Institutional Quality and Financial Market Development: Evidence from International Migrants in the U.S.

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Abstract

A growing body of theoretical and empirical work identifies the ability of a country's institutions to protect private property and provide incentives for investment as a key explanation for the persistent disparity in financial market development and economic performance across countries. We add to this literature by analyzing the impact of institutions on financial development using data on the financial decisions of immigrants and the native-born in the U.S. While all of the individuals whose decisions we analyze face the same formal institutional framework in the U.S., immigrants bring with them their experiences with institutions in their home countries. Our findings indicate that overall, immigrants are less likely than the native-born to participate in U.S. financial markets. This finding is robust to including controls for income, age, education, marital status, and time spent in the U.S. We also find that immigrants who come from countries with institutions that are more effective at protecting property rights are more likely to participate in U.S. financial markets. In fact, variation in institutional quality in immigrant source countries fully explains the low financial market participation of immigrants relative to the native-born. Having controlled for institutional quality in the home country, the fact that an individual is an immigrant has no additional power to explain financial market participation. These findings are generally robust to alternative measures of institutional effectiveness and to various methods of controlling for unobserved individual characteristics.

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1. Introduction

A central goal of economics is to understand why some economies perform better than others. A growing body of theoretical and empirical work identifies the ability of a country's institutions to protect private property and provide incentives for investment as one of the key explanations for the persistent disparity in financial market development and economic performance across countries.[2] This paper uses a new approach to test the hypothesis that better institutions will lead to greater financial development and provides independent evidence that the effectiveness of institutions for protecting private property is a key determinant of financial market development.

Our approach takes advantage of the fact that in any given year, vast numbers of individuals confront new institutional surroundings and, in some fortuitous cases, detailed data are collected on the financial decisions they make in their new institutional environments. For example, more than 200 million people migrate from developing to developed economies in any given year (Harris 2002) and in the process move from one institutional environment to another. Together with their skill and talents, international migrants bring attitudes and experiences acquired in their country of origin to the destination country. In particular, to use Douglass North's terminology, immigrants may *embody* the informal institutional constraints reflected in their home country customs, traditions and codes of conduct.[3]

The goal of this paper is to examine whether individual behavior is influenced by informal institutional constraints that are literally embodied in individuals. We consider the situation when the institutional environment changes, because individuals and families move from one institutional environment to another. Although the host country institutional environment may be profoundly different, the informal institutional constraints embodied in recent migrants may continue to shape their behavior. International migration allows us to study the impact of placing an individual into a different institutional environment while holding past experience with institutions fixed.

We analyze the impact of institutions on financial development using data on the financial decisions of immigrants and the native-born in the U.S. While all of the individuals whose decisions we analyze face a common institutional framework in the U.S., they bring with them their experiences with institutions in their home country. By analyzing how financial decisions in the U.S. are influenced by the quality of home country institutions, we gain insights into how the institutional framework becomes embedded in individuals and how susceptible it is to change. For example, we can compare the importance of home country institutions for recent migrants relative to migrants who have been in the U.S. for many years. This comparison provides some insight into the potential pace of economic progress and financial development following institutional reform.

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[2] See for example, North (1990), Knack and Keefer (1995), La Porta et al. (1998), Hall and Jones (1999), Acemoglu, Johnson and Robinson (2001 and 2002) and Rodrik, Subramanian and Trebbi (2002).

[3] "Economic Institutions Through Time", Nobel Lecture (1993).

The data we analyze come from the 1996 – 2000 panel of the Survey on Income and Program Participation (SIPP), which we have merged with country-level data on institutional, legal, financial and socio-economic characteristics for immigrants' origin countries. Our findings indicate that overall, immigrants are less likely than the native-born to participate in U.S. financial markets. They are less likely to own savings accounts and less likely to own stock. This finding is robust to including controls for income, age, education, marital status, and time spent in the U.S.

Our findings indicate that institutional quality matters and it matters a lot. We show that immigrants who come from countries with institutions that are more effective at protecting property rights are more likely to participate in U.S. financial markets. In fact, the lower financial-market participation of immigrants relative to the native-born appears to be fully explained by variation in institutional quality in the immigrant source countries. Once we control for institutional quality in the home country, the fact that an individual is an immigrant has no additional power to explain financial market participation. These findings are robust to alternative measures of institutional effectiveness and to various methods of controlling for unobserved migrant characteristics.

The approach we take to investigate the importance of institutional quality for financial development allows us to glean rudimentary insight into the relative importance of what Douglass North terms "formal constraints -- rules that human beings devise" and "informal constraints – such as conventions and rules of behavior".[4] The bulk of the evidence to date on the importance of institutions for institutional quality comes from cross-country studies. These studies reveal the total impact of institutions: formal and informal. We use individual data and all of the individuals whose behavior we analyze face the same set of formal rules in the U.S., therefore our approach isolates the impact of informal institutional constraints that are embodied in individuals.

Understanding the role of informal institutional constraints is a crucial component of predicting the impact of formal institutional change and of making appropriate policy recommendations. It is relatively straight-forward to change formal institutions by altering the written rules of that govern society, but changing the informal institutional constraints that manifest themselves in culture and norms of behavior is much more challenging. For example, Murell (1996), citing North (1990), describes policies in the countries that made up the former Soviet Union as a "mélange of the old and the new, a pattern typical of times of great institutional change, when revolutions in formal rules move far ahead of modifications in informal arrangement and behavior." By comparing our findings, which isolate the impact of informal institutional constraints, with those from cross-country investigations, which capture the total impact of institutions, we can approximate the percentage of the total impact that comes from informal rather than formal constraints.

The next section reviews the literature on institutional quality and describes the framework we use to derive the predicted relationship between institutional quality and

[4] "Institutions, Institutional Change and Economic Performance" (1990), page 4.

financial market decisions. In section 3, we describe the country and individual level data that we analyze. Section 4 outlines the empirical strategy, discusses our findings and their robustness. Section 5 presents conclusions.

2. Background and Framework

The view that better institutions lead to greater financial development and better economic performance is powerfully captured by Adam Smith in The Wealth of Nations:

> *Commerce and manufactures can seldom flourish long in any state which does not enjoy a regular administration of justice, in which people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law, and in which the authority of the state is not supposed to be regularly employed in enforcing the payments of debts from all those who are able to pay. Commerce and manufactures, in short, can seldom flourish in any state in which there is not a certain degree of confidence in the justice of government.*

This view receives support from a number of recent empirical studies, including those by Knack and Keeffer (1995), Hall and Jones (1999), Acemoglu, Johnson and Robinson (2001 and 2002), and La Porta et al. (1998). In addition, Rodrik, Subramanian and Trebbi (2002) present evidence that, not only do high quality institutions contribute to economic development, institutions are, in fact, the key determinant of economic development. In particular, once institutions are accounted for, the role of geography and trade in promoting economic development are negligible.

The fundamental identification issue that these authors confront is that current institutional quality is likely to be endogenous, because rich countries can afford good institutions, for example. The literature to date uses cross-country data on economic and financial development together with measures of institutional quality and focuses on overcoming the identification issue by finding an exogenous source of variation in institutional quality. Examples of exogenous determinants of institutional quality include: distance from the equator (Hall and Jones, 1999), settler mortality (Acemoglu, Johnson and Robinson, 2001 and Rodrik, Subramanian and Trebbi, 2002), population density in 1500 (Acemoglu, Johnson and Robinson, 2002), and legal origin (La Porta et al., 1998). Having identified an appropriate instrument, these papers regress country level measures of economic or financial performance on institutional quality, appropriately instrumented, and find a causal relationship between better institutions and greater financial development and better economic outcomes.

Our paper uses an alternative empirical approach to test the hypothesis that institutions are important for financial market development. Our approach complements the existing literature and also offers some additional insights into how the quality of institutions effects economic decisions. We address the endogeneity issue by examining individual level data. We can safely assume that individuals, unlike countries, take the institutional environment as given when they make economic decisions. Of course, it is possible that the institutional environment influences the decision to migrate, if particular types of individuals from countries with weak institutions are more likely to migrate for example.

If this is the case, then, in the context of international migration, the institutional environment of the country of origin can not be taken as given. This is of particular concern if the individual characteristics that influence the migration decision are unobservable. We use a variety of empirical techniques to deal with this possibility and to distinguish the impact of the home country institutional environment on the migration decision from the impact of these institutions on financial market participation in the U.S. While the second source effect of institutions is the focus of this paper, the impact of the institutional environment on migration decision is interesting in its own right, as well.

The challenge in using individual data is to find meaningful variation in institutional quality within a single data set. We achieve this by looking at a large sample of individuals living in the U.S. Historically high rates of migration to the U.S. in the past two decades mean that at least 10 percent of the U.S. population was born abroad. The 1996 – 2000 Survey on Income and Program Participation (SIPP) data that we use are designed to be representative of the U.S. population and include approximately 46,000 individuals, of whom 10% are immigrants.[5] These individuals face a common set of formal institutional constraints in the U.S., but the immigrants vary in the institutional constraints that they have experienced prior to coming to the U.S.

By analyzing the impact of country of origin institutional quality on individual financial decisions, we can test whether informal institutional constraints embodied in individuals are important. If they are, then we should see lower financial market participation in migrants who come from countries with weak institutions, compared to migrants who come from countries with stronger institutions. If institutions work primarily through formal constraints, then the quality of country of origin institutions should be unimportant in explaining financial market participation rates. To the extent that informal institutional constraints are important determinants of financial market participation, we can also explore how persistent these effects are. Are they inherited and present even in individuals who migrate as young children, for example? Do they decay with time and experience in the U.S.?

It is helpful to sketch out a very simple reduced form framework in order to make the hypotheses that we test clear. While we illustrate the framework in terms of an individual's decision about how much stock to purchase, it could easily apply to other financial decisions as well. Consider an individual, i, from country J who is considering how much stock to purchase. The individual's demand for stock is represented by:

$$S_i = f(ER, X_i)$$

where S_i is the amount of money that individual i invests in stock, ER is the expected return from the investment, and X_i is a vector of individual characteristics (risk aversion, wealth, education, years in the U.S., age at migration, and so on) that affect the demand for stock.

[5] In the empirical work, we analyze a sample that includes all immigrants and a random sample of the native-born that is equal in size to the immigrant population.

Institutional quality is modeled by assuming that the investor believes there is some probability, π_i that the stock broker will abscond with the investor's funds. We assume that brokers are governed by the same institutional framework and therefore they face a common cost of absconding. This means that broker variation in the likelihood of absconding can be safely ignored.

Given her beliefs, the investor's expected return on the investment will not be R, the expected return on the stock, but $\pi_i \times 0 + (1 - \pi_i) \times R$. The probability that an investor places on the likelihood that the stock broker absconds is a function of the quality of the institutions in the country that investor was born in, *J*, which may in turn be a function of the length of time the investor experienced those institutions, y_J, and the length exposure that the investor has to U.S. institutions, y_{US}: $\pi_i = \pi(J, y_J, y_{US})$. [6]

For the typical immigrant who comes from a country where institutions are weaker than in the U.S., π is decreasing in origin country institutional quality, increasing in years spent in the origin country, and decreasing in years spent in the U.S.[7] Given this framework, demand for stock will be increasing in home country institutional quality and for a given level of institutional quality, π will be higher for individuals who have recently arrived in the U.S. and who have arrived as adults.

3. Data

Country data

The country data that we use are described in Tables 1, 2 and 3A and B. Table 1 defines each variable and describes its source. Our preferred measure of institutional quality is "protection from expropriation". This variable measures the extent to which individual property rights are protected and captures a key component of the institutional framework that is important for financial market participation: the extent to which individuals can be sure that they will realize the return on their investments. Acemoglu, Johnson and Robinson (2001) also use this variable along with another variable that captures restraints on government power. In our baseline estimates, we average annual measures of the protection from expropriation index from 1982 to 1995 from the International Country Risk Guide (ICRG) IRIS – 3 data. These data were constructed by Stephen Knack and the IRIS Center, University of Maryland from monthly data provided by Political Risk Services.

Table 3A presents some summary statistics for each of the country-level variables that we use. In the data, protection from expropriation ranges from 1.83 (Iraq) to 10.00 (the U.S., Luxemburg, the Netherlands and Switzerland). The average value is 7.06 and the median country's protection from expropriation measure is 7.07. Some of the important

[6] In general, the expected rate of return on stock would be determined in equilibrium outcome, taking into account the broker's utility of absconding as well as investors' perceptions of that likelihood and the distribution of individuals with varying beliefs in the economy.

[7] Note that the U.S. measure of protection from expropriation, our preferred measure of institutional quality is ten, which is the maximum possible value.

immigrant countries of origin have above average values for protection from expropriation: Mexico (7.51), China (7.79), and Canada (9.79).

We also use three other measures of institutional quality from the ICRG-IRIS – 3 data, quality of the bureaucracy, rule of law and ethnic tensions. The variables we use in the estimates are again averages of the annual measures from 1982 to 1995. In addition to these measures of institutional quality, we also examine the effects of other exogenous determinants of institutional quality: years of independence (from the CIA Factbook), whether the country has English as an official language (from the CIA Factbook), whether the country's legal tradition is British (from La Porta et al., 1999), a measure of how far the country is from the equator, the absolute value of the latitude of the capital divided by 90 (also from La Porta et al., 1999). In addition to these proxies for institutional quality, important country-level control variables include income, as measured by the log of average real per capita gdp from 1970 to 1995 from La Porta et al (1999), and inequality, measured by the average of all high quality gini coefficient observations from 1980 to 1995 from Deininger and Squire (1996).

Table 3B reports on the correlations between the country level variables. As one might expect, many of the measures of institutional quality are highly positively correlated across countries. This table also documents the high degree of correlation between income and institutional quality as well as the negative correlation between inequality and income and between inequality and institutional quality.

Individual data

We rely on the SIPP data for individual characteristics and measures of financial market participation. The 1996 – 2000 SIPP Panel includes 12 waves of data on approximately 46,000 individuals over the age of 18. The SIPP data are representative of the U.S. population as a whole, and nearly 11% of the original sample are immigrants and approximately one-third of the immigrants arrived in the U.S. within the past 10 years. Just over half of the immigrants were born in a Latin American country and about 18% were born in a European country. We restrict our attention to a sample made up of all of the immigrants and a randomly chosen sample of an equal number of natives, for a total sample of 9,284 individuals, and 111,401 observations, with 12 observations per person. Table 2 summarizes these data for the whole sample, the native-born and immigrants.

Compared to the native-born, immigrants are younger, more likely to be married, non-white, have more children and more likely to be unemployed our economically inactive. Immigrants also tend to be less educated than the native born. Nearly 36% of the immigrant sample has never completed high school compared to only 17% of the native-born sample. However, the percentage of immigrants and the native-born who have an advanced degree is roughly the same at 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 $1,275, compared to $1,684 for the native-born.

Measures of financial market participation

The empirical work focuses on two measures of financial market participation.[8] The first measure that we consider is stock market participation. Investing in the stock market requires a great deal of institutional support. The investor must be relatively well convinced that the stock broker will not abscond with her money and that the institutional and legal framework is sufficient to ensure that her money will be invested in profitable projects and that the proceeds of these projects will be returned to investors and not be expropriated by management either in the form of non-productive investment or through outright theft. In each wave of data collection, at roughly 4 month intervals, individuals are asked whether they own any stock. In the data, 9.3% of the immigrant sample owns stock, compared with 18.5% of the native-born sample.

The second measure that we consider is savings account ownership. The decision to put money in a savings account requires less institutional support relative to investing in the stock market. In this case, the investor must only be convinced only that the bank will keep her funds safe, accurately pay any interest that is due to her, and return the accumulated funds upon demand. Individuals are asked about savings account ownership every 4 months, as well. In the data, 42% of the immigrant sample has a savings account, compared with 54.5% of the native-born sample.

4. Empirical Strategy and Findings

This section reports on our empirical findings. We estimate the decision to participate in financial markets using a linear probability model. For each set of estimates we consider two measures of financial market participation: the decision to invest in the stock market and the decision to open a savings account. All of the reported standard errors have been corrected to account for the heteroscedasticity that is implicit in the linear probability model. The reported standard errors are also adjusted to allow for correlation across observations for a given individual.

Baseline Findings

Tables 4A and B report our baseline findings for stock market participation and savings account ownership, respectively. Each of the estimates include age, age squared, labor force status, income, income squared, marital status, the number of children in the household, sex, race, and education as explanatory variables. In addition to these variables, each estimate also includes controls for the Metropolitan Statistical Area (MSA) where an individual resides. The omitted category is "lives outside of an MSA". Among other things, the MSA controls account for the possibility that access to financial markets varies across major metropolitan areas within the U.S. The sample includes individuals age eighteen and over.

[8] Although the SIPP data include, in principle, information on portfolio allocations, measures of financial market participation have far fewer missing values and are measured with less error.

Looking first at the estimates of stock market participation in column [1] of Table 4A, we find that individuals are more likely to participate in the stock market as they get older. Being unemployed or out of the labor force has a significantly positive effect on the likelihood of stock market participation. Both of these effects are likely to be the result of retired individuals who are receiving income from their stock investments. Income has a strong positive effect on stock market participation. If monthly per capita household income were to increase by one standard deviation from its mean, by $1,566, the likelihood of stock market participation would increase by 10.5 percentage points, a 75% increase relative to the observed likelihood of stock market participation of 14%.

Men and women are equally likely to participate in the stock market according to our estimates. Married individuals are much more likely to invest in the stock market; being married increases the likelihood of stock market participation by nearly 7 percentage points. The presence of children in the household also increases the likelihood of owning stock, with each additional child raising the probability of owning stock by 1 percentage point. Non-white individuals are significantly less likely to own stock. Black, Hispanic or Asian individuals are 4.1 percentage points less likely to own stock. Stock market participation increases sharply with education. Relative to individuals with less than a high school diploma, high school graduates are 4.8 percentage points more likely to own stock, those who have attended college are 10 percentage points more likely to own stock, college graduates are 16 percentage points more likely to own stock and individuals with an advanced degree are 21 percentage points more likely to own stock.

There are some interesting differences between the determinants of savings account ownership and stock ownership; although overall the findings are fairly similar. The baseline estimates for savings account ownership are reported in column [1] of Table 4B. In contrast to the findings for stock market ownership, being unemployed or out of the labor force has a strong negative effect on the likelihood of having a savings account. These individuals are 11 percentage points less likely to have a savings account. As was the case for stock ownership, income has a large positive effect on the likelihood of having a savings account. A one standard deviation increase in monthly per capita household income would lead to a 9.5 percentage point increase in the likelihood of having a savings account, a 20% increase relative to the observed percentage of the individuals in the sample who have a savings account of 48%.

As was the case for stock market participation, men and women appear equally likely to have a savings account. Being married has a strong positive impact on the likelihood of having a savings account just as it did for stock ownership. Married individuals are 17 percentage points more likely to have a savings account compared to their single counterparts. In contrast to the findings for stock ownership, the presence of children in the household lowers the likelihood of having a savings account somewhat. The likelihood decreases by 0.6 percentage points with the presence of each additional child. As was the case with the stock market results, non-white individuals are significantly less likely to have a savings account. Black, Hispanic or Asian individuals are 3.8 percentage points less likely to have a savings account.

Like stock market participation, savings account ownership increases with education. For example, individuals with a high school diploma are 9.7 percentage points more likely to have a savings account compared to individuals with less schooling. Individuals who have attended college are 18 percentage points more likely to have a savings account compared to individuals with less than a high school education. Additional schooling does not lead to additional increases in the likelihood of having a savings account, however. This contrasts somewhat with the findings for stock market participation, where the likelihood of participation increased with additional higher education.

Turning now to one of the important issues in our study, we find that immigrants are much less likely to participate in the stock market and much less likely to have a savings account compared to the native-born. All else equal, immigrants are 4.6 percentage points less likely to own stock or have a savings account compared to the native-born. There are a number of potential explanations for this finding: immigrants may face discrimination based on country or region of origin that inhibits financial market participation, immigrants may tend to live in neighborhoods within MSAs where fewer financial services are available, immigrants may learn about financial services from other immigrants, which would tend to reinforce low financial market participation over time among immigrants (see Hong, Kubik and Stein (2001), for example). In addition, legal status and the ability to speak English may also play an important role in financial market decisions, and immigrants may rely more on informal financial institutions, compared to the native born.

We hypothesize that the explanation for lower immigrant participation financial markets lies with the institutional framework that immigrants have experienced in their countries of origin. The rest of this section is concerned with demonstrating that measures of home country institutional effectiveness can explain the lower financial market participation of immigrants.

In column [2] of Tables 4A and B, we add "protection from expropriation" in the country of origin to the set explanatory variables described above. As discussed above, "protection from expropriation" captures the extent to which the institutional framework in the country of origin protects private property and creates a positive climate for investment. For the native-born, this variable is equal to the value for the U.S., which is the maximum possible value, 10. When we add "protection from expropriation" to the stock market participation and the savings account ownership estimates, we find that the immigrant indicator is no longer significantly different from zero. In a statistical sense, the "protection from expropriation" variable fully explains the lower financial market participation rates of immigrants. The magnitude and the significance of the other explanatory variables remain very close to their previous values, with one exception. The negative effect of being non-white falls from -0.041 to -0.033, for stock and from -0.038 to -0.031 for savings.

The coefficient on "protection from expropriation" is positive and strongly significant. Individuals, who were born in countries with strong institutions, as captured by this variable, are more likely to participate in financial markets in the U.S. compared to

individuals who migrated from countries with weaker institutions. According to these estimates, if an individual from a country with "average" institutions had instead come from a country that had institutions that were one standard deviation above the mean, the likelihood that they owned stock would increase by 3.9 percentage points, a 41.5% increase in the likelihood of stock market participation, relative to the observed participation rate for immigrants of 9.3%. Or to put it a perhaps more relevant way, if institutions in El Salvador had achieved the same quality as Mexico's between 1982 and 1995, then we would expect the stock market participation of Salvadorans in the U.S. to be 5.25 percentage points higher and the ownership of savings accounts to be 4.75 percentage points higher.

Additional Country Controls

We turn our attention now to exploring the robustness of our findings and determining whether it is appropriate to interpret them causally. The first issue we consider is that there may be other important country of origin characteristics that are correlated with institutional quality that were left out of the baseline results. For example, perhaps it is not institutional quality that matters, but income in the country of origin. We may have found a significantly positive effect of institutional quality on financial market participation because institutional quality is positively correlated with country income and country income was not included in the baseline estimates. We explore the possibility that our findings are the result of omitted country characteristics in Table 5. We report on five estimates for stock market participation (in panel A of the Table) and for savings account ownership (in panel B of the Table). Although the coefficient estimates are not reported in the Table, each of these estimates includes all of the same control variables that were included in the baseline estimates.

The first column of Table 5 repeats the results from Table 4A column [2], for stock, and from Table 4B column [2] for savings. Since countries with high institutional quality also tend to have been colonized by Britain, it is possible that the positive coefficient on protection from expropriation is capturing not institutional quality, but the ability of individuals who were born in some former British colonies to speak English. To control for this, the second estimate in Table 5 adds an indicator variable that is equal to one if the country of origin has English as an official language of the country. One potential explanation for the low financial market participation of immigrants is that the ability or inability to speak English plays an important role in determining the cost of financial market participation. Ideally, we would include an individual measure of English speaking ability in the estimates. However, the SIPP data does not include any measure of this characteristic, so we try to capture it at the country level instead. Coming from a country where English is an official language has a significant and positive effect on the likelihood of having a savings account. It has no effect on the likelihood of owning stock. When this variable is included in the estimates, the coefficient on "protection from expropriation" remains positive and highly significant for both stock market participation and savings account ownership.

Another potential explanation for our findings is that financial market adaptation is easier for immigrants from countries that are more similar to the U.S. This would mean that the positive coefficient on protection from expropriation should be interpreted to mean that individuals from countries with institutions like the U.S. are more likely to participate in U.S. financial markets, rather than as an indication that better institutions to protect private property encourage financial market participation. If this is the case, then including other, potentially better, measures of the similarity between the country of origin economy and the U.S. should eliminate the significance of protection from expropriation. In order to capture this possibility, we include the log of gdp per capita in the country of origin in the estimate presented in column [3] of Table 5. The impact of this variable is not significantly different from zero and, when it is included, the coefficient on protection from expropriation remains highly significant and the point estimate is essentially unchanged at 0.022 for stock and 0.016 for savings.

In column [4] of Table 5, we report on estimates that include both an indicator that is equal to one if English is an official language of the individual's country of origin and the log of gdp per capita for that country. Chiswick (1978) and Borjas (1987) both show that immigrants from English speaking countries experience more rapid wage assimilation. About 28% of the countries in our sample have English as an official language. These estimates produce somewhat different results for stock and savings. For participation in the stock market, the results are unchanged relative to the baseline findings: protection from expropriation is positive and significant and the effect of the other two variables cannot be distinguished from zero. For savings account ownership the results are qualitatively the same, however the coefficient on protection from expropriation falls in both magnitude and significance. The coefficient on protection from expropriation falls from 0.019 to 0.011 and is positive with only 7% significance. The difference in the robustness of the findings for stock ownership relative to savings account ownership is consistent with the level of institutional support required for each financial arrangement, as discussed above.

In column [5] of Table 5, we report on estimates that include continent controls in addition to protection from expropriation. One possible explanation for our findings is that there is discrimination against individuals based on their continent of origin, say Africa or Central or South America, for example, and that countries in the same continent tend to share institutional qualities.[9] This might mean that the protection from expropriation risk variable is measuring the effect of discrimination rather than institutional quality. In order to explore the feasibility of this potential explanation, we add a set of continent controls to the estimates. We can not rule out this potential explanation for the savings results. When we include continent controls in the estimates of savings account ownership, the coefficient on protection from expropriation becomes indistinguishable from zero. For stock ownership, however, the coefficient on protection from expropriation remains positive and significant at 0.015, with a standard error or 0.004, even when continent controls are included.

[9] Recall that the estimates include a control for being "non-white", so the continent controls capture differential treatment based on continent of origin, holding racial characteristics fixed.

Alternative Measures of Institutional Quality

In Tables 6A and 6B we report on estimates for stock market participation and savings account ownership, respectively, that use alternative measures of country of origin institutional quality. The alternative measures that we consider are: bureaucratic quality, rule of law, ethnic tensions, whether the country's legal origin is British, the absolute value of the latitude of the country's capital divided by 90, and the number of years that the country has been independent since 1776. These estimates are found in the order mentioned in columns [2] - [7] of Tables 6A and B.

For both stock market participation and savings account ownership, we find that the results are unchanged when we substitute bureaucratic quality or the rule of law for protection from expropriation. In these cases, the coefficient on the institutional quality variable is highly significant with a point estimate of approximately 0.02 and the coefficient on the immigrant indicator variable is indistinguishable from zero.

Some studies find that the degree of ethnic tensions in a country is an important predictor of institutional quality, since the greater ethnic diversity may lead to the adoption of policies that favor expropriation of resources, rather than the emergence of open and competitive systems (Easterly and Levine, 2002). This variable has no significant effect on the likelihood of stock market participation or savings account ownership. When it is substituted for protection from expropriation, the coefficient on immigrant status becomes significantly negative. In these estimates we find that immigrants are 6.5 percentage points less likely to own stock or have a savings account.

La Porta et al. (1998 and 2000) show that greater protection is offered to shareholders in countries with a British legal tradition. Financial development is also accelerated in these countries. Approximately 30% of the countries in our sample have a British legal tradition. Our findings reinforce that view. Individuals from countries with a British legal tradition are 3.5 percentage points more likely to own stock and 6.7 percentage points more likely to have a savings account in the U.S. The effect of immigrant status is insignificant in the savings estimates that include British legal origin. However, in the stock market estimates, we find that British legal origin is not sufficient to "explain" the immigrant variable. Although the immigrant variable is smaller and less significant compared to the baseline estimates with no controls for institutional quality, immigrants are still 2.4 percentage points less likely to own stock compared with native-born individuals.

Rodrik, Subramanian and Trebbi (2002) and Acemoglu, Johnson and Robinson (2001) find that geography has an important effect on the quality of institutions. Countries that are further from the equator tend to develop stronger institutions. Acemoglu, Johnson and Robinson (2001) argue that European colonialists adopted different colonization policies, with different associated institutions in different areas. Although their work emphasize the role of settler mortality rates in determining the colonization policy, they also show that places where effective institutional arrangements were established tend to be further from the equator. In addition, Beck, Demirgüç-Kunt and Levine (2002) show

that latitude helps to explain financial development. We include the absolute value of the latitude of the capital city divided by 90 to capture this effect and find that individuals who were born in countries that are further from the equator are significantly more likely to participate in the U.S. stock market. While the coefficient estimate on latitude is positive in the savings account ownership regression, it is not significant. However, in neither case, does this geographic control "explain" the lower financial market participation of immigrants. This is largely consistent with both Rodrik, Subramanian and Trebbi (2002) and Acemoglu, Johnson and Robinson (2001) who both find that while geography is an important determinant of institutions, it is not an important determinant of economic outcomes, once institutions are controlled for.

Institutional quality may be higher in countries that have experienced more years of independence in which to develop effective institutions. Beck, Demirgüç-Kunt and Levine (2002) find that additional years of independence are associated with greater measures of financial market development. Our findings are mixed. We find that individuals who were born in countries that have been independent longer are significantly more likely to have a savings account but this variable has no significant effect on stock market participation. In both cases, the immigrant indicator variable remains negative and significant.

The estimates in Tables 6A and 6B do not suggest that the finding that country of origin institutional quality as proxied by "protection from expropriation" explains the lower financial market participation of migrants are driven by how we measure institutional quality.

Unobserved Individual Characteristics

If unobserved individual characteristics are correlated with country of origin institutional quality, then we need to be concerned that our findings capture the effect of unobserved individual characteristics, rather than the effect of institutional quality on financial market participation. We consider two methods of controlling for this possibility.

According to Borjas (1987), the decision to migrate will be a function of, among other things, unobserved migrant ability and the distribution of income in the country of origin and the destination country. Because they are only concerned with the right tail of the income distribution, high ability migrants will tend to migrate from more equal societies to less equal ones. In contrast, low ability migrants will move from less equal societies to more equal ones, to protect themselves against a draw from the low end of the wage distribution. Since countries with low inequality also tend to have strong institutions, we have to be concerned that our finding that financial market participation increases with country of origin institutional quality is driven by the high ability individuals migrating from countries with low inequality and high quality institutions. We address this by adding a measure of country of origin inequality, the gini coefficient, to the baseline estimates.

These results are found in Table 7. Because gini coefficient data are only available for a subset of countries, these estimates use a smaller sample. The first column in Table 7 reports the baseline findings for the smaller sample. The second column adds the country of origin gini coefficient and the third column adds the log of gdp per capita in the country of origin as well. We can not rule out the possibility that selective immigration of the sort described above is influencing the results for savings account ownership. Individuals from countries with greater inequality are less likely to have a savings account and when inequality is controlled for, the institutional quality variable is no longer significant. In contrast, the stock market participation findings appear to be robust to this type of selection. We find that individuals from countries with more inequality are less likely to own stock, and the coefficient on institutional quality remains positive and highly significant. The point estimate ranges from 0.017, when just the gini coefficient is included, to 0.020, when the gini coefficient and log per capita gdp are included, compared to the baseline estimate of 0.025 for this sample.

In addition to unobserved ability, there are other individual characteristics that we cannot observe that may have an important role in the decision to participate in financial markets and may also be correlated with country of origin institutional quality. For example, undocumented immigrants may be less likely to participate in U.S. financial markets and it may be the case that immigrants from countries with weaker institutions are more likely to be undocumented. Another important omitted variable is past participation in financial institutions. Immigrants from countries with stronger institutions may be more likely to have participated in financial markets in their country of origin, since those markets were likely to be better developed. If this behavior translates to the U.S., then the coefficient on institutional quality may not be capturing the effect of institutions so much as the effect of past behavior (albeit influenced by institutions). The likelihood of return migration may also influence savings and investment behavior directly (see Paulson and Singer, 2001) and be correlated with institutional quality. Similarly, we cannot measure the effect of discrimination based on country of origin or region of origin controls, or variation in access to financial markets within an MSA.

In order to produce accurate estimates of the effect of country of origin institutional quality on financial market participation in the U.S., we need to eliminate the possibility that omitted individual characteristics are correlated with country of origin institutional quality. If we can do this, we can confidently interpret the coefficient estimate on institutional quality, despite the fact that there may be important individual characteristics that we do not observe.

To do this, we take advantage of the fact that for a given country of origin, there is variation in when migrants arrive in the U.S. and variation in institutional quality over the time period that our data cover.[10] We create three institutional quality variables: the first averages annual values from 1980 to 1984, the second from 1985 to 1989 and the third from 1990 to 1995. Migrants are assigned the institutional quality measure that captures the conditions in the country of origin at the time they left. Since we now have a measure

[10] Unfortunately, the SIPP data tell us the five year interval during which a migrant came to the U.S. to stay. The publicly available data do not tell us the precise year when migrants arrive.

of institutional quality that varies for a given country, we can estimate the relationship between financial market participation and institutional quality controlling for country fixed effects. In this specification, we eliminate the possibility that the coefficient on institutional quality is biased due to omitted time-invariant individual characteristics that are correlated with country of origin. These estimates are reported in Table 8. While the estimates presented in Table 8 eliminate the possibility the effect of institutional quality is biased due to omitted individual characteristics that are fixed through time, it is still conceivable that some of the effect is due to time varying individual characteristics that are correlated with changes in institutional quality.

The dependent variable in the first column of Table 8 is equal to one if an individual owns stock in the interview period and is equal to zero otherwise. The dependent variable in the second column of Table 8 is equal to one if an individual had a savings account in the interview period and is zero otherwise. These estimates include the same controls as those in column [2] of Table 4A (for stock market participation) and Table 4B (for savings account ownership), with three exceptions. First, the institutional quality measure that is included in Table 8 varies depending on when an immigrant arrived in the U.S., as described above. Second, these estimates include a full set of country indicator variables. Finally, the immigrant indicator variable is not included in Table 8. This is because the country of origin indicator variables control for immigrant status. The immigrant variable is equal to one when the indicator variable for the U.S. is equal to zero.

For most of the control variables, the coefficient estimates are very close to the values reported in Tables 4A and 4B, suggesting that the impact of these variables on financial market participation is not influenced by correlation between unobserved individual characteristics and unobserved county of origin characteristics. The fact that most of the parameter estimates do not change very much when country fixed effects are included also means that the variation in these variables for immigrants who share a country of origin has a very similar impact to variation in these variables across countries. Or to put it another way, income has roughly the same effect on the financial market participation of Mexican immigrants as it does for all immigrants.

There is one exception to the general finding that the coefficients on the control variables are unchanged when country fixed effects are included. For both the savings and the stock market participation estimates, the coefficient on the indicator variable "non-white" becomes larger when country of origin controls are included. This suggests that for a given country of origin, being non-white has a larger effect than it does for immigrants as a whole.

Focusing for a moment on the stock market participation estimate in column [1] of Table 8, we see that the quality of country of origin institutions continues to have an important positive effect on financial market participation in the U.S. For a given country, immigrants who migrated when country of origin protection from expropriation was stronger are more likely to own stock in the U.S. According to these estimates, immigrants who migrated from Mexico between 1990 and 1996 are 1.3 percentage points

more likely to own stock compared to immigrants who migrated from Mexico between 1980 and 1984. Improving institutional quality in the country of origin facilitates financial market participation in the U.S. By the same token, declining protection from expropriation in migrant sending countries discourages financial market participation in the U.S. Immigrants who arrived in the U.S. from China between 1990 and 1995 are 1.1 percentage points less likely to own stock in the U.S. compared to immigrants from China who came to the U.S. between 1980 and 1984.

For savings account ownership, we find that improvements in home country institutions are associated with lower savings account ownership in the U.S. One possibility is that this is due to variation in the probability of return migration that is correlated with changing home country institutional characteristics. The probability of return migration might increase when institutions improve in the country of origin. Immigrants who are planning to return to their country of origin may be less willing to pay the fixed cost of opening an account in the U.S. This effect may be exacerbated when improving country of origin institutions make it feasible for immigrants to save there, even while they are living in the U.S. While this effect seems to be important for savings account ownership, other factors appear to dominate the decision to purchase stock in the U.S.

The Effect of Age at Migration

We have presented evidence that informal institutional constraints are embodied in individuals and that these constraints influence financial market decisions even in a new formal institutional framework. However, these findings do not address the question of how or when these constraints become embodied in individuals. For example, are they inherited and present even in individuals who migrated at a very young age? Or are they only observed individuals who migrate as mature adults, consistent with the view that they are shaped by an individual's experience in their country of origin? We take an initial step toward answering these questions via the estimates presented in Table 9. This table examines the effect of country of origin institutional quality of financial market participation in the U.S. for subsets of immigrants based on their age of arrival in the U.S.

Table 9 divides the immigrant sample into five sub-samples based on age at arrival in the U.S. For each sub-sample and dependent variable (stock ownership, Panel A and savings account ownership, Panel B), two estimates are produced: one which includes controls for the calendar year when the immigrant arrived in the U.S. and one which does not. Controlling for year of arrival in the U.S. produces virtually identical results, so we will simply discuss the findings which do not include these controls. Our findings for stock market participation indicate that informal institutional constraints from the country of origin are not present in very young migrants. For individuals who arrived in the U.S. before the age of 16, the effect of protection from expropriation is positive, but statistically insignificant. However, the effect becomes positive and significant at a relatively young age. The likelihood of owning stock is 7.25 percentage points higher for an immigrant who was born in Mexico rather than in El Salvador and came to the U.S. when she was between 16 and 20. The effect persists for immigrants who were 21 or older when they arrived in the U.S.

The findings for savings are similar although a bit less straight-forward to interpret. Protection from expropriation is positive and significant for immigrants who were 11 – 15 years when they arrived in the U.S. and also for immigrants who were 21 year or older when they arrived in the U.S. Overall the findings suggest an intermediate case, while the effect of country of origin institutions is not inherited and present even in those who migrated as babies, it does show up in individuals who migrated at a very young age and perhaps before many of them would have been likely to have had much experience with their country of origin institutions outside of school. These findings are consistent with the view that families, and possibly schools, do much to shape an individual's perception of a country's institutional framework.

The Effect of Years of U.S. Experience

We have presented evidence that suggests that informal institutional constraints are embodied in individuals. This begs the question of how persistent these effects are. We examine this question in Table 10 which examines the effect of country of origin institutional quality on financial market participation in the U.S. for subsets of immigrants based on the number of years they have lived in the U.S.

Table 10 divides the immigrant sample into seven sub-samples based on how many years they have been living in the U.S. For each sub-sample and dependent variable (stock ownership, Panel A and savings account ownership, Panel B), two estimates are produced: one which includes controls for how old the immigrant was when she arrived in the U.S. and one which does not. Controlling for age at arrival in the U.S. produces virtually identical results, so we will simply discuss the findings which do not include these controls. Our findings for stock market participation suggest that the effects of informal institutional constraints are very persistent. The effect of protection from expropriation is positive and significant for every sub-sample, except the sub-sample of immigrants who have been in the U.S. for more than 32 years.

The results for savings account ownership are more mixed. The effect of protection from expropriation risk is positive for immigrants who have lived in the U.S. for 22 or fewer years. However, it is only significant for the sub-sample of immigrants who have lived in the U.S. for 13 to 17 years. The contrast in the findings for stock market participation and savings account ownership is again consistent with the view that the institutional framework is likely to matter less for opening a savings account since the level of institutional infrastructure that is required to support a savings contract is much lower than what is required for a contract that involves investing in the stock market.

5. Conclusions

This paper adds to the growing body of theoretical and empirical work identifies the ability of a country's institutions to protect private property and provide incentives for investment as a key explanation for the persistent disparity in financial market development and economic performance across countries. We analyze the impact of

institutions on financial development using data on the financial decisions of immigrants and the native-born in the U.S. While all of the individuals whose decisions we analyze face the same formal institutional framework in the U.S., immigrants bring with them their experiences with institutions in their home countries.

Our findings indicate that overall, immigrants are less likely than the native-born to participate in U.S. financial markets. This finding is robust to including controls for income, age, education, marital status, and time spent in the U.S. We also find that immigrants who come from countries with institutions that are more effective at protecting property rights are more likely to participate in U.S. financial markets. In fact, variation in institutional quality in immigrant source countries fully explains the low financial market participation of immigrants relative to the native-born. Having controlled for institutional quality in the home country, the fact that an individual is an immigrant has no additional power to explain financial market participation. This suggests that individuals do indeed embody informal institutional constraints.

These findings are generally robust to alternative measures of institutional effectiveness and to various methods of controlling for unobserved individual characteristics. We also show that the effects of informal institutional constraints are present even in those who migrated to the U.S. at a relatively young age and that these effects persist even after many years of experience with the institutional framework in the U.S. Our findings are particularly strong for financial decisions that require a great deal of institutional support, notably investing in the stock market.

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Table 1: Definitions and Sources of Country Level Variables

Variable	Definition and Source
Protection from Expropriation of Private Investment	This variables evaluates the risk "outright confiscation and forced nationalization" of property. Lower ratings "are given to countries where expropriation of private foreign investment is a likely event." Variable is the average over annual country observations 1982 – 1995. Source: International Country Risk Guide (ICRG) IRIS-3 Data
Quality of the Bureaucracy	High scores indicate "an established mechanism for recruitment and training," "autonomy from political pressure," and "strength and expertise to govern without drastic changes in policy or interruptions in government services" when governments change. Variable is the average over annual country observations 1982 – 1995. Source: International Country Risk Guide (ICRG) IRIS-3 Data
Rule of Law	This variable "reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes." Higher scores indicate: "sound political institutions, a strong court system, and provisions for an orderly succession of power." Lower scores indicate: "a tradition of depending on physical force or illegal means to settle claims." Upon changes in government new leaders "may be less likely to accept the obligations of the previous regime." Variable is the average over annual country observations 1982 – 1995. Source: International Country Risk Guide (ICRG) IRIS-3 Data
Ethnic Tensions	This variable "measures the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high because opposing groups are intolerant and unwilling to compromise. Higher ratings are given to countries where tensions are minimal, even though such differences may still exist." Variable is the average over annual country observations 1982 – 1995. Source: International Country Risk Guide (ICRG) IRIS-3 Data
Gini Coefficent	Average of Gini-coefficients across one country over all "high-quality" observations 1980-95. Source: Deininger and Squire (1996) http://www.worldbank.org/research/growth/dddeisqu.htm
Log Per Capita GDP	Log of average real GNP 1970 – 1995. Source: "The Quality of Government" LaPorta, Lopez-de-Silanez, Schleifer, Vishny (1999), originally from World Bank World Development Indicators. http://www.som.yale.edu/faculty/fl69/datasets.asp
British Legal Origin	This variable is equal to one if the legal regime of the country is British and zero otherwise. Source: "The Quality of Government" LaPorta, Lopez-de-Silanez, Schleifer, Vishny (1999). http://www.som.yale.edu/faculty/fl69/datasets.asp
Years of Independence	The number of years since 1776 that the country has been independent. Source: CIA Factbook.
English Speaking	This variable is equal to one if English is one of the official languages of the country and zero otherwise. Source: CIA Factbook.
Latitude	This variable is equal to the absolute value of the latitude of the country's capital divided by 90. Source: "The Quality of Government" LaPorta, Lopez-de-Silanez, Schleifer, Vishny (1999). http://www.som.yale.edu/faculty/fl69/datasets.asp

Table 2: Characteristics of Immigrants and the Native Born in the SIPP Data

Characteristic	Whole Sample	Native-Born	Immigrant
Individual Characteristics			
Age	45.712	46.602	44.823
	(16.632)	(17.194)	(16.004)
% Male	45.7%	45.6%	45.8%
% Married	63.5%	59.8%	67.1%
% non-white	22.0%	13.3%	30.7%
% unemployed or out of the labor force	34.9%	33.4%	36.5%
# of children < 18 in household	0.975	0.769	1.180
	(1.274)	(1.129)	(1.373)
Monthly per capita household income	1479.79	1684.07	1275.28
	(1566.05)	(1647.74)	(1451.41)
Educational Attainment (%)			
Less than High School	26.4%	17.0%	35.7%
High School Graduate	27.7%	32.0%	23.4%
Some College	25.0%	29.3%	20.8%
Bachelor Degree	13.6%	14.5%	12.7%
Advanced Degree	7.3%	7.2%	7.4%
Year of Arrival in the U.S. (%)			
Before 1964			5.0%
1965 – 1969			7.2%
1970 – 1974			8.8%
1975 – 1979			10.8%
1980 – 1984			15.1%
1985 – 1989			15.3%
1990 – 1996			16.9%
Financial Market Participation (%)			
% who own stock	13.9%	18.5%	9.3%
% with a savings account	48.3%	54.5%	42.0%
Number of Individuals	9,284	4,642	4,642
Number of Observations	111,401	55,701	55,700

Notes: Unless otherwise noted, mean values are reported. Standard deviations are in parentheses. The unit of observation is a person-wave. There are 12 waves in the panel. Sample is restricted to individuals 18 and over. The native-born sample is randomly selected from the original SIPP data native-born (approximately 46,000 individuals) to create a sample equal in size to the immigrant sample. All immigrants over 18 from the original SIPP data are included.

Table 3A: Summary of Country Variables

Characteristic	N	Mean	Standard Deviation	Minimum	Median	Maximum
Protection from Expropriation	130	7.06	1.84	1.81	7.07	10.00
Quality of the Bureaucracy	130	3.00	1.45	1.00	3.26	6.00
Rule of Law	130	3.20	1.44	0.88	3.43	6.00
Ethnic Tensions	130					
Gini Coefficent	74	36.92	33.37	6.06	20.14	62.00
Log Per Capita GDP	124	7.39	1.46	4.65	7.38	10.15
British Legal Origin	130	0.31		0	0	1
Years of Independence	130	88.6	72.22	0	69.11	220
English Speaking	130	0.28		0	0	1
Latitude	130	0.36	0.19	0	0.25	0.72

Table 3B: Correlation between Country Variables

Characteristic	Prot. from Exp.	Quality of the Bureau.	Rule of Law	Ethnic Tensions	Gini Coeff.	Log Per Capita GDP	British Legal Origin	Years of Ind.	English Speaking	Latitude
Protection from Expropriation	----									
Quality of the Bureaucracy	0.769***	----								
Rule of Law	0.831***	0.775***	----							
Ethnic Tensions	0.576***	0.465***	0.635***	----						
Gini Coefficent	-0.635***	-0.469***	-0.640***	-0.192	----					
Log Per Capita GDP	0.708***	0.722***	0.734***	0.540***	-0.447***	----				
British Legal Origin	0.039	0.147*	0.010	-0.289***	0.216*	-0.013	----			
Years of Independence	0.312***	0.227***	0.311***	0.462***	0.264**	0.192***	-0.213***	----		
English Speaking	0.079	0.155*	0.044	-0.169*	0.145	0.041	0.770***	-0.238***	----	
Latitude	0.581***	0.541***	0.628***	0.475***	-0.799***	0.531***	-0.287***	0.228***	-0.190***	----

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

Table 4A: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Baseline
(Dependent Variable: Stock Market Participation)

Explanatory Variable	[1]		[2]	
Age	0.002	***	0.002	***
	(0.001)		(0.001)	
Age Squared*	6.620		4.520	
	(6.240)		(6.250)	
Unemployed or Out of Labor Force	0.015	***	0.013	***
	(0.004)		(0.004)	
Per Capita Income*	67.400	***	65.800	***
	(2.720)		(26.600)	
Per Capita Income Squared*	-0.002	***	-0.002	***
	(0.000)		(0.000)	
Married	0.068	***	0.068	***
	(0.004)		(0.004)	
Male	0.005		0.005	
	(0.004)		(0.004)	
Non-white	-0.041	***	-0.033	***
	(0.006)		(0.006)	
High School Graduate	0.048	***	0.045	***
	(0.005)		(0.005)	
Some College	0.103	***	0.101	***
	(0.006)		(0.006)	
Bachelor Degree	0.164	***	0.162	***
	(0.008)		(0.008)	
Advance Degree	0.217	***	0.211	***
	(0.013)		(0.013)	
Number of Children	0.012	***	0.012	***
	(0.002)		(0.002)	
Immigrant	-0.046	***	0.000	
	(0.006)		(0.010)	
Protection from Expropriation			0.021	***
			(0.003)	
Constant	-0.152	***	-0.354	***
	(0.014)		(0.036)	
MSA Controls	Yes		Yes	
Adjusted R-Squared	0.1647		0.1675	
Regression F-test	282.17		265.92	
Number of Observations	103,188		103,188	

Notes: Dependent variable is equal to one if the respondent owned stock during the interview period in question and is zero otherwise. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. The reported coefficients and standard errors of variable marked by an asterisk (*) are the actual ones multiplied by 1,000,000. 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.

Table 4B: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Baseline
(Dependent Variable: Savings Account Ownership)

Explanatory Variable	[1]		[2]	
Age	-0.001		-0.001	
	(0.001)		(0.001)	
Age Squared*	37.500	***	35.600	***
	(10.100)		(10.100)	
Unemployed or Out of Labor Force	-0.111	***	-0.113	***
	(0.007)		(0.007)	
Per Capita Income*	60.900	***	59.500	***
	(4.260)		(4.220)	
Per Capita Income Squared*	-0.002	***	-0.002	***
	(0.000)		(0.000)	
Married	0.173	***	0.173	***
	(0.007)		(0.007)	
Male	-0.037		-0.037	
	(0.007)		(0.007)	
Non-white	-0.038	***	-0.031	***
	(0.009)		(0.009)	
High School Graduate	0.097	***	0.095	***
	(0.009)		(0.009)	
Some College	0.182	***	0.179	***
	(0.010)		(0.010)	
Bachelor Degree	0.192	***	0.190	***
	(0.013)		(0.013)	
Advance Degree	0.187	***	0.182	***
	(0.015)		(0.015)	
Number of Children	-0.006	**	-0.006	**
	(0.003)		(0.003)	
Immigrant	-0.046	***	-0.003	
	(0.008)		(0.014)	
Protection from Expropriation			0.019	***
			(0.005)	
Constant	0.248	***	0.060	***
	(0.024)		(0.052)	
MSA Controls	Yes		Yes	
Adjusted R-Squared	0.1467		0.1479	
Regression F-test	231.04		218.88	
Number of Observations	103,188		103,188	

Notes: Dependent variable is equal to one if the respondent owned a savings account during the interview period in question and is zero otherwise. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. The reported coefficients and standard errors of variable marked by an asterisk (*) are the actual ones multiplied by 1,000,000. 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.

Table 5: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Additional Country Controls

A. Dependent Variable: Stock Market Participation

Explanatory Variable	[1]		[2]		[3]		[4]		[5]	
Immigrant	0.000		0.005		-0.009		0.003		0.006	
	(0.010)		(0.014)		(0.011)		(0.015)		(0.012)	
Protection from Expropriation	0.021	***	0.016	***	0.022	***	0.020	***	0.015	***
	(0.003)		(0.003)		(0.004)		(0.004)		(0.004)	
English Speaking			0.022				0.019			
			(0.014)				(0.014)			
Log Per Capita GDP					-0.006		-0.005			
					(0.005)		(0.005)			
Continent Controls									Yes	
MSA Controls	Yes		Yes		Yes		Yes		Yes	
Adjusted R-Squared	0.1675		0.1661		0.1672		0.1674		0.1676	
Regression F-test	265.92		247.88		247.33		232.11		198.22	
Number of Observations	103,188		101,399		98,765		98,765		100,468	

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. Regression [1] panel [A], is the same as regression [2], Table 4. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

Table 5: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Additional Country Controls, continued

B. Dependent Variable: Own a Savings Account

Explanatory Variable	**[1]**		**[2]**		**[3]**		**[4]**		**[5]**
Immigrant	-0.003		0.031	*	0.007		0.036	*	0.018
	(0.014)		(0.019)		(0.016)		(0.020)		(0.015)
Protection from Expropriation	0.019	***	0.017	***	0.016	**	0.011		0.002
	(0.005)		(0.005)		(0.007)		(0.007)		(0.007)
English Speaking			0.045	**			0.048	**	
			(0.019)				(0.019)		
Log Per Capita GDP					0.008		0.010		
					(0.008)		(0.008)		
Continent Controls									Yes
MSA Controls	Yes		Yes		Yes		Yes		Yes
Adjusted R-Squared	0.1479		0.1504		0.1503		0.1508		0.1525
Regression F-test	218.88		211.91		210.37		197.99		164.81
Number of Observations	103,188		101,399		98,765		98,765		100,468

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. Regression [1] panel [A], is the same as regression [2], Table 4. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

Table 6A: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Alternative Measures of Institution Quality (Dependent Variable: Stock Market Participation)

Explanatory Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Immigrant	0.000	0.010	-0.0003	-0.064***	-0.024*	-0.046***	-0.047***
	(0.010)	(0.013)	(0.011)	(0.016)	(0.013)	(0.007)	(0.008)
Protection from Expropriation	0.021***						
	(0.003)						
Bureaucratic Quality		0.022***					
		(0.004)					
Rule of Law			0.020***				
			(0.004)				
Ethnic Tensions				0.004			
				(0.003)			
British Legal Origin					0.035***		
					(0.014)		
Latitude						0.082***	
						(0.029)	
Years of Independence							0.0001
							(0.0001)
MSA Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ad. R-Squared	0.1675	0.1674	0.1668	0.1648	0.1645	0.1645	0.1639
Regression F-test	265.92	265.46	265.43	262.15	263.70	264.14	262.19
Number of Obs.	103,188	103,188	103,188	103,188	101,267	101,267	101,399

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. Regression [1] panel [A], is the same as regression [2], Table 4. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

Table 6B: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Alternative Measures of Institution Quality (Dependent Variable: Savings Account Ownership)

Explanatory Variable	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**
Immigrant	-0.003	0.005	0.009	-0.065***	0.007	-0.043***	-0.026**
	(0.014)	(0.016)	(0.015)	(0.025)	(0.017)	(0.010)	(0.012)
Protection from Expropriation	0.019***						
	(0.005)						
Bureaucratic Quality		0.020***					
		(0.005)					
Rule of Law			0.024***				
			(0.005)				
Ethnic Tensions				0.004			
				(0.005)			
British Legal Origin					0.067***		
					(0.018)		
Latitude						0.062	
						(0.043)	
Years of Independence							0.0002**
							(0.0002)
MSA Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-Squared	0.1479	0.1478	0.1482	0.1467	0.1496	0.1488	0.1490
Regression F-test	218.88	217.05	219.03	214.82	222.85	221.08	221.65
Number of Obs.	103,188	103,188	103,188	103,188	101,267	101,267	101,399

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. Regression [1] panel [B], is the same as regression [1], Table 5 panel [B]. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

Table 7: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Controlling for Home Country Inequality

A. Dependent Variable: Stock Market Participation

Explanatory Variable	[1]		[2]		[3]	
Immigrant	0.010		-0.007		-0.017	
	(0.012)		(0.012)		(0.013)	
Protection from Expropriation	0.025	***	0.017	***	0.020	***
	(0.004)		(0.005)		(0.006)	
Gini Coefficient			-0.002	***	-0.002	***
			(0.001)		(0.001)	
Log Per Capita GDP					-0.009	
					(0.007)	
MSA Controls	Yes		Yes		Yes	
Adjusted R-Squared	0.1654		0.1654		0.1641	
Regression F-test	264.49		264.49		235.36	
Number of Observations	89632		89632		87843	

B. Dependent Variable: Savings Account Ownership

Explanatory Variable	[1]		[2]		[3]	
Immigrant	-0.002		0.004		-0.023	
	(0.016)		(0.061)		(0.019)	
Protection from Expropriation	0.015	**	-0.005		-0.008	
	(0.006)		(0.008)		(0.010)	
Gini Coefficient			-0.005	***	-0.005	***
			(0.001)		(0.001)	
Log Per Capita GDP					0.012	
					(0.010)	
MSA Controls	Yes		Yes		Yes	
Adjusted R-Squared	0.1506		0.1518		0.1547	
Regression F-test	214.04		200.81		197.26	
Number of Observations	89,632		89,632		87,843	

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

Table 8: The Effect of Immigrant Status and Institution Quality on Financial Market Participation, Controlling for Correlation between Unobserved Individual Attributes and Country of Origin

Explanatory Variable	Stock Market Participation [1]		Savings Account Ownership [2]	
Age	0.002	***	-0.001	
	(0.001)		(0.001)	
Age Squared*	2.480		32.900	***
	(6.290)		(9.940)	
Unemployed or Out of Labor Force	0.014	***	-0.108	***
	(0.004)		(0.007)	
Per Capita Income*	65.000	***	55.100	***
	(2.630)		(4.110)	
Per Capita Income Squared*	-0.002	***	-0.002	***
	(0.000)		(0.000)	
Married	0.068	***	0.173	***
	(0.004)		(0.007)	
Male	0.006		-0.037	***
	(0.004)		(0.006)	
Non-white	-0.051	***	-0.079	***
	(0.006)		(0.010)	
High School Graduate	0.046	***	0.083	***
	(0.005)		(0.010)	
Some College	0.102	***	0.164	***
	(0.006)		(0.010)	
Bachelor Degree	0.163	***	0.183	***
	(0.009)		(0.013)	
Advance Degree	0.210	***	0.185	***
	(0.012)		(0.015)	
Number of Children	0.012	***	-0.005	
	(0.002)		(0.003)	
Protection from Expropriation	0.006	**	-0.015	***
	(0.003)		(0.005)	
Constant	-0.215	***	0.424	***
	(0.034)		(0.057)	
Country Controls	Yes		Yes	
MSA Controls	Yes		Yes	
Adjusted R-Squared	0.1742		0.1574	
Regression F-test	86.37		76.98	
Number of Observations	104,164		104,164	

Notes: Dependent variable is equal to one if the respondent had a savings account or owned stock during the interview period in question and is zero otherwise. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. The reported coefficients and standard errors of variable marked by an asterisk (*) are the actual ones multiplied by 1,000,000. 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.

Table 9: The Effect Institution Quality on Financial Market Participation, Controlling for Age at Migration
MIGRANTS ONLY

A. Dependent Variable: Stock Market Participation

Explanatory Variables	Age at Arrival in U.S.				
	1 – 5	6 – 10	11 – 15	16 – 20	21+
No Year of Arrival Controls					
Protection from Expropriation	0.025	0.013	0.006	0.029***	0.026***
	(0.018)	(0.014)	(0.009)	(0.010)	(0.004)
Adjusted R-Squared	0.2200	0.2189	0.3233	0.2761	0.2410
Regression F-test	2.15	2.37	4.36	3.61	23.65
Year of Arrival Controls					
Protection from Expropriation	0.024	0.013	0.004	0.029***	0.026***
	(0.017)	(0.015)	(0.009)	(0.010)	(0.004)
Adjusted R-Squared	0.2193	0.2252	0.3272	0.2788	0.2459
Regression F-test	1.89	2.11	3.46	2.77	17.14
Number of Observations	2,037	1,840	2,639	5,600	25,979

B. Dependent Variable: Savings Account Ownership

Explanatory Variable	Age at Arrival in U.S.				
	1 – 5	6 – 10	11 – 15	16 – 20	21+
No Year of Arrival Controls					
Protection from Expropriation	0.035	0.022	0.037*	0.010	0.019***
	(0.024)	(0.020)	(0.020)	(0.015)	(0.006)
Adjusted R-Squared	0.2936	0.3352	0.2924	0.2338	0.1726
Regression F-test	6.52	13.77	11.99	13.61	32.76
Year of Arrival Controls					
Protection from Expropriation	0.037	0.020	0.037*	0.012	0.017***
	(0.024)	(0.020)	(0.021)	(0.015)	(0.006)
Adjusted R-Squared	0.2999	0.3395	0.2967	0.2404	0.1834
Regression F-test	5.42	11.24	9.29	11.70	26.86
Number of Observations	2,037	1,840	2,639	5,600	25,979

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.

Table 10: The Effect Institution Quality on Financial Market Participation, Controlling for Years in the U.S.
MIGRANTS ONLY

A. Dependent Variable: Stock Market Participation

Explanatory Variables	Years in the U.S.						
	1 – 7	8 – 12	13 – 17	18 – 22	23 – 27	28 - 32	33+
No Age at Arrival Controls							
Protection from Expropriation							
	0.020***	0.019***	0.029***	0.041***	0.021*	0.043***	0.023
	(0.007)	(0.007)	(0.008)	(0.012)	(0.011)	(0.013)	(0.020)
Adjusted R-Squared	0.2829	0.3080	0.3174	0.3282	0.2955	0.2956	0.3276
Regression F-test	5.40	4.46	8.88	4.14	4.47	4.85	4.28
Age at Arrival Controls							
Protection from Expropriation							
	0.020***	0.019***	0.029***	0.041***	0.020*	0.044***	0.022
	(0.007)	(0.007)	(0.008)	(0.012)	(0.011)	(0.013)	(0.020)
Adjusted R-Squared	0.2827	0.3082	0.3179	0.3351	0.2986	0.2975	0.3477
Regression F-test	4.79	3.68	7.02	3.42	3.66	4.04	4.22
N	8,350	7,364	7,275	4,939	4,197	3,545	2,425

B. Dependent Variable: Savings Account Ownership

Explanatory Variables	Years in the U.S.						
	1 – 7	8 – 12	13 – 17	18 – 22	23 – 27	28 - 32	33+
No Age at Arrival Controls							
Protection from Expropriation	0.014	0.019	0.028**	0.018	-0.004	0.006	-0.009
	(0.012)	(0.013)	(0.013)	(0.015)	(0.021)	(0.024)	(0.027)
Adjusted R-Squared	0.2752	0.2560	0.2080	0.2382	0.2311	0.2593	0.2381
Regression F-test	13.65	15.14	13.48	7.34	5.74	5.71	3.36
Age at Arrival Controls							
Protection from Expropriation	0.014	0.018	0.028**	0.016	-0.002	0.007	-0.006
	(0.012)	(0.013)	(0.013)	(0.015)	(0.022)	(0.025)	(0.026)
Adjusted R-Squared	0.2764	0.2571	0.2097	0.2456	0.2337	0.2602	0.2613
Regression F-test	12.75	12.69	11.11	6.64	5.14	4.47	3.25
N	8,350	7,364	7,275	4,939	4,197	3,545	2,425

Notes: In addition to those reported on here, all of these regressions include controls for age, age squared, labor force status, income, marital status, sex, ethnicity, education, and number of children. A linear probability model is used and standard errors are corrected for heteroskedasticity and clustering at the individual level. Standard errors are in parentheses. *** indicates significance at at least the 1% level, ** at at least the 5% level, * at at least the 10% level.