

**Prospects for Immigrant-Native Wealth Assimilation:
Evidence from Financial Market Participation**

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I. Introduction

A central question facing researchers and policymakers is the extent to which immigrants will assimilate into economic, social, and political life in United States. One crucial facet of economic and social well-being is wealth. However, relatively little is known about the determinants of wealth differences between immigrants and the native-born. On the other hand, there is a rich literature that examines the sources of differences in labor market, health, and educational outcomes. A handful of recent studies have documented that immigrants have substantially lower wealth levels and hold their wealth in different forms compared to natives (Amuedo-Dorantes and Pozo, 2002; Hao, 2001; Cobb-Clark and Hildebrand, 2002). In particular, the median wealth levels of natives are estimated to be about 2.3 times higher than that of immigrants, and also immigrants are less likely to own financial and real estate wealth compared to natives (Cobb-Clark and Hildebrand, 2002). In this paper, we examine the factors that influence the decision of immigrants and natives to hold wealth in a particular form. Immigrants are much less likely to participate in U.S. financial markets compared to their native-born counterparts. For example, 55 percent of the native-born have a savings account, compared to only 40 percent of immigrants. There is a similar gap in the percentage of native-born and immigrants who own interest-bearing checking accounts: 36 percent versus 22 percent. By focusing on the extensive margin, rather than on the intensive margin, we hope to shed light on the reasons for the wide disparities in immigrant- native wealth holdings and assess the prospects for assimilation in wealth.

An investigation of the financial market behavior of immigrants is important for a number of reasons. First, between 1990 and 2000, the number of immigrants living in the United States increased by 57 percent. Today, one out of every nine individuals living in the U.S. was born abroad. Immigrant participation in financial markets affects important wealth-accumulation decisions, ranging from homeownership, to small-business formation, to retirement and also captures key components of immigrant economic progress in the destination community. Because immigrants are often members of economically vulnerable groups, participation in the financial mainstream provides an indicator of how well immigrant households can cope with income uncertainty and their potential to find pathways out of poverty.

Second, the extent of immigrant participation in formal financial markets can be viewed more broadly as an important indicator of society's progress in successfully incorporating immigrants. We know very little about how immigrants adapt to and gain trust in U.S. economic institutions. Because financial contracts require a high degree of trust and confidence in

institutions (see, for example, Guiso, Sapienza, and Zingales, 2004), the financial market behavior of immigrants, when combined with other indicators, can provide unique insights into the process of economic and social assimilation.

Finally, beyond its implications for the assimilation process, the process of financial market participation can influence social outcomes such as crime and neighborhood safety. According to several newspaper accounts, criminals target immigrants who hold cash balances and do not use checking or savings accounts. The cash attracts criminals, as does the reluctance of immigrants to report crimes because of legal status or home country experience with law enforcement (see, for example, *The Washington Post*, July 26, 2002, p. B01). Thus, immigrant participation in mainstream financial markets may be closely linked to the economic and social health of destination communities.

The goal of this paper is to investigate the prospects for wealth assimilation and immigrant adaptation by studying the financial market behavior of U.S. immigrants and comparing it to that of the native-born. To our knowledge, this is the first study to examine immigrant-native differences in financial market behavior. We use panel data from the 1996–2000 Survey on Income and Program Participation (SIPP) to analyze savings and checking account ownership decisions of immigrants relative to those of natives and to estimate the impact of being an immigrant on the likelihood of opening and closing accounts. In addition to documenting differences in immigrant versus native financial market participation, we also show how duration of stay in the United States impacts immigrant behavior relative to natives’.

Our analysis shows that immigrants’ financial market behavior is significantly different from that of similar native-born individuals. In particular, immigrants are less likely to have a savings or a checking account, and they exit out of account ownership at much higher rates. Recent immigrants are also less likely to enter into account ownership compared to natives. We show that lower rates of financial market participation tend to persist even for immigrants who have lived in the U.S for several years. Approximately half of the difference in immigrant-native financial market participation can be attributed to group differences in observed characteristics. Our calculations suggest that group differences in education and income account for a large share of the immigrant-native gap in financial market participation that can be attributed to characteristics. Interestingly, group differences in the metropolitan areas where immigrants and natives reside also account for a significant share of the immigrant-native gap. Our findings are robust to various methods of controlling for unobserved heterogeneity.

We present additional evidence that the explanation for differential behavior of immigrants relative to natives has to do with the characteristics of the geographic area where a given immigrant resides. For a given immigrant, the likelihood of financial market participation decreases with higher levels of ethnic concentration in the metropolitan area. Our measure of ethnic concentration is based on the number of immigrants from the same country of origin who reside in a given metropolitan area. These results provide suggestive evidence that social interactions may play an important role in determining whether immigrants participate in financial markets.³ Like wage growth (Borjas, 1998 and 2000), human capital accumulation, and language proficiency (Chiswick and Miller, 1996), immigrant financial market participation appears to be inhibited when there is a large network of immigrants to interact with. These findings are also consistent with other studies that have shown that financial market decisions are often influenced by social interactions. For example, Hong, Stein, and Kubik, (2004) show that social interactions have important effects on stock market participation. Similarly, Madrian and Shea (2000) and Duflo and Saez (2003) show that decisions to participate in employer-sponsored retirement plans are influenced by the choices of co-workers.

The rest of the paper is organized as follows. Section II describes the SIPP data and the variables used in the analysis and summarizes the data on the financial market participation of immigrants relative to natives. Empirical methods and findings are described in Section III. Section IV presents conclusions.

II. Data and Characteristics of Immigrants and Natives

A. Data

The empirical analysis in this paper is based on longitudinal data from the 1996-2000 waves of the Survey of Income and Program Participation (SIPP). The SIPP is a panel survey of adults within households and is conducted by the U.S. Census Bureau. The SIPP collects monthly data by interviewing individual respondents (about 65,000 individuals) about their economic experiences, including ownership of savings accounts, checking accounts (both interest and noninterest bearing), and stocks. The 1996 SIPP panel consists of 12 waves of interview questions, where the interview questions depend on the wave. We include only individuals who are 18 or older in our study. Our analysis deals with individuals who reside in a metropolitan

³We view these results as suggestive because of the possibility that unobserved individual and community characteristics determine not only the outcomes of interest but also whether immigrants choose to live in cities with high concentrations of individuals from their country of origin.

statistical area (MSA). This allows us to control for MSA-level variation in the availability of financial services by including MSA controls in estimates of financial market behavior. By focusing on an urban sample, we can also eliminate an important source of heterogeneity between immigrants and natives, since about 75 percent of the SIPP immigrant sample lives in an MSA compared to about half of natives. Our sample includes, on average, about 28,633 natives and 4,450 immigrants. Because we observe individuals multiple times, the total sample is made up of 356,769 observations.

The immigrant population in the 1996 SIPP closely mirrors 2000 Census data on U.S. immigrants. Out of a total sample of 29,731 MSA residents, 14 percent are immigrants.⁴ Nearly 51 percent of the immigrant sample was born in a Latin American country, while about 18 percent of the immigrant sample is of European descent (Table 1). A sizable share of the immigrants in the SIPP can be classified as recent immigrants, with almost 40 percent of the immigrants arriving in the U.S. after 1990.

The SIPP data consist of a “core” module in which primary respondents (and other adults in the household) are interviewed about demographic characteristics, ownership of interest or dividend-earning financial accounts, and income. These data are available for each of the 12 waves, at approximately three-month intervals. While the SIPP panel is relatively short, the large sample sizes available provide an opportunity to observe within-sample changes in the use of financial services (savings and interest-bearing checking accounts) for both immigrants and natives. Our analysis indicates that a significant fraction of the sample changes financial market participation over the course of the survey, although there are no apparent trends in the use of financial services over the course of the survey.⁵

In addition to information on financial market participation, the SIPP data also include information on immigrant status, country of origin, and year of arrival in the U.S., coded into five-year intervals to protect respondent confidentiality. The SIPP data are well-suited for this study because they include information on financial market behavior and immigration. Other data sources available from the Bureau of the Census or from the monthly Current Population Survey

⁴ In the 2000 Census, 11.4 percent of the total population was born abroad. The higher percentage of immigrants we find in our sample is due to the fact that we restrict our attention to MSA residents, and immigrants are more likely to live in metropolitan areas than in rural areas.

⁵ With any data that track individuals over time, the problem of individuals dropping out of the sample during the course of data collection arises. Our analysis indicates that while immigrants drop out of the sample at higher rates between Wave 1 and Wave 2, after that, patterns of attrition are fairly similar for natives and immigrants.

contain a large number of immigrants and provide detailed information on immigration. However, these data sources provide very limited information on participation in financial markets or transitions in ownership, which make them poorly suited to a study of financial assimilation among immigrant households.

The SIPP data have some weaknesses from the perspective of this study, however. In particular, they do not include any information on remittances or the use of informal financial institutions. This makes it difficult to directly assess how participation in formal financial markets in the U.S. is impacted by immigrant financial ties to countries of origin and the use and availability of informal financial substitutes. These may be important issues. For example, in 2001, \$23 billion was remitted to Latin America and the Caribbean, mostly from migrants living in the U.S. (Multilateral Investment Fund figures). The process of remitting to family members in the country of origin can lead immigrants to engage with U.S. financial institutions, including credit unions, banks, and wire transfer services. Immigrants also tend to rely heavily on informal networks, including family members, friends, and neighbors, to cope with economic shocks and to finance investments in businesses and homes (Light, 1972; Portes, 1987; Sanders and Nee, 1996). Thus, informal substitutes for formal financial markets may impact immigrant use of mainstream financial markets.

B. Characteristics of Immigrants and Natives

Socioeconomic and Demographic Characteristics

Table 1 provides a detailed comparison of the characteristics of immigrants and the native-born. Compared to the native-born, immigrants are younger, more likely to be married, have more children, and more likely to be unemployed or economically inactive. Immigrants also tend to be less educated than the native born. Nearly 36 percent of the immigrant sample has never completed high school, compared to only 15 percent of the native-born sample. However, the percentage of immigrants and the native-born who have an advanced degree is comparable at around 7 percent. Monthly per capita household income is significantly lower for immigrants compared to the native-born. For immigrants, average monthly per capita household income is \$1,619, compared to \$2,195 for the native-born. We also note that immigrants are more likely to be nonwhite. About 75 percent of the immigrant sample is nonwhite, compared to about 33 percent of the native sample.

Financial Market Participation

The empirical work in this paper focuses on two indicators of financial market participation: ownership of savings and interest-bearing checking accounts. The SIPP data provide information on whether a given survey respondent participated in a specific financial market in the previous month (savings account, interest-bearing checking accounts) at four-month intervals for the duration of the panel.⁶ Table 2 summarizes patterns of financial market participation for immigrants and natives.

Compared to the native born, immigrants are less likely to participate in mainstream financial markets. Ownership of savings accounts appears relatively widespread in the SIPP data, with 53 percent of the pooled immigrant-native sample reporting ownership of a savings account. However, only 40 percent of immigrants own a savings account, compared to 55 percent of natives. Ownership of an interest-bearing checking account is less common, with only 34 percent of the sample reporting ownership. For interest-bearing checking accounts, the gap between immigrants and natives is even larger, with immigrant ownership rates of 22 percent being only 60 percent that of natives at 36 percent.

A significant advantage of the SIPP panel is that we observe not just ownership at one point in time but also transitions into (and out of) financial market participation at frequent intervals (every four months) for both savings and interest-bearing checking accounts. Table 2 reports summary statistics on exit and entry from the SIPP for savings and interest-bearing checking accounts. Transitions into and out of account ownership differ in important ways by immigrant-native status. Over the course of the panel, immigrants are less likely to participate in mainstream financial markets. For example, about 41 percent of immigrants report *never* owning a savings account throughout all 12 waves, compared to 29 percent of natives. We also note that, for immigrants, the percentage of immigrants who *never* owned an interest-bearing checking account at any time during the panel is about 65 percent, compared to 49 percent for natives.

Immigrants report more volatility in their financial market participation status. We find that immigrants are more likely than natives to report exits from both types of account ownership. Specifically, exit rates out of savings and checking account ownership for immigrants are about 60 percent higher for immigrants than for natives. Immigrants also have lower rates of entry into account ownership compared to natives.

⁶Because information on ownership of noninterest bearing checking accounts is available only at less frequent intervals (approximately every eight months), we focus our attention on the ownership of savings accounts and interest-bearing checking accounts.

In addition to the information presented in Table 2, we also see important differences in financial market participation by race and ethnicity as well as by immigrant status. For example, among nonimmigrants, we find low rates of savings account ownership among Hispanics compared to other ethnic groups. In particular, ownership of savings accounts for Hispanics is about 55 percent that of non-Hispanic whites. For checking accounts, Hispanic ownership rates are only 32 percent of the ownership rates for non-Hispanic whites. White natives have the highest rate of financial market participation, followed by white immigrants. Hispanic immigrants have the lowest financial market participation rates. For example, 60 percent of native whites own a savings account, while only 28 percent of Hispanic immigrants report savings account ownership. Similarly, 41 percent of white natives own interest-bearing checking accounts, compared to only 10 percent of Hispanic immigrants.

III. Empirical Methods and Findings

In this section we describe the empirical models used to estimate the gap between immigrant and native financial market participation. We also describe various robustness tests and some additional estimates that help to clarify why immigrant financial market behavior differs from that of otherwise similar people born in the U.S.

The comparison of immigrant-native characteristics and financial market behavior discussed above suggests that differences in financial market participation between immigrants and the native-born may be driven by differences in household income, education, age, and family structure. Previous research has also highlighted the role of race and ethnicity in explaining differences in immigrant asset accumulation and financial market behavior (see, for example, Hao, 2001). In addition, it may also be important to account for additional sources of immigrant-native differences, including legal status, language skills, years of U.S. experience, and patterns of residential settlement, which are likely to affect financial decisions (Cobb-Clark and Kossoudji, 1999; Cobb-Clark and Hildenbrand, 2004). It is also likely that tastes and preferences, including the degree of risk aversion, may differ across otherwise similar immigrants and natives. In addition, as mentioned above, the financial support of relatives in the country of origin and the use and availability of informal substitutes for formal financial products and services are also likely to be important. While we cannot observe these characteristics directly, we make use of various empirical techniques to explore whether differences in immigrant-native financial market behavior is driven by unobserved heterogeneity.

A. Estimates of Immigrant-Native Differences in the Use of Financial Services

1. Empirical Specification

Our basic specification investigates the likelihood that an individual has used a particular financial service in a given period. The benefits and costs associated with the use of a financial service for individual i living in a destination community j can be defined as U_{ij} , which is a function of (Z_{ij}) , a vector of socioeconomic and demographic variables, including education, race, income, household size, and other control variables. In addition, for immigrants, U_{ij} may be a function of immigrant status, (I_i) , and duration of stay in the United States, D_i . The net benefits and costs associated with the use of a financial service may also vary by community, C_j , and be subject to an error term, ε_{ij} , that is particular to the individual. For each time period, U_{ij} can be measured as:

$$U_{ij} = \alpha + \beta_1 Z_{ij} + \beta_2 I_i + \beta_3 (D_i * I_i) + \gamma_j * C_j + \varepsilon_{ij} \quad (1)$$

We do not observe U_{ij} , but we observe whether the household has participated in a given financial market. Thus, we observe:

$$P_{ij} = \begin{cases} 1 & \text{if } U_{ij} > 0 \\ 0 & \text{otherwise} \end{cases} \quad (2)$$

Equation (1) represents the fully specified model. We build up to this model and first estimate a parsimonious specification, which includes individual characteristics and an indicator variable for immigrant status. We use a maximum likelihood logit model to estimate the probability that an individual has used a given financial service in the survey period. The parameter on the immigrant indicator, β_2 , will capture the effect of being an immigrant on the likelihood of using a particular financial service, after having controlled for time in the U.S. and socioeconomic and demographic characteristics. The parameter on the duration of stay variable, β_3 , measures how time in the U.S. affects the immigrant's likelihood of using a given financial service. The set of parameters, γ_j , measure community level fixed effects.

We identify the community as the metropolitan statistical area (MSA) where an individual resides. All of the estimates include MSA-level fixed effects, which capture the effect of community variables such as the density of formal financial institutions in the MSA, employment conditions, and other economic attributes of the MSA. In addition to MSA fixed effects, all estimates include the following explanatory variables: age, age squared, labor force status, per capita income, per capita income squared, marital status, the number of children in the

household, sex, race, and education.⁷ There are 12 waves in the 1996-2000 SIPP panel, and wave dummies are also included in all estimates to capture time variation in financial market participation over the sample period. All reported standard errors are adjusted to allow for correlation across observations for a given individual.

2. Baseline Findings for Participation in Financial Markets

Our baseline findings are summarized in Tables 3 and 4. In Table 3, the dependent variables are indicator variables that capture whether or not an individual owned a savings account (column 1) or a checking account (column 2) during the survey reference period. These estimates show that immigrants are significantly less likely to participate in financial markets, compared to the native-born. Specifically, immigrants are 7.4 percentage points less likely to own a savings account, compared to a similar native-born individual. Immigrants are also 6 percentage points less likely to own an interest-bearing checking account, compared to a similar native-born individual.

In Table 4, we consider the role of time in the U.S. on the financial market participation of immigrants relative to that of natives. Specifically, we estimate the additional effect of being a recent immigrant on savings account ownership (column 1) and checking account ownership (column 3). We define recent immigrants to be those who arrived in the U.S. in 1990 or more recently. At most they would have lived in the U.S. for six years at the beginning of the SIPP survey. Columns (2) and (4) include a full set of year-of-arrival controls and allow us to consider how the impact of being an immigrant on savings and checking account ownership, respectively, varies more generally with time in the U.S.⁸

While immigrants as a group are 7.4 percentage points less likely to have a savings account and 6 percentage points less likely to have a checking account, compared to the native-born, recent immigrants are 17.4 percentage points less likely to have a savings account and 12 percentage points less likely to have a checking account (see Table 4, columns 1 and 3). Recent immigrants are particularly likely to differ in important ways from natives in their familiarity and knowledge of U.S. financial markets. English language ability and legal status are likely to be important concerns for recent immigrants compared to their more established counterparts. In

⁷ While household wealth may provide a more suitable measure of permanent income or the lifetime resources for a given household, the SIPP wealth variable is available only in the topical modules (and is measured every eight months).

⁸ In addition to controls for being an immigrant and duration of stay in the U.S., the estimates presented in Table 4 also contain the same set of control variables included in the estimates presented in Table 3.

addition, information costs may impose significant barriers to immigrant participation in formal financial markets. However, it is likely that these information barriers would decrease as immigrants gain U.S. experience. The estimates presented in columns 2 and 4 suggest that this is indeed the case. While immigrants who arrived between 1990 and 1996 are 18 percentage points less likely to have a savings account and 12 percentage points less likely to have a checking account, immigrants who arrived between 1985 and 1989 are only 9 percentage points less likely to have a savings account and only 8 percentage points less likely to have a checking account, compared to the native-born.

With one exception, the cohort controls are not significantly different from zero for immigrants who arrived before 1985, suggesting that partial financial market assimilation happens in the first 10 to 15 years after migration and then stops. Interestingly, we find that immigrants who arrived between 1975 and 1979 are as likely as the native born to have a savings account.⁹ Altogether, the estimates presented in Table 4 indicate that immigrant financial market assimilation is partial at best. Taking into account U.S. experience and a rich set of controls, immigrants are about 5 percentage points less likely to have a savings account or a checking account compared to the native-born.

The findings in Tables 3 and 4 tell us that differences in characteristics – income, education, race, and time in the U.S. – do not fully account for the differences in immigrant-native financial market participation presented in Table 2. Naturally, however, individual characteristics do have important effects on financial market participation. These results are presented in Table 3.¹⁰ Older individuals are more likely to own interest-bearing checking accounts. There are some nonlinearities with respect to the effect of age on savings account ownership. While age is negatively associated with savings account ownership, age squared has a positive and significant impact on savings account ownership.

In general, the effect of individual and household level variables on savings account and checking account ownership is similar. Being married has a large positive impact on savings and checking account ownership, increasing the probability of savings account ownership by more than 20 percentage points and the likelihood of checking account ownership by 17 percentage

⁹ The 1975-79 cohort may have been particularly impacted by the 1986 Immigration Reform and Control Act, which provided amnesty in the form of legal permanent residence for undocumented immigrants who could prove they had been living continuously in the U.S. prior to January 1, 1982. Agricultural workers who had worked in the U.S. for at least 90 days in the year prior to May 1, 1986 were also eligible for amnesty.

¹⁰ Although they are not reported or discussed, the influence of socioeconomic and demographic characteristics is largely the same for the estimates in Table 4, which include year-of-arrival controls.

points. Interestingly, men are significantly less likely to own savings and checking accounts. We also note that, compared to whites, nonwhites are 11–12 percentage points less likely to have a savings or a checking account. The number of children in the household reduces the likelihood of having a savings or a checking account by about 2 percentage points for each additional child.

Income has a strong positive effect on financial market participation. If monthly per capita household income were to increase by one standard deviation from its mean, by \$2,764, the likelihood of savings account ownership would increase by 12 percentage points, a 23 percent increase relative to the observed percentage of the individuals in the sample who have a savings account of 53 percent. Similarly, participation in interest-bearing checking accounts would increase by 12 percentage points, and this represents a 30 percent increase relative to the observed likelihood of owning an interest-bearing checking account of 35 percent. Being unemployed or out of the labor force has a strong negative impact on savings account ownership, but a small positive impact on the probability of owning an interest-bearing checking account. The different effect of age and labor market status on savings and interest-bearing checking account ownership is most likely driven by greater ownership of interest-bearing checking accounts among retirees.

Educational attainment plays a very important role in explaining patterns of financial market participation. For example, compared to those with less than a high school diploma, high school graduates are about 13 percentage points more likely to own a savings account and 17 percentage points more likely to have a checking account. Individuals who have completed some college are 21 percentage points more likely to have a savings account and 26 percentage points more likely to have a checking account compared to those who did not complete high school. The predicted gap in account ownership between college graduates and those who did not complete high school is even larger, 24 percentage points for savings accounts and 35 percentage points for checking accounts. The figures are similar when we compare individuals with an advanced degree to individuals who did not complete high school.

B. Decomposing the Immigrant-Native Gap in Financial Market Participation

Having documented that there is an important gap in immigrant-native financial market participation that cannot be accounted for by differences in the characteristics of the two groups, we turn now to quantifying the fraction of the gap that can be explained by characteristics and by returns to characteristics (or “prices”). In addition, we identify the key characteristics that drive the portion of the gap that can be attributed to group differences in characteristics. In particular, we identify the relative importance of group differences in education, income, and metropolitan

areas in explaining immigrant-native gaps in participation in financial markets. Given the nonlinearity of the logit equation, we use a variation of the Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973), which is described in Fairlie (2003).

Table 5 summarizes the nonlinear decomposition of the immigrant-native gap in financial market participation based on Fairlie (2003).¹¹ The estimates presented in columns 1-4 use the coefficients from separate logit estimates of financial market participation for immigrants and natives. These estimates include the same explanatory variables as those in Table 3, with the exception that the immigrant coefficient is naturally dropped. These estimates are reported in Appendix Table 1.

The gap in immigrant-native financial market participation can be decomposed in two different ways. In columns (1) and (3), the gap is decomposed assuming that immigrants have the average characteristics of natives, and that the returns to these characteristics are those estimated for the immigrant sample alone. In columns (2) and (4) of Table 5, the decomposition assumes that immigrants receive the returns to characteristics estimated from the native sample, and the mean of each characteristic is calculated from the immigrant sample. Although both decompositions are equally valid, they can be associated with different policy perspectives. If one is interested in a relatively long-run perspective and believes that immigrant and native characteristics will converge over time, then the relevant decomposition is found in columns (1) and (3). Using these decompositions, we can consider what would happen to immigrant financial market participation if immigrants were given the characteristics of the average native, but retained the immigrant returns to these characteristics. Our estimates suggest that group differences in characteristics account for 50 percent of the gap in savings account participation and 58 percent of the gap in checking account participation.

¹¹ For the logit equation, the decomposition of the native/immigrant gap is expressed below. $F(\cdot)$ is the cumulative distribution function from the logistic distribution, X^j is a row vector of average values for the individual characteristics and MSA effects, $\hat{\beta}^j$ is a vector of coefficient estimates for group j , and Y^j is the average probability of owning an account for group j . We present the decomposition using immigrant coefficients in the first term:

$$\bar{Y}^N - \bar{Y}^I = \left[\sum_{i=1}^{N^N} \frac{F(X_i^N \hat{\beta}^I)}{N^N} - \sum_{i=1}^{N^I} \frac{F(X_i^I \hat{\beta}^I)}{N^I} \right] + \left[\sum_{i=1}^{N^N} \frac{F(X_i^N \hat{\beta}^N)}{N^N} - \sum_{i=1}^{N^N} \frac{F(X_i^N \hat{\beta}^I)}{N^N} \right]$$

If we take the perspective of columns (2) and (4) and consider what would happen to the gap in financial market participation if immigrants retained their characteristics but received the native return to these characteristics (or “prices”), then 56 percent of the gap in savings account participation and 72 percent of the gap in checking account ownership would be eliminated. This perspective is perhaps most relevant for evaluating the potential effect of a change in policy such that financial institutions treat natives and immigrants with similar characteristics the same way. With the exception of column (4) for checking account ownership, the decomposition suggests that group differences in characteristics and the returns to characteristics between immigrants and natives are equally important in explaining the gap in financial market participation for the two groups.

In addition to decomposing the overall gap, we can also consider the role that specific characteristics play in creating the differences between immigrants and the native-born. A positive sign means that the variable in question increases the immigrant-native gap, and a negative sign means that the variable reduces the immigrant-native gap. As one might expect, education and income differences between immigrants and natives play a key role in increasing the gap in financial market participation. Focusing on column (1), we see that education accounts for 19 percentage points and income accounts for 14 percentage points of the gap in savings account ownership that is due to differences in characteristics. Interestingly, differences in the metropolitan areas where immigrants and natives live play an equally important role, accounting for another 17 percentage points of the gap that is due to characteristics. This suggests that, on average, the financial market participation of immigrants would be higher if they lived in the same MSAs as natives. Overall, education, income, and location account for 99 percent of the total gap in immigrant-native savings account ownership that can be attributed to characteristics. The results for checking account ownership in column (3) are very similar. Differences in marital status and the number of children between immigrants and natives have lower relative contributions to the gap in savings and checking account ownership.

Race also contributes to the immigrant-native gap, but only when native coefficients are used (specifications 2 and 4). This asymmetry is revealing. The estimates in columns (1) and (3) mean that if immigrants were given the racial characteristics of natives, but retained their returns to race, the immigrant-native gap in savings account ownership would go down by 2 percent and the gap in checking account ownership would increase by 5 percent. Interestingly, looking at columns (2) and (4), we consider what would happen if immigrants kept their racial characteristics but were given the native returns to being nonwhite. Here, the gap in savings

account ownership would increase by 15 percent and the gap in checking account ownership would increase by 26 percent. This suggests that nonwhite natives receive a bigger “penalty” compared to nonwhite immigrants when it comes to financial market participation.

C. Unobserved Heterogeneity and Financial Market Participation

According to the decomposition discussed above, individual, family, and MSA characteristics account for about 50 to 70 percent of the difference in financial market participation for immigrants and natives. This suggests that there are other important factors that we have yet to consider that may play an important role in explaining differences in the financial behavior of immigrants and natives. To the extent that these omitted factors are correlated with being an immigrant, they will bias the coefficient on the immigrant indicator variable in the baseline estimates of financial market participation. We take two approaches to dealing with unobserved heterogeneity. First, we investigate the impact of additional control variables on the estimates presented in Table 3 in an effort to better account for omitted variables. We explore the role of ethnicity, legal status, language, and other potential sources of bias. These estimates are presented in Table 6 and discussed in sub-section [1] below. In addition, we make use of the panel nature of the SIPP data and estimate transitions into and out of financial market ownership. The estimates of changes in financial market behavior from one period to the next account for unobserved heterogeneity by implicitly differencing out the effect of fixed characteristics. If being an immigrant has a similar effect on owning a savings or a checking account as it does on transitions in ownership, then we gain confidence that our baseline findings are not driven entirely by unobserved heterogeneity. These estimates are presented in Tables 7A (Entry) and 7B (Exit) and discussed in sub-section [2] below.

1. Unobserved Heterogeneity – Additional Control Variables

Before discussing the estimates that include additional controls, it is useful to consider the estimates that include year-of-arrival controls in the light of unobserved heterogeneity (Table 4). To some extent, potential biases in the effect of being an immigrant on financial market participation due to unobserved heterogeneity are addressed in these estimates. In the estimates that do not include these controls, we have to be concerned that the coefficient on being an immigrant is influenced by omitted variables like legal status and English ability. Legal status and English ability and many other immigrant-specific attributes are likely to change and become less relevant as time in the U.S. increases. In estimates with year-of-arrival controls their influence

will show up in the coefficients on the year-of-arrival controls and will not bias the coefficient on immigrant status. Including the year-of-arrival controls reduces the impact of being an immigrant on financial market participation from negative 7 percent to negative 4 percent for savings and from negative 6 percent to negative 4 percent for checking.

In Table 6 we take a more direct approach and investigate the effect of specific omitted variables on the financial market participation of immigrants relative to natives. While we are interested in the direct effect of the additional control variables, we are also interested in how much the coefficient on immigrant status changes as a result of adding controls. If this coefficient declines significantly in size and/or significance, then we have to be concerned that our baseline findings are entirely due to unobserved individual heterogeneity from some of the sources discussed above.

For comparison purposes, the baseline results from Table 3 are presented in column (1) of Table 6. The first source of unobserved heterogeneity that we consider is racial differences within the immigrant community. This estimate addresses the possibility that nonwhite immigrants differ significantly in their use of (or, potentially, access to) formal financial institutions compared to that of white immigrants because of discrimination by financial institutions or beliefs about discrimination by financial institutions. Recent empirical studies of household financial behavior have documented significant differences in the use of financial services by race, even after controlling for income and education (Blau and Graham, 1990; Chiteji and Stafford, 1999; Altonji and Doraszelski, 2002). In column (2) we allow the effect of race to differ for immigrants and natives. In the baseline estimates, the effect of being “nonwhite” is restricted to be the same for immigrants and natives. We find relatively small but significant differences in the financial market behavior of immigrants by race. According to these estimates, nonwhite immigrants are 3 percentage points *more* likely than nonwhite natives to have a savings account, and white immigrants are 13 percentage points less likely than white natives to have a savings account. For checking account ownership, we find that nonwhite immigrants are 2 percentage points *more* likely to have a checking account compared to white immigrants and 7 percentage points *more* likely to have a checking account compared to nonwhite natives. White immigrants are 10 percentage points less likely to have a checking account than white natives. These findings echo the results of the decomposition presented in Table 5, where we found that native financial market participation is more negatively affected by being nonwhite than immigrant financial market participation. Being an immigrant has a much more profound effect

on financial market participation than do the racial characteristics of immigrants. However, for the native-born, the opposite is true.¹²

In column (3), we consider the effect of legal status at the time of migration on financial market participation. Immigrants who lack the legal right to live and work in the U.S. may face additional barriers to opening a savings or checking account. Many financial institutions, particularly during the survey period, required a Social Security number and a U.S. driver's license to open an account.¹³ While the SIPP data do not include information on whether an immigrant is undocumented upon arrival or at the time of the survey, they do report whether an immigrant was a legal permanent resident at the time of migration. Our results suggest that permanent residence has a positive and significant impact for both savings and checking account ownership. Immigrants who arrived in the U.S. as permanent residents are about 2 to 3 percentage points more likely to own savings and checking accounts, compared to other immigrants. However, adding the legal status variable does not significantly reduce the negative effect of being an immigrant on financial market participation.

The baseline estimates of financial market participation include controls for education and assume that education has the same impact on financial market participation for immigrants and natives. In column (4) of Table 6 we consider the possibility that the impact of being an immigrant on financial market participation varies with education *among* the immigrant population. If immigrants with exposure to higher education (beyond high school) also have better employment opportunities, enhanced English skills, and access to different sources of information about financial markets, their behavior may differ significantly from that of less-educated immigrants. We allow for this possibility by adding an interaction term to the set of control variables: immigrant multiplied by a variable that is equal to one if an individual has completed more than a high school education. We find that immigrants with more than a high school degree are 16 percentage points more likely to have a savings account and 25 percentage points more likely to have a checking account, compared to immigrants who have at most completed a high school degree. Among natives, natives who have a high school degree or more are 13 percentage points more likely to have a savings account and 15 percentage points more

¹² The differential impact of being nonwhite for immigrants and natives may be due to differences in the composition of the nonwhite group by immigrant/native status. For immigrants, the nonwhite group is primarily Hispanic; for natives, about one-half of the nonwhite group is black.

¹³ Although most U.S. financial institutions require a Social Security number in order to open an interest-bearing account, a growing number of banks now accept an individual taxpayer identification number (ITIN) as an alternative and recognize identification cards issued by consular offices of the immigrant's country of origin.

likely to have a checking account. Education appears to have a bigger impact on immigrant financial market behavior than it does on native financial market behavior, which suggests that, for immigrants, education does capture other aspects of the immigrant experience, such as access to job sources, English language ability, and information about financial products and services. When we compare immigrants to the native-born with the same level of schooling, however, the results for savings account ownership are very similar to the baseline findings: immigrants who have completed more than high school are 7 percentage points less likely to have a savings account. For checking account ownership, educated immigrants are only 1 percentage point less likely to have a checking account than their educated native counterparts. For immigrants as a whole, however, adding the interaction of immigrants with a high school education or greater makes the contrast between immigrant and native financial market participation even starker: immigrants are 10 percentage points less likely to have a savings account and 11 percentage points less likely to have a checking account in these estimates. It appears that failing to control for educational differences among immigrants in the baseline estimates led to a downward bias in the estimated impact of being an immigrant on financial market participation.

In column (5), we repeat the estimation of the baseline specification on a sample that excludes Mexican immigrants. Mexican immigrants make up approximately one-third of the immigrant sample and have some distinguishing characteristics that are difficult to measure in the SIPP data and that are also potential sources of bias. Specifically, Mexican immigrants are more likely to be undocumented. They also have higher propensities for return migration compared to other immigrants. Models of immigrant savings behavior suggest an important role for return migration in the immigrant asset-accumulation decision (see Dustmann (1997) and Galor and Stark (1990), for example). In addition, Mexican immigrants tend to have lower English ability and education compared to other immigrants. Eliminating this immigrant group from the sample does not substantively alter the conclusions of the baseline estimates. Excluding the Mexican sample, we find that immigrants are 5 percentage points less likely than natives to have a savings account (compared to 7 percentage points in the baseline case) and 5 percentage points less likely to have a checking account (compared to 6 percentage points in the baseline estimates).

In column 6, we restrict the sample to native and immigrant Hispanics. Several studies have documented low rates of financial market participation among Hispanics. However, it is not clear how much of their lower participation rates can be explained by immigrant status and how much can be explained by English language proficiency and other barriers. While data on English language proficiency are not available in the SIPP data, we can learn about the relative

importance of language proficiency (compared to other factors) by restricting our sample to Hispanics. When we restrict our sample to Hispanics, we still find significant differences, of roughly the same magnitude as the baseline estimates, in financial market participation between natives and immigrants. Hispanic immigrants are 6 percentage points less likely to have a savings account and a checking account compared to native-born Hispanics. These estimates increase our confidence that the baseline estimates of the gap in immigrant-native financial market behavior is not driven by omitted variables like English language ability.

We have examined a number of potential sources of bias in our baseline results and found that they are robust to adding additional controls for race, legal status, and education and also to studying a sample that excludes Mexican immigrants and a sample made up solely of Hispanic immigrants and natives. If anything, adding controls for race, legal status, and education widens the gap in the predicted financial market participation of immigrants and natives. The estimates of the gap in financial market behavior derived from the sample that excludes Mexicans and from the sample of all Hispanics are similar in magnitude and substance to the baseline results. Unobserved heterogeneity along the dimensions discussed above does not seem to account for the gap in immigrant-native financial market participation.

2. Unobserved Heterogeneity – Entry into and Exit out of Account Ownership

In Tables 7A and 7B we estimate transitions into and out of account ownership. These estimates are of interest for at least two reasons. First, they offer some insights into why immigrant financial behavior differs from that of natives. If differences in behavior are driven by differences in the propensity to enter into account ownership, then the reason for immigrant-native differences may lie in differential access to information about financial services and products that impacts the decision to open an account. If the gap is driven by differences in the likelihood of closing an account, then the lower financial market participation among immigrants may be driven by increased vulnerability to economic shocks and the possibility of return migration. A second reason for examining transitions into and out of account ownership is that these estimates provide another means for controlling for unobserved heterogeneity. Since the dependent variable in these estimates reflects changes in financial market decisions, the impact of time-invariant individual characteristics (tastes and preferences, in particular, risk aversion, unobserved ability, home country experiences, private transfers to relatives living outside the U.S., English language proficiency, for example) has been implicitly differenced out.

Let V_{ijt} represent the net benefits of entry (or exit) into the use of a given financial service from time $t-1$ to time t . The net benefits of entry (or exit) are defined to be a function of individual and household characteristics at time $t-1$, immigrant status, year-of-arrival controls, as well as community controls. Specifically, we measure V_{ijt} as:

$$V_{ijt} = \alpha + \beta_1 Z_{ijt-1} + \beta_2 I_i + \beta_3 (D_i * I_i) + \gamma_j * C_j + \eta_{ijt} \quad (3)$$

We do not observe the net benefits of entry or exit; instead we know whether the household has experienced a transition into (or out of) the use of a given financial service. Hence, we estimate using logit maximum likelihood:

$$\begin{aligned} E_{ijt} &= 1 \text{ if } V_{ijt} > 0 \\ &= 0 \text{ otherwise} \end{aligned} \quad (4)$$

For estimates of entry, the dependent variable is equal to one if the individual reports owning an account at time t and not owning an account at time $t-1$. The dependent variable is equal to zero if the individual reports no account ownership at time t and at time $t-1$. For exit, the dependent variable is equal to one if an individual reports ownership at $t-1$ and no ownership at time t . The dependent variable is equal to zero if the individual reports ownership at both t and $t-1$. Note that the entry estimates are restricted to those who report no ownership at time $t-1$ and that the exit estimates are restricted to those who do own an account at time $t-1$. All of the transition estimates include the explanatory variables described in the discussion of the baseline results in Table 3. Standard errors are adjusted to allow for correlation across observations at the individual level.

Estimates of transitions **into** account ownership are found in panels A and B of Table 7 for savings and checking accounts, respectively. The dependent variable in panel A is equal to one if an individual, who had no savings account at time $t-1$, reports having a savings account at time t . It is equal to zero if the individual reports having no savings account at both $t-1$ and t . The dependent variable for entry into checking account ownership is analogously defined. These results are reported in panel B. There are two estimates of entry into account ownership. The estimates presented in column (1) of Table 7A include a control for being an immigrant. In column (2) an additional control for being a recent immigrant is added. The estimates also include all of the control variables described above in the discussion of Table 3.

From column (1) we see that immigrants are significantly less likely to enter into savings and checking account ownership, although the effect is perhaps small in magnitude. Being an immigrant reduces the likelihood of opening a savings account by 0.4 percentage point, a 6.9 percent decrease relative to the observed frequency of opening a savings account of 5.8 percent.

The likelihood of opening a checking account is predicted to be 0.2 percentage point lower for immigrants, a 6.6 percent decrease relative to the observed frequency of opening checking accounts of 3 percent. The estimates presented in column (2) suggest that the differences in the likelihood of opening savings and checking accounts for immigrants and natives is driven by recent immigrants, who are 1.2 percentage points less likely to open a savings account and 0.8 percentage point less likely to open a checking account. In the estimates that include a control for being a newly arrived immigrant, the immigrant indicator variable is no longer statistically significant.

In panels C and D of Table 7 we present estimates of the likelihood of transitions **out of** account ownership (**exits**) for savings accounts (panel C) and checking accounts (panel D). The dependent variables in panels C and D are equal to one if an individual, who had an account at time $t-1$, reports not having an account at time t . The dependent variable (exit) is equal to zero if the individual reports having an account at both $t-1$ and t . From column (1) we see that immigrants are 1.4 percentage points more likely to exit from both savings and checking account ownership. This corresponds to a 27 percent higher likelihood of closing a savings account or a checking account for immigrants compared to natives, relative to the observed frequency of savings account closures of 5.2 percent and the observed frequency of checking account closures of 5.3 percent. In contrast to the estimates for opening accounts, the difference in account closures for immigrants and natives is *not* driven by recent immigrants. The estimates in column (2) show that being a recent immigrant has no significant additional impact on the likelihood of closing an account. The coefficient on being an immigrant remains basically unchanged in size and significance when the recent immigrant control is included.

Concerns about bias due to unobserved heterogeneity in the baseline estimates are mitigated by the fact that we see roughly the same effect of being an immigrant on estimates of transitions into and out of account ownership. In addition, the transition estimates suggest that the underlying causes of differences in financial market participation among immigrants and natives are likely to differ for recent and established immigrants. Recently arrived immigrants are less likely to open accounts than both natives and more established immigrants, which is consistent with barriers to information and the likelihood of return migration limiting entry into mainstream financial markets. Information barriers and the potential for return migration do not seem to limit the entry of more established immigrants, however. In contrast, all immigrants, regardless of their duration of stay, are more likely to close savings and checking accounts compared to the native-born. It seems highly unlikely that this effect is driven by information, since this group had

enough information about U.S. financial services to open an account in the first place. The fact that immigrants are more likely to close accounts suggests that part of the explanation for differences in the financial behavior of immigrants and natives may lie in their relative vulnerability to economic shocks. One possibility here is that adverse economic circumstances force immigrants to liquidate accounts more frequently than they do natives. This could be due to the fact that immigrants are over-represented in sectors of the economy – agriculture and services, for example – that are particularly cyclical. Another potential explanation could be that immigrants are more likely to be subject to adverse shocks compared to the native born because they provide economic support to more people, including family members who live in their country of origin. In contrast, family members of the native-born are more likely to be covered by Social Security and other social safety net programs in the U.S.

D. Location and Financial Market Participation

In this section,, we consider how location contributes to immigrant-native differences in financial market behavior. There are several reasons for focusing on location (MSA of residence) in seeking to better understand why immigrants make different financial decisions than otherwise similar native-born individuals. First, the decomposition exercise presented in Table 5 found that if immigrants lived in the same metropolitan areas (MSAs) as the native-born, the difference in immigrant-native financial market participation would fall by about 17 percent. Second, many other researchers have found important effects of residential settlement on immigrant behavior. For example, Borjas (1998, 2000) finds that immigrants who live in ethnic enclaves have lower wage growth and greater income uncertainty. The geographic clustering of immigrants has also been shown to affect educational attainment and language proficiency (see Gang and Zimmerman, 200; Chiswick and Miller, 2002). Ethnic networks have also been shown to provide some benefits. For example, Munshi (2003) shows that ethnic networks provide valuable information about employment opportunities and job search assistance.¹⁴ Finally, focusing on a measure of the network that immigrants are likely to interact with seems very reasonable given our interest financial behavior. A number of researchers have shown that social interactions have important effects on financial decisions. For example, Hong, Stein, and Kubik (2004) show that social interactions have important effects on stock market participation. Similarly, Madrian and

¹⁴ In a recent paper, Munshi (2003) examines the role of migrant networks and finds that employment outcomes for Mexican migrants depends on network size, even if instruments for network size are used.

Shea (2000) and Duflo and Saez (2003) show that decisions to participate in employer-sponsored retirement plans are influenced by the choices of co-workers.

We examine the possibility that an immigrant who lives in an urban community where there is a high concentration of people who have emigrated from the same country may differ in financial market behavior from an immigrant from the same country who lives in a community with a lower concentration of people who emigrated from the same country. One testable hypothesis here is that low financial market participation of immigrants may be reinforced when immigrants have a large network of individuals to interact with who came from the same country of origin. Related to this, ethnic networks may provide information about informal alternatives for formal financial services.

To measure ethnic concentration, we supplement the SIPP data with information from the 1990 Integrated Public Use Microdata Sample as (IPUMS) 1 percent sample of the U.S. Census to construct the fraction of a given MSA population that was born in a specific country. Summary information about the ethnic concentration variable is found in Appendix Table II. For an immigrant from a given country, k (for example, Mexico), ethnic concentration is measured as the share of immigrants from that country (for example, Mexico) that reside within a given MSA, j . More formally, we define ethnic concentration for country k and MSA j as follows:

$$\text{Ethnic Concentration}_{kj} = \frac{\text{\# of individuals born in country } k \text{ residing in destination community } j}{\text{Total \# of individuals (including natives) residing in destination community } j}$$

Estimates that include the ethnic concentration variable are found in Table 8. Column (1) adds this variable to the baseline estimates for savings (in panel A) and checking (in panel B). In column (2) we also add a control for immigrants who have arrived in the U.S. since 1990. In column (3), the interaction of the arrival variable and the ethnic concentration is also included in the estimation. As always, the estimates in columns (1)–(3) also include MSA fixed effects.

The results in Table 8 provide evidence that patterns of residential settlement may play an important role in understanding immigrant participation in U.S. financial markets. We find that the size of the ethnic network has a significant negative impact on financial market participation. Immigrants who live in MSAs with higher ethnic concentrations are less likely to use mainstream financial services. In order to quantify these effects, we consider the case of Mexican immigrants living in the Chicago and Milwaukee MSAs. The Milwaukee MSA is located only 90 miles north of Chicago. However, Mexican immigrants account for 4.22 percent of the population in the Chicago MSA (which is the highest representation among immigrants in Chicago), while Mexican immigrants have the second highest representation among immigrants in Milwaukee and

account for 0.51 percent of the population. Across all of the MSAs in the sample, the average concentration of Mexicans is 2.61 percent, and this ranges from a low of 0.01 percent to a high of 33.04 percent.

Looking at column (1) of Table 8, we see that immigrants in general are 6 percentage points less likely than the native-born to have a savings account. For Mexican immigrants living in Milwaukee, the community characteristics do not change this figure too much: they are an additional 0.31 percentage point less likely to have savings account. However, Mexican immigrants living in Chicago are an additional 2.5 percentage points less likely to have a savings account. If a Mexican immigrant moved from Chicago to Milwaukee, the likelihood that they would have a savings account would go up by 2.2 percentage points. For checking account ownership, the overall effect of being an immigrant is somewhat smaller. Immigrants overall are predicted to be 3 percentage points less likely to have a checking account. However, the magnitude of the ethnic concentration variable is larger. Mexican immigrants living in Milwaukee are an additional 5.2 percentage points more likely to have a checking account compared to Mexican immigrants living in Chicago.

In column (2) of Table 8, we add an additional control variable for being a recent immigrant. As we have seen before, recent immigrants are much less likely than similar natives to own a savings account or a checking account. In these estimates, recent immigrants are predicted to be 16 percentage points less likely to have a savings account and 10 percentage points less likely to have a checking account. Adding the recent immigrant control variable does not appreciably change the size or the significance of the ethnic concentration variable, however.

In column (3) of Table 8, we consider the possibility that the impact of living among a substantial population of immigrants from the same country of origin may differ for recent and more established immigrants. We find evidence that this is, in fact, the case. A recent Mexican immigrant living in Milwaukee is 5.5 percentage points more likely to have a savings account compared to a recent immigrant living in Chicago. In contrast, for a more experienced Mexican immigrant, the likelihood of having a savings account is 2.2 percentage points higher in Milwaukee than in Chicago. The same pattern is observed for checking accounts: a recent Mexican immigrant living in Milwaukee is 9 percentage points more likely to have a checking account compared to a recent immigrant living in Chicago. However, the coefficient on the ethnic concentration variable for recent immigrants is not significant in this specification. The size of the potential immigrant network appears to have an important effect on the financial market participation of immigrants, particularly for recent immigrants who may be especially reliant on

other immigrants who share the same country of origin for information about U.S. financial markets. This is consistent with the finding in Table 7 that recent immigrants are less likely to open savings and checking accounts compared to the native-born but that more established immigrants behave similarly to natives when it comes to opening accounts.¹⁵

Compared to our baseline findings, the effect of being an immigrant is lower in the estimates that include the ethnic concentration variable. For savings account ownership, the effect of being an immigrant is 56–81 percent lower according to the estimates that include the ethnic concentration variable, compared to the analogous estimates that do not control for ethnic concentration. For checking account ownership, the impact of being an immigrant is estimated to be 39–49 percent lower when the ethnic concentration variable is included. According to these estimates, somewhere between 20 and 60 percent of the effect of being an immigrant may operate through residential settlement.

These estimates do not tell us the exact mechanism through which ethnic concentration impacts financial market participation. It is certainly possible that there is a direct effect of ethnic concentration on financial market participation. Specifically, Mexicans living in Chicago are more likely to interact with and get information about financial products and services from other Mexicans, and this reinforces already low levels of financial market participation among this group. In contrast, Mexicans living in Milwaukee have a much smaller pool of other Mexicans to interact with, so they are more likely to get financial information from non-Mexicans, and as a result they are more likely to have a checking or a savings account. It is also possible that there is an indirect effect of ethnic concentration on financial market participation. For example, as noted above, other researchers have found that ethnic concentration reduces immigrant language acquisition, raises income uncertainty, lowers wage growth, and reduces human capital accumulation. While we are able to hold education and income constant in our estimates, we do not have data on language proficiency or income uncertainty, so the coefficient on the ethnic concentration variable will capture both direct and indirect effects. If there is an indirect effect it would mainly operate through language or income uncertainty, since the estimates control for

¹⁵ Estimates of financial market transitions that include ethnic concentration (available from the authors) reinforce the message that the entry behavior of recent immigrants, but not more established immigrants, is influenced by patterns of residential settlement. For transitions out of account ownership, immigrant behavior does not vary with U.S. experience. Exit from savings account ownership is higher for immigrants but does not vary with ethnic concentration. In contrast, exit rates from checking account ownership are higher for immigrants and go up with ethnic concentration. We note that these estimates come closest to dealing with unobserved heterogeneity, including decisions about where to live and country of origin effects, because they implicitly difference out fixed characteristics.

education, income, and employment status. The most likely scenario is that there is both a direct and an indirect effect of ethnic concentration.

While it is tempting to identify the ethnic concentration variable with a measure of social interactions, more research is needed on this topic. Estimates of the impact of residential settlement on financial market participation may be biased because the decision about where to live is unlikely to be random.¹⁶ It is quite possible that immigrants who choose to live in Milwaukee differ in some unmeasured way from those who choose to live in Chicago and that the characteristics that impact the choice about where to live also impact financial market behavior; since these characteristics are unobserved and potentially correlated with the ethnic concentration variable, they may bias the coefficient on this variable. For example, if lack of English proficiency inhibits financial market participation and leads immigrants to choose to live in communities with many other individuals from the same country of origin, then the coefficient on ethnic concentration will be biased in a negative direction.

By including MSA fixed effects in the estimates, we address the concern that residents of a given community share a common economic environment or have similar preferences. For example, there may be a lower supply of financial services or limited employment prospects in one MSA compared to another. MSA fixed effects do not, however, capture variation in the supply of financial services or employment prospects by country of origin within a MSA. If country of origin characteristics also influence the choice of destination community (as in Gang, 2001), then the unobserved determinants of immigrant location choice are likely to vary by country of origin within a given MSA. Normally, one would include country of origin fixed effects in the estimation to eliminate bias due to unobserved characteristics that vary with country of origin. Within an MSA, however, the ethnic concentration variable is the same for all immigrants from the same country of origin, so it is not possible to control for both unmeasured country of origin variables and MSA attributes.

IV. Conclusions

This paper seeks to add to our existing knowledge on the prospects for immigrant wealth assimilation, and immigrant assimilation more generally, by studying the financial market behavior of U.S. immigrants and comparing it to the native-born. Compared to similar natives, immigrants are less likely to own savings and checking accounts. We show that lower rates of

¹⁶ Bauer, Epstein, and Gang (2002) find that as immigrants gain English language proficiency they choose communities with smaller ethnic networks, and Bartel (1989) finds that skilled immigrants are less geographically concentrated than their unskilled counterparts.

financial market participation tend to persist even for immigrants who have lived in the U.S. for several years, compared to the native-born. In addition, immigrant status has a significant impact on transitions into and out of account ownership. Specifically, immigrants are somewhat less likely to open accounts and more likely to close accounts compared to similar native-born individuals. Concerns that the results are driven by unobserved heterogeneity are reduced, because the effect of being an immigrant is similar for financial market participation and for changes in financial market participation.

Our results suggest that a large share of the immigrant-native gap in financial market participation is driven by education, income, and geographic location. We present some suggestive evidence that the explanation for differential behavior of immigrants relative to natives has to do with variations in patterns of residential settlement, specifically ethnic concentration within a given MSA. Our results on entry into account ownership are consistent with social interaction effects, in which immigrants, particularly recent arrivals, have fewer connections with mainstream society and lack information about formal financial markets. The finding that immigrants have higher exit rates from account ownership suggests that the informational hypothesis cannot be the sole explanation for low rates of immigrant participation in mainstream financial markets. Past research has shown that immigrants residing in ethnically concentrated areas have low levels of English proficiency and higher income uncertainty. Thus, an additional channel through which ethnic concentration may affect financial participation is through greater labor market insecurity and greater language barriers among immigrants residing in ethnic enclaves.

Our findings on ethnic concentration are intriguing in light of a growing number of studies that have shown that social interactions play an important role in many economic decisions, including financial market participation, welfare usage, and criminal behavior. An important goal of future research in this area is to identify the precise mechanism through which ethnic concentration affects immigrant behavior – controlling in particular for factors that may influence financial market participation indirectly through location choice. Understanding the mechanism through which ethnic concentration impacts immigrant behavior may have important policy implications. For example, if ethnic concentration mainly affects financial market participation through word-of-mouth learning about mainstream financial services, then financial literacy programs may have large multiplier effects within immigrant populations. Because financial transactions rely on trust and confidence in institutions, the financial market behavior of

immigrants provides key insights into the process of immigrants' adaptation to U.S. social and economic life.

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