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THE SELF-EMPLOYMENT
EXPERIENCE OF IMMIGRANTS

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ABSTRACT

Self-employment is an important aspect of the immigrant experience in the labor market. Self-employment rates for immigrants exceed 15 percent for some national groups. This paper addresses three related questions on the self-employment experience of immigrants. First, how do self-employment rates of immigrants compare to those of native-born men? Second, is there an "assimilation" effect on the self-employment propensity of immigrants? Finally, are the more recent waves of immigrants facing different self-employment opportunities than the earlier waves? Using the 1970 and 1980 U.S. Censuses, the analysis shows that indeed self-employment rates of immigrants exceed those of native-born men; that there is a strong, positive impact of assimilation on self-employment rates; and that more recent waves of immigrants are opting with increasing frequency for the self-employment option.

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The Self-Employment Experience of Immigrants

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I. Introduction

The question of how immigrants do in the labor market has been studied intensively in the last decade. Generally, this literature has demonstrated that earlier waves of immigrants have higher earnings than more recent waves and that, in addition, the earnings of immigrants who have been in the U.S. for 10-15 years (or longer) exceed the earnings of the native-born.¹ Recent work by Borjas (1985) questions the validity of the inference often made from these cross-section studies that immigrants "assimilate" rapidly in the U.S. labor market. In fact, by following immigrant cohorts over a decade Borjas shows that the cross-section studies confound secular changes in cohort quality with the assimilation process and that most of the earnings growth captured by cross-section regressions is due to a sizable decline in the quality of immigrants admitted to the United States in the postwar period.

Despite the important insights provided by these studies of how immigrants do in the labor market, a potentially significant aspect of this issue has been ignored. In particular, it is not uncommon in the sociological literature to assert that a major channel for immigrant assimilation has been the ample availability of self-employment opportunities for immigrants (see, for example, Bonacich and Modell, 1980; and Cummings, 1980). These studies argue that many immigrants begin their climb up the ladder of economic success by becoming self-employed and catering to customers from the "old country," i.e., consumers who have similar national backgrounds and who demand products

where immigrants have a comparative advantage in the production process (due perhaps to language barriers or to the familiarity with ethnic preferences). Since all studies in the earnings determination literature discussed earlier ignore the self-employment option and/or explicitly focus on the earnings of salaried workers it is possible that these studies have provided an incomplete picture of how immigrants assimilate in the labor market.

It must be noted, however, that the disinterest in the question of self-employment among labor market participants is not restricted solely to the immigration literature. In fact, the related questions of who are the self-employed and how they do in the labor market have received only the most tangential attention in labor economics.² This disinterest could be justified if self-employment was a numerically unimportant component of the labor market. The summary statistics in Table 1, however, should quickly dispel this myth. This table presents the self-employment propensities and incomes observed in the 1980 Census for men aged 18-64 in each of 12 major racial/ethnic/nativity groups. Among white male labor force participants, the probability of self-employment is 11.7 percent for the native-born and rises to 16.5 percent for the foreign-born. These probabilities remain above the 10 percent level for both Asian and Cuban immigrants and fall to about 8 percent for "other" Hispanics. The self-employment probabilities are lowest, both among the native- and foreign-born, in the black and Mexican samples, where they lie in the 4-5 percent range. Table 1 also shows differentials by nativity status and ethnic groups in the annual incomes received by self-employed and salaried workers. These statistics also indicate that self-employed workers have higher annual incomes than salaried workers (although part of these differences may be due to returns on the physical capital owned by self-employed workers).

The fact that immigrants have higher self-employment propensities raises the interesting question of exactly what it is that these individuals do in the labor market. Table 2 sheds some light on this issue by presenting the industrial distributions of the native- and foreign-born by self-employment status. These statistics show that self-employed immigrant workers are significantly more likely to be in a "retail-trade" job than native-born self-employed workers: Over 27 percent of self-employed immigrants are in this industry compared to 17 percent of the native-born self-employed population. Since the retail trade industry contains such types of firms as "variety stores", "grocery stores", and "eating and drinking places", Table 2 does provide some support for the hypothesis that many immigrants assimilate in the U.S. labor market by opening up small shops and catering to specialized consumer groups.

The statistics in Tables 1 and 2, therefore, show that self-employment is a significant activity among immigrant (and native-born) men in the labor market and that it deserves careful study. This paper provides an initial attempt at documenting the differences in self-employment propensities between the native-born and the foreign-born and at analyzing the impact of assimilation and changes in cohort quality on the self-employment experience of the immigrant population. Section II of the paper presents the framework that will guide the empirical analysis. Section III analyzes the self-employment propensities of immigrants and native-born workers using the 1970 and 1980 U.S. Censuses, while Section IV shows that the "enclave" effect is a major factor in the creation of a gap in self-employment propensities between the foreign-born and the native-born. Section V summarizes the results of the study.

II. Framework

In deciding whether or not to become self-employed immigrant i compares

the market wage he would earn as a salaried worker, w_i , with the expected net income from self-employment, y_i . Define the index function:

$$I_i = y_i - w_i = X_i \pi + v_i \quad (1)$$

where X_i is the vector of observable socioeconomic characteristics which affects y_i and/or w_i . If I_i is positive the immigrant becomes self-employed and is a salaried worker otherwise. The probability of self-employment is then given by:

$$P_i = \Pr[I_i > 0] = \Pr[v_i > -X_i \pi], \quad (2)$$

and the parameter vector π can be estimated (up to a factor of proportionality) once the stochastic nature of the disturbance v_i is specified.

Little is known about the specification of the variables in the vector X_i in equation (2). It is reasonable to expect, however, that the standard socioeconomic characteristics of education, age, marital status, etc., which play a major role in the determination of salaries will also play a role in the determination of self-employment incomes, and hence on the self-employment propensity. Individuals who are self-employed differ from salaried workers in two important respects: (1) they have a financial investment in the firm; and (2) will bear more risk than a salaried worker. It clearly takes time and some level of skill to raise the necessary resources for an individual to open up his business. Thus it would not be surprising if the self-employment propensity was positively correlated with age. In addition, to the extent that education increases the types of skills necessary for an individual to assess the extent of the market and the kinds of goods customers demand it seems likely that education and self-employment rates would also be positively related. Note, however, that both of these predictions implicitly assume

that marginal increases in both education and age affect self-employment incomes by more than they affect the individual's salaried alternatives.

One type of risk that self-employed workers bear is the possibility that their employees will shirk on the job. Married self-employed persons have a simple way of diminishing this type of risk: hire their spouses. This allocation of labor within the family is optimal since both self-employed workers will have identical incentives--the maximization of family income or self-employment profits--and the shirking problem is thus solved. Hence we would expect that self-employment propensities are greater for married persons than for single persons.

As these examples illustrate interesting economic hypotheses about the relationship between self-employment incomes (and probabilities) and standard socioeconomic characteristics can be easily derived from basic economic principles. Although the derivation of a complete theory of self-employment is beyond the scope of this paper, these examples should illustrate that important insights can be obtained from further research along these lines.

Our main interest, of course, is on the determination of self-employment rates for immigrants, and how this process differs from the determination of self-employment rates for native-born men. One key variable which clearly plays a role in determining self-employment rates for immigrants is the number of years that have elapsed since immigration, t_i . Since self-employment requires a relatively large financial investment, it is unlikely that recently arrived immigrants have the financial capability to start up a firm soon after immigration. Hence self-employment rates and t_i will be positively correlated. In other words, as immigrants "assimilate" they are also more likely to become self-employed. It is well known, however, that a single cross-section regression of equation (2) will not provide estimates of this assimilation effect unless

it is also assumed that the "quality" of immigrant cohorts has remained stationary over the sample period. The evidence in Borjas (1985), however, has shown that the stationarity assumption is, in fact, invalid in terms of the market wage rate. In particular, the quality of immigrants admitted to the U.S. has declined in the sense that more recent immigrants have lower wage rates than earlier immigrants had at comparable stages of the assimilation experience. Thus cross-section estimates of the effect of t_i on the self-employment probability confound the true assimilation impact with quality differentials among immigrant cohorts.³

To derive a general framework that allows the identification of these separate effects, consider the group of immigrants aged 18-54 in 1970. Using the 1970 Census, it is convenient to partition this group into four cohorts: arrivals in 1965-1969, arrivals in 1960-1964, arrivals in 1950-1959, and immigrants who arrived prior to 1950. Consider next the group of immigrants aged 28-64 in the 1980 Census. The 1980 Census data allows the partitioning of this group of immigrants into six cohorts: arrivals in 1975-1979, arrivals in 1970-1974, arrivals in 1965-1969, arrivals in 1960-1964, arrivals in 1950-1959, and immigrants who arrived prior to 1950. Note that the last four cohorts defined in the 1980 group exactly match the definitions of the cohorts from the 1970 Census.⁴ Given these data, and assuming that the disturbance v_i follows a logistic distribution, two cross-section regressions can be estimated by maximum likelihood:

$$\ln\left(\frac{P_{70}}{1-P_{70}}\right) = X\gamma_{70} + \alpha_{65}D_{65} + \alpha_{60}D_{60} + \alpha_{50}D_{50} + \alpha_{40}D_{40} + \eta_{70} \quad (3)$$

$$\begin{aligned} \ln\left(\frac{P_{80}}{1-P_{80}}\right) = & X\gamma_{80} + \beta_{75}D_{75} + \beta_{70}D_{70} + \beta_{65}D_{65} + \beta_{60}D_{60} + \beta_{50}D_{50} \\ & + \beta_{40}D_{40} + \eta_{80} \quad , \end{aligned} \quad (4)$$

where P_t is the probability of self-employment in Census year t , X is a vector of socioeconomic characteristics, and the dummy variables indexing years-since-immigration/cohort are defined by: $D_{75}=1$ if immigrated in 1975-1979; $D_{70}=1$ if immigrated in 1970-1974; $D_{65}=1$ if immigrated in 1965-1969; $D_{60}=1$ if immigrated in 1960-1964; $D_{50}=1$ if immigrated in 1950-1959; and $D_{40}=1$ if immigrated prior to 1950. By definition, the vector X in (3) and (4) does not contain a constant term.

Consider cohort k , where $D_k=1$ ($k=40,50,60,65$). Let \bar{X} give the mean values of the socioeconomic characteristics for the immigrant group as of 1980. Define:

$$\hat{P}_{70,k} = \{1 + \exp[-(\bar{X}\hat{\gamma}_{70} + \hat{\alpha}_k)]\}^{-1}, \quad (5)$$

$$\hat{P}_{80,k} = \{1 + \exp[-(\bar{X}\hat{\gamma}_{80} + \hat{\beta}_k)]\}^{-1}, \quad (6)$$

$$\hat{P}_{80,k+10} = \{1 + \exp[-(\bar{X}\hat{\gamma}_{80} + \hat{\beta}_{k+10})]\}^{-1}, \quad (7)$$

Equations (5) and (6) give the predicted probability of self-employment (evaluated at \bar{X}) for the representative member of cohort k in 1970 and 1980, respectively. Equation (7) gives the predicted self-employment probability in 1980 for the cohort who arrived 10 years after cohort k . Note that the comparison of cohort k in 1970 and cohort $k+10$ in 1980 holds constant the number of years since immigration across Censuses.

Using the definitions in (5)-(7), the 1980 regression can be used to estimate the cross-section change in the probability of self-employment over a 10 year period (net of aging). The cross-section change in the probability is, of course, given by $\hat{P}_{80,k} - \hat{P}_{80,k+10}$. Note, however, that this term can be rewritten as:

$$\hat{P}_{80,k} - \hat{P}_{80,k+10} = (\hat{P}_{80,k} - \hat{P}_{70,k}) + (\hat{P}_{70,k} - \hat{P}_{80,k+10}). \quad (8)$$

Equation (8) decomposes the cross-section change in the self-employment probability into two parts. The first term in (8) gives the change in the probability experienced by cohort k over the 1970-1980 decade, and will be called the "within-cohort" change in the self-employment probability. It is worth stressing that this within-cohort change measures the true impact of the assimilation process on self-employment propensities. The second term in (8) estimates the difference in P_i which occurred over the decade for immigrants with a given number of years since immigration. Thus it compares different cohorts at the same point of their U.S. life cycle and will be called the "across-cohort" change in self-employment propensities. If, for example, the quality decline experienced by immigrant cohorts has affected mainly the level of market earnings, the "across-cohort" effect would be negative since more recent cohorts would find self-employment more profitable than earlier cohorts found it at comparable stages of the assimilation experience. The existence of quality differences among immigrant cohorts, therefore, implies that the cross-section regression provides a biased measure of the impact of assimilation on self-employment propensities.

It should be noted, however, that the within-cohort change defined in equation (8) can also be a biased measure of the impact of assimilation if aggregate labor market conditions changed sufficiently between 1970 and 1980. For instance, if economic changes over the decade led to a relative decline in the earnings of salaried workers, the probability of self-employment will have experienced a secular increase during the period. This aggregate shift in the probability will bias upwards the within-cohort change and, due to the decomposition in (8), will impart a downward bias on the across-cohort change. One possible solution to this problem is simply to analyze the behavior of the self-employment probability of immigrants net of the changes

which occurred in the native-born population. Suppose the logit equations determining self-employment propensities for the native-born are given by:

$$\ln\left(\frac{P_{70}}{1-P_{70}}\right) = X\delta_{70} + \alpha_n + u_{70} , \quad (9)$$

$$\ln\left(\frac{P_{80}}{1-P_{80}}\right) = X\delta_{80} + \beta_n + u_{80} , \quad (10)$$

where the subscript "n" indicates native-born status. Define the self-employment probability of a native-born worker statistically similar to the average immigrant by:

$$\hat{P}_{70,n} = \{1 + \exp[-(\bar{X}\hat{\delta}_{70} + \hat{\alpha}_n)]\}^{-1} . \quad (11)$$

$$\hat{P}_{80,n} = \{1 + \exp[-(\bar{X}\hat{\delta}_{80} + \hat{\beta}_n)]\}^{-1} . \quad (12)$$

The decomposition of the cross-section change in the probability of self-employment net of the secular changes occurring in the native-born population can be written as:

$$\begin{aligned} \hat{P}_{80,k} - \hat{P}_{80,k+10} &= [(\hat{P}_{80,k} - \hat{P}_{70,k}) - (\hat{P}_{80,n} - \hat{P}_{70,n})] \\ &+ [(\hat{P}_{70,k} - \hat{P}_{80,k+10}) - (\hat{P}_{70,n} - \hat{P}_{80,n})] . \end{aligned} \quad (13)$$

The first bracketed term in (13) gives the difference between the within-cohort change in the self-employment probability of immigrants and the change in that probability which occurred among native-born workers. Thus it gives the change in self-employment propensities experienced by a specific immigrant cohort net of the change experienced by similar native-born workers. Likewise, the second bracketed term in (13) gives the across-cohort effect

net of the economy-wide changes experienced by native-born workers during the 1970-1980 period.

III. Assimilation and Self-Employment

The data used in the analysis are drawn from the 1970 1/100 Public Use Sample from the U.S. Census (5 percent SMSA and County Group file), and the 1980 A Sample from the U.S. Census (a 5 percent random sample of the population). Due to the very large sample sizes in these data sets, random samples were drawn for some of the larger groups (e.g., white natives in both 1970 and 1980, black natives in 1980, etc.).⁵

The analysis is restricted to male persons aged 18-54 in 1970 and 28-64 in 1980. The five sample selection rules used in both Censuses are: (1) the individual is not in the Armed Forces; (2) the individual does not reside in group quarters; (3) the individual is not enrolled in school; (4) the individual worked at some point during 1969 or 1979; and (5) the individual resides in an SMSA. This last restriction prevents the analysis from being biased by the prevalence of self-employment in the farm sector and by the relative absence of immigrants in rural areas. Since previous research has shown that major differences in economic status exist within the male immigrant (and native-born) labor force, the study will be conducted separately for each of six major immigrant groups: Mexican, Cuban, other Hispanic, Asian, white, and black, where the "white" and "black" immigrant samples contain the observations which are neither Hispanic nor Asian.⁶ Finally, the definition of self-employment is drawn from the class of worker variables in the 1970 and 1980 Censuses. An individual is classified as self-employed if he is a self-employed worker (business not incorporated) or if he is an employee of his own corporation. Unpaid family workers are excluded from the analysis in this paper.

Before proceeding to the decomposition suggested by equations (8) and (13) it is useful to describe the 1980 Census data in terms of a simple cross-section regression. In particular, pool the native-born and foreign-born samples in the 1980 Census and estimate the logit regression:

$$\ln \left(\frac{P_{80}}{1-P_{80}} \right) = Z_i \gamma + \varepsilon_i \quad (14)$$

where the vector Z_i includes both socioeconomic variables and the years-since-migration vector, and the native-born sample pooled with the immigrant samples is the immigrant's racial/ethnic counterpart in the native-born population. The maximum likelihood estimates of equation (14) are presented in Table 3.

These regressions show that education has a positive (and significant) impact on self-employment rates in all the samples. This result, of course, is consistent with the hypothesis presented earlier that higher education levels increase the individual's ability to provide a service that other persons may desire, or perhaps that higher education levels increases the organizational or managerial skills of workers. Similarly, Table 3 shows that self-employment propensities increase with potential labor force experience. The experience coefficient is positive and significant for all racial/ethnic groups except black men. It is of interest to note that black men are also the only group for whom there is zero correlation between marital status and self-employment propensities. In general, married men have higher self-employment rates, due perhaps to the fact that family-owned businesses have an advantage over other firms in solving the shirking problem. As Table 3 shows, however, this effect does not exist in the black male sample. This finding probably reflects the inherent instability in the black family. Finally, the

regressions in Table 3 include a variable measuring the health status of the individual (namely, if health "limits" work). Surprisingly, it is seen that for most of the groups this variable has a positive impact on self-employment propensities. It thus seems that the self-employment option expands the opportunities of persons with disabilities and gives them the flexibility of mitigating the negative labor market impacts of bad health.

The regressions in Table 3 include a vector of years-since-migration dummies which are of more direct concern to the present study. The omitted variable in the vector indexes if the individual is native-born. Two important findings are evident in the table. First, self-employment probabilities are almost always larger for immigrants than for the native-born. The exceptions to this result are usually found in the samples of immigrants who have resided in the U.S. fewer than 5 years. For immigrants who have resided in this country longer than 10 years, however, Table 3 shows that, without exception, the probability of self-employment is at least as large for immigrants as it is for the native-born. A second important finding evident in Table 3 is that the probability of self-employment is not monotonically increasing with years-since-migration. For example, in the white sample the logit coefficients of the years-since-migration dummies exhibits little variance (and, in fact, are insignificantly different from each other) during the 1950-1975 period. Roughly speaking, therefore, Table 3 suggests that, in the absence of quality differences among immigrant cohorts, most of the gap in self-employment propensities between the foreign-born and the native-born is created within 5-10 years after immigration. This result differs markedly from the conclusions reached in the cross-section regression on immigrant earnings where it is found that immigrant earnings are a monotonically increasing function of years-since-migration.

However, as equations (8) and (13) make clear the cross-section regressions in Table 3 say nothing about the assimilation process since they confound the true growth attributable to assimilation with quality differences among immigrant cohorts. These decompositions are presented in Table 4 for 18 immigrant cohorts. Two important points should be made about the derivation of the statistics in Table 4. First, the vector of socioeconomic characteristics, X , held constant in the logit self-employment regressions includes the variables: years of completed schooling; years of labor market experience (defined by Age-Schooling-6); years of labor market experience squared; whether or not health limits work; and whether or not married spouse present. Secondly, to minimize the large number of parameters to be estimated by maximum likelihood, and due to the large number of observations, the coefficients of the socioeconomic variables (γ_{70} , γ_{80} , δ_{70} , δ_{80}) are constrained so that $\gamma_{70} = \gamma_{80} = \gamma$ and $\delta_{70} = \delta_{80} = \delta$. Thus the socioeconomic variables are allowed to have a differential impact between the native- and foreign-born samples, but this impact remained constant over the decade.⁷

The results in Table 4 are best understood by illustrating their derivation through an example. Consider the group of white men who arrived in 1965-1969. According to the 1980 cross-section regression, the probability of self-employment for these men is -.0028 percentage points lower than that of similarly skilled immigrants who arrived 10 years later.⁸ Thus the cross-section regression reveals little change in self-employment propensities over time. Using equation (8), however, this quantity can be decomposed into within- and across-cohort changes in self-employment probabilities. This decomposition reveals that as of 1980 this group of immigrants actually had a self-employment probability that was 9.8 percentage points higher than in 1970. Thus the cohort experienced a significant increase in self-employment

propensities. Yet, at the same time, this cohort as of 1970 had a self-employment probability that was 10.1 percentage points lower than the 1980 self-employment probability of men who arrived in 1975-1979. Thus the secular changes in the quality mix of these immigrant cohorts have led to an increase in self-employment propensities. In fact, the across-cohort change wipes out the within-cohort change so that in the cross-section it appears as if years-since-migration had no impact on the self-employment probability.

Of course, it may well be that these changes between 1970 and 1980 simply reflect economy-wide fluctuations in self-employment incomes. The decomposition in equation (13) controls for this problem by netting out the change in the self-employment probability achieved by the native-born group. It should be noted, however, that the choice of the native-born reference group is somewhat arbitrary since the immigrant population can be compared to a number of different racial/ethnic native-born men. In this paper, each immigrant group (except for the Cubans) is compared to its respective ethnic/racial native-born counterpart. In the Cuban case, due to the small sample size (and the even smaller number of self-employed Cuban "natives") the Cuban immigrants are compared to white native-born men.

The last two columns of Table 4 conduct the decomposition of the cross-section growth after netting out the change in the self-employment probabilities of the native-born. In the case of the 1965-1969 white immigrant cohort, the within-cohort change remains positive and significant and is approximately 8.1 percentage points. In other words, the self-employment probability of white immigrants who arrived in 1965-1969 increased 8.1 percentage points above the increased experienced by white native-born men over the 1970-1980 period. Similarly, the across-cohort change remains negative and significant even after netting out the white native-born change so that, indeed, more

recent cohorts of immigrants are more likely to opt for self-employment than earlier immigrants.

The remaining rows of Table 4 replicate the analysis for all other cohorts in the six immigrant groups. Perhaps the major finding obtained from these results is that there are sizable differences in the within- and across-cohort changes experience by immigrants both within and across national groups. In general, however, the within-cohort change in the probability of self-employment is positive, while the across-cohort change is negative. For instance, in the decomposition that nets out the change in P_i for the native-born, 17 out of 18 within-cohort effects are positive (and 11 of these effects have a t-ratio exceeding unity), while 14 of the across-cohort effects are negative (with 9 of these effects having t-ratios above 1.0 in absolute value). These results, therefore, are consistent with the hypothesis that as immigrants assimilate in the United States the relative gains from self-employment increase. In addition, the results in Table 3 also show the existence of a secular shift in the relative gains of self-employment for immigrants. In other words, more recent immigrant cohorts perceive self-employment as a relatively better employment alternative than earlier immigrant cohorts.

Thus two important substantive questions are raised by the results in Table 4. First, why does the assimilation process of immigrants involve a switch from salaried jobs to self-employment? Second, why do more recent immigrants find self-employment a much more profitable alternative than the earlier waves of immigrants? With respect to the first question, it is clear that self-employment requires a somewhat large financial investment in the firm. It is unlikely that the most recent immigrants have accumulated the financial resources needed to open up a business. Thus it is not too surprising to find that, during their assimilation, immigrants switch from salaried jobs to

self-employment opportunities.

The second question posed above is somewhat harder to address. A possible factor for the cohort effects is related to the analysis of Borjas (1985). One interpretation of his findings is that salaried opportunities for recent waves of immigrants are substantially worse than the opportunities faced by the earlier waves of foreign-born persons. This implies that the more recent waves of immigrants will find it relatively more profitable to enter self-employment than the earlier waves did (at the same point of their U.S. life cycle). This, however, raises the important question of why salaried opportunities declined more than self-employment opportunities. A second factor which may be responsible for the cohort effects in Table 4 is the change in immigration policy implicit in the 1965 Immigration and Naturalization Act. This law has emphasized family reunification as the primary variable determining visa allocation among potential entrants.⁹ Since self-employment opportunities increase greatly when family members can join the firm, the family reunification goal of the current law may well be playing a major role in the self-employment cohort effects. Although the results in Table 4 cannot conclusively prove the validity of these hypotheses, it is clear that additional research on the self-employment of immigrants should be conducted to address these important questions.

IV. Enclaves and the Self-Employment of Immigrants

An important result in Section III was the finding that the probability of self-employment of immigrants exceeds the probability of self-employment of native-born men for practically all ethnic/racial groups. Although this result can be explained in terms of the hypothesis that immigrants face higher self-employment incomes (relative to the native-born), this explanation

does not really provide an understanding of why the nativity differences arise. The sociological literature, however, has presented extensive anecdotal evidence of how immigrants create enclaves by concentrating in specific geographic areas, and of how these enclaves create and expand opportunities for immigrants to become self-employed. These opportunities arise because immigrants from a particular national group are assumed to have a comparative advantage in serving the needs of consumers from that national group. The comparative advantage, of course, is created by informational asymmetries between the immigrants and the rest of the population, and these informational asymmetries may include such factors as better knowledge of consumer preferences and knowledge of the language spoken by the immigrant population.

This hypothesis can be easily tested by analyzing the self-employment propensities of the three Hispanic groups (i.e., Mexicans, Cubans, and other Hispanics) studied in the previous section. Since these three groups are much more homogeneous in culture and language than the three other groups analyzed earlier (namely, whites, blacks and Asians), it is likely that enclaves of Hispanics may have opened up self-employment opportunities for Hispanic immigrants. Formally, the enclave hypothesis can be tested by estimating the regression:

$$\ln\left(\frac{P}{1-P}\right) = Z\gamma + \lambda q_h + v_i , \quad (15)$$

where Z_i is a vector of socioeconomic characteristics, and q_h is the fraction of the SMSA's population that is Hispanic.¹⁰ The enclave hypothesis implies that λ is positive. In addition, if equation (15) is estimated separately in the foreign-born and native-born samples, and if immigrants benefit more from the self-employment opportunities opened up by the enclave, one would

expect that the impact of q_h on the probability of self-employment is larger in the immigrant than in the native-born sample.

Table 5 presents the estimated impact $dp/dq_h = \beta p(1-p)$ for each of the six Hispanic groups under study, where the derivative is evaluated at the mean self-employment probability of each group. For purposes of comparison the table also presents the impact of q_h on the self-employment probability of non-Hispanic whites. Two important results are apparent. First, the coefficient λ is indeed positive and significant in the Hispanic samples. That is, Hispanics are more likely to be self-employed in areas which have larger Hispanic populations. Moreover, note that the impact of q_h in the non-Hispanic white samples is insignificantly different from zero; hence the results for Hispanics cannot be dismissed as reflecting some unknown area-specific effect. Second, the impact of q_h on the self-employment probability is larger for immigrants than for the native-born, and this difference is significant in two of the three Hispanic samples.¹¹

It is possible to use the regression coefficients reported in Table 5 to calculate the increase in the self-employment rates of immigrants (relative to natives) due to the enclave effect. The results from this calculation are reported in Table 6. Consider the sample of Mexican men. The average Mexican immigrant lives in a metropolitan area that is 23.7 percent Hispanic, while the average Mexican/American lives in an SMSA that is 25.6 percent Hispanic. The regressions in Table 5 report the marginal increase in the self-employment probability due to changes in these proportions. The relevant calculation then shows that the enclave effect increases the self-employment rate of Mexican immigrants by 1.2 percentage points over that of Mexican native-born men. Similar calculations reported in Table 6 for the Cuban and other Hispanic

samples show that enclave effects increase foreign-born self-employment rates by 1-2 percentage points over the native-born base. Hence enclave effects are not only statistically significant, but they are also numerically important.

These results, however, cannot really answer the fundamental question of why enclave effects exist. The fact that the self-employment rates of non-Hispanic whites (reported in the last row of Table 5) are not related to percent Hispanic in the SMSA suggests that language (and/or culture) plays an important role in the creation of the enclave effect. A number of additional experiments were conducted to provide a better test of this hypothesis. These experiments included relating the self-employment rates of Asians to the percent Asian in the SMSA, and conducting a separate analysis of the self-employment rates of immigrants from English-speaking countries. On the whole, however, these preliminary calculations were negative and did not provide any additional insights into the factors that are driving the results in Table 5. The likely reason for this failure is the fact that the Asian sample is extremely heterogeneous--both in language and culture--so that any future analysis of these individuals will have to segment by country-of-origin. Similarly, the sample of men from English-speaking countries includes men from the U.K. and Ireland, as well as men from Jamaica and the Philippines. The cultural (and racial) differences among these various samples makes it unlikely that a self-employed immigrant from an English-speaking country can be equally efficient in catering to all the groups that make up his "enclave". Future studies of this problem, therefore, will have to increasingly look at the roles played by culture, race, and language in differentiating among immigrant and native-born groups.

V. Summary

Self-employment represents an important component of the immigrant experience in the U.S. labor market. Its omission in earlier studies cannot be

justified by the presumption that self-employed workers represent a numerically unimportant part of the immigrant labor force. In fact, among large immigrant groups self-employment rates exceed 15 percent of the labor force. This paper begins the study of the immigrant self-employment experience by analyzing the self-employment rates of 18 immigrant cohorts using the 1970 and 1980 U.S. Census. The major findings are:

1. Assimilation has a sizable impact on self-employment probabilities: The longer the immigrant resides in the United States, the higher the probability of self-employment.

2. There has been a rapid increase in the self-employment rates experienced by recent immigrant cohorts as compared to earlier cohorts. These across-cohort changes may have been caused by the relative decline of opportunities faced by immigrants in the salaried sector over the last decades.

3. Immigrants are more likely to be self-employed than similarly skilled native-born workers. A major reason for this differential is that geographic enclaves of immigrants increase self-employment opportunities particularly for immigrants who share the same national background (or language) as the residents of the enclave.

The prevalence of self-employment among immigrants (and native-born workers) in the labor market suggests that much additional work is needed in this area. The analysis in this paper makes clear that continued research of the self-employment option and of self-employment incomes is likely to greatly enhance our understanding of the immigrant assimilation process.

Footnotes

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¹ See Carliner (1980), Chiswick (1978), DeFreitas (1979) and Long (1980).

² Recent studies by Lazear and Moore (1984) and Wolpin (1977) have been concerned with the question of why there exist smaller wage differentials (by skill) among the self-employed than among salaried workers. Studies by Fuchs (1968, 1982) provide a descriptive analysis of the extent of self-employment among older workers and in the service economy.

³ In addition, non-random emigration of the immigrant population biases the impact of t_i on both market wage rates and self-employment incomes. See Borjas (1985) for a discussion of the biases introduced by the high emigration rates of the foreign-born.

⁴ Of course, there are many reasons why, in actuality, the cohorts in the 1970 and 1980 Census data may not be perfectly matched. For instance, the presence of emigration will lead to secular trends in the size (and quality) of a specific immigrant cohort. Similarly, institutional changes in the Census enumeration procedures may lead to different counts of immigrants (and native-born persons) in particular cohorts across Censuses. Finally, there may be age (and/or cohort) related differences in labor supply and mortality rates which generate additional differences in the size

of the cohort samples, included in the regressions over time. Note, however, that all these problems will impart biases on both cross-section and cohort analyses so that, in a sense, the cohort study presented below nets out only one of the many sources of bias, that due to violations of the assumption of stationarity in the quality of immigrants at the time of entry.

⁵ The sampling fractions for 1970 are: white native-born (.001 of the population), all other groups (.01). The 1980 sampling fractions are: black natives (.00245), black immigrants (.01651), Mexican natives (.01652), Mexican immigrants (.01638), white natives (.00042), white immigrants (.00249), all other groups (.05).

⁶ The Hispanic samples do not include the group of Puerto Rican men since Puerto Ricans born in Puerto Rico are not asked the year they migrated to the U.S. by the Census.

⁷ The t-ratios in Table 4 refer to the relevant transformations of the logit coefficients and are estimated from the covariance matrix of the regression coefficients.

⁸ Note that since the constraints $\gamma_{70} = \gamma_{80} = \gamma$ and $\delta_{70} = \delta_{80} = \delta$ have been imposed on the estimates, the cross-section regressions in Table 3 are not directly comparable to the cross-section estimates in Table 4. In particular, Table 3 constrains the socioeconomic variables to have the same impact for the foreign- and native-born in the 1980 Census year, while Table 4 allows a differential impact between the two groups but assumes this difference is invariant to calendar year.

⁹ See Jasso and Rosenzweig (1986) for an interesting discussion and empirical study of some of the implications of the family reunification emphasis in the current law.

¹⁰ The analysis was also conducted with alternative definitions for the variable q_h . These specifications included such variables as percent Mexican, percent Cuban, etc. The model in equation (15) does as good a job in describing the enclave effect as the more detailed specification.

¹¹ It would be of interest, of course, to analyze - along similar lines - the relative levels of salaried and self-employment incomes. Unfortunately, this extension of the work introduces the problem of correcting for sample selection biases both within and across immigrant cohorts. In addition, self-employment incomes, as reported in the Census, are an amalgam of returns to human and physical capital. A complete study of the income levels, therefore, will require much more detailed data on the source and types of incomes of the self-employed.

TABLE 1

Self-Employment Rates and Incomes

<u>GROUP</u>	<u>Self-Employment Probability</u>	<u>Mean Annual Income of Salaried Workers</u>	<u>Mean Annual Income of Self-Employed Workers</u>
White: Immigrant	.165	19594.7	24707.7
Native-Born	.117	18014.2	23995.4
Black: Immigrant	.053	12192.7	16469.9
Native-Born	.037	12756.7	15036.8
Asian: Immigrant	.126	16350.3	25454.5
Native-Born	.121	17613.4	24149.6
Mexican: Immigrant	.042	10158.8	13981.8
Native-Born	.056	12932.2	17189.2
Cuban: Immigrant	.156	14090.2	20670.3
Native-Born	.109	13762.7	21249.1
Other Hispanic: Immigrant	.080	12382.4	22598.6
Native-Born	.083	14867.5	21338.9

Source: 1980 U.S. Census.

Table 2
INDUSTRIAL DISTRIBUTION BY
SELF-EMPLOYMENT STATUS

<u>% Employed in Industry:</u>	<u>Native Born</u>		<u>Immigrants</u>	
	<u>Salaried</u>	<u>Self-Employed</u>	<u>Salaried</u>	<u>Self-Employed</u>
Agriculture	1.2	9.1	3.9	5.9
Mining	1.2	.5	.6	.1
Construction	9.5	17.6	8.6	13.5
Manufacturing	32.0	6.8	34.6	9.8
Transportation	11.0	4.7	7.0	3.6
Wholesale Trade	6.0	6.0	5.1	5.2
Retail Trade	11.0	17.2	13.1	27.6
Finance	4.6	7.2	4.7	3.9
Business Services	4.5	10.6	5.0	9.2
Personal Services	1.2	3.5	2.5	5.5
Entertainment	.9	1.2	1.2	1.1
Professional Services	10.3	15.9	10.8	14.8
Public Administration	6.4	.0	2.9	.0

Source: 1980 U.S. Census

TABLE 3

Maximum Likelihood Logit Regressions on Probability of Self-Employment*

Variable**	GROUP					
	White	Black	Asian	Mexican	Cuban	Other Hispanic
CONSTANT	-3.3575 (-17.51)	-4.3717 (-11.72)	-4.1438 (-31.48)	-4.6183 (-19.37)	-3.4602 (-21.54)	-4.3481 (-24.55)
EDUC	.0629 (7.53)	.0649 (3.72)	.0692 (12.69)	.0835 (8.76)	.0478 (7.23)	.1112 (15.93)
EXPER	.0353 (3.25)	.0223 (1.04)	.0520 (7.68)	.0544 (4.07)	.0468 (5.05)	.0347 (3.31)
EXPER ²	-.0004 (-1.94)	.0000 (.00)	-.0003 (-2.61)	-.0006 (-2.45)	-.0007 (-4.14)	-.0003 (-1.59)
MAR	.1501 (2.08)	-.0541 (-.48)	.4519 (7.92)	.2829 (3.01)	.4311 (6.50)	.2016 (3.17)
HLTH	-.0208 (-.17)	.5741 (3.05)	.2902 (2.91)	.2700 (1.97)	.0232 (.22)	.1834 (1.60)
D40	.4194 (3.99)	.5914 (2.22)	.2117 (2.35)	.2707 (1.73)	.5809 (3.35)	-.0294 (-.20)
D50	.2706 (2.96)	.8109 (3.12)	.1794 (2.34)	.2132 (1.90)	.4544 (5.28)	.1706 (1.77)
D60	.3983 (2.89)	.6985 (2.84)	.2512 (3.25)	-.1306 (-.83)	.3867 (6.60)	.1829 (2.24)
D65	.1980 (1.38)	-.0539 (-.22)	.0765 (1.31)	.0864 (.20)	.1107 (1.54)	.1471 (2.05)
D70	.2453 (1.44)	.2785 (1.44)	.2065 (4.01)	-.3678 (-2.55)	.2211 (2.59)	-.1419 (-1.78)
D75	.1111 (.70)	.0421 (.17)	-.4101 (-7.34)	-.4693 (-2.72)	-.4545 (-2.01)	-.4188 (-4.24)

*The asymptotic t-ratios are given in parentheses.

**Key to Variables: EDUC = years of completed education; EXPER = age-Educ-6;
MAR = 1 if married, spouse present, 0 otherwise; HLTH = 1 if health limits
work, 0 otherwise.

TABLE 4

Decomposition of Changes in the Probability of Self-Employment*

GROUP/ Year	Cross-Section Growth	Immigrants Only		Relative to Natives	
		Within-Cohort	Across-Cohort	Within-Cohort	Across-Cohort
<u>White</u>					
1965-1969	-.0028 (-.10)	.0982 (5.78)	-.1010 (-5.55)	.0806 (6.17)	-.0834 (-4.70)
1960-1964	.0228 (.72)	.0659 (3.05)	-.0431 (-1.82)	.0483 (2.57)	-.0255 (-1.09)
1950-1959	.0002 (.04)	.0319 (2.28)	-.0317 (-.95)	.0143 (.85)	-.0141 (-.23)
<u>Black</u>					
1965-1969	-.0028 (-.20)	.0130 (.64)	-.0158 (-.75)	.0179 (.72)	-.0207 (-.44)
1960-1964	.0281 (1.50)	.0245 (.58)	.0036 (.11)	.0294 (.67)	-.0013 (-.09)
1950-1959	.0369 (1.89)	-.0108 (-.25)	.0477 (1.27)	.0157 (.03)	.0428 (.79)
<u>Asian</u>					
1965-1969	.0525 (7.95)	.1062 (4.62)	-.0537 (-3.02)	.1331 (5.64)	-.0806 (-5.75)
1960-1964	.0088 (.83)	.1219 (3.51)	-.1131 (-3.39)	.1488 (2.21)	-.1400 (-1.76)
1950-1959	.0046 (.46)	-.0432 (-1.45)	.0478 (1.70)	-.0163 (-.62)	.0209 (1.03)
<u>Mexican</u>					
1965-1969	.0247 (2.66)	.0453 (2.71)	-.0206 (-1.64)	.0303 (2.65)	-.0056 (-1.35)
1960-1964	.0094 (1.09)	.0263 (1.80)	-.0169 (-1.32)	.0113 (1.48)	-.0019 (-.87)
1950-1959	.0116 (1.40)	.0184 (1.41)	-.0068 (-.41)	.0034 (.43)	.0082 (.61)

TABLE 4 (Continued)

<u>GROUP/ Year</u>	<u>Cross-Section Growth</u>	<u>Immigrants Only</u>		<u>Relative to Natives</u>	
		<u>Within-Cohort</u>	<u>Across-Cohort</u>	<u>Within-Cohort</u>	<u>Across-Cohort</u>
<u>Cuban</u>					
1965-1969	.0551 (2.34)	.1037 (4.95)	-.0486 (-2.41)	.0861 (5.05)	-.0310 (-2.14)
1960-1964	.0336 (2.48)	.1110 (5.18)	-.0774 (-3.79)	.0934 (5.39)	-.0598 (-3.63)
1950-1959	.0308 (2.43)	.0898 (2.70)	-.0590 (-1.23)	.0722 (2.38)	-.0414 (-.86)
<u>Other Hispanics</u>					
1965-1969	.0396 (5.13)	.0614 (3.80)	-0.218 (-1.75)	.0552 (5.34)	-.0156 (-2.22)
1960-1964	.0261 (3.19)	.0261 (1.45)	.0000 (.08)	.0199 (1.93)	.0062 (.56)
1950-1959	.0017 (.13)	.0298 (1.57)	-.0281 (-1.27)	.0236 (.21)	-.0219 (-1.51)

*The asymptotic t-ratios given in parentheses refer to the respective transformation of the logit coefficients.

TABLE 5

Impact of Enclave on Self-Employment Probabilities*

<u>GROUP</u>	<u>Immigrant</u>	<u>Native-Born</u>	<u>Difference</u>
Mexican	.0869 (6.37)	.0344 (3.33)	.0525 (2.10)
Cuban	.1975 (5.04)	.1009 (.64)	.0966 (2.43)
Other Hispanic	.0794 (3.64)	.0114 (.65)	.0680 (2.83)
White	.1751 (.83)	.1009 (.64)	.0661 (.38)

*The asymptotic t-ratios are given in parentheses, and refer to the corresponding logit coefficients.

TABLE 6

Immigrant/Native-Born Differential in Self-Employment
Propensities Due to Enclave Effects

	<u>Fraction Hispanic in SMSA where:</u>		<u>Predicted</u>
	<u>Average</u>	<u>Average</u>	<u>Difference in</u>
	<u>Immigrant</u>	<u>Non-Immigrant</u>	<u>Self-Employment</u>
	<u>Resides</u>	<u>Resides</u>	<u>Probability</u>
Mexican	.237	.256	.012
Cuban	.136	.061	.021
Other Hispanic	.165	.161	.011

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