The Business Ownership Patterns of Undocumented Immigrants in the United States: An Exploratory Study*

ABSTRACT

When debating the effect of undocumented immigrants on the economy, scholars often presume that undocumented immigrants are wage laborers rather than business owners. This study imputes the legal status of Mexican and Central American immigrants (MCAs) in the Survey of Income and Program Participation (SIPP) between 1996 and 2008 to evaluate how legal status affects business ownership patterns. From 1996 to 2008, the SIPP asked a series of questions about business ownership and migration history that make it uniquely suited to an investigation of undocumented MCA business owners. Instrumental variables regressions reveal that undocumented immigrants had a lower likelihood of owning a business than documented immigrants, but undocumented and documented business owners derived similar incomes from their businesses. A lack of legal status may hold back potential entrepreneurs. MCA business owners of both legal statuses clustered into similar low-paying, low-growth industries, however, so regardless of legal status, there are likely limits to how much business ownership can promote economic mobility among MCAs. All told, scholars should do more to acknowledge the existence of undocumented immigrant business owners, measure their impact on the economy, and examine their influence on immigrant incorporation patterns.

KEYWORDS: Undocumented Immigrants; Immigrant Entrepreneurship; International

Migration; Business Ownership; Economic Sociology

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INTRODUCTION

There is great debate over the effect of undocumented immigrants on host countries' economies and labor markets. Some scholars argue that undocumented immigration suppresses native-born wages (Borjas 2003; Hanson 2009), while others claim that, on average, undocumented immigrant labor can reduce unemployment rates and increase native-born wages (Blau and Mackie 2017; Liu 2010; Orrenius and Zavodny 2012). The debate is hardly resolved, but it often misses an important fact: Many undocumented immigrants are business owners, not just wage workers. Research on immigrant entrepreneurship frequently suffers from the same problem, limiting its scope to documented immigrants or ignoring business owners' legal statuses altogether (Aliaga-Isla and Rialp 2013; Dabić et al. 2020; Light 2005). Nonetheless, a growing number of studies have begun to examine undocumented immigrant business owners (Fairlie and Woodruff 2010; Gold 2019; Ramirez and Hondagneu-Sotelo 2009; Valdez 2011), finding their impact to be substantial. Journalistic estimates claim that eight to 10 percent of undocumented immigrants in the United States are business owners (Geraldino 2014), and that undocumented immigrant entrepreneurs generate up to $17.2 billion dollars in business income nationwide (Partnership for a New American Economy 2017). These estimates may be plausible because of the unique laws that regulate undocumented immigrants in the United States. While it is illegal to employ an undocumented immigrant in the U.S., there is no law preventing an undocumented immigrant from

starting and owning a business in the formal economy. With a birth certificate or some form of official identification (e.g. a passport, military ID), an immigrant can apply for an Individual Taxpayer Identification Number, with which they can obtain an Employer Identification Number (Carmaco 2013; Mastman 2008).

To investigate how undocumented status affects business ownership and income patterns, this study is an exploratory analysis that examines Survey of Income and Program Participation (SIPP) data between 1996 and 2008 on Mexican and Central American immigrants (MCAs) in the United States. The SIPP is a nationally representative survey, and between 1996 and 2008, it asked a series of questions about business ownership and migration history that make it uniquely suited to investigate how documented and undocumented MCA business ownership patterns differ. After 2008, events such as the Great Recession, the creation of the Deferred Action for Childhood Arrivals program (DACA), and the presidency of Donald Trump dramatically changed the legal and economic landscape of MCA incorporation. I consequently extend analyses using additional data from 2018. Yet, for reasons I explain later, results that include 2018 data should be interpreted with extreme caution.

Whether or not the analysis includes data from 2018, instrumental variables regressions show that undocumented MCAs were less likely than documented MCAs to own a business, and that documented and undocumented business owners derived similar incomes from their businesses. Put another way, legal status increased the likelihood that an MCA was a business owner, but it afforded documented MCAs no advantages over undocumented MCAs in terms of business income. Numerous undocumented MCAs

appear to take part in the economy through means other than their wage labor, which more scholars and practitioners should acknowledge. Nevertheless, the degree to which business ownership can promote economic mobility among MCAs is likely limited, irrespective of legal status.

This paper makes important theoretical, empirical, and methodological contributions. Theoretically, scholars can do more to problematize legal status as a moderator between entrepreneurship and immigrant incorporation. According to my results, up to 140,000 undocumented MCAs in the United States attempted business ownership between 1996 and 2008, yet only a handful of studies investigate legal status as a socioeconomic condition that affects the mobility gains associated with immigrant entrepreneurship (Fairlie and Woodruff 2010; Gold 2019; Ramirez and Hondagneu-Sotelo 2009; Valdez 2011). Empirically, the returns to business ownership were comparable for documented and undocumented MCA immigrants in this study. Both documented and undocumented MCA business owners concentrated in low-paying, precarious niches of the economy such as gardening and housecleaning. Although a substantial number of MCA-owned ventures are highly profitable (Agius Vallejo and Canizales 2016; Orozco et al. 2022), many MCA-owned businesses need to move into more remunerative industries to improve their viability, regardless of their owners' legal status. Methodologically, this study expands on Pena's (2010) use of period of entry as an instrumental variable that accounts for selection bias when distinguishing the labor market outcomes of documented and undocumented immigrants. The use of such causal

inference techniques is a necessary step toward producing scholarship that appropriately measures the impact of legal status on immigrant entrepreneurship.

The remainder of the paper is structured as follows. First, I review the literature on MCA business ownership, hypothesizing the likely effect of legal status on MCA business ownership and income patterns. Next, after describing the data and methods used in the study, I conduct analyses on data between 1996 and 2008. When discussing the findings, I extend analyses to 2018 and examine robustness checks that account for the heterogeneous education levels of undocumented MCAs. Finally, I conclude with lessons for scholars of international migration and economic sociology as well as practitioners fighting for immigration reform.

LITERATURE REVIEW

The Business Ownership Patterns of Mexican and Central American Immigrants

Many immigrants are attracted to entrepreneurship as a means of achieving socioeconomic mobility (Aliaga-Isla and Rialp 2013; Dabić et al. 2020; Light 2005), but their entry into business ownership tends to come in one of two varieties: opportunity entrepreneurship or necessity entrepreneurship. Opportunity entrepreneurs create businesses to take advantage of market opportunities, while necessity entrepreneurs use business ownership as an alternative to unemployment or underemployment (Valdez 2015). Opportunity and necessity entrepreneurs are frequently distinguished by their class positions. Whereas highly educated immigrant entrepreneurs may exploit opportunities in high-technology industries (Wadhwa et al. 2007), necessity entrepreneurs include some

of the least educated immigrants, many of whom start businesses in volatile, labor-intensive industries that offer meager returns (Fairlie and Fossen 2020).

The distinction between opportunity and necessity entrepreneurship appropriately characterizes MCA business ownership patterns. Over the past several decades, Latinx entrepreneurship has grown at a faster rate than non-Latinx entrepreneurship in the United States (Orozco et al. 2022), yet the benefits of this growth have been distributed unequally. Among MCAs, opportunity entrepreneurship is common for individuals with substantial startup capital (Agius Vallejo and Canizales 2016) as well as individuals belonging to migration streams that contain many well-educated professionals, such as Panamanian migrants to the U.S. (Chinchilla and Hamilton 2004). In contrast, members of the MCA population with little education and low wealth are more likely to be necessity entrepreneurs, operating in precarious, low-paying niches of the economy, including construction and the hospitality sector (Valdez 2011; Valdez et al. 2019; Valenzuela 2001; Verdaguer 2009:Ch. 3).

Considering the diversity of contexts in which MCAs start businesses, scholars have incorporated useful theoretical frameworks like intersectionality and mixed embeddedness to characterize the heterogeneity of racial, class, and institutional conditions under which MCA business owners operate (Romero and Valdez 2016; Salamanca and Alcaraz 2019). Nevertheless, studies that address legal status as a dimension of business ownership are in their infancy (Fairlie and Woodruff 2010; Gold 2019; Raijman 2001; Ramirez and Hondagneu-Sotelo 2009). A well-established literature shows how undocumented status inhibits wage-working immigrants' ability to

incorporate into the economy (Borjas 2003; Hall, Greenman, and Yi 2019), yet there

remain a host of unanswered questions about the economic incorporation of

undocumented immigrant entrepreneurs. Do undocumented business owners look more

like opportunity or necessity entrepreneurs? In what occupations and industries are they

found? How do the business ownership and income patterns of undocumented

immigrants compare to those of documented immigrants? Once these questions are

answered, scholars and practitioners can begin to devise public policies that maximize the

benefits of entrepreneurship for immigrants and the larger economy.

How Does Legal Status Affect Immigrants' Business Ownership Patterns?

There are numerous reasons to suspect that, compared to documented immigrants,

undocumented immigrants have a lower likelihood of business ownership, and that their

businesses generate lower incomes. These reasons include barriers to capital access, an

inability to advertise one's business, a lack of legal recourse, and the threat of being

exploited by customers and suppliers. These challenges are compounded by the ever-

present threat of deportation. For example, in the United States, identification

requirements make it nearly impossible for undocumented immigrants to hold bank

accounts (Coyle 2007). When sued for an issue such as breach of contract, moreover,

some undocumented business owners avoid going to court in order to keep their

undocumented status hidden (Weber 2009:784). The sentiment of an undocumented

Mexican gardener interviewed by Ramirez and Hondagneu-Sotelo (2009) reflects the

consequences of being unable to rely on financial and legal institutions. "I feel pressured

right now…Maybe if I had my *seguro* (Social Security Number), I would venture to open more doors…get bigger jobs, get bigger trucks. With my *seguro*, I could pay credit, invest in machinery. I know that with my *seguro* I could place ads in the yellow pages" (2009:80). This business owner's struggles were tied to both his lack of access to formal credit as well as his fear of exposure to immigration authorities who could deport him. In addition, because of his hesitancy to advertise in the phone book, his business likely remained hidden from customers who could help his business grow.

Although undocumented immigrants face severe challenges, documented immigrants endure obstacles as well. Documented immigrants may be forced out of the mainstream labor market due to racial or ethnic discrimination, pushing them toward business ownership (Dabić et al. 2020). Many documented immigrants consequently pool their resources together, share business knowledge, and extend credit to one another to create profitable businesses (Agius Vallejo 2009; Portes and Sensenbrenner 1993). In contrast to the social supports available to documented immigrants, undocumented immigrants regularly exploit each other to survive (Mahler 1995; Menjívar 2000). When Rocío Rosales interviewed undocumented fruit sellers in Los Angeles, for example, she noted that informants sometimes rented out fruit carts to co-ethnics at exorbitant rates, knowing these co-ethnics had no other means of subsistence (2020). In another case, undocumented Mexican gardeners paid each other off to avoid competing for a particular client. After a few months, however, some gardeners would try to steal those clients anyway (Ramirez and Hondagneu-Sotelo 2009:80). In addition to the financial, legal, and social disadvantages that undocumented immigrant business owners endure, the "liminal

legality" (Menjívar 2006) of undocumented entrepreneurship can translate into misfortune at any moment. For instance, police were once called to Los Gallos Taqueria in Philadelphia to stop a fight between two rowdy customers. The owner, an undocumented immigrant, consequently lost his business and entered deportation proceedings (Geraldino 2014).

As these examples show, undocumented immigrants face a variety of unique difficulties when starting and running businesses. Hence, I hypothesize that undocumented immigrants are less likely than documented immigrants to become business owners and more likely to run businesses that generate lower incomes.

Hypothesis 1: Undocumented immigrants are less likely than documented immigrants to be business owners.

Hypothesis 2: Undocumented business owners earn lower incomes than documented business owners.

ANALYTIC STRATEGY

Data

To test my hypotheses, I leverage data from the 1996, 2001, 2004, and 2008 waves of the Survey of Income and Program Participation (SIPP), a nationally representative panel study that captures economic and demographic information about U.S. workers. These waves of the SIPP asked a series of questions about place of origin, migration history, and lawful permanent residency status that enable the use of logical imputation methods to identify potentially undocumented respondents. While there is

debate over the use of imputation methods to identify potentially unauthorized immigrants in government-sponsored survey data (Spence et al. 2020), such techniques have helped scholars better understand the undocumented population in the United States (Bachmeier, Van Hook, and Bean 2014; Borjas 2017; Hall, Greenman, and Farkas 2010; Van Hook et al. 2015). To gather SIPP data, surveyors interviewed each member of a given household every four months, asking about income, employment status, and family characteristics each month during the survey period. Questions about migration history were asked in the Wave 2 topical module. Because one's legal status can change over time, I include the first 12 months of each panel in the analysis, enabling the creation of annual income values across the four panels.

There are several reasons why it is useful to leverage 1996 to 2008 SIPP data to analyze Mexican and Central American[1] undocumented immigrants. First, publicly available SIPP data, which I use here, only distinguish between lawful and non-lawful permanent residents (non-LPRs). The majority of non-LPRs in the U.S. between 1996 and 2008 were from Mexico and Central America (Passel and Cohn 2014). Second, unlike in other waves of the SIPP, waves between 1996 and 2008 asked whether a respondent's residency status changed after they arrived in the U.S., an extremely useful piece of information when imputing legal status. Finally, although the 1996, 2001, and 2004 SIPP asked about countries of origin, the 2008 SIPP only asked about regions of origin, grouping Mexicans and Central Americans together. Countries such as El Salvador send a notable number of refugees and Temporary Protected Status (TPS) recipients to the United States, but refugees and TPS recipients constituted a small

amount of non-LPRs in the U.S. in the 1990s and 2000s (Igielnik and Krogstad 2017).

Some non-LPRs also include documented temporary workers, but documented temporary

workers made up a small number of non-LPRs during the study period as well (Hall et al.

2010).

To examine business ownership patterns, the SIPP is more useful than related data

sets such as the Decennial Census or the American Community Survey. Unlike those

surveys, the SIPP asks questions specifically about business ownership rather than self-

employment.[2] The self-employment of undocumented immigrants may include day

laboring, gig economy work, and other occupations that do not reflect business ownership

(Arum 2004). In this study, to qualify as a business owner, a respondent must have

owned a business in at least one of the twelve months about which respondents were

asked. Approximately four percent of respondents in the sample owned a business across

all twelve months. Nonetheless, I treat anyone who had at least one month of business

ownership as a business owner in order to analyze the characteristics of all respondents

who attempted business ownership. Results should consequently be seen as an upper

bound on undocumented business ownership. Even when restricting the data set to full-

year business owners, however, results are similar.[3] In analyses, I account for business

owners who held a wage-working job while owning a business as well as business

owners who dropped out of the data set across multiple waves.

Imputing Legal Status

      To infer the legal status of MCAs, I adapt a logical imputation method created by

Hall, Greenman, and Farkas (2010). Figure 1 is a flowchart that explains how I imputed

the legal status of respondents. First, I limited the sample to respondents who were born

in Mexico or Central America, of working age, and had less than a high school education.

The education restriction follows Hall et al.'s (2010) imputation approach and is suitable

because, in the 1990s and 2000s, almost two out of every three undocumented MCAs in

the United States did not hold a high school degree (Passel and Cohn 2019). Nonetheless,

a sizable number of undocumented immigrants were high school or college educated

during the study period (Abrego and Gonzales 2010; Mulhare 2015). I therefore relax the

restriction on education level in robustness checks later in the paper. Second, if a survey

respondent entered the United States as a lawful permanent resident or changed to

permanent residency status by the time of their SIPP interview, then I treated them as

documented. In addition, undocumented immigrants must not have received any form of

federal assistance (e.g. TANF, food stamps).[4] Finally, if an immigrant or their spouse was

enrolled in college or employed as a high-ranking public official, then I assumed that the

respondent was documented.

<div align="center">[Figure 1]</div>

      There is potential that the sample suffers from undercoverage of the

undocumented population, whose members have higher than average rates of limited

English proficiency, illiteracy, unstable household arrangements, and weaker ties to local

political organizations. All these factors decrease the likelihood that someone will

respond to a survey administered by the U.S. Census Bureau (Rodriguez and Hagan 1991). Consequently, the undocumented immigrants captured by the SIPP may skew toward more stable and advantaged members. Despite the potential for undercoverage and sample bias, 25 percent of MCA immigrants in this analysis were presumed to be undocumented, which is comparable to other published estimates using SIPP data (Greenman and Hall 2013; Hall et al. 2019) The demographic profile of undocumented MCA immigrants in the sample is also comparable to other studies that use administrative data or other sources of information that are not self-reported (Lesser and Batalova 2017; Zong and Batalova 2018).

One source of undercoverage is addressable with available data. The same factors that discourage undocumented immigrants from participating in government-sponsored surveys likely encourage undocumented respondents to drop out of the SIPP over time. In my study, 15 percent of undocumented respondents dropped out of the survey before the end of the study period. Therefore, in supplemental analyses, I added a dummy variable for dropouts. The addition of this variable in regressions did not change the statistical significance or direction of the associations between key dependent and independent variables presented in the paper.

Variables and Methods

To determine if there were differences between documented and undocumented MCA business owners, I conduct regressions to analyze three outcomes: *the likelihood of owning a business*, *annual overall income* (logged), and *annual business income*

(logged).[5] Overall income combines income from all sources, while business income refers to income specifically generated from one's businesses. When testing the likelihood of owning a business, the key independent variable is whether the respondent was *undocumented*. When predicting overall income, regressions are restricted to respondents who earned an income, and the key independent variable is the interaction between being undocumented and *whether the respondent owned a business*. When predicting business income, regressions are restricted to business owners only, and the key independent variable is whether the respondent was undocumented.

Control variables include human capital factors such as *potential work experience* (age – years of education – 6) and *work experience squared*. One's *age at arrival* into the United States affects the amount of cultural capital one can accrue while in the U.S., so I include it as a control variable as well. Marriage and having children increase one's propensity for business ownership, and women have a lower likelihood of business ownership than do men (Parker 2018). I consequently include *married*, *number of children*, and *female* as controls. When restricting the analysis to business owners only, I also control for the *age of one's business* (in years, logged), whether the respondent worked *full-time* at their business (i.e. if they put in 40 hours per week or more at the business), and whether the proprietor *held another job* in addition to owning a business. Because of family obligations and other constraints, it is possible to work part-time at one's business and not hold another job. Finally, controls include dummies for *Census region*,[6] *survey year*, and *industry*. I could have included other control variables, such as

whether one ran their business as a partnership, but for reasons I will explain later, these

variables were not appropriate for the analysis.

The Need for Instrumental Variables

To examine the association between legal status and business ownership patterns,

it is crucial that the respondents being compared are as similar as possible, save for their

different legal statuses. Control variables available in the SIPP can account for some

differences between undocumented and documented MCA immigrants, but unobserved

personal characteristics may have caused respondents to self-select into undocumented

versus documented migration. As Douglas Massey writes:

> People with and without documents may be selected into the migrant workforce in
> different ways. For example, although economic motives probably predominate in the
> migration decisions of both documented and undocumented migrants, in the latter case
> the barriers to entry are much higher, both in psychic and monetary terms, and for this
> reason undocumented migrants may be more highly selected with respect to factors like
> motivation and risk-taking propensity, variables that are theoretically related to wage
> rates. Not controlling for this selection effect reduces the apparent wage gap between
> documented and undocumented migrants and biases the estimated effect of legal status
> downward (1987:242-243).

If motivation and risk-taking propensity are inherent to undocumented migration, then

undocumented immigrants may be exceptionally self-selected on entrepreneurial traits

that are unobservable in the SIPP. Motivation and risk-taking are intrinsic to

entrepreneurship, even though many entrepreneurs are risk-averse (Parker 2018). If one

does not control for the fact that motivated, risk-accepting people likely self-select into

both undocumented migration and business ownership, it becomes difficult to determine

whether legal status has any real causal influence on business ownership and income. The

potential impact of being undocumented on business ownership and income, in other words, may become downwardly biased, as Massey (1987) would suggest.[7]

To assess the causal impact of legal status on the likelihood of business ownership and income, I rely on a set of instrumental variables borrowed from Pena (2010): dummy variables that reflect *period of entry*. Changes to federal immigration policy directly affect immigrants' ability to legally migrate to the United States. Although different eras of federal immigration policy affect the barriers to legal entry into the U.S., these eras should not directly influence the likelihood of business ownership or annual income. Period of entry, in other words, satisfies the relevance and exogeneity conditions of a good instrumental variable.

I use dummy variables for periods of entry that include the years before 1986, 1986 to 1989, 1990 to 1995, 1996 to 2000, and 2001 or after. 1986 was the year that the Immigration Reform and Control Act was passed, which expanded the undocumented population by tightening border controls that forced many undocumented MCAs to stay in the United States instead of taking part in a circular flow of migration (Massey, Durand, and Malone 2002). The 1990 Immigration Act increased employer sanctions and penalties for violating immigration law. The Personal Responsibility and Work Opportunity Act and the Illegal Immigration Reform and Immigrant Responsibility Act were both passed in 1996. The former law limited undocumented immigrants' use of public aid. The latter law increased the size of the U.S. Border Patrol and changed the eligibility factors for deportation suspension (Pena 2010:10). Finally, in 2001, the

PATRIOT Act was passed, making it easier to deport undocumented immigrants without judicial review (Massey, Pren, and Durand 2016).[8]

To incorporate the instrumental variables, I use two-stage least squares regression. In the first stage, I regress the endogenous variable (undocumented status) on the instrumental variables (periods of entry) to capture exogenous variation in the endogenous variable. In the second stage, I regress the dependent variable of interest (in one set of regressions, likelihood of business ownership, and in another set of regressions, annual income) on predicted values from the first stage regression. To avoid the "forbidden regression" problem (Angrist and Pischke 2009:190-192), I apply Wooldridge's (2002:623-625) approach to two-stage least squares regression with a dichotomous endogenous variable. I report results using a linear probability model, but results using bivariate recursive probit models (Bhattacharya, Goldman, and McCaffrey 2006) are virtually identical to those in the body of the paper.

To recapitulate my analytic approach, I use two-stage least squares regression to test how a lack of legal status affects the likelihood of owning a business. I then use two-stage least squares regression to assess how being an undocumented business owner affects annual overall income. Finally, I use traditional OLS regression to determine how being undocumented affects annual business income. This final regression is restricted to business owners, so there is no need to use instrumental variables. In supplementary analyses, however, I used two-stage least squares regression to test the association between business income and a lack of legal status, and conclusions were consistent with the main results.

RESULTS

According to the SIPP, the number of undocumented MCA business owners

between 1996 and 2008 ranged from a low of 37,704 to a high of 141,621.

Undocumented MCA business owners constituted, at most, 0.63 percent of all business

owners in the United States. Although these numbers are small, they are large

considering how often people overlook the business pursuits of undocumented

immigrants. Figure 2 visualizes the business ownership rates of undocumented and

documented MCA immigrants as well as all U.S. workers in the data set across time.

Trends followed existing literature in two ways. First, regardless of legal status, business

ownership rates were consistently lower among MCAs compared to all U.S. workers

(Fairlie and Woodruff 2010). Second, the overall business ownership rate in the United

States decreased slightly in the 1990s and 2000s, but both documented and

undocumented MCA business ownership rates jumped sharply in the 2000s (Fairlie

2010). The overall U.S. business ownership rate has steadily declined due to factors such

as increasing market concentration and an aging population (Abraham and Master 2021),

yet the immigrant entrepreneurship rate has consistently been higher than the native-born

entrepreneurship rate, in part because many immigrants attempt business ownership to

avoid downward or blocked mobility in the labor market (Dabić et al. 2020). It is beyond

the scope of this paper to explain the slowdown in undocumented MCA business

ownership rates going into 2008, which may have occurred for several reasons, including

the implementation of the Secure Communities program (Waslin 2011), the expansion of

the 287(g) program (American Immigration Council 2021), or the Great Recession.

[Figure 2]

Table 1 shows the top five occupations for undocumented and documented MCA business owners and wage workers. Over one out of every five undocumented MCA business owners was a groundskeeper or gardener, which fits the profile of undocumented immigrant business owners found in some other studies (Ramirez and Hondagneu-Sotelo 2009, Raijman 2001; Valenzuela 2001). Overall, however, the top occupations of undocumented business owners were virtually identical to the top occupations of documented business owners and undocumented wage workers. One might suspect that undocumented business owners experience market disadvantages because they take part in unique niches of the economy, but Table 1 reveals that not to be the case. In fact, despite having papers, documented MCA business owners were just as likely as undocumented business owners to operate in low-paying, low-growth industries, an important point that will contextualize the regression results to come.

[Table 1]

Table 2 includes summary statistics for key variables used in regressions. MCAs of both legal statuses were disadvantaged in several ways, enduring lower business ownership rates and incomes than other workers in the U.S. economy. Undocumented MCAs were further disadvantaged compared to documented MCAs in terms of their incomes, years of work experience, and business ownership rates. Nonetheless, in several respects, the composition of the two groups was similar: MCAs of both legal statuses were majority Mexican, worked in similar industries, and disproportionately lived in Western states. Table 2 also highlights characteristics that I exclude from remaining

analyses due to data constraints. English-language ability was not asked in 1996, so I exclude it from the analysis. Even if I drop 1996 data from the analysis and include a variable for English-language ability in regressions, results are virtually identical. Furthermore, almost all MCAs identified as White, so I omit variables on race. Among business owners, few MCAs owned firms that were incorporated, had employees, or run as partnerships, adhering to literature that shows how most immigrant-owned firms are sole proprietorships (Aliaga-Isla and Rialp 2013). I therefore exclude these variables from the analysis as well. Finally, virtually no MCAs owned multiple businesses, so I assume every proprietor only owned one.

[Table 2]

Likelihood of Owning a Business

Table 3 presents three sets of regressions. The first set tests the association between legal status and the likelihood of owning a business, the second set tests the association between being an undocumented business owner and overall income, and the third set tests the association between being an undocumented business owner and business income. Controlling for other factors, undocumented MCAs had a lower likelihood of owning a business than documented MCAs. Models (1) and (2) respectively include a logistic regression and a linear probability model, neither of which account for the potential endogeneity between legal status and owning a business. Logistic regressions are commonly used for binary dependent variables, but linear probability models are frequently used in two-stage least squares regressions (de Blasio and

Nuzzo 2010; Loeffler 2013). Regardless of the potential endogeneity between legal status and business ownership in these models, the key associations of interest are negative, despite not reaching statistical significance.

[Table 3]

Once endogeneity is taken into consideration, as occurs in the two-stage least squares (2SLS) regression in Model (3), a lack of legal status was predicted to decrease the probability of business ownership by 19 percentage points, controlling for other factors. The 2SLS procedure demonstrates exactly what Massey (1987) suggested would occur. If one ignores the possibility that undocumented immigrants are highly selected on entrepreneurial traits, as the logistic and linear probability models do, then the effect of being undocumented on the likelihood of business ownership is biased downward. The 2SLS regression, furthermore, fits the data well, yielding a first-stage F-statistic above 10 (Stock and Yogo 2005) and passing common tests of endogeneity and overidentifying restrictions.[9] In summary, undocumented MCAs had a statistically lower likelihood of business ownership than comparable documented MCAs.

Overall Income and Business Income

Models (4) and (5) of Table 3 test how being an undocumented business owner was associated with overall income, no matter the source. Model (6) tests how, among business owners, a lack of legal status was specifically associated with business income. According to Models (4) and (5), undocumented wage workers endured a severe income penalty. The 2SLS regression reveals that undocumented wage workers earned 72 percent

less than documented wage workers. In addition, documented business owners earned 13 percent less than documented wage workers. This latter result approaches statistical significance (p=0.08) and fits with literature suggesting that low-wealth immigrants pursue necessity entrepreneurship as an alternative to unemployment or underemployment (Valdez 2015). As with the 2SLS regression shown in Model (3), furthermore, the F-statistic of the first-stage regression is above 10, and the regression passes tests of endogeneity and overidentifying restrictions.

After accounting for the distinct income penalties associated with being undocumented and being a business owner, being an undocumented business owner did not yield an additional penalty on overall income. In other words, the association between overall income and the variable interacting undocumented status and business ownership was not statistically significant. Even though the interaction variable was not significant, undocumented business owners still earned 65 percent (-0.72 + 0.07) less than documented business owners in overall income. Rather than reflect differences in the income generated by each group's businesses, however, this finding may reflect other kinds of income-generating opportunities that are more readily available to documented immigrants than undocumented immigrants, including governmental cash transfers and interest income from bank accounts (Coyle 2007). It is therefore useful to limit the analysis to business owners and focus specifically on business income, as occurs in Model (6) of Table 3. According to Model (6), a lack of legal status and business income were not statistically associated, implying no differences in the business incomes of documented and undocumented business owners. Taken together, Table 3 reveals two

major findings. First, undocumented immigrants were less likely to own a business than documented immigrants. Second, undocumented business owners were no better or worse off than documented business owners in terms of business income.

Inclusion of High School and College Educated Undocumented Immigrants

Up to this point, the logical imputation method I used to identify undocumented MCAs required that they could not have completed high school. This approach follows established imputation methods (Greenman and Hall 2013; Hall et al. 2010). In this section, however, I relax the education restriction, allowing for the possibility that undocumented MCAs had a high school or college degree. Table 4 reproduces previous regressions but includes high school and college educated MCA immigrants. When including these groups in the analysis, the findings stay largely the same. Undocumented immigrants are now 15 percentage points less likely to be business owners than documented immigrants. Furthermore, both undocumented wage workers and documented business owners continue to endure a substantial income penalty, but there is no joint effect of undocumented status and business ownership on income. When including high school and college educated MCAs in the data set, the only new finding of note is that the income gap between documented and undocumented wage workers grows larger, from 72 percent to 166 percent. This finding supports studies indicating that the labor market returns to higher education are much lower for undocumented immigrants compared to documented immigrants (Gonzales 2011).

[Table 4]

DISCUSSION

This study explored the effect of being undocumented on business ownership and income patterns. Taking advantage of the Survey of Income and Program Participation (SIPP) from 1996 to 2008—years in which the SIPP asked a series of questions about migration history and business ownership that make it uniquely suited to an examination of undocumented Mexican and Central American immigrant (MCA) business owners— instrumental variables regressions revealed that undocumented immigrants were less likely than documented immigrants to own businesses, but that documented and undocumented business owners both derived similar incomes from their businesses. Looked at from one angle, this means that undocumented immigrants who engage in business ownership can earn incomes comparable to their documented counterparts. Looked at from another angle, however, legal status offers documented business owners no income advantage over undocumented business owners. Documented and undocumented MCA business owners clustered into similar low-paying, precarious niches of the economy such as gardening and housecleaning, suggesting that MCA business owners were necessity entrepreneurs regardless of legal status. Indeed, whether documented or undocumented, MCAs with little education share the experience of having little startup capital (Fairlie, Valdez, and Agius Vallejo 2020) and encountering discrimination in business due to their race, class, and foreign-born status (Valdez et al. 2019; Verdaguer 2009). For these reasons, the degree to which business ownership can promote economic mobility among MCAs is likely limited, irrespective of legal status.

Studying the undocumented population in government-sponsored data sets like

the SIPP is difficult and controversial (Spence et al. 2020). Therefore, several limitations

to the analysis should be addressed in future research. First, the logical imputation

method I used to identify potentially unauthorized immigrants may have led to biases for

which I could not control. The SIPP only captures information on undocumented

immigrant business owners who willingly responded to the survey. Future analyses

should go beyond the limitations of the SIPP and distinguish between business owners in

the formal versus the informal economy. Such a distinction could help reveal the number

of undocumented business owners that the government fails to see, a necessary step in

determining the biases of SIPP data.

Second, by using data on undocumented immigrants from the 1990s and 2000s,

there are limits to how much the analysis can speak to contemporary conditions. Since

2008, undocumented immigrants have experienced the aftereffects of the Great

Recession, the implementation of DACA, and the presidency of Donald Trump. In

Appendix A, I incorporate 2018 SIPP data into the analysis as an attempt to capture more

recent trends. Due to data limitations that I discuss in the appendix, estimates that include

2018 SIPP data should be interpreted with extreme caution. Nevertheless, the inclusion of

2018 data in the regressions upholds the major findings of the paper, as shown in

Appendix Table A.1.

Third, there were many month-to-month transitions into and out of business

ownership that the analysis compressed into annual measures. I discerned much from

exploring overall differences in business ownership across legal statuses using stacked

cross-sections of the SIPP. Nevertheless, future analyses should investigate more clearly how, why, and when undocumented immigrants transition into and out of business ownership. Such transitions are likely an important aspect of undocumented immigrant business ownership because undocumented immigrants experience job instability at greater rates than documented immigrants and native-born workers (Hall et al. 2019). I view this paper as a first step toward understanding a phenomenon that has been overlooked by many scholars for too long.

Finally, this study analyzed a national-level data set that could not disaggregate findings by local contexts of reception, legal environments, and other factors that may produce intra-national variation in the findings. After the Legal Arizona Workers Act required that employers use E-Verify to confirm the work authorization statuses of employees, for example, there was a spike in the self-employment rate of Arizona's Latinx immigrants (Bohn and Lofstrom 2013). It is important to determine how local conditions affect undocumented immigrant business ownership patterns. To this end, U.S. scholars can learn from European studies that explicitly account for legal and institutional environments when studying immigrant entrepreneurship (Engelen 2001; Jones and Ram 2021; Kloosterman 2010; Samers 2002).

CONCLUSION

This paper offers important conclusions for scholars of international migration and economic sociology. The paper also holds lessons for public policy. International migration scholars have done extensive work on two groups of people: immigrant

entrepreneurs and undocumented immigrants (Dabić et al. 2020; Donato and Armenta 2011; Light 2005; Massey et al. 2016). More work needs to analyze the overlap between these two groups (Gold 2019; Mahler 1995; Valdez 2011; Zlolniski 2006). This study demonstrates that a sizeable portion of undocumented immigrants attempts business ownership, and that their businesses are sometimes as remunerative as businesses owned by documented immigrants. The fact that documented and undocumented MCA-owned businesses generated similar incomes for their owners nonetheless lays the seed for future research questions. For instance, scholars know that a lack of legal status in the first immigrant generation translates into slower socioeconomic incorporation in later immigrant generations, especially for Latinx immigrants (Bean, Brown, and Bachmeier 2015; Enriquez 2015; Telles and Ortiz 2008). Yet, if undocumented and documented immigrants earn similar business incomes, does undocumented business ownership have any unique effects on the socioeconomic mobility of undocumented immigrants and their children? Some children of immigrant entrepreneurs are quick to leave behind business ownership (Jones and Ram 2021), while others are inspired to pursue entrepreneurship and support their parents' enterprises (Chaudhary 2015; Estrada 2016). In addition to this question, does undocumented business ownership help create job opportunities and internal labor markets within immigrant communities? Many of the businesses in this study were sole proprietorships in low-paying industries, so undocumented immigrant businesses are likely not creating jobs and are more in line with necessity entrepreneurship.

Looking beyond this study's findings, economic sociologists can better conceptualize legal status as a requirement to participate in the economy. Undocumented immigrant business owners in the United States are unable to rely on financial and legal institutions that others in the economy take for granted (Coyle 2007; Ramirez and Hondagneu-Sotelo 2009; Weber 2009). Their liminal status is like that of other marginalized groups whose business pursuits are complicated by their legal status. Ex-offenders in various U.S. states, for instance, are unable to start certain businesses because they are legally barred from obtaining necessary occupational licenses (Fetsch 2016). Analyzing the economic activities of lawfully marginalized populations can sharpen theories at the intersection of economics and the law.

Finally, policymakers and activists can do more to acknowledge the existence of undocumented business owners. Undocumented immigrants in this study were less likely than documented immigrants to own businesses, so it is worthwhile for immigration reform advocates to consider how current immigration laws are holding back potential entrepreneurs. One way to measure the full impact of undocumented immigrant entrepreneurship is for the U.S. Census Bureau to bring back survey questions on lawful permanent residency that were dropped from the SIPP after 2008. New questions can also be added that ask about DACA status. Policymakers outside of the United States should acknowledge the impact of undocumented immigrant business owners as well. In Greece, for example, it is estimated that up to 35 percent of immigrant business owners are illegally in the country (Piperopoulos 2010). Through further investigation of undocumented immigrant business ownership and more sensitivity to its policy

implications, economies can reap the rewards of all people who hold entrepreneurial

ambitions.

ENDNOTES

1. MCAs in the SIPP include respondents born in Mexico, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Belize, Costa Rica, or "Other" parts of Central America.

2. The SIPP asks, "How many businesses did [the respondent] have, alone or jointly, between [the] 1st [of this month] and today?"

3. In data restricted to respondents who owned a business for the full year, undocumented immigrants continued to have a lower business ownership rate than documented immigrants (two versus four percent, respectively). Additionally, monthly business ownership rates reached a low of two percent for undocumented immigrants and a high of ten percent for documented immigrants, suggesting that the differences between undocumented and documented immigrants in the main results would still hold if I required respondents to be business owners for other lengths of time.

4. I consider a respondent undocumented if they did not receive federal assistance in their own name, although they may have received benefits through others in the household, such as a dependent born in the United States.

5. Some business owners did not own firms for the full study period, so I also tested using *average monthly overall income* and *average monthly business income* as dependent variables. Results are very similar to those presented in the paper.

6. According to SIPP data, undocumented immigrants lived in almost all 50 states. Most states had only a handful of undocumented survey respondents, but California and Texas were notable positive outliers. When I replace Census region controls with dummy variables for California and Texas, results are virtually identical.

7. There are other unobservable characteristics that may influence how legal status affects business ownership. A lack of legal status may result in barriers to capital access *after* migrating, but legal status may reflect access to capital *before* migrating. In the case of EB-5 visa holders in the United States, for example, one receives a green card for investing in a U.S. business. Even though EB-5 visa holders may confound the analysis, their impact is likely small. Few EB-5 investors come from Mexico or Central America (Singer and Galdes 2014).

8. Starting in 2006, a wave of U.S. municipalities passed anti-immigrant ordinances, many of which directly targeted the undocumented population. I would have liked to add a dummy variable for whether a respondent entered the United States after 2006, but too few SIPP respondents entered after 2006 to be included in the analysis.

9. Specifically, Durbin and Wu-Hausman tests are significant, and Sargan's and Basmann's tests are not significant.

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TABLE 1. TOP FIVE OCCUPATIONAL CATEGORIES BY CLASS OF WORKER AND LEGAL STATUS

Wage Workers				Business Owners			
Undocumented (*N = 1,491*)		Documented (*N = 4,652*)		Undocumented (*N = 112*)		Documented (*N = 423*)	
Occupation	%	Occupation	%	Occupation	%	Occupation	%
Cooks	8	Misc. Agricultural Workers	9	Groundskeepers and Gardeners	21	Private Household Cleaners	13
Construction Laborers	8	Cooks	6	Private Household Cleaners	13	Groundskeepers and Gardeners	11
Groundskeepers and Gardeners	7	Janitors and Building Cleaners	6	Family Child Care Providers	10	Family Child Care Providers	9
Misc. Agricultural Workers	7	Construction Laborers	6	Sales Proprietors	8	Construction Laborers	8
Private Household Cleaners	5	Maids and Housekeepers	5	Painters	6	Sales Proprietors	6

Source: The SIPP, 1996-2008. *Note*: Ns are unweighted. The '%' column is the percentage of all Mexican and Central

American workers who belonged to a given category. For example, of the 1,491 wage workers presumed to be undocumented

in the data set, eight percent were cooks.

TABLE 2. SUMMARY STATISTICS

	Undocumented MCAs	Documented MCAs	All U.S. Workers
Characteristics of All Workers			
Owns a Business?	7%	9%	11%
Annual Overall Income[a]	$14,663	$16,000	$27,000
	($110 - $79,773)	($88 - $342,465)	($0 - $831,600)
Years of Potential Work Experience	32	37	34
	(11)	(12)	(14)
Female	36%	48%	51%
Married	55%	69%	56%
Number of Children	1	2	1
	(1)	(2)	(1)
Speaks English Well[b]	22%	37%	95%
Identify as White	93%	94%	81%
Age at Arrival into the U.S.	26	26	----
	(9)	(10)	
Country of Origin in Central America[c]			
Mexico	83%	88%	----
Honduras	3%	2%	----
El Salvador	7%	6%	----
Guatemala	5%	3%	----
Other	1%	1%	----
Period of Entry into the U.S.			
Before 1986	9%	39%	----
1986-1989	13%	16%	----
1990-1995	25%	17%	----
1996-2000	29%	13%	----
2001-2008	25%	15%	----
Characteristics of Business Owners Only			
Annual Business Income[a]	$5,715	$8,274	$18,296
	($238 - $50,932)	($110 - $342,465)	($0 - $574,200)
Business Age (in Years)[a]	2	4	5
	(0 - 20)	(0 - 44)	(0 - 47)
Incorporated	5%	9%	24%
Employer Firm	1%	2%	30%
Works at Business Full-Time[d]	37%	43%	50%
Held Another Job While	19%	21%	28%
Owning a Business			
Business is a Partnership[e]	8%	12%	16%
Owns More Than One Business	1%	4%	9%
Industry			
Agriculture & Mining	5%	8%	6%
Construction	19%	24%	16%
Professional, FIRE,	28%	21%	28%
and Related Services			
Retail	11%	11%	11%
Personal Services	37%	29%	26%
Other	1%	7%	13%
Census Region of the U.S.			
Northeast	8%	5%	19%
Midwest	10%	11%	23%
South	34%	31%	35%
West	48%	53%	23%
Survey Year			
1996	13%	19%	23%
2001	25%	24%	25%
2004	27%	28%	26%
2008	34%	30%	26%
N$_{Unweighted}$	1,603	5,075	208,894
N$_{Weighted}$	5,658,730	17,074,707	666,942,085

Source: The SIPP, 1996-2008. *Note:* All summary statistics are weighted. For continuous variables, I report means along with standard deviations in parentheses unless noted otherwise.

a. I log these values in regressions. Therefore, I present medians and ranges rather than means and standard deviations.

b. This variable refers to respondents who either spoke English at home or at least somewhat well. It was not available in 1996.

c. These percentages omit the 2008 SIPP, for which respondents were asked their region of origin, not their country of origin.

d. I define full-time as spending 40 or more hours at one's business.

e. Surveyors only asked for partnership information when business owners ran unincorporated firms that earned greater than $2,500 per year. Very few firms were incorporated, and most businesses that earned less than $2,500 were likely sole proprietorships.

TABLE 3. REGRESSION ESTIMATES

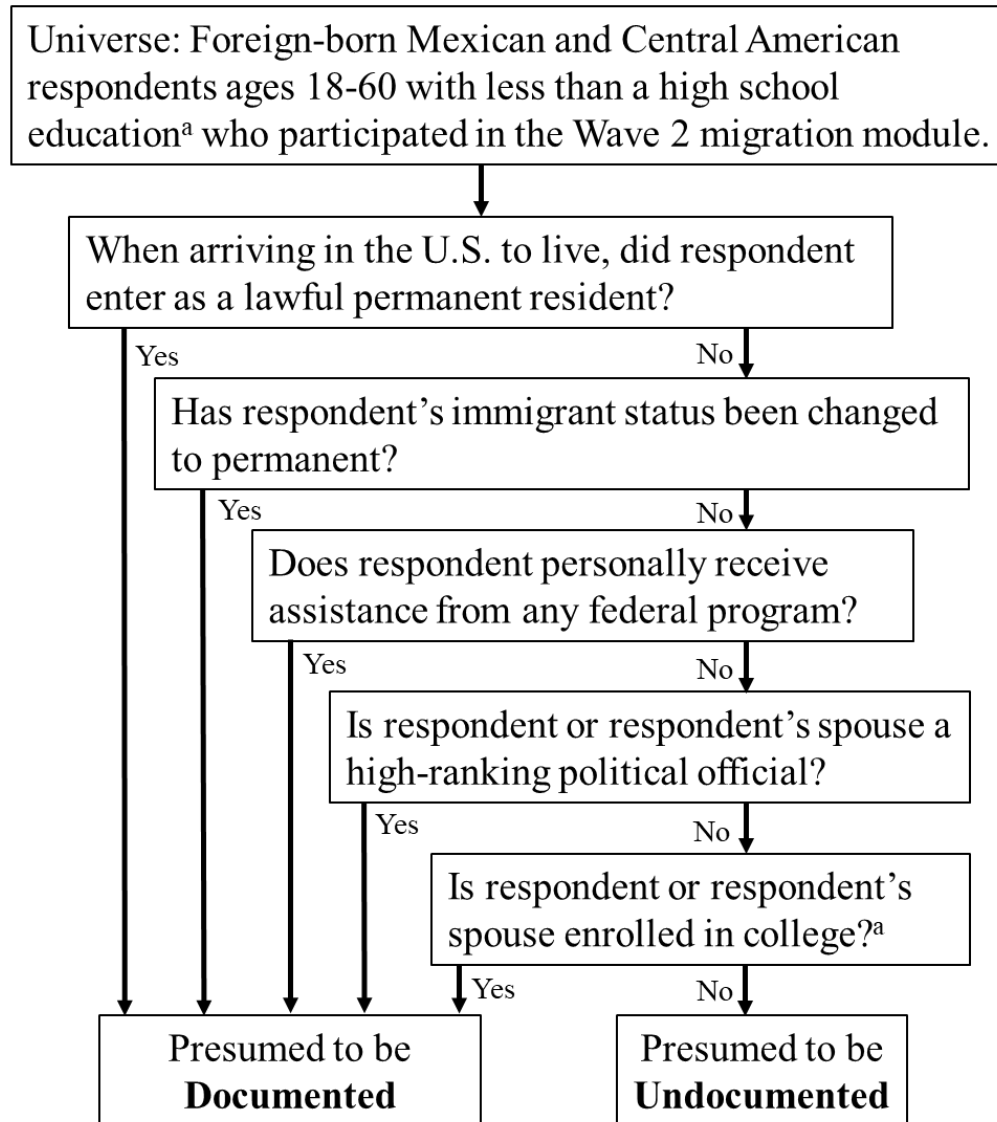|	Likelihood of Business Ownership			log(Overall Income)		log(Business Income)
	(1)	(2)	(3)	(4)	(5)	(6)
	Logistic	LPM	2SLS	OLS	2SLS	OLS
Undocumented	-0.10	-0.01	-0.19*	-0.11***	-0.72***	-0.04
	(0.12)	(0.01)	(0.04)	(0.03)	(0.14)	(0.53)
Business Owner				-0.17***	-0.13	
				(0.04)	(0.07)	
Undocumented X Business Owner				-0.07	0.07	
				(0.08)	(0.30)	
Work Experience	0.17***	0.01***	0.01***	0.07***	0.06***	0.13
	(0.03)	(0.00)	(0.00)	(0.01)	(0.01)	(0.12)
Work Experience, Squared	-0.01***	-0.00***	-0.00***	-0.01***	-0.01***	-0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age at Arrival	-0.01	0.00	0.00	-0.01***	-0.01	0.01
	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.03)
Female	-0.50***	-0.03***	-0.04***	-0.61***	-0.66***	-1.17*
	(0.11)	(0.01)	(0.01)	(0.03)	(0.03)	(0.49)
Married	-0.14	-0.01	-0.02*	0.11***	0.08**	-0.23
	(0.11)	(0.01)	(0.01)	(0.03)	(0.03)	(0.47)
# of Children	-0.06	-0.01*	-0.01**	-0.01	-0.02*	0.02
	(0.03)	(0.00)	(0.00)	(0.01)	(0.01)	(0.15)
log(Business Age)						0.34**
						(0.13)
Works Full-time at Business						1.22**
						(0.43)
Holds Another Job						-1.51**
						(0.52)
Fixed Effects						
Region	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	-6.07***	-0.09**	-0.03	8.26***	8.45***	6.25
	(0.59)	(0.03)	(0.04)	(0.11)	(0.13)	(2.59)
Likelihood Ratio χ²	403.41***					
R²		0.10		0.30		0.26
First-Stage F-Stat			50.12***		23.33***	
N	6,678	6,678	6,678	4,996	4,996	484

*p<0.05, **p<0.01, ***p<0.001 (two-tailed tests)

TABLE 4. REGRESSIONS INCLUDING HIGH SCHOOL AND COLLEGE

EDUCATED MEXICAN AND CENTRAL AMERICAN IMMIGRANTS

	Likelihood of Business Ownership			log(Overall Income)		log(Business Income)
	(1)	(2)	(3)	(4)	(5)	(6)
	Logistic	LPM	2SLS	OLS	2SLS	OLS
Undocumented	-0.14	-0.01	-0.15***	-0.23***	-1.66***	-0.14
	(0.09)	(0.01)	(0.03)	(0.02)	(0.11)	(0.41)
Business Owner				-0.24***	-0.26**	
				(0.03)	(0.08)	
Undocumented X Business Owner				-0.25***	0.04	
				(0.07)	(0.35)	
Work Experience	0.13***	0.01***	0.01***	0.06***	0.05***	-0.01
	(0.02)	(0.00)	(0.00)	(0.00)	(0.01)	(0.08)
Work Experience, Squared	-0.01***	-0.00***	-0.00***	-0.01***	-0.01***	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age at Arrival	0.00	0.00	0.00	-0.01***	0.01**	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Female	-0.61***	-0.04***	-0.05***	-0.52***	-0.61***	-0.80*
	(0.08)	(0.01)	(0.01)	(0.02)	(0.03)	(0.37)
Married	-0.02	-0.01	-0.01	0.17***	0.08**	0.19
	(0.08)	(0.01)	(0.01)	(0.02)	(0.03)	(0.36)
# of Children	-0.07**	-0.01*	-0.01**	-0.03***	-0.06***	0.10
	(0.03)	(0.00)	(0.00)	(0.01)	(0.01)	(0.12)
log(Business Age)						0.28**
						(0.10)
Works Full-time at Business						1.62***
						(0.33)
Holds Another Job						-1.90***
						(0.40)
Fixed Effects						
Region	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	-5.06	-0.12	-0.11	8.56***	8.45***	8.71
	(5.20)	(0.16)	(0.19)	(0.50)	(0.73)	(0.76)
Likelihood Ratio χ^2	596.50***					
R^2		0.08		0.19		0.26
First-Stage F-Stat			130.15***		66.19***	
N	11,444	11,444	11,444	8,876	8,876	877

*$p<0.05$, **$p<0.01$, ***$p<0.001$ (two-tailed tests)

FIGURE 1. IMPUTATION OF LEGAL STATUS FOR MEXICAN AND CENTRAL

AMERICAN IMMIGRANTS IN THE 1996 TO 2008 SIPP

Universe: Foreign-born Mexican and Central American respondents ages 18-60 with less than a high school education[a] who participated in the Wave 2 migration module.

↓

When arriving in the U.S. to live, did respondent enter as a lawful permanent resident?

Yes   No ↓

Has respondent's immigrant status been changed to permanent?

Yes   No ↓

Does respondent personally receive assistance from any federal program?

Yes   No ↓

Is respondent or respondent's spouse a high-ranking political official?

Yes   No ↓

Is respondent or respondent's spouse enrolled in college?[a]

Yes ↓   No ↓

Presumed to be **Documented**

Presumed to be **Undocumented**

Note: Adapted from Hall, Greenman, and Farkas (2010)

   a.   In robustness checks reported in Table 4, I allow for the possibility that undocumented immigrants were high school or college educated.

FIGURE 2. BUSINESS OWNERSHIP RATES OVER TIME, BY GROUP
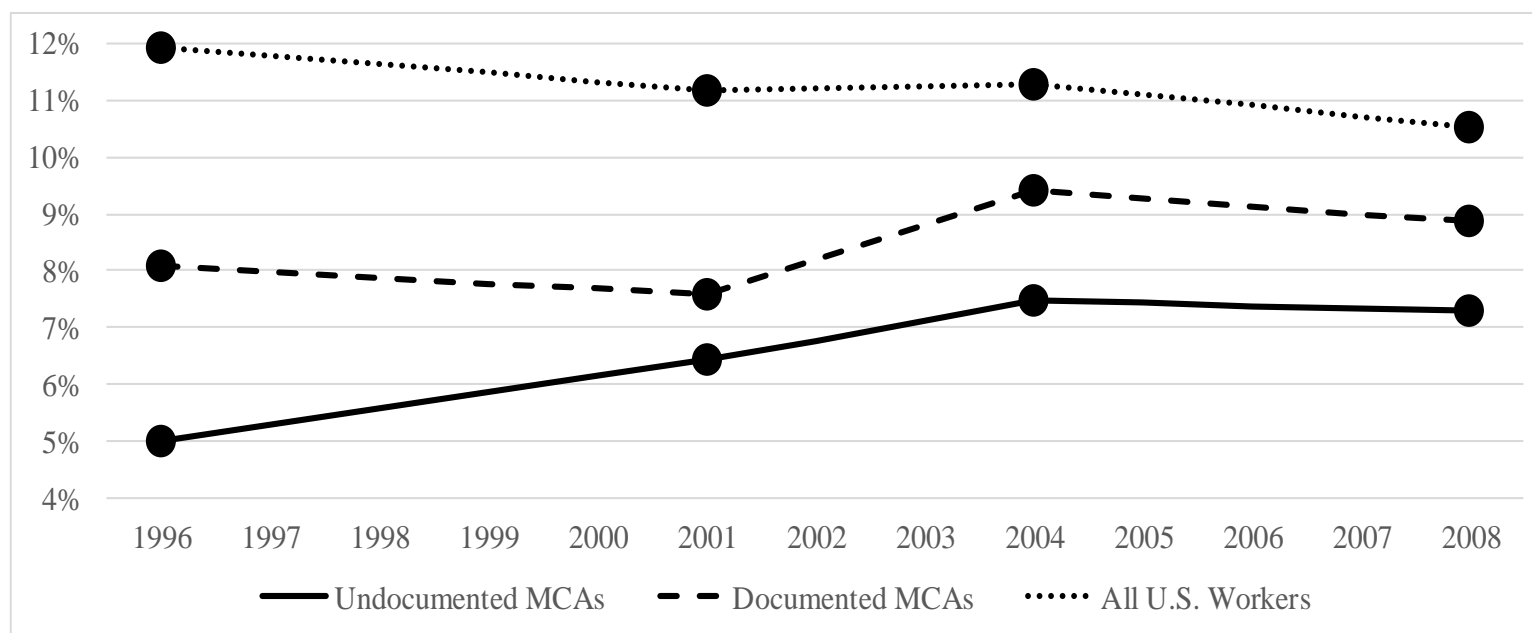
Source: The SIPP, 1996-2008. *Note:* Data are weighted using final person weights. Dots are survey years. Lines between survey years are linearly interpolated.

APPENDIX A. EXTENDING THE ANALYSIS USING THE 2018 SIPP

      The main analysis examines the SIPP from 1996 to 2008. Nevertheless, U.S. politics and economics has changed tremendously since 2008. This appendix extends the analysis to determine whether trends reported in the main analysis have persisted through 2018. There are several reasons to be cautious when analyzing undocumented MCA business owners using the 2018 SIPP. In SIPP panels administered between 1996 and 2008, one could identify foreign-born respondents who were Mexican or Central American. In the 2018 SIPP, however, one could only identify if someone was born in the "Americas and Caribbean." Furthermore, the 2018 SIPP no longer asked if a respondent adjusted to lawful permanent residency status after migrating to the United States as a non-LPR. Finally, the DACAmented status of respondents was not captured by the 2018 SIPP, which is problematic because DACA granted some undocumented immigrants protection from deportation and eligibility for a work permit in the United States.

      Little can be done to address the geographical imprecision of the 2018 SIPP, but one can loosely approximate the number of foreign-born respondents who adjusted to LPR status after arriving in the United States by gauging whether the respondent lived in a household that contained a U.S. citizen over the age of 18. By far, the most common pathway through which immigrants obtain LPR status is the sponsorship of an immediate relative who is a citizen (Department of Homeland Security 2018:3). While the immediate relatives of an applicant for LPR status need not live in the applicant's household, the SIPP offers information on the citizenship status of other inhabitants in a

respondent's home. It is problematic to proxy a non-LPR's adjustment to LPR status by noting whether they lived with a U.S. citizen, but the bias this adds to the data set is better than what the bias would have been had I ignored this limitation of the 2018 SIPP. Finally, it is impossible to identify DACA recipients in SIPP data, but DACAmented business owners are unlikely to dramatically bias the results. According to one study, the business ownership rate of DACA holders is six percent (Wong et al. 2019), which is in line with the undocumented MCA business ownership rate I found between 1996 and 2008.

Despite problems with the 2018 SIPP, when these data are added to the main data set, regression results change little. Appendix Table A.1 shows the updated regressions. Undocumented immigrants continue to be negatively associated with the likelihood of business ownership, and business owners continue to derive similar incomes from their enterprises regardless of legal status. These findings are consistent even though the 2SLS models now fail tests of overidentifying restrictions. In other words, I cannot reject the possibility that the instruments are correlated with the error term, and unobserved variables are driving the 2SLS regression results. It makes sense that the model suffers from endogeneity when I add data from 2018. As mentioned earlier, undocumented immigrants in the U.S. experienced a vastly different political and economic climate in the 2010s than they did in the 1990s and 2000s. Although results that include 2018 SIPP data should be interpreted with extreme caution, they uphold findings restricted to the 1996 to 2008 SIPP.

APPENDIX TABLE A.1. REGRESSIONS INCLUDING 2018 SIPP DATA

| | Likelihood of Business Ownership | | | log(Overall Income) | | log(Business Income) |
| | (1) | (2) | (3) | (4) | (5) | (6) |
	Logistic	LPM	2SLS	OLS	2SLS	OLS
Undocumented	-0.01	-0.01	-0.10*	-0.08**	-0.68***	0.18
	(0.11)	(0.01)	(0.04)	(0.02)	(0.14)	(0.49)
Business Owner				-0.15***	-0.15*	
				(0.04)	(0.07)	
Undocumented X Business Owner				-0.11	0.14	
				(0.07)	(0.28)	
Work Experience	0.18***	0.01***	0.01***	0.07***	0.06***	0.18
	(0.03)	(0.00)	(0.00)	(0.01)	(0.01)	(0.12)
Work Experience, Squared	-0.01***	-0.00***	-0.00***	-0.01***	-0.01***	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age at Arrival	-0.01*	-0.01*	0.01	-0.01***	0.00	0.02
	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.03)
Female	-0.47***	-0.03***	-0.03***	-0.59***	-0.64***	-0.62
	(0.10)	(0.00)	(0.01)	(0.02)	(0.03)	(0.46)
Married	-0.08	-0.01	-0.01	0.10***	0.07*	-0.24
	(0.10)	(0.01)	(0.01)	(0.02)	(0.03)	(0.46)
# of Children	-0.05	-0.00	-0.01*	0.00	-0.01	0.08
	(0.03)	(0.00)	(0.00)	(0.01)	(0.01)	(0.15)
log(Business Age)						0.32*
						(0.13)
Works Full-time at Business						1.21**
						(0.42)
Holds Another Job						-1.51**
						(0.53)
Fixed Effects						
Region	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	-6.32***	-0.10**	-0.07*	8.31***	8.48***	5.01**
	(0.56)	(0.03)	(0.03)	(0.10)	(0.12)	(2.58)
Likelihood Ratio χ^2	570.69***					
R^2		0.09		0.30		0.30
First-Stage F-Stat			41.47***		21.44***	
N	7,898	7,898	7,898	5,975	5,963	570

*$p<0.05$, **$p<0.01$, ***$p<0.001$ (two-tailed tests)