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Understanding Immigrant-Native Differences in Financial Market Participation

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Abstract: The goal of this paper is to investigate access to financial services and prospects for the wealth assimilation of immigrants by studying the financial market behavior of U.S. immigrants, compared to the native-born. Compared to similar natives, immigrants are less likely to own a wide range of financial assets, including savings and checking accounts. We find that lower rates of financial market participation tend to persist even for immigrants who have lived in the U.S. for several years. Our results suggest that a large share of the immigrant-native gap in financial market participation is driven by group differences in education, income, and geographic location. For a given immigrant, the likelihood of financial market participation decreases with higher levels of ethnic concentration in the metropolitan area.

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Keywords: Immigrants, financial markets, ethnic concentration, location

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I. Introduction

A central question facing researchers and policymakers is the extent to which immigrants will adapt to economic, social, and political life in United States. One crucial facet of economic and social well-being is wealth. While there is a rich literature that examines the sources of immigrant-native differences in labor market, health, and educational outcomes, relatively little is known about the determinants of access to financial markets and wealth differences between immigrants and the native born. In a growing number of studies, researchers have documented that immigrants have substantially lower wealth levels and that differential patterns in asset holdings can explain a large share of the immigrant-native wealth gap (Amuedo-Dorantes and Pozo, 2002; Hao, 2004, Cobb-Clark and Hildebrand, 2006a, 2006b; Krivo and Kaufman, 2004). In particular, the median wealth levels of natives are estimated to be about 2.3 times higher than of immigrants, and immigrants are less likely to hold financial and real estate wealth compared to natives (Cobb-Clark and Hildebrand, 2006a).

In this paper, we investigate the factors that influence the decision of immigrants and natives to hold wealth in a particular form—financial assets. By focusing on the extensive margin, rather than the intensive margin, we hope to shed light on the reasons for the wide disparities in immigrant-native wealth holdings. Based on recent data, financial wealth holdings are the second largest component of household wealth in the U.S., after housing, and account for 42% of overall household assets in 2001 (Survey of Consumer Finances, 2001). The relative liquidity of financial assets means that they can play an important role in allowing households to self-insure against negative income shocks induced, for example, by job loss, illness, and marital

disruption. Beyond their role in helping households cope with income uncertainty, financial assets also tend to be associated with high expected returns over time and can contribute significantly to understanding long-run differences in wealth accumulation. Several empirical studies have shown that the ownership and the value of financial assets is correlated with a wide range of economic and social decisions, including investments in health (Roberts and House, 1996), well-being at retirement (Bender, 2004), home ownership (Haurin et al., 1997), business formation (Holtz-Eakin et al., 1994), children's educational outcomes (Duncan and Brooks-Gunn, 1997; Mayer, 1997), and political participation (Scanlon and Page-Adams, 2001).

We use panel data from the 1996 – 2000 Survey on Income and Program Participation (SIPP) to analyze financial market decisions of immigrants relative to those of natives and to estimate the impact of being an immigrant on the likelihood of transitions into and out of financial market participation. In addition to documenting differences in immigrant versus native financial market participation, we show how duration of stay in the United States impacts immigrant behavior relative to the native-born. Based on unconditional means, immigrants are much less likely to hold U.S. financial assets compared to their native-born counterparts. For example, 40% of immigrants have a savings account, compared to 55% of the native-born. There is a similar gap in the percentage of immigrants and native-born who hold an interest-bearing checking account: 22% versus 36%. While 12% of immigrants own stock, ownership rates are much higher among the native-born at 25%. We find that immigrants also report lower rates of ownership of a wide range of additional financial assets, including individual retirement accounts and mutual funds, when compared to the native-born.

Controlling for education, income, and other individual and household characteristics, the financial market behavior of immigrants remains significantly different from that of similar

native-born individuals. 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 the percentage of the population in a given metropolitan area from the same origin country as the immigrant in question. One potential explanation for these results is that social interactions may play an important role in determining whether immigrants participate in financial markets or that immigrant networks provide informal substitutes for formal financial markets. Like wage growth (Borjas, 1998 and 2000), human capital accumulation, and language proficiency (Chiswick and Miller, 1996), immigrant participation in formal financial markets appears to be inhibited when there is a large network of immigrants from the same country of origin to interact with.

The rest of the paper is organized as follows. Section II describes the conceptual framework and empirical methods. We describe the SIPP data and summarize the data on the financial market participation of immigrants relative to natives in Section III. In Section IV, we present results. Section V presents conclusions.

II. Understanding Immigrant-Native Differences in Financial Market Participation

A simple life-cycle model is a useful starting point for exploring immigrant-native differences in financial market behavior (Modigliani and Brumberg, 1954). Individuals, whether immigrant or native-born, select a portfolio from a wide range of assets, comparing returns, transaction costs, risk profiles, and liquidity in order to smooth consumption over time.¹ This approach suggests that differences in financial market participation between immigrants and the native-born may be driven (at least in part) by differences in household income, education, age,

¹ There are additional motives for savings and wealth accumulation, which include precautionary motives and the desire to leave bequests.

and family structure. The decision to hold a particular asset will also depend on information, tastes and preferences, and the degree of risk aversion, which may differ across otherwise similar immigrants and natives. We recognize that it may be important to account for additional sources of immigrant-native differences, including race and ethnicity, legal status, English language skills, years of U.S. experience, and patterns of residential settlement, which are likely to affect financial decisions (Amuedo-Dorantes et al., 2005; Cobb-Clark and Hildenbrand, 2006a). In the section below, we describe the empirical models used to estimate the gap between immigrant and native-born financial market participation.

Empirical Specification

Immigrant-Native Differences in Financial Market Participation

The basic specification investigates the likelihood that an individual holds a given financial asset during a given period. The benefits and costs associated with the financial market participation for individual i living in a destination community j at time t can be defined as U_{ijt} , which is a function of (Z_{ijt}) , a vector of socio-economic and demographic variables including education, race, income, household size, and other control variables. In addition, for immigrants, U_{ijt} 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 holding a given financial asset may also vary by community, C_j , with time v_t , and be subject to an error term, ε_{ijt} , that is particular to the individual. For each time period, U_{ijt} can be measured as:

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

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

$$P_{ijt} = 1 \text{ if } U_{ijt} > 0 \\ = 0 \text{ otherwise}$$

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 participated in a given financial market in the survey period. The parameter on the immigrant indicator, β_2 , will capture the effect of being an immigrant on the likelihood of holding a given financial asset, after having controlled for time in the U.S. and socio-economic and demographic characteristics. The parameter on the cohort of arrival variable, β_3 , measures how duration of stay in the U.S. affects the immigrant's likelihood of participating in a given financial market. 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. In our empirical estimates, we 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. We also include time controls in all estimates to capture any 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.

III. Data and Characteristics of Immigrants and the Native-born

The empirical analysis uses longitudinal data from the 1996-2000 waves of the Survey of Income and Program Participation (SIPP). The SIPP is a panel survey which provides detailed information about adults residing within households and is conducted by the U.S. Census Bureau. The SIPP collects data by interviewing individual respondents (about 65,000 individuals) once a quarter about their economic experiences, including ownership of savings accounts, checking accounts, and stocks. The 1996 SIPP panel consists of twelve waves of interview questions, where the interview questions depend on the wave. We include only individuals who are 18 or older in our study. The analysis deals with individuals who reside in a Metropolitan 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.² The sample includes about 28,633 native-born, and 4,450 immigrants. Because we observe individuals multiple times, the total sample is made up of 356,769 quarterly observations.

In addition to information on financial asset holdings, the SIPP data include information on immigrant status, country of origin, and year of arrival in the U.S., coded into 5-year intervals to protect respondent confidentiality. The SIPP data are well-suited for this study because they include information on financial market behavior and on immigration. Other data sources available from the Bureau of the Census, or from the monthly Current Population Survey, contain a large number of immigrants and provide detailed information on immigration but include very limited information on participation in financial markets or transitions into and out of ownership.³ 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% are immigrants.⁴

Our analysis is conducted at the individual level to capture the extent to which immigrants and the native-born differ in the distribution of financial asset holdings.⁵ The SIPP data provides detailed information; all adults in the household are interviewed on demographic characteristics, ownership of interest or dividend-earning financial accounts, and income. These data are available for each of the 12 waves, at approximately 3-month intervals. While the SIPP

² By focusing on an urban sample, we can also eliminate an important source of heterogeneity between immigrants and natives since about 75% of the SIPP immigrant sample lives in a MSA compared to about half of natives.

³ The SIPP data 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 origin countries and the use and availability of informal financial substitutes.

⁴ In the 2000 Census, 11.4% of the total population was born abroad. The higher percentage of immigrants that 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 An advantage of our approach is that we do not have to impose social norms about the degree to which assets are jointly held within the household as these may vary by country of origin. However, we find comparable results on immigrant-native differences in financial market behavior when we restrict the sample to household heads. These results are available upon request.

panel is relatively short, the large sample sizes available provide an opportunity to observe within-sample changes in financial asset holdings for both immigrants and the native-born.⁶

A. Financial Market Participation

The empirical work focuses on two indicators of financial market participation: ownership of savings and interest-bearing checking accounts.⁷ We emphasize savings and checking account ownership because these represent entry-level financial assets with relatively low barriers to participation. However, we also examine additional indicators of financial market participation including individual retirement accounts (IRA) or Keogh and mutual fund ownership, although mean ownership rates tend to be lower for these indicators of financial market participation. Figure 1 summarizes this information. The SIPP data provide information on whether a given survey respondent held a particular financial asset in the previous month at four month intervals for the duration of the panel. To allow a comparison across the two of the major components of asset holdings, we present immigrant-native gaps in homeownership (see Borjas, 2002; Krivo and Kauffman, 2004).

⁶ With any data that tracks individuals and/or households 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.

⁷ We focus our attention on interest-bearing checking accounts because information on ownership of non-interest bearing checking accounts is available less frequently in the SIPP (approximately once a year). We obtain similar results when we combine both interest and non-interest bearing checking accounts (see Figure 1).

Figure 1: Financial Asset Ownership of Native born and Foreign born Individuals
Source: Survey of Income and Program Participation (SIPP) 1996-2000

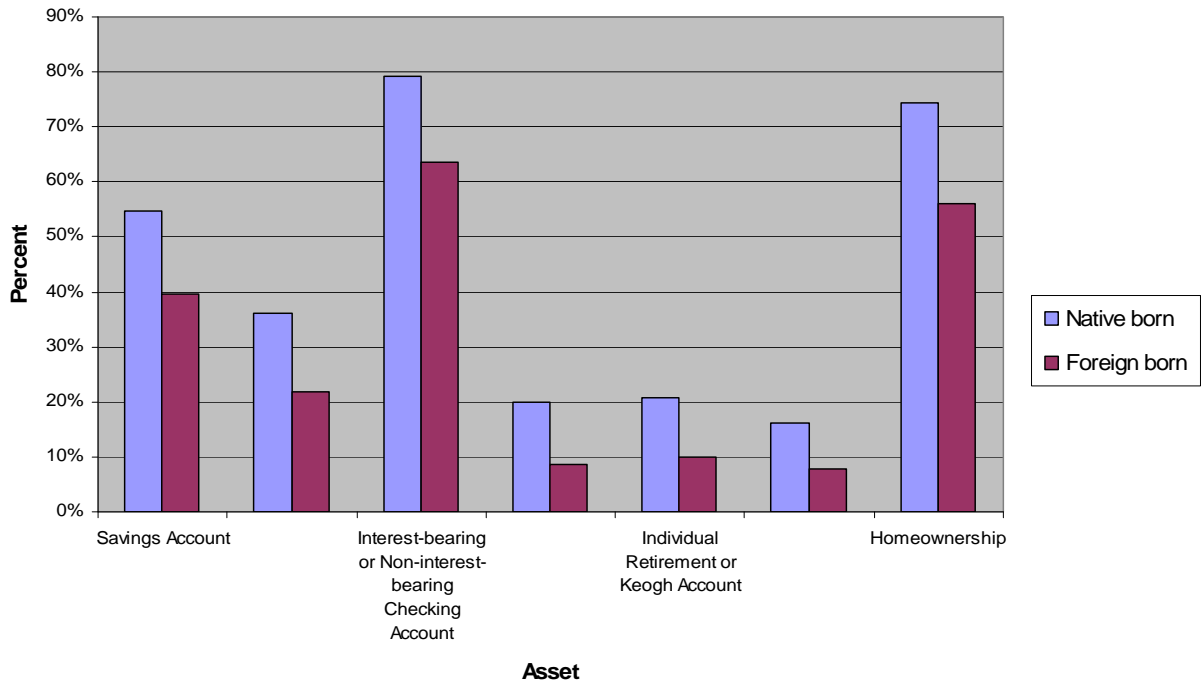


Table 1 summarizes patterns of financial asset ownership for immigrants and the native-born. Compared to the native-born, immigrants are less likely to hold mainstream financial assets. We find that ownership of savings accounts appears relatively widespread in the SIPP data, with 53% of the pooled immigrant-native-born sample reporting ownership of a savings account. However, only 40% of immigrants own a savings account compared to 55% of natives. Ownership of an interest-bearing checking account is less common, with only 34% of the sample reporting ownership. For checking accounts, the gap between immigrants and natives is even larger, with immigrant ownership rates of 22% being only 60% that of the native-born at 36%. While 18% of the pooled sample report stock ownership, only 9% of immigrants own stock, in comparison to the stock ownership rate of the native-born population at 20%.

Table 1: Financial Market Participation and Transitions, 1996 – 2000 SIPP Panel

	All	Native-born	Immigrants	Immigrant/Native ¹
A: Savings Account Ownership				
Own %	52.66%	54.72%	39.72%	0.73
Never Owned %	31.91%	30.18%	42.80%	1.42
Ever Owned %	31.10%	30.77%	33.24%	1.08
Entry %	5.82%	5.92%	5.32%	0.90
Exit %	5.15%	4.86%	7.66%	1.58
Always Owned %	36.99%	39.06%	23.96%	0.61
Observations	356,769	307,894	48,875	
B: Checking Account Ownership				
Own %	34.11%	36.08%	21.74%	0.60
Never Owned %	53.28%	51.33%	65.60%	1.28
Ever Owned %	23.60%	23.93%	21.58%	0.90
Entry %	3.05%	3.15%	2.53%	0.80
Exit %	5.25%	4.98%	8.07%	1.62
Always Owned %	23.11%	24.75%	12.82%	0.52
Observations	356,769	307,894	48,875	
C: Stock Ownership				
Own %	18.42%	20.00%	8.50%	0.42
Never Owned %	73.08%	71.17%	85.12%	1.20
Ever Owned %	15.37%	16.20%	10.13%	0.63
Entry %	1.73%	1.84%	1.10%	0.60
Exit %	7.50%	7.30%	10.61%	1.45
Always Owned %	11.55%	12.63%	4.75%	0.38
Observations	356,769	307,894	48,875	

¹ Mean immigrant ownership rates are measured as a fraction of mean ownership rates for the native-

born.

Note: The sample consists of all MSA residents greater than or equal to the age of 18.

"Own" means that the respondent had a saving account or checking account (interest bearing) during the interview period. "Never Owned" means that the respondent had no saving account or checking account (interest bearing) in all the interview periods. "Ever Owned" means that the respondent had a saving account or checking account (interest bearing) in some of the interview periods, but not all. "Always Owned" means that the respondent had a saving account or checking account (interest bearing) in all the interview periods.

The sum of the percentage of Never Owned, Ever Owned and Always Owned is equal to 1.

Entry is defined as the individual switches from non-ownership to ownership.

Exit is defined as the individual switches from ownership to non-ownership.

Table 1 also reports summary statistics on exit and entry from the SIPP for savings, checking accounts, and stock. 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 43% of immigrants report *never* owning a savings account throughout all 12 waves, compared to 30% of the native-born. We also note that for immigrants the percentage of immigrants who *never* owned a checking account at any time during the panel is about 66%, compared to 51% for the native-born. Similarly, for immigrants, the percentage of immigrants who *never* owned stock at any time during the panel is about 85%, compared to 71% for the native-born.

Immigrants report more volatility in their financial market participation status. We find that immigrants are more likely than the native-born to report exits from financial asset holdings. Specifically, exit rates out of savings and checking account ownership for immigrants are about 60% higher for immigrants than for the native-born. Immigrants also have lower rates of entry into savings and checking account and stock ownership compared to the native-born.

B. Characteristics of Immigrants and the Native-born

Socioeconomic and Demographic Characteristics

Table 2 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% of the immigrant sample has not completed high school compared to only 15% of the native-born sample. However, the percentage of immigrants and the native-born who have an advanced degree is comparable at

about 7%. 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 non-white. About 75% of the immigrant sample is non-white compared to about 23% of the native-born sample. Nearly 30% of the immigrant sample was born in Central America, while about 15% of the immigrant sample is of European descent. A sizeable share of the immigrants in the SIPP can be classified as recent immigrants, with almost 40% of the immigrants arriving in the U.S. after 1990.

Table 2: Characteristics of the Native-born and Immigrants in the MSA Sample, 1996 – 2000 SIPP Panel

	All	Natives	Immigrants
Age	45.98 (17.34)	46.18 (17.47)	44.70 (16.41)
Number of Children < 18	0.78 (1.14)	0.72 (1.09)	1.13 (1.36)
Monthly Per Capita Household Income	2116.31 (2764.29)	2195.18 (2810.94)	1619.47 (2391.05)
% Male	45.81%	45.70%	46.46%
% Married	58.45%	57.31%	65.65%
% unemployed or out of the labor force	33.95%	33.48%	36.94%
Race (%)			
White	70.08%	77.15%	25.53%
Black	13.06%	14.20%	5.83%
Hispanic	11.98%	6.97%	43.52%
Asian	4.42%	1.16%	24.93%
Other	0.47%	0.51%	0.20%
Education (%)			
Less than High School	17.86%	15.03%	35.73%
High School Graduate	29.67%	30.48%	24.59%
Some College	29.12%	30.58%	19.95%
College Graduate	15.40%	15.87%	12.42%
Advanced Degree	7.94%	8.04%	7.31%
<u>Immigrant Characteristics</u>			
Years In U.S. (%)			
Less Than 10 Years			37.74%
10 < Duration < 14			17.28%
15 < Duration < 30			16.96%
More Than 30 Years			15.20%
Immigrant Region of Origin (%)			
Central America			32.51%
Asia			20.63%

European			15.11%
Caribbean			7.73%
South America			4.53%
North America			1.62%
Middle East			1.14%
Other			16.73%
<hr/>			
Number of Observations	356,769	307,894	48,875
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Note: The sample consists of all MSA residents greater than or equal to the age of 18.
Standard deviations are shown in parentheses ONLY for continuous variables.

IV. Results

A. Baseline Findings for Participation in Financial Markets

We present the baseline findings in Tables 3. The key dependent variables in the analysis 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. All of our estimates include MSA fixed-effects, as well as 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.⁸ We present additional results for stock, individual retirement accounts and other financial assets in Appendix Table.⁹

Individual and Household Variables

First, we discuss the results on individual and household characteristics – income, education, race, and household structure in on financial market participation. These results are presented in Table 3. In general, the effect of individual and household level variables on savings account and checking account ownership are similar.

⁸ 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 only available in the topical modules (and is measured every 8 months).

⁹ We should note that we find similar results on stock, individual retirement account, and mutual fund ownership (and these results are shown in Appendix I). We omit a detailed discussion of these results in the interest of space.

Table 3: Logit Estimates of Financial Market Participation

	Savings Account			Checking Account		
	(1) Coef.	***	M.E.	(2) Coef.	***	M.E.
Immigrant	-0.296	***	-0.074	-0.303	***	-0.061
	(0.031)			(0.037)		
Age	-0.004		-0.001	0.015	***	0.003
	(0.003)			(0.004)		
Age Squared (x100)	0.014	***	0.004	0.009	**	0.002
	(0.003)			(0.004)		
Unemployed/Out of Labor Force	-0.293	***	-0.073	0.080	***	0.017
	(0.025)			(0.028)		
Per Capita HH Income (x100)	0.021	***	0.005	0.021	***	0.004
	(0.001)			(0.001)		
Per Capita HH Income Squared (x10 ⁶)	-0.006	**	-0.002	-0.005	***	-0.001
	(0.0004)			(0.0003)		
Married	0.873	***	0.215	0.837	***	0.170
	(0.022)			(0.025)		
Male	-0.299	***	-0.074	-0.268	***	-0.056
	(0.021)			(0.023)		
Non-White	-0.432	***	-0.108	-0.629	***	-0.121
	(0.026)			(0.032)		
No of children < 18	-0.082	***	-0.020	-0.080	***	-0.017
	(0.009)			(0.011)		
High School	0.543	***	0.133	0.776	***	0.172
	(0.030)			(0.039)		
Some College	0.861	***	0.208	1.177	***	0.264
	(0.031)			(0.040)		
College	1.037	***	0.241	1.489	***	0.348
	(0.038)			(0.045)		
Advanced Degree	0.940	***	0.217	1.581	***	0.373
	(0.048)			(0.053)		
No of Obs	356,769			356,769		
Log-likelihood	-215936.94			193291.3		

Pseudo R-squared	0.125	0.156
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Note: The sample consists of all MSA residents greater than or equal to the age of 18.

The dependent variable is equal to one if the respondent had a saving account or checking account (interest bearing) during the interview period in question and is zero otherwise.

Logit model with fixed effects at MSAs level is used and standard errors are corrected for clustering at the individual level.

All regressions include a constant term, age as linear and square terms, per capita income as linear and square terms, marital status, male, non-white, labor force status, number of kids, schooling dummies and wave dummies.

The omitted education category is less than a high school education.

*** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

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% increase relative to the observed percentage of the individuals in the sample who have a savings account of 53%. Similarly, checking account ownership would increase by 12 percentage points, and this represents a 30% increase relative to the observed likelihood of owning a checking account of 35%. 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 a checking account. The different effect of age and labor market status on savings and 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.

Older individuals are more likely to own 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. 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 points. Interestingly, men are significantly less likely to report holding a savings and checking accounts. We also note that, compared to whites, non-whites 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.

Impact of Immigrant Status

We now turn to the key variable of interest. 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 6.1 percentage points less likely to own a checking account compared to a similar native-born individual. Across a range of additional financial assets— notably, stock, mutual funds, and individual retirement accounts, we note that immigrants have a lower likelihood of financial asset ownership, compared to the native born. From Appendix I, immigrants are 5.6 and 4 percentage points less likely to own stock and individual retirement accounts, respectively 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 the native-born. 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.¹⁰

¹⁰ 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 that were included in the estimates presented in Table 3.

Table 4: Logit Estimates of Financial Market Participation (with duration controls)

	Savings Account					Checking Account				
	(1) Coef.		M.E.	(2) Coef.	M.E.	(3) Coef.	M.E.	(4) Coef.	M.E.	
Immigrant	-0.212 *** (0.034)		-0.053	-0.186 *** (0.059)	-0.047	-0.250 *** (0.040)	0.051	-0.217 *** (0.067)	0.044 ***	
Recent (after 1990)	-0.501 *** (0.068)		-0.124			-0.354 *** (0.089)	0.069			
1990-1996				-0.531 *** (0.085)	-0.131			-0.383 *** (0.106)	0.074	
1985-1989				-0.172 * (0.090)	-0.043			-0.186 * (0.111)	0.038	
1980-1984				-0.062 (0.089)	-0.016			-0.142 (0.110)	0.029	
1975-1979				0.192 ** (0.098)	0.048			0.188 (0.119)	0.041	
1970-1974				-0.048 (0.110)	-0.012			0.089 (0.126)	0.019	
1964-1969				-0.008 (0.122)	-0.002			-0.042 (0.139)	0.009	
1960-1964				-0.036 (0.148)	-0.009			-0.186 (0.166)	0.038	
(Omitted Category: Before 1960)										
No of Obs	356,769			356,769			356,769		356,769	
Log-likelihood	-215760.57			-215718			-193235.03		193228.2	
Pseudo R-squared	0.156			0.126			0.156		0.156	

Note: The sample consists of all MSA residents greater than or equal to the age of 18.

The dependent variable is equal to one if the respondent had a saving account or checking account (interest bearing) during the interview period in question and is zero otherwise.

Logit model with fixed effects at MSAs level is used and standard errors are corrected for clustering at the individual level.

All regressions include a constant term, age as linear and square terms, per capita income as linear and square terms, marital status, male, non-white, labor force status, number of kids, schooling dummies and wave dummies. The omitted education category is less than a high school education.

*** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

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 18 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).¹¹ Recent immigrants are particularly likely to differ in important ways from the native-born 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 addition, information costs may impose significant barriers to immigrant participation in formal financial markets although these costs would tend to 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 duration of stay controls are not significantly different from zero for immigrants who arrived before 1985, suggesting that partial financial market assimilation may happen in the first ten to fifteen 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.¹² 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

¹¹ For stock and IRA ownership, recent arrivals are 12 percentage points and 17 percentage points less likely to own these assets compared to similar native-born.

¹² The 1975-1979 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 that 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.

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.

B. Unobserved Heterogeneity and Financial Market Participation

From the baseline estimates, while observed characteristics such as household income, race and ethnicity, education, age, and family structure play an important role, it is also likely that unobservables, including tastes and preferences and the degree of risk aversion, may differ across otherwise similar immigrants and the native-born. While we cannot observe all these characteristics directly, various empirical techniques help us examine the extent to which differences in immigrant-native financial market behavior are driven by unobserved heterogeneity.¹³

We take seriously the impact of unobserved heterogeneity on the baseline estimates. Specifically, we investigate the impact of adding control variables to the estimates presented in Table 3 in an effort to better account for omitted variables. We are concerned that to the extent that omitted variables are correlated with being an immigrant, they will bias the coefficient on the immigrant indicator variable in the baseline estimates of financial market participation. In the estimates presented in Table 6 and discussed in sub-section [1] below, we explore the role of ethnicity, legal status, language, and other potential sources of bias.

1. Unobserved Heterogeneity – Additional Control Variables

Before discussing the results which include additional controls, it is useful to reconsider the estimates which include duration of stay controls in the light of unobserved heterogeneity (Table 4). To some extent, potential biases in the effect of being an immigrant on financial

¹³ In particular, 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 sources of unobserved heterogeneity.

market participation due to unobserved heterogeneity are addressed in these estimates. By including year of arrival controls, the influence of omitted variables (such as English language ability and legal status which tend to vary over time and by year of arrival cohort) will tend to show up in the coefficients on the year of arrival controls and will reduce the coefficient on immigrant status. We find that 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 5, we investigate the effect of specific omitted variables on the financial market participation of immigrants relative to the native-born. 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.

**Table 5: Immigrant Heterogeneity and Financial Market Participation
(Marginal Effects Only)**

	Ownership										
	(1) Baseline	(2) Race		(3) Legal Status		(4) Greater than high school		(5) Exclude Mexican Immigrants		(6) Hispanics only	
A: Savings Acct											
Immigrant	-	0.07 ***	-0.13 ***	-0.09 ***	-0.10 ***	-0.05 ***	-0.06 ***				
Immi*Non-white			0.16 ***								
Non-white			-0.14 ***								
Immi*Permanent Resident				0.02 *							
Greater Than High School						0.13 ***					
Immi * Greater Than High School						0.03 **					
Number of obs		356,769	356,769	356,769	356,769	343,464	42,667				
Log-likelihood		-	-	-	-	-	-				
Pseudo R-squared		215531	215926	217133	208910	22683					
		0.13	0.13	0.12	0.12	0.16					
B: Checking Acct (Interest Bearing)											
Immigrant	-	0.06 ***	-0.10 ***	-0.08 ***	-0.11 ***	-0.05 ***	-0.06 ***				
Immi*Non-white			0.17 ***								
Non-white			-0.15 ***								
Immi*Permanent Resident				0.03 **							
Greater Than High School						0.15 ***					
Immi * Greater Than High School						0.10 ***					

Number of obs	356,769	356,769	356,769	343,464	42,667
Log-likelihood	192971	193276	195226	208910	22683
Pseudo R-squared	0.16	0.16	0.15	0.12	0.16

Note: The sample consists of all MSA residents greater than or equal to the age of 18. The young sample only includes the MSA residents between the age of 18 and 25.

The dependent variable is equal to one if the respondent had a saving account or checking account (interest bearing) during the interview period in question and is zero otherwise.

Logit model is used and standard errors are clustered at the individual level.

All regressions include a constant term, age as linear and square terms, per capita income as linear and square terms, marital status, male, non-white, labor force status, number of kids, schooling dummies and wave dummies.

The omitted education category is less than high school graduate.

*** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

For comparison purposes, the baseline results from Table 3 are presented in column (1) of Table 5. The first source of unobserved heterogeneity that we consider is racial differences within the immigrant community. This estimate addresses the possibility that non-white 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 (Altonji and Doraszelski, 2005; Blau and Graham, 1990; Chiteji and Stafford, 1999). In column (2) we allow the effect of race to differ for immigrants and the native-born. In the baseline estimates, the effect of being “non-white” is restricted to be the same for immigrants and the native-born. We find relatively small but significant differences in the financial market behavior of immigrants by race. We should note that adding the interaction of immigrant status and race actually increases the negative effect of being an immigrant on financial market participation.

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.¹⁴ 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

¹⁴ Although many U.S. financial institutions require a Social Security number in order to open an account, a growing number of banks accept Individual Taxpayer Identification Numbers (ITINs) as an alternative and recognize identification cards issued by consular offices of the immigrant’s country of origin.

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 the native-born. In column (4) of Table 5 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 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 the native-born, those who have a high school degree or more are 13 percentage points more likely to have a savings account and 15 percentage points more 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. This suggests that education captures additional aspects of the immigrant experience like access to job sources, English language ability, and information about financial products and services. For immigrants as a whole, however, adding the

interaction of immigrant 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 allow education to have a different effect immigrants and the native-born 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 and this may have implications for savings behavior (see Dustmann, 1997; 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. Consistent with several studies that have documented low rates of financial asset holdings among Hispanic immigrants compared to the Hispanic native-born, we also find low rates of savings account ownership among Hispanics compared to other ethnic groups (Cobb-Clark and Hildebrand,

2006c; Smith, 1995). In particular, we find that ownership rate of savings accounts for Hispanic immigrants is low at 19% when compared to ownership rates of 38% for native-born Hispanics. For checking accounts, Hispanic immigrants' ownership rates are 10% compared to much higher ownership rates of 28% among Hispanic native-born individuals. However, for Hispanics, taken as a group, 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 information on English language proficiency is 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 native-born Hispanics and Hispanic 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 the baseline results and found that they are robust to adding additional controls for race, legal status, and education and also to studying a sample which exclude 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 which 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.

II. Location and Financial Market Participation

A final issue in our analysis is how location contributes to immigrant-native differences in financial market behavior. There are important reasons for focusing on location (MSA of residence) in seeking to better understand why immigrants make different financial decisions compared to otherwise similar native-born individuals. Several 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 lower educational attainment and language proficiency (see Gang and Zimmerman, 2000; Chiswick and Miller, 2002).¹⁵

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. Focusing on a measure of the network that immigrants are likely to interact with seems very reasonable given our interest in financial behavior, as a number of recent studies have shown that social interactions have important effects on financial decisions.¹⁶ One testable hypothesis here is that

¹⁵ Munshi (2003) shows that ethnic networks affect employment opportunities for Mexican immigrants even after instruments for network size are used.

¹⁶ 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.

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 also provide information about and be sources of 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% 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 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:

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

Estimates which include the ethnic concentration variable are found in Table 6. 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.

Table 6: The Impact of Location on Financial Market Participation
(Marginal Effects Only)

	Ownership					
	(1)		(2)		(3)	
A: Savings Acct						
Immigrant	-0.06	***	-0.03	***	-0.04	***
Immi * Ethnic Concentration in MSA	-0.66	***	-0.72	***	-0.67	***
Recent (after 1990)			-0.13	***	-0.12	***
Recent * Ethnic Concentration in MSA					-0.53	
Number of obs	353083		353083		353083	
Log-likelihood	213488		213321		-213317	
Pseudo R-squared	0.125		0.126		0.126	
B: Checking Acct (Interest Bearing)						
Immigrant	-0.04	***	-0.02	**	-0.02	**
Immi * Ethnic Concentration in MSA	-1.38	***	-1.42	***	-1.37	***
Recent (after 1990)			-0.08	***	-0.07	***
Recent * Ethnic Concentration in MSA					-0.74	
Number of obs	353,083		353,083		353,083	
Log-likelihood	191138		191073		-191069	
Pseudo R-squared	0.157		0.157		0.157	

Note: The sample consists of all MSA residents greater than or equal to the age of 18.

The dependent variable is equal to one if the respondent had a saving account or checking account (interest bearing) during the interview period in question and is zero otherwise.

Logit model is used and standard errors are corrected for clustering at the individual level.

All regressions include a constant term, age as linear and square terms, per capita income as linear and square terms, marital status, male, non-white, labor force status, number of kids, schooling dummies and wave dummies. The omitted education category is less than high school graduate. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

The results in Table 6 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% 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% of the population. Across all of the MSAs in the sample, the average concentration of Mexicans is 2.61%, and this ranges from a low of 0.01% to a high of 33.04%.

Looking at column (1) of Table 6, 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 points 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. Holding other variables fixed, 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.¹⁷

¹⁷ 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 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 6, 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 6, we consider the possibility that the impact of living among a substantial population of immigrants from the same origin country may differ for recent and more established immigrants. We find evidence that this is in fact the case. 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. One potential explanation for this finding is 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.¹⁸

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 which do not control for ethnic concentration. For checking account ownership, the impact of being an immigrant is

¹⁸ 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. 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.

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.

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 all forms of unobserved heterogeneity such as variation in the supply of financial services or employment prospects by country of origin within a MSA.¹⁹ Moreover, 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.²⁰ For example, 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.

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, immigrants residing in ethnically concentrated locations are more likely to interact with and get information about financial products and services from other immigrants from the country of origin and this reinforces already low levels of formal financial market participation among this group. It is

¹⁹ If country of origin characteristics also influence the choice of destination community (as in Bauer et al, 2005), then the unobserved determinants of immigrant location choice are likely to vary by country of origin within a given MSA. However, we find that effect of ethnic concentration on financial market behavior is robust when we interact country characteristics (such as the level of financial development in the country of origin) with ethnic concentration in a given MSA. This specification allows us to include both MSA and country fixed effects.

²⁰ Bauer, Epstein, and Gang (2005) 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.

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 education, income, and employment status.

V. 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 participate in financial markets. 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, compared to the native-born.

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 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. 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. Finally, immigrants residing in ethnically concentrated areas may have access to informal alternatives to formal financial services.

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 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. However, to the extent that ethnic enclaves provide immigrants with informal alternatives to formal financial markets, then additional research may be needed to understand the factors that increase the attractiveness of informal financial services for immigrants, compared to similar natives. Because financial transactions rely on trust and confidence in institutions, the financial market behavior of immigrants provides insights into immigrant adaptation to U.S. social and economic life.

Appendix I: Logit Estimates of Financial Market Participation, 1996 – 2000 SIPP Panel
Additional Indicators of Financial Asset Participation

	Participation							
	(1)		(2)		(3)		(4)	
	Stock		IRA or Keogh		Mutual Funds		Combined Checking ¹	
	Coef.	M.E.	Coef.	M.E.	Coef.	M.E.	Coef.	M.E.
Immigrant	-0.611 (0.052)	-0.056	-0.436 (0.055)	-0.039	-0.418 (0.058)	-0.031	-0.342 (0.033)	-0.052
Age	0.060 (0.005)	0.006	0.215 (0.006)	0.022	0.057 (0.006)	0.005	0.015 (0.004)	0.002
Age Squared (x100)	-0.036 (0.005)	-0.004	-0.177 (0.006)	-0.018	-0.038 (0.006)	0.000	0.009 (0.004)	0.001
Unemployed/Out of Labor Force	0.241 (0.036)	0.027	0.131 (0.039)	0.013	0.404 (0.041)	0.036	-0.201 (0.027)	-0.029
Per Capita HH Income (x100)	0.024 (0.001)	0.003	0.017 (0.001)	0.002	0.023 (0.001)	0.002	0.025 (0.001)	0.035
Per Capita HH Income Squared (x10 ⁶)	-0.005 (0.000)	0.001	-0.004 (0.000)	0.000	-0.005 (0.000)	0.000	-0.006 (0.001)	-0.001
Married	0.758 (0.032)	0.079	0.621 (0.034)	0.061	0.819 (0.036)	0.065	0.980 (0.024)	0.151
Male	-0.224 (0.029)	-0.024	-0.210 (0.031)	-0.021	-0.336 (0.033)	-0.028	-0.372 (0.023)	-0.052
Non-White	-0.770 (0.044)	-0.070	-1.075 (0.051)	-0.085	-0.762 (0.052)	-0.053	-0.805 (0.003)	-0.134
# of children < 18	-0.068 (0.014)	-0.007	-0.153 (0.016)	-0.015	-0.044 (0.015)	-0.004	-0.114 (0.010)	-0.016
High School	1.185 (0.065)	0.155	0.978 (0.066)	0.116	1.242 (0.081)	0.130	0.886 (0.032)	0.109
Some College	1.650 (0.066)	0.233	1.440 (0.066)	0.185	1.737 (0.080)	0.200	1.386 (0.034)	0.163
College	2.155 (0.068)	0.375	2.041 (0.069)	0.334	2.463 (0.082)	0.382	1.769 (0.041)	0.173
Advanced Degree	2.142 (0.074)	0.398	2.166 (0.075)	0.388	2.670 (0.087)	0.465	1.824 (0.054)	0.158
MSA Fixed Effects	YES		YES		YES		YES	

No of Obs	356,769	330,042	330,042	196,787
Pseudo R-squared	0.180	0.217	0.189	0.207

¹The combined checking account indicator measures whether an individual held a checking account (interest bearing or non-interest bearing) during the interview period in question and is zero otherwise. Because non-interest bearing checking is measured less frequently, we have fewer observations for this indicator. Note: The full sample consists of all MSA residents greater than or equal to the age of 18. To keep the native and immigrant samples comparable, some of the MSAs are dropped where MSA fixed effects cannot be estimated separately for the immigrant sample due to a lack of observations. Logit models with the fixed effects at MSAs level are used and the standard errors are corrected for clustering at the individual level. All regressions include a constant term, age as linear and square terms, per capita income as linear and square terms, marital status, male, non-white, labor force status, number of kids, and schooling dummies. The omitted education category is less than high school.

Appendix II: Top-25 MSAs (Based on Population)

Metropolitan Statistical Area	% Foreign Born	Imm Pop 90	% Foreign Born	Country 1	Largest Ethnic Concentration		Ethnic Conc2
	(1990 U.S. census)		(SIPP 1996 Sample)		Ethnic Conc1	Country 2	
New York-Northern New Jersey -Long Island, NY	22.65%	3260551	18.84%	Italy	1.62%	Dominican Republic	1.57%
Los Angeles-Riverside -Orange County, CA	32.98%	2905552	39.03%	Mexico	13.46%	El Salvador	2.00%
Chicago-Gary-Kenosha, IL-IN-WI	15.01%	753332	15.48%	Mexico	4.22%	Poland	1.35%
San Francisco-Oakland -San Jose, CA	23.62%	1164254	29.97%	Mexico	4.37%	Philippines	3.32%
Washington-Baltimore, DC-MD-VA-WV	10.95%	500004	13.00%	El Salvador	0.82%	Korea	0.70%
Philadelphia-Wilmington -Atlantic City, PA-NJ-DE-MD	6.32%	271774	6.46%	Italy	0.57%	Germany	0.51%
Detroit-Ann Arbor-Flint, MI	6.66%	242155	7.09%	Canada	1.14%	Italy	0.50%
Boston-Worcester-Lawrence, MA-NH-ME-CT	12.77%	435377	13.22%	Canada	1.34%	Italy	1.02%
Dallas-Fort Worth, TX	9.41%	265538	14.72%	Mexico	4.28%	Vietnam	0.59%
Houston-Galveston-Brazoria, TX	14.83%	389256	18.46%	Mexico	6.40%	El Salvador	1.09%
Miami-Fort Lauderdale, FL	39.06%	958188	41.98%	Cuba	17.32%	Colombia	2.13%
Seattle-Tacoma-Bremerton, WA	9.31%	203895	14.29%	Canada	1.16%	Philippines	1.02%
Atlanta, GA	4.80%	100422	9.15%	Korea	0.41%	Germany	0.34%
San Diego, CA	19.51%	367263	27.30%	Mexico	8.03%	Philippines	2.75%
Anaheim-Santa Ana -Garden Grove, CA	27.55%	502450	\	Mexico	11.38%	Vietnam	2.68%
Minneapolis-St. Paul, MN	4.37%	78899	6.53%	Laos	0.62%	Canada	0.31%
St. Louis, MO-IL	2.56%	45894	2.92%	Germany	0.31%	Italy	0.16%
Cleveland-Akron, OH	5.94%	105152	3.97%	Yugoslavia	0.78%	Italy	0.46%
Tampa-St. Petersburg -Clearwater, FL	8.37%	137736	8.00%	Canada	1.06%	Cuba	1.01%

Pittsburgh-Beaver Valley, PA	2.95%	47556	3.48%	Italy	0.47%	Germany	0.39%
Phoenix, AZ	8.64%	134719	11.61%	Mexico	3.59%	Canada	0.76%
Denver-Boulder-Greeley, CO	6.31%	93315	8.97%	Mexico	1.61%	Germany	0.57%
Cincinnati-Hamilton, OH-KY- IN	2.34%	29902	1.67%	Germany	0.44%	India	0.17%
Milwaukee-Racine, WI	4.40%	51816	8.79%	Germany	0.70%	Mexico	0.51%
Sacramento-Yolo, CA	12.00%	131261	20.95%	Mexico	2.74%	Philippines	1.00%

Note: The Census sample consists of all MSA residents greater than or equal to the age of 18 in Census 1990 1% Sample.

The SIPP sample consists of all MSA residents greater than or equal to the age of 18 in the wave 2 of 1996-2000 SIPP Panel.

Appendix III: Logit Estimates of Financial Market Participation, 1996 – 2000 SIPP Panel
Native and Immigrant Samples

	Participation			
	Saving Acct		Checking Acct	
	Native	Immigrant	Native	Immigrant
	(1)	(2)	(3)	(4)
Age	-0.007 *	0.016	0.014 ***	0.050 ***
	(0.004)	(0.010)	(0.004)	(0.013)
Age Squared	0.017 ***	-0.006	0.010 **	-0.031 **
(x100)	(0.004)	(0.010)	(0.004)	(0.013)
Unemployed/Out	-0.287 ***	-0.319 ***	0.075 **	0.117
of Labor Force	(0.027)	(0.069)	(0.030)	(0.081)
Per Capita HH	0.020 ***	0.022 ***	0.019 ***	0.031 ***
Income (x100)	(0.001)	(0.003)	(0.001)	(0.002)
Per Capita HH	-0.006 ***	-0.006 ***	-0.004 ***	-0.008 ***
Income Squared (x10 ⁶)	(0.0004)	(0.0018)	(0.0003)	(0.0009)
Married	0.879 ***	0.792 ***	0.852 ***	0.646 ***
	(0.024)	(0.062)	(0.027)	(0.079)
Male	-0.298 ***	-0.301 ***	-0.253 ***	-0.409 ***
	(0.023)	(0.057)	(0.025)	(0.069)
Non-White	-0.574 ***	0.069	-0.784 ***	-0.166 **
	(0.030)	(0.059)	(0.037)	(0.072)
# of children < 18	-0.072 ***	-0.113 ***	-0.0666 ***	-0.1186 ***
	(0.011)	(0.023)	(0.012)	(0.029)
High School	0.522 ***	0.464 ***	0.710 ***	0.847 ***
	(0.034)	(0.071)	(0.044)	(0.101)
Some College	0.843 ***	0.763 ***	1.115 ***	1.266 ***
	(0.036)	(0.078)	(0.044)	(0.104)
College	1.046 ***	0.688 ***	1.436 ***	1.397 ***
	(0.042)	(0.093)	(0.050)	(0.115)
Advanced Degree	0.910 ***	0.848 ***	1.500 ***	1.706 ***
	(0.054)	(0.122)	(0.059)	(0.136)
MSA Fixed Effects	YES	YES	YES	YES
No of Obs	302,247	48,822	298,532	48,256
Pseudo R-squared	0.121	0.131	0.148	0.182

Note: The full sample consists of all MSA residents greater than or equal to the age of 18. To keep the native and immigrant samples comparable, MSAs are dropped where MSA fixed effects cannot be estimated separately for the immigrant sample due to a lack of observations.

Logit models with the fixed effects at MSAs level are used and the standard errors are corrected for clustering at the individual level.

The dependent variable is equal to one if the respondent had a saving account or checking account (interest bearing) during the interview period in question and is zero otherwise.

All regressions include a constant term, age as linear and square terms, per capita income as linear and square terms, marital status, male, non-white, labor force status, number of kids, and schooling dummies.

The omitted education category is less than a high school education.

*** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

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