The Role of Small Firms in the Upward Mobility of Immigrants

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Executive Summary

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I. Objective of this Study

In 1994 the number of adult workers who were immigrants reached 12.6 million, about 10% of all adult workers. The assimilation and upward mobility of these immigrants is an important factor in the overall performance of the economy. This study measures the extent to which new immigrants find initial employment in small businesses, and later move to larger firms. Prior research has shown that small businesses contribute more than proportionately to hiring and providing on-the-job training for entry level workers. This suggests that small firms are an important source of skills development for the workforce as a whole, not only for those entry level employees who spend their careers in small businesses.

Small businesses may provide similar opportunities for new immigrants, who often have prior work experience or skills but have limited knowledge of the English language and local customs. This may be due in part to what are termed *enclave effects*, which result from the tendency of immigrants to concentrate residence in ethnic clusters. However, it is also easier for a small business to hire most of its workers from a single non-English speaking ethnic group. From a practical standpoint, large businesses would find it difficult to hire an entire work force which shares a common language other than English. Thus small firms are more able to hire new immigrants whose English skills are limited.

This study compares small firm (under 500 employees) employment among recent immigrants (those who have been in the U.S. less than 12 years), earlier immigrants, and native born workers. In particular, the research examines the frequency with which these different groups are employed by small firms. The following questions are addressed:
1. To what extent are immigrants initially employed in small firms?

2. To what extent do immigrants initially employed by small firms later move to large firms?

This study uses census data to examine these questions. Specifically, data is drawn from the March 1994 Current Population Survey (CPS) and the Public Use Microdata Samples (PUMS) from the 1980 and 1990 Population Censuses.

II. Major Findings

1. Immigrants are more likely to be employed by small firms than native born workers. Recent immigrants are more likely to be employed by small firms than earlier immigrants, while earlier immigrants are more likely to be employed by small firms than native born workers. The CPS sample indicates that small firms employ 68.1% of new immigrants, 60.6% of earlier immigrants and 52.4% of native born workers.

2. The amount of labor skills possessed by workers is an important factor in determining the likelihood that they will be employed in a small firm. Unskilled workers are more likely to be employed in small firms and recent immigrants tend to be less skilled (as proxied by education level) than both earlier immigrants and native born. In the CPS sample, 36.5% of recent immigrants but only 29.3% of earlier immigrants and 11% of native born workers have less than a high school education. This explains some of the differential employment pattern. However, even when controlling for the level of education, recent immigrants are more likely to be employed by small firms than earlier immigrants or native born. Comparing workers with a high school (but no college) degree, 70.0% of recent immigrants but only 60.5% of earlier immigrants and 54.9% of native born are employed in small firms.

3. Other factors affecting likelihood of small firm employment are age, gender, race, student
status, and age at time of arrival in the U.S. When these factors are held constant, small firm employment remains higher for recent immigrants compared with earlier immigrants and native born. For example, a recent immigrant who is a white male high school graduate of age 30 has a 74% probability of small firm employment. A similarly endowed earlier immigrant has a 66% likelihood of small firm employment, while the comparable probability for a native born person is 57%.

4. The movement of immigrants from small to large firms appears to take place gradually. Rather than observing a high percentage of change in employment patterns after some initial assimilation period, a relatively steady shift occurs. The probability of small firm employment (for a 30 year old white male with less than high school education) declines from 87% (for immigrants in the U.S. less than two years) to 84% after four years’ residence, 82% after 8 years, and 78% after thirteen years.

5. Even after many years in the U.S., immigrants are more likely to be employed in small firms than native born workers. Immigrants with less than high school education who have lived in the U.S. 30 or more years have a 76% likelihood of small firm employment, while among comparable native born workers the probability is 72%.

6. The likelihood of small firm employment for immigrants and native born workers is directly related to English-speaking ability and is therefore dependent on country of origin as well as length of residence in the U.S. The fact that the ability to speak English is a function of country of origin and also increases with residence in the U.S. is consistent with the theory that small firms can more easily employ non-English speaking workers.

7. The inverse relationship between length of U.S. residence and the likelihood of small firm employment is more pronounced for some ethnic and racial groups. It is weakest for non-Hispanic whites and all persons of European ancestry. It is strongest for Asians other than those from China,
Japan or Korea and for non-Cuban Hispanics.

8. Differences in emigration dates apparently do not contribute to the observed employment patterns. The relationship between small firm employment and length of U.S. residence is the same for individuals arriving between 1985 and 1989 as it was for those arriving between 1975 and 1979. This suggests that the differences in likelihood of small firm employment that are found for recent and earlier immigrants are not attributable to unidentified socio-economic differences between these two groups nor to structural changes in U.S. employment patterns.

III. Significance of Findings

These findings are evidence that small firm employment contributes significantly toward the success and upward mobility of immigrants. Small businesses play an important role in providing on-the-job training as well as acculturation for immigrants to the U.S. These represent social benefits that small firms provide to the U.S. economy. Public policies to help small firms can be justified in part by these social benefits.

These findings also suggest that immigrants provide a greater share of the labor inputs for small firms than for large firm. Thus small business owners ought to favor more open immigration policies as a way of satisfying their labor requirements.

Additional research is needed to more accurately estimate the number of immigrants who have started in small firms and switched to large firms. This could be done by surveying immigrants currently employed in large firms and asking about their prior employment. A related research topic that should be pursued is the extent to which immigrants become small business owners after being employees of small businesses.
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1.0 Introduction

Social scientists frequently characterize the U.S. as a nation of immigrants and point to the contribution of immigration to economic growth. Historically, the economic progress of immigrants has been fairly rapid. While the earnings of new immigrants have generally been below those of similar skilled native born, the average immigrant has attained parity with native born after about ten to fifteen years. Small businesses no doubt play an important role in the success of immigrants in the U.S., though there has been little research to document this fact. The research reported below measures the extent to which new immigrants find employment in small businesses and later move to large businesses. Prior research has shown that small businesses contribute more than proportionately to on-the-job training of entry level workers. It is likely that small businesses provide similar opportunities to new immigrants who often have prior work experience and skills but have limited knowledge of the English language and local customs. Such job opportunities contribute to the assimilation and upward mobility of new immigrants which has always been a distinctive feature of the U.S. economy.

The following questions will be addressed:

1. To what extent do new immigrants find their first jobs in small firms?

2. To what extent do new immigrants switch from small firms to large firms after residing in the U.S for a period of years?

3. To what extent is the tendency to switch from small to large firms after accumulating job experience greater for new immigrants than for native born?

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The study compares the relative frequency of employment in small firms among new immigrants, immigrants who have been in the U.S. for a long period of time and native born persons. If immigrants take their first jobs in small firms and later move to large firms, it is expected that the percentage employed in small firms will be larger for new immigrants than for earlier immigrants and native born. For either immigrant group, the percentage employed in small firms should decline as the average number of years in the U.S. increases.

1.1 Why First Jobs are Likely to be in Small Firm

Upon arrival in the U.S. immigrants tend to cluster in enclaves in different geographic areas. Limited ability to speak and write English and lack of knowledge of American customs and etiquette makes it more difficult for immigrants to find jobs in large firms. One reason is that recruitment of new workers and communication between existing workers is more efficient when workers have common language and customs. Large firms have to hire large numbers of workers and for them the only common language can be English and the only common customs will be the dominant American customs. However, small businesses hire small numbers of workers and can hire relatively large numbers of a single ethnic group and still have a majority of workers with common language and custom. Thus a firm with 20 employees located near any enclave could easily find enough workers in a single ethnic group to satisfy its labor requirements. However a firm with 1000 employees may be unable to find enough workers from any single ethnic group.

Borjas (1986) found that self-employment rates are higher for immigrants than for native born workers between 5 and 10 years after immigrants arrive in the U.S.. His theory about enclave effects suggests that the businesses owned by these self-employed persons will employ mainly newer
immigrants with the same native language and ethnic background. These business owners are able to evaluate the educational and occupational credentials, and the skills and experience of immigrants (which have been acquired outside the U.S.). Firms that hire new immigrants are more likely to be relatively new businesses with limited access to capital markets and therefore small in size.

Labor market discrimination by employers against immigrants may also be a factor especially for those immigrants who do not fall into a protected minority class. These workers are more likely to be hired by a firm whose owners or managers are earlier immigrants with the same ethnic background so that employers' discriminatory preferences are not an obstacle and may even be an advantage.

Even if immigrants tend to find their first jobs in small firms, they may or may not switch to large firms after accumulating experience. Switching to large firms would be less likely if the skills developed from on the job training are specific to the firm or specific to an industry dominated by small firms. Rather than switching to a large firm after accumulating job experience, immigrants may set up their own small businesses and become owners of small businesses rather than employees of large businesses. Alternatively, immigrants may move away from enclaves as they assimilate and switch from one small firm to another within the same industry.

2.0 Data Sources

Data for this study come from two sources, the Current Population Survey (CPS) Annual Demographic File for 1994 and Decennial Population Census, Public Use Microdata Samples (PUMS) for 1990 and 1980. Both sources contain information on whether a person was born outside or inside the U.S. Each of these data sets has advantages and limitations.
2.1 Public Use Microdata Samples

The advantage of the PUMS data is large sample size. For each decennial census, the PUMS files contain information on nearly fifteen million people. The major limitation of the PUMS data is that it does not directly indicate the size of the firm in which each person is employed. However, it does indicate the industry in which a person is employed. The probability that a person is employed in a small firm can then be inferred from industry employment size distributions taken from other sources. The limitation is that all persons in the same industry have to be assigned the same probability of being employed in a small firm, regardless of immigrant status. The result is that while the PUMS data can show a tendency for immigrants to be employed in small firm dominated industries, it cannot show any tendency for immigrants to be employed in small firms within a given industry. Thus the PUMS data can only partially measure any overall propensity of immigrants to be employed in small firms.

The industry employment size distribution data are taken from Current Population Survey (CPS) which indicate the size class of the firm in which each person is employed. Data from three annual CPS files, 1990, 1992 and 1994 were aggregated and the percentage of employees in small firms in each CPS detailed industry were computed. In all but a few industries the PUMS industry definition is the same as the CPS industry definition so that CPS industry data could be matched to PUMS industries. Thus for most individuals on the PUMS file, it was possible to compute the percentage of employees who are in small firms, for the industry in which the person was employee. From this, the probability that an individual on the PUMS file was employed in a small firm was inferred. Individuals on the PUMS employed in industries not matching a CPS industry definition were not used. For each industry the percentage of individuals on the three annual files employed in small firms was computed. A listing of the industries and the industry small firm share is shown in Appendix IV. The PUMS data were then
used to compute the likelihood (i.e. probability) of being employed in a small firm for recent immigrants, earlier immigrants and native born.

For each individual, the likelihood that he/she was employed in a small firm was the small firm share of the industry where the individual was employed. Thus if a person was employed in a PUMS industry where 80% of the employees were in small firms (according matched CPS data), then the probability is .8 that this person is employed in a small firm. The average probability was computed and compared for groups of recent immigrants and earlier immigrants. Separate comparisons were made for different ethnic groups.

A second strength of the PUMS data is that it contains information on the ability of persons to speak English which is not available on the CPS files. Since lack of knowledge of English is hypothesized to be a significant factor in explaining why new immigrants take their first jobs in small businesses, it is important to see whether immigrants who are more able to speak English are less likely to be employed in small firms. This was carried out by examining the average probability of small firm employment for immigrants who speak English well compared to those who speak little or no English.2

2.2 Current Population Survey

The main advantage of the CPS is that it identifies the employment size of the firm where each individual is employed. Thus the number of immigrants employed in small firms can be computed. This contrasts with the PUMS data where only the likelihood of employment in a small firm can be computed. The disadvantage of the CPS data is its small size, 150,000 persons compared with fifteen

2 This comparison is again based on industry membership and can show only part of a tendency for immigrants with the least knowledge of English to be employed in small firms.
million in each PUMS. A second limitation of the CPS is that information on immigrant status was added to the annual demographic survey starting in March 1994, and is therefore available only for one year.\textsuperscript{3} The discussion below indicates why this limitation may cause a bias in inferences drawn from the data (see Section 5.3 ).

Given that the PUMS data and the CPS data have different strengths and weakness, both data sets are used in this study.

3.0 Analysis Using The March 1994 CPS

3.1 Description of the Sample

Table I shows how the sample of individuals used for this study was constructed. The March 1994 CPS is a sample of 150,943 persons from the total population in the U.S. estimated at 259.7 million people (see line 1 of Table 1). Out of the total sample, there were 73,620 persons in the labor force of whom 8,547 were classified in this study as immigrants. A person was classified as an immigrant if he/she was born outside the U.S. or born in Puerto Rico or other U.S. outlying areas. Otherwise, a person was classified as native born. Persons who were born abroad to a least one American parent however, were classified as native born.

The study uses 70,670 sample labor force participants who were fifteen years or older drawn from the population estimated at 124.2 million. The sample contains 8,013 immigrants and 62,657 native born. The sample of immigrants was initially classified into two groups according the date of their arrival in the U.S. The first consists of 3,381 immigrants who arrived in the U.S. between 1982 and 1994. As of March 1994 these individuals would have been in the U.S. no more than twelve years.

\textsuperscript{3} Immigrants status is available in earlier years as part of special surveys. However none of the special surveys contain firm size data.
This group will be referred to as new (or recent) immigrants. They represent a population of 5.4 million persons. The second group in the sample is immigrants who arrived before 1982 (more than 12 years in the U.S.). This sample represents a population of 7.2 million earlier immigrants.

3.2 Classification by Firm Size

The CPS defines firm size according to the number of employees in all locations operated by an employer. Six firm size classes are defined. Table 2 shows the percentage of all of new immigrants, all other immigrants and all native born employed in each firm size class. These percentages will be referred to as "employment shares." Panel A of Table 2 shows the sample totals and Panel B shows the population estimates obtained by aggregating using the CPS population weights. Individuals who are employees of federal, state or local governments or government agencies are classified into a single separate size class.

Table 2 indicates that out of 5.4 million new immigrants employed in the U.S., 3.7 million are employed in small firms (less than 500 employees) and the remainder employed in large firms or government. It shows that while large numbers of immigrants are employed in small and large firms, small firms employ new immigrants as a greater proportion to their total employment.

Table 2 shows that for all four firm size classes with less than 500 employees, the employment share of new immigrants exceeds the share of other immigrants and the share of other immigrants exceeds the share of native born. In size classes greater than 500 and for governments, the share of new immigrants is less than the share of other immigrants and the share of other immigrants is less than native born. For example, firms having between 10 and 24 employees employed 8.6 percent of all native born persons but 13.2 percent of new immigrants (i.e., less than 12 years in the U.S.) and 9.2
percent of all other immigrants. Firms with more than 1,000 employees employed 26.1 percent of all natives, 21.4 percent of new immigrants and 22.8 percent of other immigrants. Thus new immigrants are more likely than other immigrants to work in small firms and other immigrants are more likely than natives to work in small firms.

Panel B of Table 2 repeats the analysis of Panel A but uses the population estimates (weighted sums) rather than the sample (unweighted sums). The results are virtually identical.

3.3 Classification By Time in the U.S.

Table 3 replicates the analysis in Table 2 but uses only two firm size classes. Small firms are those with under 500 employees and large firms are those with 500 or more employees including all government employees. Table 3 also breaks the immigrant population into six classes by time in the U.S. (as opposed to two classes in Table 2). For each time class, Table 3 shows the number and the percentage employed in small firms. For example, there were 1,056 immigrants who had been in the U.S. 4 years or less. Of these, 715 or 69 percent were employed small firms. This percentage is referred to as the small firm share.

The extent to which small firms are more likely to employ immigrants is clearer in Table 3 than it is in Table 2. Among immigrants 0-4 years in the U.S. and immigrants 5-8 years in the U.S., the small firm share is about equal at 69 percent. As the length of time in the U.S. increases beyond eight years the small firm share declines monotonically. Among native born the small firm share was 52.9 percent. The pattern suggests that immigrants tend to start out in small firms and switch to large firms after they have been in the U.S. for some time. The population estimates in Panel B show a similar pattern.
The population estimates in Panel B of Table 3 can be used to answer the following question: how many immigrants who are currently working in large firms were employed in small firms when they first arrived? Panel B shows that there were 2.91 million immigrants working in large firms who have been in the U.S. 13 or more years. The difference in the small firm share for more recent immigrants (4 or less years) compared to earlier immigrants (13 or more years) is 7.7% (69.7% - 62.0%). If small firms had maintained their share of the immigrants as their length of time in the U.S. increased, large firms would have employed 7.7% x 2.91 million or 224,070 fewer immigrants. In this sense one could say that 224,070 immigrants who are currently working in large firms started out working in small firms.

3.4 Skilled and Unskilled Workers

The likelihood of being employed in a small firm may be determined in part by the level of an individual's labor skills. Small firms are more labor intensive and provide more unskilled and semi-skilled jobs relative to large firms, which are generally more capital intensive. At the same time, new immigrants may be disproportionately unskilled workers so that some or all of the observed difference of small firm shares reflects a skill effect rather than an assimilation effect. Holding skill levels constant, the propensity of immigrants to work in small firms may be no different than the propensity of natives to work in small firms.

3.5 Skill Levels Among Immigrants and Natives

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\(^4\text{See Table 2, Panel B, column 4 (2.91 = 1.16 + 0.96 + 0.79)}\)
Table 4 describes the distribution of worker skills among immigrants and natives where the level of education is used as proxy for skill. Workers are classified into four groups: (1) People with no high school degree, (2) high school graduates with out a college degree, (3) people with a two year college degree, but no four year college degree and (4) people with a minimum of a four year college degree. Table 4 shows the small firm share for all workers in each of the four education groups.

Table 4 shows that the main difference in education is that immigrants are less likely than natives to have completed high school. Thus 37% of new immigrants but only 11% of natives have no high school degree. At the same time, the percentage of people completing some college is almost the same for natives and immigrants (i.e. adding lines 3 and 4 in Table 4). There is also little difference between new immigrants and other immigrants for each education level. The data in Table 4 suggest that small firms may disproportionately employ immigrants because they are less skilled. One can argue that assimilation includes acquiring labor skills and that education is a proxy for greater skills. Thus the shift in immigrant employment from small to large firms with education is part of small firm contribution to the assimilation process. However, this education related shift in employment patterns is also observed among native born workers. Therefore, in order to identify a pure assimilation effect, it is necessary to compare the small firm share of employment for immigrant and native born workers with the same education level.

3.6 Small Firm Share by Time in U.S. and Level of Education

Table 3 showed the breakdown of small firm employment shares by length of residence in the U.S. Table 5 repeats this breakdown for several different levels of education. This shows how the small firm employment share changes both with education level and length of residence.
Table 5 shows a declining small firm share of employment as education increases for immigrants having spent the same amount of time in the U.S. For example, among those who have immigrated within the last four years, the small firm share of employment is 80.9 percent for those with no high school degree. For those with a high school degree it is 72.3 percent and it drops to 49.8 percent for those with a college degree.

The same pattern is observable for immigrants with longer U.S. residence as well as for native born persons. The main difference between immigrant cohorts is that the education related difference in small firm share of employment is more pronounced for more recent immigrants.

The more important feature of Table 5 is the relation between the small firm share and time in the U.S. for people with the same education. Table 5 shows that among those with a high school education or less, the small firm share declines monotonically as the length of time in the U.S. increases. The relationship is similar to the one shown in Table 3 for all education levels combined, but it is stronger for high school graduates and weaker for college graduates. Among those immigrants with a high school degree but no college degree, 70.0 percent of immigrants in the U.S. less than 13 years but only 60.5 percent of immigrants in the U.S. 13 or more years were in small firms. However among those with a 2 year college degree the pattern is almost reversed, although the sample size for this group is relatively small. For college graduates, the small firm share initially increases with time in the U.S., reaches a peak at 9-12 years and then declines.

3.7 Other Factors Affecting the Small Firm Share

One other factor determining the frequency of small firm employment is the amount of work experience. There may be a tendency for both native and immigrant workers to switch from small to
large firms after accumulating work experience. If the average work experience of immigrants and natives is different, this could explain the difference in small firm shares. The CPS does not give information on work experience. Therefore a person's age, which is given, is used as a proxy for work experience. Two other potential factors that might affect small firm employment are gender and race. Race may be a factor to the extent that affirmative action enforcement is greater in large firms and the racial composition of immigrants differs from natives. Gender may also be a factor if women are either more or less likely to be employed by small firms. 5 Race and gender may also be proxies for skill levels not captured by education.

Another factor that might influence the frequency of small firm employment is whether a person is currently a student. Students may be more likely than non-students to work in a small firm. For example, students may be more likely to be part-time workers and may be more frequently employed in small firms. Or, students may be temporarily in one occupation (e.g., waiter) while they are preparing for a more skilled occupation. Temporary work may be more frequent in small firms.

In order to consider the simultaneous effect of all the above mentioned factors affecting small firm employment, probit models were estimated. The parameters of these models allow one to estimate the probability of being employed in a small firm for immigrants and natives with the same age, education, race, gender and student status. The probabilities estimated from the probit models are analogous to the small firm shares analyzed in the tables above. Thus using the probit model, it is possible to estimate and compare the probability of being employed in a small firm for recent immigrants, earlier immigrants and native born with the same age, race, gender and education.

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5 Women may be less likely to work in small firms if small firms tend to have fewer day care facilities or less flexible work hours.
3.8 Probabilities Estimated Using Probit Models

The probit model parameter estimates and standard errors are shown in Appendix I. A separate equation was estimated for each of three education groups. The estimates of the probability of being employed in a small firm that were derived from the probit estimates are shown in Table 6. The estimates shown were made for a 30 year old white male.\(^6\)

Table 6 shows that for each education group, the likelihood of employment in a small firm declines as the number of years in the U.S. increases. The decline is greatest for high school graduates where the probability goes from .74 for the newest immigrants to .57 for the oldest immigrants. For all three education groups the probability of small firm employment declines gradually over many years. It does not approach the level of native born until born until after thirty years. The length of time required to reach the level of native born may mean that the differences between the most recent immigrants and the earliest immigrants reflect differences between cohorts rather than changes within a cohort. That is, it is possible that at the time of their arrival, earlier immigrants were less likely to work in small firms compared to recent immigrants in the current year (1994). This issue is discussed in more detail in connection with the results using the PUMS data.

4.0 Additional Issues

4.1 First Jobs

In the tables above, the most recent arrivals were up to 4 years in the U.S. at the time that the CPS was prepared. It may be that immigrants take their very first jobs in small firms and switch after

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\(^6\)The parameter estimates in Appendix I indicate that the probabilities of employment in a small firm are smaller for women and blacks. However, the decrease in the probabilities of being employed in a small firm as the length of time in the U.S. increases is about the same for blacks and women as it is for white males.
only two or three years. This difference between new and old immigrants would be less visible in the above tables. In order to insure a large number of immigrants in each arrival group in the tables above, the ranges of time in the U.S. used were broader than the most narrow ranges available on the CPS. Therefore additional estimates using the probit model were prepared by splitting the "up to 4 years" group into two subgroups. These were "less than 2 years in the U.S." and "3-4 years in the U.S." and were the narrowest ranges that were available in the CPS file.

4.2 Immigrants Arriving as Children

Many of the immigrants in the sample arrived in the U.S. when they were young children. These immigrants were educated in the U.S. and in most respects are like second generation rather than first generation in the U.S. To any prospective employer they will be indistinguishable from native born. Immigrants who arrived as children but were adults in 1994 will have been in the U.S. for a substantial period of time. In comparing the likelihood of being employed in a small firm for recent and earlier immigrants, both groups should be immigrants who arrived in the U.S. as adults. Otherwise, differences between new and old immigrants are less likely to reflect assimilation through work experience rather than assimilation by being raised and educated in the U.S. Therefore the study attempted to identify immigrants who arrived in the U.S. as children and to analyze differences between these and other immigrants.

Since the March CPS does not give the exact date of arrival or the length of time in the U.S. it was impossible to determine precisely which immigrants arrived as children and which arrived as adults. However, the CPS gives a range of years during which each person arrived (e.g., between 1992 and 1994, between 1990 and 1991, etc.). Given an immigrant’s age as of March 1994, it is
possible to approximate how long that person had been in the U.S. as of that date. An immigrant was considered as having arrived as an adult if the person's approximate age at time of arrival was more than 15 years. For 1992-1994 arrivals, immigrants were considered as having arrived as an adult if their age recorded on the March 1994 CPS was above 17 years old. For 1991-92 arrivals, persons were considered as having arrived as adults if their age recorded on the CPS was 20 years or older. A similar cut-off was set for each arrival range.

4.3 Other Firm Size Classes

It is possible that immigrants start out in very small firms and then switch to medium sized firms and later to large firms. Is so, the definition of small firms as those with under 500 employees may mask any tendency of immigrants to start in very small firms. For this reason, the probit equations described above were re-estimated with two other categories of small firms: (a) those with under 25 employees and (b) those with under 100 employees.

4.4 Additional Probit Estimates

Parameter estimates for probit models with narrower ranges of time in the U.S. and separation of immigrants who arrived as children are shown in Appendix II. The probability of being employed in a small firm derived from the probit models is shown in Table 7. In most respects the patterns in Table 7 are similar to those in Table 6. That is, the likelihood of being employed by a small firm is highest for the more recent immigrants, lower for earlier immigrants and lowest for native born.

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7 This means that for 1992-1994 arrivals, the youngest immigrant classified as arriving as an adult arrived in January 1992 and was 15 years and ten months old at that time. Thus the person would have been 16 years old in March 1992 and 18 years old in March 1994.
However the pattern in Table 7 is clearer for those who have not graduated from high school. Here the likelihood is greatest for the most recent immigrants and it declines as the length of time in the U.S. increases. For the high school and college graduates, the probability is highest for immigrants who have been in the U.S. for two to four years and declines from there as the time in the U.S. increases.

4.3.1 Other Small Firm Size Classes

Table 8 shows probability of being employed in a firm with under 100 employees (Panel A) and the probability of being employed in a firm with under 25 employees (Panel B). The patterns in Table 8 are quite similar to the ones in Table 7 but the relative differences between new immigrants and other immigrants are greater in Table 8. The relative differences are greatest for firms with under 25 employees. For example, consider the differences between two immigrant groups; the most recent immigrants who were here less than two years and those here 13-19 years. Using firms with under 500 employees with no high school degree (see Table 7), the difference between these two immigrant groups is .87 - .78 = .11 which is a relative difference of .11/.78 or 14 percent. However using firms with under 25 employees (Table 8, Panel B), the difference between the same two immigrant groups is .55 - .37 = .18. This is a relative difference of .18/.37 = 49 percent.

Tables 7 and 8 together suggest that the immigrants take their first jobs in very small firms (i.e. under 25 employees) and then move to medium sized firms. However even the medium sized firms tend to be relatively small (i.e., under 500 employees).

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8 The probabilities were derived from a separate set of probit model parameter estimates (not shown) where the dependent variable is 1 for employees in firms with under 100 employees (Panel A) or 1 for employees in firms with under 25 employees (Panel B).
5.0 Results using PUMS 1980 and 1990 Census Files

Given the size of the PUMS data base, it is possible to compare immigrants and native born from the same ethnic group. For this purpose, individuals were classified into one of nine groups based on either race, ancestry or ethnic identity (e.g., Hispanic origin) The number of immigrants found on the PUMS files for 1980 and 1990 is shown in Table 7 for each group. The table also shows the number of native born in each ethnic group. Individuals were classified first by race and then by ancestry or ethnic identity. Thus a white person who lists his ancestry as European is classified as European while Hispanic whites or blacks are classified as Mexican, Cuban or Other Hispanic. Thus the group "white" in Table 7 includes mainly people who are not Asian or black and who list American or Canadian as their ancestry.

The data used to generate the tables below use a 50% random sample of white immigrants and 100% of immigrants in all the other groups. For each ethnic group a random sample of natives was selected to be approximately the same size as the immigrants of that ethnic group.

5.1 Ability to Speak English

An important factor in assimilation of many immigrants is learning to speak English. The PUMS classifies people according to their ability to speak English into four groups. Table 10 shows percentage of each immigrant group who speak English (i) not at all (ii) not well (iii) well, and (iv) very well. Persons in each English ability group are then classified according to the length of time immigrants have been in the U.S. Table 10 indicates that among the most recent immigrants (2-4 years
in the U.S.), 41% speak English either "not at all" or "not well." That percentage declines almost monotonically as the length of time in the U.S. increases. For those who have been in the U.S. thirty or more years, the percentage speaking English "not at all" or "not well" declines to 9 percent.

5.1.1 Ability to Speak English and Employment in Small Firms

The hypothesis of this study is that immigrants are disproportionally employed in small firms because their ability to speak English is often limited and this limitation is more likely to discourage hiring by large firms. This implies that the likelihood of being employed in a small firm ought to be inversely related to an immigrant's ability to speak English. To directly test this proposition, the likelihood of being employed in a small firm was regressed on the ability to speak English along, with several other variables. The parameter estimates and t-values for regressions are shown in Appendix III. The estimated likelihood of being employed in a small firms (i.e., predicted values of the dependent regression variable) is shown in Table 11 for each of several ethnic/racial groups. The table shows the likelihood of being employed in a small firm for each ethnic group and for the four categories of ability to speak English. Table 11 indicates that for each ethnic group (with the exception of Europeans), the likelihood of employment in a small firm decreases as the ability to speak English increases. The relationship is strongest among Spanish speaking immigrants. For immigrants from Mexico, for example, the table shows that the probability of being employed in a small firm is .76 for those who speak no English at all and declines to .64 for those who speak English very well. For those immigrants who speak English very well, the likelihood of being employed in a small firm is still

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9 The dependent variable was the percentage of employees in small firms for the industry in which the individual is employed. The other independent variables in the regression were age, education, gender, and veteran status.
slightly higher than it is for native born. This suggests that there are other factors beside ability to speak English that deter immigrants from employment in large firms.

The evidence in Table 11 confirms the hypothesis that immigrants with limited ability to speak English are more likely to be employed in small firms, compared to other immigrants.

5.2 Small Firm Employment and Years in the U.S.

Given the relationship between years in the U.S. (i.e. tenure) and ability to speak English, and between ability to speak English and likelihood of being employed in a small firm, it is expected that tenure and likelihood of small firm employment will be related. However, the latter relationship may be stronger or weaker than the former. One reason for expecting a weaker relationship is because tenure is only a proxy for ability to speak English, which is the real determinant of likelihood of small firm employment. There are immigrants who have been in the U.S. for many years who do not speak English very well and others here for a few years who speak English well. A reason for expecting a stronger relationship is that ability to speak English may be only one factor in assimilation of immigrants. Other factors, such as knowledge of American custom and culture may increase with time in the U.S. even those who arrive speaking English very well.

The relation between tenure and likelihood of small firm employment was estimated in a regression equation similar to the ones in Appendix III but with tenure in the U.S. replacing ability to speak English. The predicted probability of employment in a small firm is shown in Table 12 for immigrants in each ethnic/racial group by tenure in the U.S.. The predicted probability was also calculated for two other groups: immigrants who arrived in the U.S. as children and native born Americans of the same racial/ethnic background. For almost every group the probability of small firm
employment declines as tenure in the U.S. increases. The differences between new immigrants and other immigrants are greatest among Hispanics other than those from Cuba and Mexico and among Asian immigrants other than those from China, Japan or Korea. For Other Asians, the probability of employment in a small firm goes from .58 among immigrants in the U.S. two years or less to .51 among those here more than thirty years. For each ethnic group, the differences between recent and earlier immigrants in Table 12 are considerably smaller than the differences between those who speak no English and those who speak English very well shown in Table 11. This suggests that ability to speak English more than other assimilation variables affected by tenure in the U.S., determine the likelihood of being employed in a small firm.

5.3 Within Cohort Differences vs. Between Cohort Differences

The greater likelihood of being employed in a small firm for "new immigrants" as compared to other immigrants observed above has been attributed to the affect of assimilation. However it is possible that these differences reflect differences in the propensity of earlier immigrants to be employed in small firms at the time of their arrival in the U.S. compared with the most recent immigrants. This could result if earlier and recent immigrants from the same country came from different socio-economic classes.\(^\text{10}\) Thus if the most recent immigrants are from a lower socio-economic group than earlier immigrants of the same ancestry, and lower socio-economics groups tend to find employment in small firms more frequently than others, then differences in frequencies of small firm employment between recent and earlier immigrants would reflect socio-economic differences rather than assimilation. The

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\(^{10}\) Borjas (1987) argues that the "quality" of recent immigrants is lower compared to earlier immigrants. Immigrant quality is determined by political and economic conditions in the country of origin at the time of migration. Borjas (1994) found that in 1970 immigrants were slightly less likely than native born to receive public assistance. In 1990 immigrants were more likely to receive public assistance than native born.
observed results could also occur if earlier and recent immigrants are from countries at a different stage of economic development. To test whether differences in the observed rates of small firm employment between recent and earlier immigrants reflect differences at the time of arrival in the U.S., it is necessary to compare immigrants who have been in the U.S. the same length of time but arrived at different times.

Table 13 shows the estimates of the likelihood of being employed in a small firm derived from the 1990 and 1980 PUMS for immigrants with varying time in the U.S.. These estimates were obtained by estimating regressions similar to those in Appendix III. When immigrants on the 1980 and 1990 PUMS are grouped according to time in U.S., those in the 1980 PUMS have arrived in the U.S. ten years earlier than those in the 1990 PUMS. If differences between recent and earlier immigrants observed in the tables above reflect differences between cohorts at the time of emigration, rates of small firm employment in Table 13 ought to be higher for the 1990 PUMS than for the 1980 PUMS. However the rates in Table 13 are almost identical for both samples. This suggests that the differences in Tables 1-12 reflect shifts of immigrants from small firms to large firms as they assimilate.

6.0 Conclusion

The research reported in this study shows that recent immigrants are more frequently employed in small firms than earlier immigrants and native born. The research also shows that immigrants with less knowledge of English are more likely to be employed in small firms than other immigrants with the same ethnic background. The fact that knowledge of English tends to increase with time in the U.S., suggests that the difference in frequency with which recent and earlier immigrants find

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11 For example, immigrants on the 1990 PUMS who have been in the U.S. for one year arrived in 1988 while those on the 1980 PUMS who have been in the U.S. for one year arrived in 1979.
employment in small firms reflects the assimilation process. These patterns suggest that new immigrants find their first jobs in small firms and after gaining a knowledge of English move to large firms. The overall findings of this research demonstrate a contribution that small firms make to the process of assimilating new immigrants. Given the size and growth of the immigrant population in the U.S., this contribution is important in the overall performance of the U.S. economy.
REFERENCES


Table 1
Sample Sizes for March 1994 CPS

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<th>Sample Size</th>
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Table 2

Immigrants and Native Born by Firm Size

Panel A: Sample Statistics

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Panel B: Population Estimates (in millions)

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