ethnic Gaps in Business Exit Rates
Current Population Survey, Matched Annual Demographic Surveys (1994-2004)

	Men Mexican 1st Gen.	Men Mexican U.S. Born	Men African-American	Women Mexican 1st Gen.	Women Mexican U.S. Born	Women African-American
White/minority gap in exit rate	-0.1237	-0.1413	-0.1612	-0.2080	-0.1868	-0.1428
Contributions: Education	-0.0183	-0.0055	-0.0038	-0.0500	-0.0152	-0.0091
	(0.0131)	(0.0032)	(0.0015)	(0.0205)	(0.0047)	(0.0023)
	14.8%	3.9%	2.4%	24.0%	8.1%	6.3%
Age	-0.0109	-0.0239	-0.0071	-0.0098	-0.0118	-0.0115
	(0.0021)	(0.0033)	(0.0009)	(0.0020)	(0.0023)	(0.0016)
	8.8%	16.9%	4.4%	4.7%	6.3%	8.0%
Marital status and childre	0.0080	-0.0034	-0.0061	0.0001	-0.0007	0.0074
	(0.0027)	(0.0023)	(0.0018)	(0.0039)	(0.0030)	(0.0045)
	-6.5%	2.4%	3.8%	0.0%	0.4%	-5.2%
Assets	-0.0127	-0.0116	-0.0120	-0.0148	-0.0063	-0.0168
	(0.0027)	(0.0024)	(0.0022)	(0.0046)	(0.0026)	(0.0047)
	10.3%	8.2%	7.4%	7.1%	3.4%	11.7%
Region	0.0062	0.0028	-0.0102	0.0134	0.0151	-0.0141
	(0.0051)	(0.0049)	(0.0030)	(0.0071)	(0.0068)	(0.0047)
	-5.0%	-1.9%	6.3%	-6.5%	-8.1%	9.9%
Central city status	-0.0170	-0.0041	-0.0181	-0.0151	-0.0058	-0.0144
	(0.0027)	(0.0017)	(0.0039)	(0.0046)	(0.0021)	(0.0056)
	13.8%	2.9%	11.2%	7.2%	3.1%	10.1%
Year effects	-0.0040	0.0005	0.0008	-0.0010	-0.0022	0.0013
	(0.0013)	(0.0008)	(0.0007)	(0.0023)	(0.0025)	(0.0015)
	3.2%	-0.4%	-0.5%	0.5%	1.2%	-0.9%
Assets and education (explaine	-0.0311	-0.0172	-0.0158	-0.0648	-0.0215	-0.0258
	25.1%	12.2%	9.8%	31.2%	11.5%	18.1%
All included variables ("explaine	-0.0489	-0.0454	-0.0566	-0.0772	-0.0268	-0.0571
part of the gap)	39.5%	32.1%	35.1%	37.1%	14.4%	40.0%

Notes: (1) The sample consists of individuals (ages 20-64) who are self-employed business owners in year t. (2) Contribution estimates are from non-linear decompositions. See text for more details. (3) Standard errors are reported in parentheses.

Table 8
Decomposition of Racial/Ethnic Gaps in Log Business Income
Census (2000)

	Men	Men	Men	Women	Women
	Mexican Immigrants	U.S. Born Mexicans	Blacks	Mexican Immigrants	U.S. Born Mexicans
White log business earnings	10.3648	10.3648	10.3648	9.6296	9.6296
Minority log business earnings	9.8526	10.1064	10.0384	9.2619	9.4812
White/minority gap in bus. income	0.5122	0.2585	0.3264	0.3677	0.1484
Contributions: Education	0.3000	0.1349	0.0790	0.2588	0.1129
	(0.0071)	(0.0014)	(0.0008)	(0.0113)	(0.0021)
	58.6%	52.2%	24.2%	70.4%	76.1%
English language ability	0.1593	0.0144	0.0026	0.0619	-0.0166
	(0.0112)	(0.0056)	(0.0004)	(0.0170)	(0.0077)
	31.1%	5.6%	0.8%	16.8%	-11.2%
Age	0.0233	0.0195	0.0055	0.0218	0.0254
	(0.0017)	(0.0011)	(0.0004)	(0.0017)	(0.0015)
	4.5%	7.5%	1.7%	5.9%	17.1%
Marital status and children	-0.0379	0.0136	0.0393	0.0454	0.0170
	(0.0021)	(0.0010)	(0.0010)	(0.0035)	(0.0017)
	-7.4%	5.3%	12.0%	12.4%	11.4%
Region	-0.0263	-0.0027	-0.0273	-0.0324	-0.0086
	(0.0028)	(0.0028)	(0.0015)	(0.0042)	(0.0038)
	-5.1%	-1.0%	-8.4%	-8.8%	-5.8%
Education and language ability	0.4593	0.1494	0.0816	0.3208	0.0963
	89.7%	57.8%	25.0%	87.2%	64.9%
All included variables ("explained"	0.4183	0.1798	0.0992	0.3556	0.1301
part of the gap)	81.7%	69.6%	30.4%	96.7%	87.7%

Notes: (1) The sample consists of individuals (ages 20-64) who are business owners and work at least 15 hours per week and 20 weeks in the previous year. (2) Contribution estimates are from linear decompositions. See text for more details. (3) Standard errors are reported in parentheses. (4) The decomposition for black women is not reported because the log earnings gap is very small (0.0322).

Table 9
Business Ownership Rates by Legal Status
Legalized Population Survey, Census (1980, 2000), and Current Population Surveys, ORG (1987, 1992)

	Male Business Ownership Rate			Female Business Ownership Rate		
	1987/88	1992	Change	1987/88	1992	Change
Mexican-born undocumented immigrants obtaining legal status under IRCA (LPS)	3.1%	5.8%	2.7%	1.5%	2.7%	1.2%
I. Synthetic control group of Mexican immigrants (Census 1980)	2.9%	4.2%	1.3%	0.6%	0.9%	0.3%
Difference in Change from LPS Change			1.4%			0.9%
Aggregate business ownership rate (CPS)	13.3%	13.3%	0.0%	6.7%	6.4%	-0.3%
Total Difference from LPS Change			1.4%			1.2%
II. Synthetic control group of Mexican immigrants (Census 2000)	4.7%	6.2%	1.5%	2.4%	3.1%	0.7%
Difference in Change from LPS Change			1.3%			0.5%
Aggregate business ownership rate (CPS)	13.3%	13.3%	0.0%	6.7%	6.4%	-0.3%
Total Difference from LPS Change			1.3%			0.8%

Notes: (1) The synthetic control group estimates are created by multiplying the characteristics of Mexican-born undocumented immigrants in the LPS by business ownership probit coefficients estimated using the 1980 or 2000 Census. See text for more details. (2) Aggregate business ownership rates for 1987 and 1992 are estimated using the CPS.

Table 10
Business Ownership Rates by Legal Status
Legalized Population Survey and Current Population Surveys, ORG (1987, 1992, 1994-2004)

	Male Business Ownership Rate			Female Business Ownership Rate		
	1987/88	1992	Change	1987/88	1992	Change
Mexican-born undocumented immigrants obtaining legal status under IRCA (LPS)	3.1%	5.8%	2.7%	1.5%	2.7%	1.2%
I. Synthetic control group of Mexican immigrants (CPS 1994-2004)	4.2%	5.8%	1.6%	1.4%	2.0%	0.6%
Difference in Change from LPS Change			1.1%			0.6%
Aggregate business ownership rate (CPS)	13.3%	13.3%	0.0%	6.7%	6.4%	-0.3%
Total Difference from LPS Change			1.1%			0.9%
II. Synthetic control group of Mexican immigrants including cohort and year effects (CPS 1994-2004)	4.2%	5.7%	1.5%	1.4%	2.2%	0.8%
Difference in Change from LPS Change			1.2%			0.4%
Aggregate business ownership rate (CPS)	13.3%	13.3%	0.0%	6.7%	6.4%	-0.3%
Total Difference from LPS Change			1.2%			0.7%

Notes: (1) The synthetic control group estimates are created by multiplying the characteristics of Mexican-born undocumented immigrants in the LPS by business ownership probit coefficients estimated using the 2000 Census. See text for more details. (2) Aggregate business ownership rates for 1987 and 1992 are estimated using the CPS.