Federal Reserve Bank of Chicago

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Abstract

This paper uses 2000 U.S. Census data to study the determinants of self-employment decisions among immigrants. It outlines a theoretical framework for analyzing the role of ethnic enclaves in the self-employment decision of immigrants that captures nuances involved in the interaction between ethnic enclaves and different ethnic groups. It assesses the effect of ethnic enclaves for different groups and explores explanations for differences. The results show that higher ethnic concentration in metropolitan areas is positively related to the probability of self-employment of immigrants. However, the significance of ethnic concentration for self-employment differs by the country or region of origin of immigrants. The relationship between location and self-employment probability of immigrants is reinforced by other metropolitan area-specific characteristics that include labor market factors, such as the unemployment rate, the self-employment rate, the monetary returns to self-employment relative to wage employment, and the success of self-employed co-ethnic members.

I. Introduction and Overview

An emerging issue in community economic development is the need to integrate and coordinate responses that are appropriate and sensitive to the needs of our increasingly heterogeneous communities due to immigration. Many city neighborhoods are enlivened with the presence of a growing ethnic business sector. A vibrant immigrant business neighborhood has the potential to impact the local economy and can be an important source of community economic development and a route for economic success for an immigrant group.

This paper focuses on the interaction between ethnic enclaves and the self-employment propensity of different ethnic groups in the United States. A notable feature of migration is the high level of geographic concentration of immigrants in distinct locations in the United States (Bartel, 1989). Referred to as ethnic enclaves, these concentrations of immigrants have occupied the interest of scholars from different fields, who have questioned their role in the integration and assimilation of immigrants in the host country. Of particular interest is the role of ethnic enclaves in promoting self-employment among immigrants, a state which stands to enhance their socioeconomic mobility. On the one hand, geographic concentration of a group provides a natural setting for entrepreneurs to capture the market for "ethnic goods" in which they may have a comparative advantage in producing, having greater information on the taste and preferences of their co-ethnic members. Yet, such enclosed environments may be subject to the restraints of competition, which curb entries by potential entrepreneurs. Some ethnic enclaves may be poor areas were residents may have lower purchasing power, which restrains the potential for business growth.

The purpose of this paper is to outline a theoretical framework for analyzing the role of ethnic enclaves in the self-employment decision of immigrants that captures nuances involved in the interaction between ethnic enclaves and different ethnic groups. It assesses the effect of ethnic enclaves for different groups. It also explores explanations for differences.

The results show that higher ethnic concentration in metropolitan areas is positively related to the probability of self-employment of immigrants. However, the significance of ethnic concentration for self-employment differs by the country or region of origin of immigrants. The relationship between location and self-employment probability of immigrants is reinforced by other metropolitan area-specific characteristics that include labor market factors, such as the unemployment rate, the self-employment rate, the monetary returns to self-employment relative to wage employment, and the success of self-employed co-ethnic members.

The next section reviews the previous literature, which describes the role of ethnic enclaves, how they are formed and what their implications are. Section III proposes a theoretical framework for analyzing underlying differences in immigrant self-employment and the relationship between geographic concentration, immigrants' characteristics and self-employment propensity. Section IV describes the data, presents the estimation procedure and reports the empirical results. The paper concludes with a summary of findings and a note of caution on the limits imposed by the difficulty of developing a measure of a notion as complex as ethnic enclaves, with the existing data.

II. Previous Literature: *The Role of Ethnic Enclaves*

The role of ethnic enclaves has been explored extensively in the sociology and anthropology literature, which focus on the interaction of immigrants in ethnic enclaves. These literatures propose that ethnic enclaves promote social networks, including personal contacts, and informal arrangements to build financial resources. Bonacish and Model (1980) and Light (1972) maintain that some immigrants are "pushed" into self-employment in response to disadvantages faced in the labor market (i.e., lack of English language proficiency and discrimination or *blocked mobility*) and, as such, they rely more heavily on ethnic networks, which are formed in ethnic enclaves. According to Alrich and Waldinger (1990), ethnic social structures consist of the networks of kinship and friendship around which ethnic communities are arranged and the interlacing of these networks with positions in the economy (jobs), in space (housing), and in society (institutions). *Ethnic economies* and/or *ethnic enclaves* potentially can provide an opportunity structure for greater business networks, offer a *protected market* for ethnic goods production, and provide experience and apprenticeship from a co-ethnic employer. Within these economies, ethnic institutions play a role in mobilizing monetary and information resources for ethnic small businesses. For example, they promote informal business arrangement at relatively low search costs and information costs, and more effective monitoring and enforcement mechanisms (Bond and Townsend, 1996).

The economic literature has also proposed theories as to why ethnic enclaves emerge and their role in the assimilation of immigrants. Chiswick and Miller (2002) review a number of arguments related to the enclave formation process. They outline three main reasons for immigrants to locate in a particular area. First, the area may be a port of entry which historically has attracted a cluster of immigrants from the same country of origin and the immigrants remain

there since mobility is costly. Second, due to family reunification motive of immigration in the United States, immigrants end up settling where family, friends or co-ethnic members have settled. Third, immigrants move where economic opportunities are greatest. An ethnic enclave is distinguished by the fact that it encompasses an environment where "the consumption characteristics of an immigrant/ethnic group (is) not shared with the host population, broadly defined to include market and non-market goods and services, including social interactions for themselves and their children with people of the same origin." Economies of scale in the production of these goods lead to concentrations of co-ethnics.

Another prevalent argument is that ethnic enclaves allowed for an environment of shared language. Lazear (1999) proposes a model whereby individuals are randomly matched and find it easier to trade with trading partners who share the same language and culture. They are costs associated with acquiring the culture of the majority of the host country. At equilibrium, there occur linguistic concentrations of individuals. Enclaves offer an alternative means of cushioning the relatively higher cost of integration and of acquiring a new language that some immigrants may face (Chiswick and Miller, 2002). Immigrants with less human capital may be less efficient at acquiring a new language and therefore have a greater reliance on living in an ethnic enclave. In support to this argument, Carliner (1995) shows that immigrants who do not speak English have more difficulty finding jobs outside the ethnic enclaves. Likewise, McNanus (1990) also shows that Hispanic men have lower wage penalty associated with not speaking English in areas of Hispanic concentration.

Empirical studies in the economic literature on the effect of ethnic enclaves have yielded mixed results. Borjas (1986) calculates the "enclave effect", defined as the proportion of co-ethnic immigrants in a given metropolitan area, on the self-employment of 6 groups: Whites, Blacks, Asians, Mexicans, Cubans, and 'Other' Hispanics. Based on 1970 and 1980 Micro Census data, he finds that Hispanics are more likely to be self-employed in areas which have larger Hispanic populations. He finds no enclave effect for Asians (the percent of Asians in the SMSA). Defining further ethnic enclaves in terms of linguistic concentration, he finds no effect for immigrants from English-speaking countries. In part, this result was driven by the heterogeneous language and culture of immigrants from English-speaking countries that span from countries as different as England and Jamaica, to the Philippines.

Yuengert (1995) finds no evidence that self-employment rates are higher in cities with higher concentrations of immigrants. He argues that it is rather the self-employment rate of the country of origin of the immigrant group that influences the self-employment choice of the group in the United States. However, Fairlie and Meyer (1996) find that this effect is not statistically significant.

Lofstrom (2002), in a study of the (earnings) assimilation of self-employed immigrants in the United States, used a model of self-employment decision as an instrument to the earnings model. He controls for the effect of ethnic enclaves and other characteristics of location. He finds that ethnic enclave is positive and highly significant for the probability of self-employment of immigrants, even after controlling for other location characteristics. He argues that the importance of ethnic enclave however differs by immigrant group. For example, compared to Africans, the enclave effect is important for Mexicans and for Cubans. He finds that the difference in the self-employment rate of Cuban and African immigrants possessing similar individual characteristics is in fact entirely due to the fact that Cubans tend to be in enclaves. He

also finds that the entrepreneurial success of immigrant co-nationals in the area (as measured by the proportion of immigrants who are self-employed in an area) is quite important in the self-employment decision process for immigrants.

Razin (1990) compares the influence of location on the propensity of recent immigrants from various origins to become self-employed in California, Canada, and in Israel. He finds that differences in the "local opportunity structure" (the industrial composition of the local economy) influences the probability of immigrants to become self-employed. For example, Latin American immigrants resided in California had a high rate of self-employment despite the existence of a large non-entrepreneurial Latin American group in that metropolitan area. In this instance, according to Razin (1990), the local economic conditions encouraged involvement in specific types of businesses among them. They tended to be in construction, food services, wholesale trade, and business services.

Flota and Mora (2001) explore the enclave effects for Mexicans and find that self-employment rates in U.S./Mexico border cities are higher than in other cities for Mexican men and similar for women in border cities than in non-border cities. Fairlie and Woodruff (2005) also focus on self-employment of Mexicans. They find that language is a key factor behind the relationship between enclaves and self employment rates of Mexican immigrants in the sense that the association between enclaves and self-employment is stronger among those who speak English poorly.

This paper contributes to this literature in some important ways. It uses 2000 Census data and since previous studies have used earlier Censuses, the paper is therefore able to test or confirm previous results. Moreover, the paper expands understanding of the self-employment decision of more ethnic groups than have been considered in previous studies. The paper comes closest to the study of Lofstrom (2002) in terms of the variety of immigrant groups taken into account and compared. However, whereas Loftstrom's focus was on the wage assimilation of immigrants, this paper is able to investigate further the sources of differences in the impact of ethnic enclaves for different groups.

III. Theoretical Framework

This section outlines a theoretical framework for analyzing the self-employment decision of immigrants and the influence of ethnic enclaves. The model outlined builds from the traditional two-sector model by de Wit (1993), which was later extended by Clark and Drinkwater (2000). Whereas their model concludes with the prediction that ethnic enclave, "a pulled factor," would lead to increasing self-employment among immigrants, this paper proposes some additional considerations to capture the many nuances involved in the interaction between ethnic enclaves and different immigrant groups. It develops further arguments, based on Borjas (1998) theory of how individuals from different immigrant groups are sorted into neighborhoods, which show how the ethnic enclave effect would vary based on the characteristics of individuals and the ethnic enclave contexts where they operate.

The standard model:

The standard economic model of sectoral choice assumes that the decision to be either self–employed or wage-employed is based on the comparison of earnings in each of the sectors. Individuals choose the employment status that offers the highest expected utility. The choice depends on the difference between the logarithms of the potential income in the two alternatives, a vector of observable characteristics of the individuals, and a disturbance term that captures unobservable characteristics, such as ability or motivation.

In the de Wit (1993) model of self-employment it is assumed that there is a competitive goods economy where the self-employed sell their output, x at a price, p. The self-employed also have "entrepreneurial ability" given as follows:

$\Phi \in [\Phi, \Phi]$, and distributed among individuals with a distribution function $F(\Phi)$.

The firm owner faces cost, $c(x, \Phi)$, with partial derivatives, $c_x > 0$, $c_\Phi > 0$, $c_{xx} > 0$, $c_{x\Phi} < 0$.

That is, the higher he produces x the more cost he faces; the more he expands his entrepreneurial ability or efforts, the higher the cost.

The maximizing profit function is given as follows:

$$\pi(px - c(x, \Phi)) \qquad (1)$$

where, $x = x(p, \Phi)$ and $\pi = \pi(p, \Phi)$,

that is, both output and profit are increasing in both price and entrepreneurial ability.

Assuming that income from the wage sector is given by *i*, then individuals would choose self-employment if the profit from self-employment is greater than the income from the wage sector. A situation which would yield the following condition:

$$\pi(p, \Phi) > i$$

Following this condition, the marginal value of the wage employment sector can be defined as Φ^*, such as,

$$i = \pi(p, \Phi^*) \qquad (2)$$

Individuals with marginal value of self-employment higher than marginal value of wage employment, $\Phi > \Phi^*$, will choose self-employment.

Likewise, individuals with marginal value of wage employment higher than marginal value of self-employment, $\Phi^* > \Phi$, will choose wage employment.

The proportion of individuals entering self-employment is $1-F(\Phi^*)$.

Augmenting the model:

Clark and Drinkwater (2000) extend the de Wit model by introducing two ethnic groups. The key assumption of their model is wage differentiation between the two groups— the non-white group has lower earnings in the wage sector, than the white group. (In this paper, since the interest is on immigrant ethnic groups as opposed to race, the disadvantaged group will be referred to as immigrant and the advantage group as native). The earnings differential in the wage sector between the two groups is represented by the following:

$$i_{\text{immigrant}} < i_{\text{native}}$$

Following equation (2) and assuming similarity in the distribution of entrepreneurial ability, the marginal value of wage employment for the immigrant group will be less than the marginal value of wage employment for the native group.

$$\Phi_{\text{immigrant}}^* < \Phi_{\text{native}}^* \qquad (3)$$

As a result, a higher proportion of immigrants will enter self-employment compared to natives. Another way the proportion of self-employed immigrants would increase relative to natives is in the case where immigrants have greater entrepreneurial ability. In the Clark and Drinkwater framework, the proportion of natives have a distribution of entrepreneurial ability, Φ, given by $G(\Phi)$ where $G(\Phi) <= F(\Phi)$ for all Φ. (Recall $F((\Phi)$ is the distribution function of individual with entrepreneurial ability.) As such, for any level of marginal value of wage employment, Φ^*, the proportion of immigrants entering self-employment in the ethnic enclave will be at least as high as that of natives.

Ethnic enclaves would contribute to making equation (3) true if they give an immigrant group a comparative advantage in the production of ethnic goods compared to the natives. According to Clark and Drinkwater (2000) framework, this would mean that being in an ethnic enclave would lower the costs of producing x for a given level of entrepreneurial ability, thus giving a higher profit for immigrant businesses in enclaves compared to natives. Then, through equation (2) this reduces $\Phi_{\text{immigrant}}^*$, the marginal value of wage employment for immigrants, relative to natives, Φ_{native}^*. As a result, the proportion of self-employed immigrants would increase relative to natives in areas with a large portion of co-ethnic members.

While this result is fairly intuitive, it remains a challenge to reconcile it with the many variations in self-employment across ethnic groups and the differences that exist in the impact of ethnic enclaves on the self-employment decision. The literature of location choice, which provides some explanations as to how immigrants choose different locations, sheds some light as to how the impact of ethnic enclaves on self-employment might differ by groups. In particular, Borjas (1998) proposes a theory of how individuals from different ethnic groups are sorted in neighborhoods. The theory is based on the assumption of externality, which he refers to as "effective ethnic capital", defined as a weighted average of the ethnic capital of different groups. The assumption is that human capital production is affected by the average level of human capital in the neighborhood around the individual. In areas with more human capital, on average

human capital production is more efficient. Other things being equal, at equilibrium, the more skilled individuals who belong to an advantaged ethnic group will tend to segregate themselves. The most skilled persons who belong to disadvantaged ethnic groups will tend to move out their ethnic enclaves. The least skilled person belonging to disadvantaged groups will wish to move into areas with more skilled groups, however, their resources may not allow them to.

One can extend Borjas's notion of "effective ethnic capital" to incorporate an ethnic environment propitious to self-employment. For example, this is possible if one conceives that more economic and human resources would allow for more effective network and "ethnic economies" and greater opportunity for expression of "entrepreneurial ability". In the spirit of the Clark and Drinkwater (2000) extension model, "effective ethnic capital" would give a comparative advantage in the production of x and lower the cost of production. Whereas, one with less "effective ethnic capital" would provide no relative cost advantage in the production of ethnic goods. These additional considerations lead to a number of possibilities:

Suppose that skilled immigrants from an advantaged group, one with "effective ethnic capital", with comparative advantage in production, have greater entrepreneurial ability, because of self-selection or any other reasons. In the Clark and Drinkwater framework, suppose that the proportion of native have a distribution of entrepreneurial ability, Φ, given by $G(\Phi)$ where $G(\Phi) <= F(\Phi)$ for all Φ. And further, if the marginal value of wage employment for the immigrant group is less than the marginal value of wage employment for natives, $\Phi_{immigrant}^* < \Phi_{native}^*$, then for any level of marginal value of wage employment, Φ^*, the proportion of immigrants entering self-employment in the ethnic enclave will increase relative to natives.

Suppose that skilled immigrants from a disadvantaged group, one with relatively lower "effective ethnic capital," with no comparative advantage in production, have greater "entrepreneurial ability". According to Borjas, they choose to be outside their ethnic enclaves. Suppose the proportion of natives have a distribution of entrepreneurial ability, Φ, given by $G(\Phi)$ where $G(\Phi) <= F(\Phi)$ for all Φ. And further, suppose the marginal value of wage employment for the group is less than the marginal value of wage employment for natives, $\Phi_{immigrant}^* < \Phi_{native}^*$. Then, for any level of marginal value of wage employment, Φ^*, the proportion of immigrants in the group entering self-employment outside of the ethnic enclave will increase relative to natives.

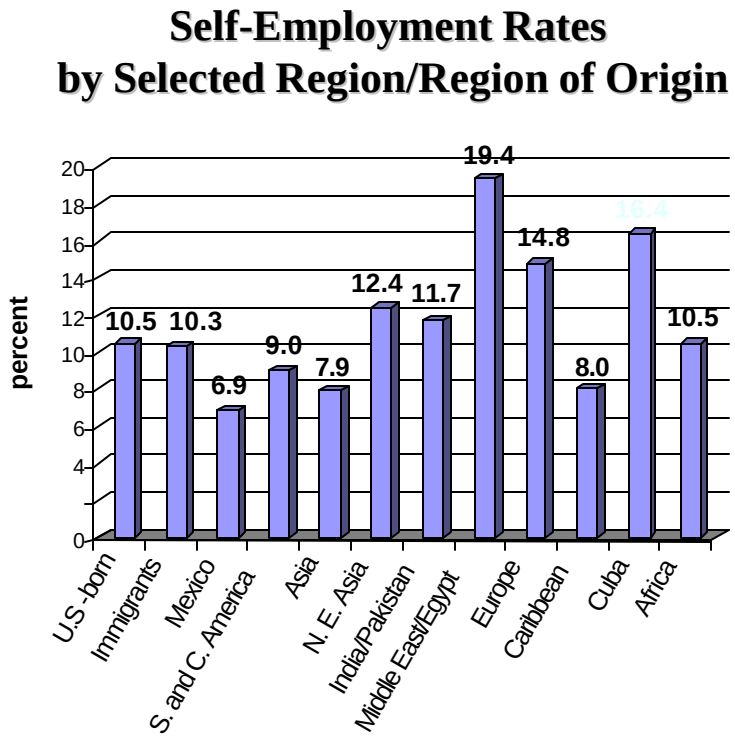
Suppose less skilled immigrants from a disadvantaged group, one with relatively lower "effective ethnic capital," with no comparative advantage in production, have lower "distribution of entrepreneurial ability" (e.g., in the sense that lack of human capital and language knowledge may hamper their ability to go into business for themselves). Then, the proportion of immigrants from this group entering self-employment in the ethnic enclave will be less than natives.

IV. Data and Descriptive Statistics

The data source is the 2000 Public Use Micro Statistic from the Census. The population is restricted to males, 18 to 64 years old, living in metropolitan area, in the labor force, not in the military, and with positive earnings. Figure 1 shows the self-employment rates by country or

region of origin. The selection of country of origin groups follows Lofstrom (2002) who classified immigrant groups based on country of origin that are relatively homogenous in geographic location, cultural and economic conditions, and maintaining a large enough sample size for each group. The self-employment rate of immigrants is quite similar with that of the natives. However, there exist substantial variations in the self-employment rates between the ethnic groups. This justifies treating the groups separately, rather than collectively.

Figure 1



Source: 2000 PUMS. Results are weighed. The population here is defined as males, 18 to 64, with positive earnings, in labor force, and who reside in metropolitan areas.

The next set of figures shows selected socioeconomic characteristics by self-employment status. Figure 2 shows the level of educational attainment by group. On average, immigrants who are self-employed have completed more schooling, compared to those who are waged-employed. Some differences exist in the average number of years of schooling by country/region of origin. Namely, Mexicans and other Latin Americans and Caribbean immigrants have relatively lower educational attainment level. Other immigrant groups such as N. E. Asian, Indian/Pakistanis, Middle East immigrants and Europeans have relatively higher average number of years of schooling completed.

Figure 2

Average Years of Schooling
by Self-Employment Status and Region/Country of Origin

Source: 2000 PUMS. Results are weighed. The population here is defined as 18 to 64 males, with positive earnings, in labor force, and who reside in metropolitan areas.

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Figure 3 shows the proportion of individuals with limited English language proficiency by self-employment status. A higher proportion of wage-employed Mexican and other Latin American immigrants have limited English proficiency, compared to those who are self-employed. The reverse is true for S. E and N. E Asians, as well as Caribbean immigrants. More of their self-employed have limited English proficiency.

Figure 3

Proportion of Immigrants with Limited English Proficiency
by Self-Employment Status and Region/Country of Origin

Source: 2000 PUMS. Results are weighed. The population here is defined as 18 to 64 males, with positive earnings, in labor force, and who reside in metropolitan areas.

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Figure 4 reports the average number of years since migration by self-employment status. Consistent across all groups, those who are self-employed have resided for a longer period of time in the U.S.

Figure 4

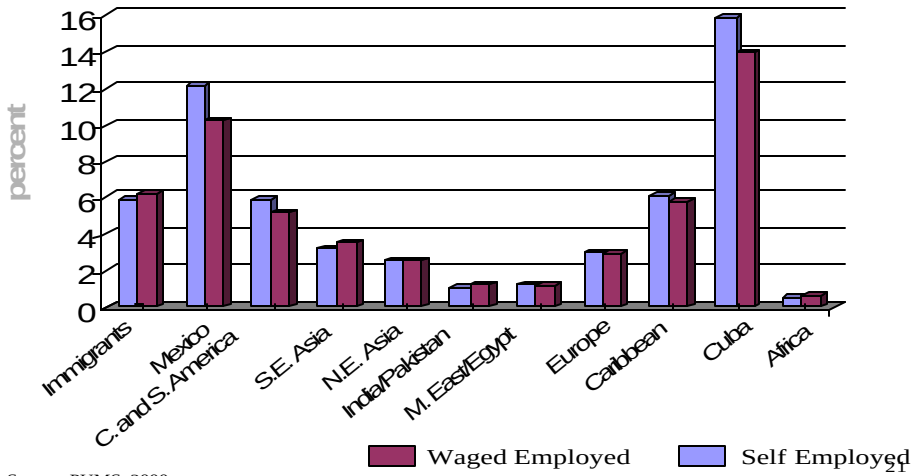
Average Years Since Migration
by Self-Employment Status and Region/Country of Origin

Source: PUMS, 2000. The population is defined as males 18 to 64, with positive earnings, in labor force, and who reside in metropolitan areas.

Figure 5 shows the average percent of the number of co-ethnic members of each group in metropolitan areas. The result suggests that Cubans and Mexicans have the highest average concentration in metropolitan areas. Appendix A lists the main metropolitan area where the immigrant groups live.

Figure 5

Average Percent of Co-Ethnic in Metropolitan Areas
by Self-Employment Status and Region/Country of Origin



Source: PUMS, 2000

IV. Estimation and Empirical Results

To determine the independent effect of various characteristics on the decision to be self-employed as opposed to being wage employed, a logistic estimation procedure is used. For ease of interpretation, Table 1 presents odds ratios rather than coefficients of the logistic estimates. The odds ratios indicate how being in the underlying group contributes to the probability of responding more positively to the question of being self-employed. A coefficient less than one indicates that belonging to the group leads to a more negative response relative to being in the omitted category. For the continuous variables, an odds ratio of more than 1 indicates how an infinitesimal increase in the underlying distribution of the variable leads to a more positive response to the question of self-employment. The asterisks indicate whether the odds ratio is significantly different from one, which is equivalent to asking whether the corresponding estimated coefficient is different from zero.

The first Column controls for basic demographic characteristics, Age, Education, and Immigrant Status. Consistent with previous studies, being an immigrant corresponds to a higher likelihood of being self-employed compared to being a native. The second Column controls for country of origin. The descriptive statistics showed considerable differences in the rates of self-employment of immigrants. Researchers have argued that among other factors, differences in traditions of commerce among immigrants from different countries may be a reason why immigrants have different self-employment rates (e.g., Light 1979). Control is thus made for country-specific unobservables, with the addition of dummy variables for the country/region of origin. Using European immigrants as reference group, the results show that there are statistically significant differences in the probability of different groups to become self-employed, relative to European immigrants. Note that the odds of being self-employed if an immigrant relative to being a native increase when the country of origin is accounted for. This suggests that not accounting for country of origin underestimates the effect of immigrant status on self-employment.

The third Column controls for immigrant-related characteristics, including language fluency, the number of years since migration, and the period of migration. The results show that individuals who do not speak English well are less likely to be self-employed. The longer an immigrant resides in the U.S., the higher the likelihood of being self-employed. While education in general increases the odds of being self-employed, the result for education interacted with immigrants suggests that education of immigrants play a more limited role in the choice of self-employment versus wage employment. Adding the immigrant-related control variables causes a substantial change in the independent impact of immigrant status.

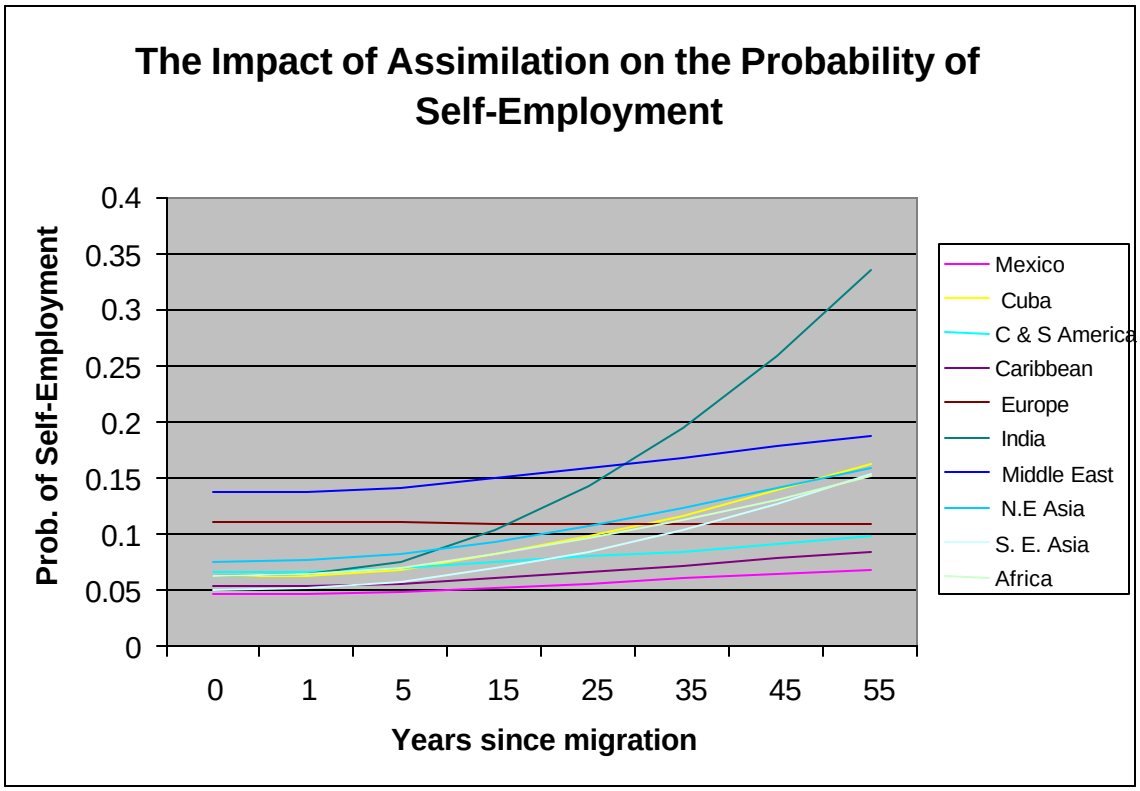
Table 1:
Determinants of Self-Employment Decision
(Odds Ratio)

	Demog. and human capital	Add country of origin	Add immigrant-related variables	Add ethnic concentration and location characteristics
	(1)	(2)	(3)	(4)
Immigrant	1.068***	1.477***	30.698***	48.444***
Age	1.558***	1.556***	1.606***	1.618 ***
Age square	0.992***	0.992***	0.991***	0.991***
Age cube/1000	1.058***	1.057***	1.064***	1.065***
Education	1.037***	1.030***	1.046***	1.052***
Mexico		0.606***	0.488***	0.371***
Caribbean		0.491***	0.434***	0.395***
C&S America		0.665***	0.593***	0.521***
N.E. Asia		0.728***	0.729***	0.682***
S.E. Asia		0.477***	0.431***	0.389***
Cuba		0.950**	0.925***	0.632***
Middle-East		1.129***	1.122***	1.095***
India/Pakistan		0.745***	0.774***	0.754***
Puerto-Rico		0.329***	0.303***	0.289***
Africa		0.657***	0.663***	0.677***
Education*immigrant			0.958***	0.952***
Age*immigrant			0.788***	0.778***
Age2*immigrant			1.006***	1.006***
Age3*immigrant			0.958***	0.958***
Do not speak Eng.			0.959***	0.913***
Years since mig.			1.117***	1.090***
YSM square			0.996***	0.997***
YSM cube/1000			1.038***	1.025***
Ethnic concentration in metro				1.017***
Unemployment rate in metro				1.013***
Size of metro				1.000***
Self-employment rate in metro				1.108***
Earnings to self-empl. ratio in metro				1.223***
Ethnic earnings to self-empl. ratio in metro				1.106***

Notes: Data Source: 2000 Public Use Micro Statistics.
*Significant at 10%; ** significant at 5%; *** significant at 1%.
Number of observations is 2,914,489.
Periods of migration are controlled for in the 3rd and 4th column. They are not reported.

Indeed, one might ask how quickly immigrants assimilate into self-employment as they live longer in the United States. To address this question, I computed predicted probabilities of self-employment for the different groups at different number of years since migration. Figure 5 indicates that the probability of self-employment increases for all groups, the longer they live in the U.S., supporting the proposition that assimilation (as proxied by years since migration) contributes to increasing the likelihood of self-employment. There are however substantial differences in the probability of self-employment by group for any given time after they migrate in the U.S. For example, the probability of self-employment of Mexicans is lower than the other groups. Middle-East immigrants have a higher probability of self-employment. The probability of self-employment due to assimilation increases rapidly for Indian immigrants after they have been in the U.S. for 15 years.

Figure 5



Turning back to Table 1, the fourth Column adds the ethnic concentration variable, the proxy for ethnic enclaves. This variable is defined as the proportion of an immigrant group (as defined) who live in the same metropolitan area relative to the total population in the area. The literature speaks of ethnic enclaves as a factor that can affect immigrants' choice to be self-employed as they provide a protected market and networks that may facilitate access to information and necessary financing for business startups. Consistent with the enclave hypothesis, the results show that an increase in the percent of co-ethnic immigrants in a

metropolitan area increases the odds of immigrants' responding positively to the question of self-employment.

In addition, five other location characteristics are included in Column 4, as in Lofstrom (2000) study: The unemployment rate in the metropolitan area, the size of the total population in the metropolitan area, the self-employment rate of native-born individuals in the metropolitan area, the ratio of self-employment earnings to wage earnings, and the ratio of ethnic self-employment rates to wage earnings. The unemployment rate is included to capture the opportunity costs of having one's own business, as opposed to being a wage earner. In metropolitan areas where unemployment is high, the prospect of wage employment may be less for immigrants, hence making self-employment a better alternative. The results, according to this proposition, is higher self-employment among immigrants living in metropolitan areas with high unemployment rate. The result indicates that an increase in the unemployment rate in a metropolitan areas make individuals more likely to respond positively to the question of being self-employed.

The self-employment rate in the metropolitan area is expected to capture the business opportunity structure that might exist within a metropolitan area. The greater the self-employment rate in the metropolitan area, the more likely that a structure (e.g., economic, legal, or political) is in place, propitious to business formation, which might also encourage the decision to become self-employed. The results confirm this proposition: The higher the rate of self-employment of native-born in a metropolitan area the higher the probability of self-employment of immigrants. The odds of being self-employed increase by more than 1 with an increase in the self-employment rate in the metropolitan area.

The ratio of self-employment earnings to wage earnings and the ratio of ethnic self-employment rate to wage earnings are added to measure the relative success of the self-employed in the metropolitan area, and the relative success of the ethnic group, respectively. The result indicates that an increase in the relative returns to self-employment in a metropolitan areas increase the odds that individuals will choose self-employment. The results also indicate that the relative success of an immigrant's co-national in the metropolitan area influences positively the self-employment decision process for immigrants.

Similar regression analyses are performed for each group to gauge the independent effect of ethnic enclave on their self-employment decision, respectively. Table 2 summarizes the results of the ethnic enclave effects and other location control variables on the odds of being self-employed for each immigrant group. The results show that an increase in the proportion of Mexicans increases the odds that Mexicans will be self-employed. The same holds true for Cubans and Central and South American immigrants. Therefore, consistent with Borjas (1986) results, Hispanic ethnic concentration increases the odds that individuals of Hispanic ethnicity will be self-employed. This study finds that, in addition, ethnic enclave increases the odds of Middle-East immigrants' choosing self-employment. By contrast, ethnic enclaves do not affect Caribbean, Asian, or Indian/Pakistani immigrants in their decision to be self-employed as opposed to choosing wage employment.

Table 2:
Contribution of ethnic concentration and other location characteristics to the odds of choosing Self-employment relative to wage employment
(Odds Ratio)

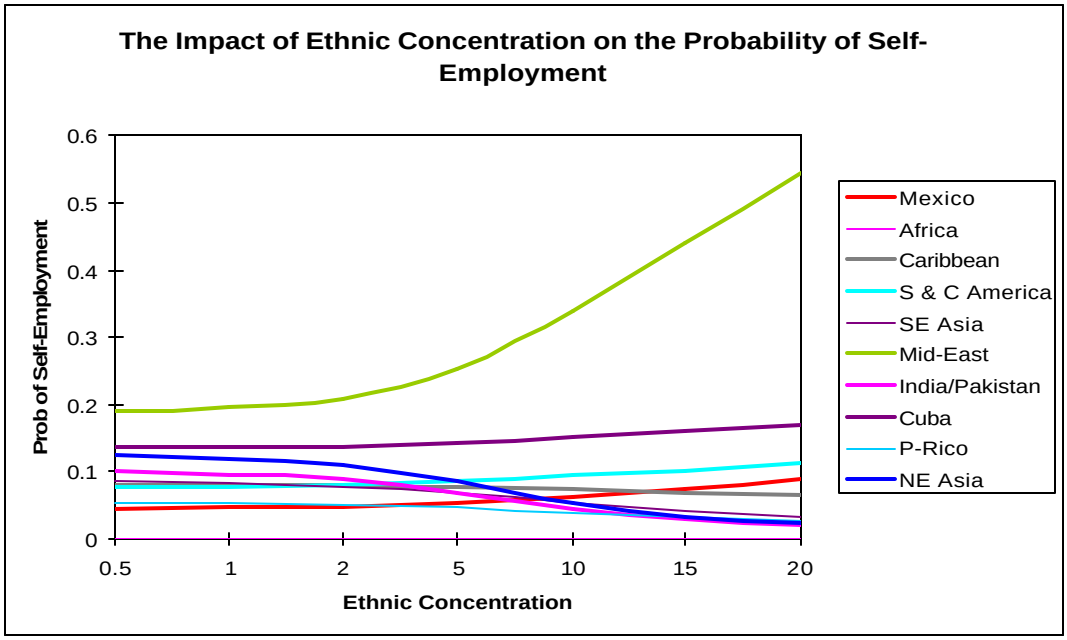
Country/ Region of Origin (number of observations)	Ethnic Concentration in Metro	Unemployment Rate in Metro	Size of Metro	Self-Employment Rate in Metro	Self-Employment to Earnings Ratio in Metro	Ethnic Self-Employment to Earnings Ratio in Metro
Mexico (151,725)	1.038***	1.020**	1.000	1.006	0.471***	1.065***
Cuba (11,979)	1.013**	1.028	1.001	1.090***	1.627	1.066*
S & C America (62,779)	1.024***	1.030*	1.000	1.100***	1.091	1.089***
Caribbean (26,315)	0.980*	1.061**	1.001	1.035*	0.450**	1.114***
N.E. Asia (28,945)	0.923***	1.023	1.001	1.148***	1.930***	1.067**
S.E. Asia (44,871)	0.944***	1.044***	1.000	1.017	0.931	1.040
Middle East (60,512)	1.126***	1.033***	1.000	1.109***	1.499***	1.151***
India/Pakistan (22,954)	0.931***	1.075***	1.000	1.076***	1.224	1.135***

Notes: Data Source: 2000 Public Use Micro Statistics.
*Significant at 10%; ** significant at 5%; *** significant at 1%.
The number of observations is in parentheses.
Age, education, English language fluency, years since migration, and period of migration are controlled for, but not reported.

Figure 6 shows graphically the change in the predicted probability of self-employment as the proportion of an ethnic group increases. The self-employment probability of Middle-East immigrants increases, from under 20 percent to over 50 percent as ethnic concentration increases from under 1 percent to 20 percent. The impact of an increase in Mexican concentration by the same amount increases the probability of self-employment from 4 percent to 8 percent. The probability of self-employment of South and Central American immigrants increases from 7 percent to 11 percent as concentration of the group goes from 1 to 20 percent. The probability of self-employment for Cubans goes from 13 percent to 17 percent. By contrast, the probability of self-employment for N.E. Asians decreases, from 12 percent to 3 percent, as their concentration goes from 1 to 20 percent. Likewise, for S.E. Asians, it goes from 8 to 2 percent. For Caribbean immigrants it goes from 8 to 6 percent. Africans have generally very low predicted probability of

self-employment, relative to choosing wage employment less than 1 percent, regardless of the level of ethnic concentration.

Figure 6



Turning back to Table 2, it is important to note that other location characteristics, besides ethnic enclaves, come into play in the self-employment decision process for each group. For Mexican immigrants, higher unemployment rates in the metropolitan context where they operate serve as a "pushed" factor into getting them to decide to become self-employed. In addition, the success of other Mexicans in business creates an incentive to also "pulling" them into self-employment.

For Cubans, the business opportunity structure in their metropolitan area contributes to their decision, as does the success of other Cubans in business.

For other Latin American immigrants, as for Mexicans, the labor market condition is a contributing factor to their decision to become self-employed. In addition, the business opportunity structure in the metropolitan area, as well as the success of other Hispanics in business, contributes to the decision to be self-employed.

For Caribbean immigrants, while ethnic enclave per se does not seem to be linked with their decision to be self-employed, the labor market conditions and business opportunity structure, as well as the success of other Caribbean in business, propel their decision to choose self-employment.

For N.E. Asians, ethnic enclave is not a factor affecting positively their decision to be self-employed, the business opportunity structure, however, and the success of individuals in the metropolitan areas in business influence positively their decision to be self-employed. N.E. Asians' decision to go into business is influenced by the labor market condition in the metropolitan area where they reside. For these groups, those who engage in self-employment may not necessarily link to the immigrant enclave economy; they may be providing goods and services to the general market, rather than the specialized immigrant market.

For Middle-East immigrants, all the elements of the characteristics of the metropolitan areas controlled for seem to play a contributing role in their decision to be self-employed. The success of self-employed individuals in the metropolitan area where they live exerts an even stronger influence in their decision to also become self-employed.

For Indian and Pakistani immigrants, ethnic enclave is not a strong influential factor, suggesting that many of the self-employed may be independent professionals providing services to the general market. Labor market conditions affect their decision to be self-employed, as do the business opportunity structure and the success of other Indian self-employed individuals in their area.

Conclusion

The paper begins with the question whether enclaves matter in the decision of immigrants to go into self-employment. The results show that ethnic concentration in metropolitan areas is positively related to the probability of self-employment of immigrants, consistent with the enclave hypothesis. However, the significance of ethnic concentration for self-employment differs by the country or region of origin of immigrants. The relationship between location and self-employment probability of immigrants is reinforced by other metropolitan area-specific characteristics that include labor market conditions; the business opportunity structure in the metropolitan area (the self-employment rate in a metropolitan area); the relative success of the self-employed (ratio of self-employment earnings to wage employment in the metropolitan area); and in particular, the relative success of self-employed co-ethnic members in the metropolitan area. As a result, policies that promote the creation and sustenance of business have a good possibility of increasing participation of immigrants in the business sector.

Arguably, there are some limitations to how much that can be said about the causes for differences, given the difficulties of finding the appropriate measure for a concept as broad and complex as that of ethnic enclave. While the results show no effect of ethnic enclave for some group, it is still possible that the enclave dynamics in which these groups operate manifest on smaller geographic scales, which was not captured in this study. The analysis suggests that further research is needed to better understand the nature of ethnic enclaves and its relevance for different groups of immigrants.

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Appendix A

Primary Metropolitan Areas for Immigrants by Country or Region of Origin

Mexico

Laredo, TX
McAllen-Edinburg-Mission, TX
El Paso, TX
Brownsville, Harlingen-San Benito, TX
Yuma, AZ
Salinas, CA
Visalia-Tulare-Porterville, CA
Las Cruces, NM
Merced, CA
Los Angeles-Long Beach, CA
Yakima, WA
Fresno, CA
Santa Barbara-Santa Maria-Lompoc, CA
Orange County, CA
Santa Cruz-Watsonville, CA
Ventura, CA
Bakersfield, CA
Riverside, San Bernardino, CA
Modesto, CA
San Diego, CA

Latin America

Miami, FL
Jersey City, NJ
Fort Lauderdale, FL
New York, NY
Los Angeles-Long Beach, CA

Southeast Asia

Honolulu, HI
San Jose, CA
San Francisco, CA
Vallejo-Fairfield-Napa, CA
Orange County, CA
Stockton-Lodi, CA
Oakland, CA
San Diego, CA

Cuba

MIAMI, FL
Jersey City, NJ
Naples, FL
Fort Lauderdale, FL
West Palm Beach-Boca Raton, FL
Tampa-St. Petersburg-Clearwater, FL
Orlando, FL
Newark, NJ
Las Vegas, NV-AZ
Fort Myers-Cape Coral, FL
Bergen-Passaic, NJ
Fort Pierce-Port St. Lucie, FL
Lakeland-Winter Haven, FL
New York, NY

Africa

Brockton, MA
Washington, DC-MD-VA
New Bedford, MA
Rochester, MN
Worcester, MA-CT
Providence-Fall River-Warwick, RI-MA
Atlanta, GA
New York, NY

India/Pakistan

Middlesex-Somerset-Hunterdon, NJ
Yuba City, CA
Jersey City, NJ
San Jose, CA
Oakland, CA
Bergen-Passaic, NJ
Trenton, NJ
New York, NY
Washington, DC-MD-VA

Europe

New Bedford, MA
Stamford-Norwalk, CT
Hartfort, CT
Bergen-Passaic, NJ
Bellingham, WA
Waterbury, CT
Danbury, CT
New York, NY
Bridgeport, CT
Providence-Fall River-Warwick, RI-MA
Newark, NJ
Jersey City, NJ
Fort Lauderdale, FL
Killeen-Temple, TX
Boston, MA-NH
Clarksville-Hopkinsville, TN-KY
Punta Gorda, FL

Middle East

Honnolulu, HI
Bergen-Passaic, NJ
Los Angeles-Long Beach, Ca
San Jose, CA
Orange County, CA
Modesto, CA
Jersey City, NJ
Detroit, MI
San Francisco, CA

Northeast Asia

San Francisco, CA
Honolulu, HI
San Jose, CA
Oakland, CA
New York, NY
Los Angeles-Long Beach, CA

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