A Cross-Country Analysis of Financial Inclusion within the OECD

Andrew D. Van der Werff, George Fox University[1]
Jeanne M. Hogarth, Ph.D., Center for Financial Services Innovation[2]
Dr. Nathanael D. Peach, Ph.D., George Fox University[3]

Abstract

Financial inclusion has been extensively researched on a nation-by-nation basis. The recently released Global Findex data set from the World Bank allows for this literature to be extended because it creates universal measures of relevant data. Because data are universal, it allows multiple nations to be analyzed simultaneously. Using a set of thirty-one countries from the OECD, we find that social factors are an important part of highly banked populations. Higher levels of trust in government and formal financial institutions increase the level of financial inclusion. Increases in income inequality are predicted to decrease the banked population within a nation. Our results suggest that in OECD nations the consideration of non-financial factors yields important insight into the determinants of financial inclusion.

Introduction

In recent years, the global development sphere has become concerned with financial inclusion. The focus has been on combining microfinance, financial literacy, and product innovation to provide individuals in undeveloped and underdeveloped economies an opportunity to utilize financial institutions. The United States has the largest, and arguably most developed economy in the world. However, recent World Bank data reveals that compared to thirty-one other countries in the Organization for Economic Co-operation and Development (OECD), the United States has a disproportionately large share of unbanked citizens. Through a cross-country analysis, this paper attempts to answer the question of why the United States has a highly unbanked population. Expanding the banked population is an opportunity that could create macro-economic growth and improve the lives of the impoverished (Sahrawat, n.d.). For the purpose of this study, we chose the World Bank Global Findex's definition: "someone with an account at a bank, credit union, another financial institution (e.g. cooperative, microfinance institution), or post office, and includes those with debit cards" (Demirguc-Kunt & Klapper, 2012).

Recently the FDIC began releasing one of the first sets of comprehensive data on the financial inclusion status of the United States (Previously, levels of financial inclusion had been measured at the national level (see Hogarth & O'Donnell, 1999 etc.), but no state-level data had been available). This state-by-state data set provided extensive information on the unbanked and banked populations, but only allowed for domestic comparison. There is the potential for the United States to learn from the nations that have achieved the highest levels of banking participation. Analyzing the World Bank's newly released Global Findex Data set, this paper intends to fill the gap of the lack of macro comparison between developed economies with varying degrees of banking penetration among individuals.

Past surveys and reports that analyzed financial inclusion, usually at the micro or household level, have highlighted numerous reasons for being unbanked, but three consistently recur within these studies: lack of excess cash to save, costs and fees of accounts, and trust in formal institutions (Chakravarty & Pal, 2010; Desmond & Sprenger, 2007; Dobbie, Gillespie, Lindsay, McHardy, & Sinclair, 2009; FDIC, 2009; FINRA Investor Education Foundation, 2009; Marshall, 2004). Our study confirmed lack of excess cash and trust in financial institutions as significant determinates of financial inclusion.

[1]Undergraduate Student, School of Business, 420 N. Meridian Street, George Fox University, Newberg, OR, vanderwerffd@yahoo.com.
[2]Vice President of Policy, 1730 Rhode Island Ave. NW, Center for Financial Services Innovation, Washington, D.C., US.
[3]Assistant Professor of Economics, School of Business, George Fox University, 414 N. Meridian Street, Newberg, OR, US. (503) 554–2815. npeach@georgefox.edu.

There is extensive literature suggesting ways to promote financial inclusion within developing countries. For example, Love and Bruhn (2009) find that in Mexico an increase in access to ATMs, bank agents, and bank branches will yield improvements in multiple macroeconomic factors and in turn financial inclusion. Another recent study, the SPINNAKER project, through the New American Foundation and MicroSave, reveals that in the Philippines low-income households are willing and want to save; however they often do not have access to the right products or formal financial institutions. When given access to accounts, even with a commitment component and limited excess cash on hand, these individuals save at exceptional rates (Diaz, Ledesma, Anjana, Singh, & Tyler, 2011). Other studies, such as Barclays' 2010 report, state that "…we have found that the most vulnerable people in society are often those who also have the most limited access to financial services" (Barclays Economist Intelligence Unit-The Economist, 2010, Foreword). Furthermore, the impoverished want to save and will do so when given the opportunity (Appel & Karlan, 2011; Kendall, 2010; Moury & Zimmerman, 2009). Simply put, access to the financial sector is a major issue among developing countries.

While we believe access is an important consideration for financial inclusion there are other important factors to consider within developed nations. As such, the barrier to financial inclusion in the United States and most of the OECD does not parallel that of developing countries. Exclusion in OECD economies should be redefined and addressed as: "…exclusion occurs on grounds or prices, products that are inappropriate to people's needs, and the fact that no one is trying to sell them products**"** (Marshall, 2004, p.243).

Conceptual Model

Many factors influence whether an individual will choose to hold a formal account at a financial institution. These factors are a confluence of micro and macroeconomic phenomena. In seeking to understand the impact of macroeconomic conditions on financial inclusion we focus on factors external to the individual. The data applied in the study fall into four broad categories: economic, financial infrastructure, inequality, and social trust. Specific data used in the analysis is discussed in the *Empirical Methods* section.

The economic category serves as the foundation of the analysis. Income, unemployment rates, interest rates, and a host of other factors are all expected to influence the extent to which a nation's citizens utilize the financial sector. More favorable macroeconomic conditions, such as higher incomes or lower unemployment, are expected to increase the financial inclusion of a population. For example, higher incomes allow for higher levels of savings, which in turn are likely to be held in financial accounts.

The physical infrastructure of financial service companies is another important category of determinants. Conceptually, financial infrastructure includes ATMs, retail branches, and so on. As a nation's financial infrastructure grows larger, the transaction costs of using financial services for the individual decreases—the time costs of accessing one's accounts decrease. In the near future, it is possible that mobile technology will offset the need for much of the physical infrastructure in developed nations.

The inequality and social trust categories are where we make the biggest contribution to the existing literature. Income inequality may impact financial inclusion. As income becomes more concentrated in the hands of a few, a higher percentage of the population is found at the lower end of the income distribution. Declining or stagnating relative incomes may discourage financial inclusion. In light of the financial crisis of 2007 and 2008 it is plausible that higher income inequality is associated with public distrust of the financial sector. We create a measure of financial inclusion inequality to test whether inequality of access is an important contributor to financial inclusion.

Trust is an important component of any transaction. Because no tangible good is exchanged when one opens an account, we hypothesize that trust may be even more important in the financial sector than in others. If one does not trust the institution, than they are less likely to part with their income. FDIC insurance is one example of a successful program the United States government has used to facilitate trust in the banking sector.

Empirical Methods

Dependent Variable

Throughout the analysis, the dependent variable is the percentage of adults age 15 and over using a formal financial institution. In initial estimations, the value of the variable is applied. In order to isolate the impact of the control variables on the probability that an individual uses a financial institution, a binary variable was also created. The benchmark applied was the sample median of 92 percent. Those with a banked population above 92 percent were valued at one while those below 92 were valued at zero.

Independent Variables: Macro-Economic, Financial Infrastructure, Inequality and Social Well-Being, Corruption and Inequality

Data applied in this study are from the 2011 version of the Global Findex data set and OECD data bank. Table 1 presents descriptive statistics of the data applied in the study. Previous research shows that employment is associated with having a bank account at the micro level (Hogarth et al., 2005). It is generally accepted that a higher rate of employment within the population will result in a more banked population. With this in mind, the aggregate harmonized unemployment rate was included in nearly all estimations.

Interest rates and inflation were selected to try to capture macroeconomic stability. The interest rate on ten-year bonds serves as a proxy for long-term interest rates. High rates for risk-free investments may be a signal that outside lenders view the economy as unstable. If a government can issue bonds at low rates, the economy is most likely healthy. When economies are healthy, people are more likely to invest, borrow, and utilize the formal financial sector.

Population Concentration and Banking Infrastructure

While populations within the developed countries did not cite access to formal financial institutions as a major reason for staying unbanked, literature suggests that when there is more access either through bank branches, bank agents, mobile banking systems, or number of ATMs, there is a higher banked population (Diaz et al., 2011; Love, 2009; Ravi & Tyler, 2012; World Economic Forum, 2011). For this reason, we included the number of banks and ATMs per 100,000 people.

Many studies have shown that access in the form of transportation is a major barrier to a highly banked population (Love & Bruhn, 2009; World Economic Forum, 2011). Conversely, the 2009 FDIC survey revealed that even extremely populated areas remain unbanked (FDIC, 2009). With these factors in mind we include control for a nation's population. It may be the case that the larger the population the more difficult it is to increase the banked population.

Demographics of Population

Education has been shown to be associated with having a bank account; countries with higher rates of educational attainment are more likely to have higher rates of financial inclusion (Hogarth, Anguelov & Lee, 2003; Hogarth & O'Donnell,1999). Another report states, "The largest effects [for being banked] were found for income, net worth, education, race/ethnicity, and vehicle ownership" (Hogarth, Anguelov & Lee, 2005, p. 26). In the United States, those with a secondary education are 40 percent more likely to have an account at a formal financial institution compared with those who have only a primary education (Demirguc-Kunt & Klapper, 2012). To measure the effect of education, we calculated the percentage of the population enrolled at the secondary education level.

Wealthier populations are more likely to be banked (CGAP & The World Bank Group, 2010; Hogarth, Anguelov & Lee, 2005). Gross national income per capita (GNI) was selected to measure wealth of the general population. Another frequently cited reason for not having a bank account is a lack of excess cash (CGAP & The World Bank Group, 2010; Demirguc-Kunt & Klapper, 2012; Dobbie et al., 2009; FDIC, 2009). Hourly minimum wage was selected to gauge disposable income. While both GNI per capita and the minimum wage are income measures, each captures different characteristics on the nation's labor market.

Corruption and Equality

The corruption index is one of the important contributions our study makes to the literature. In many studies, consumers indicated a lack of trust in the institution as one of the main reasons for staying unbanked (FDIC, 2009; Khashadourian & Tom, 2007; Stegman, Rocha & Davis, 2005). Ideally, one

would want a direct measurement of how much a population trusts the financial institutions within a country. Because this variable is not currently available at the macro-level, the corruption index is used. The OECD defines this index as a variable "based on a binary question of whether corruption is widespread in business and government and the confidence in national institutions index is based on questions regarding confidence in the military, the judiciary and the national government" (OECD, 2011). While this index does include a confidence aspect, the OECD emphasizes, "A cohesive society is one where citizens have confidence in national-level institutions and believe that social and economic institutions are not prey to corruption" (OECD, 2011). These data were collected through a Gallup World Poll. After analysis of the data, each country was assigned a value between one and ten—with one denoting extreme corruption and ten no corruption at all (The values devised from this survey aligned with the Transparency International Corruption Perception index which is an index among the OECD, created through studies and perception).

A second contribution to the literature we make is our consideration of inequality. We use two variables to isolate the potential relationship between inequality and financial inclusion. The GINI coefficient is used to capture income inequality. The GINI coefficient ranges from zero to one; zero designating perfect income equality and one perfect inequality (one person receives all the country's income). In nearly every country in the data set, the higher income population was more banked than the lower income population. To test the disparities in having a bank account between high and low-income segments, we generated a new variable comparing two populations. This comparison is calculated by subtracting the proportion of banked households in the lower 40 percent of the income distribution from the proportion of banked households in the overall population. For example, the Netherlands has a banked population of 98.7 percent; among those in the bottom 40 percent of the population, 98.2 are banked. Thus, the spread variable for this country would be 0.5 (See Figure 1).

The Global Findex data ranks the United States banked population at twenty-first out of thirty-one within the OECD community. The US has a formal financial institution usage of 88 percent compared with the highest banked country, Denmark, which has a rate of 99.7 percent. Mexico has the lowest banked rate within the OECD at 27.4 percent. Furthermore, when comparing the difference between the use of formal financial institutions throughout the whole country and in the lowest 40 percentile of income, the United States ranks ninth out of the thirty-one with a "spread" variable of 6.1 percent. When observing this spread metric, the country with the next lowest ranking, Korea has a spread of 3.7 percent, grouping the United States with countries such as Czech Republic (9.2%), Portugal (7.7%), Turkey (6.8%), and Slovak Republic (6.4%)—some of which are reasonably less developed (Figure 1). Numerically, this implies that a major problem in the United States is the comparatively high proportion of unbanked consumers in the bottom 40 percent of the income distribution. Interestingly, Luxembourg actually has a higher banked population in its lower income quartile than the rest of its population, with a spread value of -0.55 percent. As expected, Luxembourg also has one of the highest standards of living and equality of wealth among the OECD community. Other countries that had a low "spread" variable also had significantly even distributions of wealth (Countries that also have more equal income distribution and are highly banked: Denmark, Germany, Finland, Sweden, Netherlands, Spain, and New Zealand (Central Intelligence Agency, 2010)). This further suggests that greater equality in the distribution of wealth is associated with higher financial inclusion rates.

Table 1

Descriptive Statistics

Variables	Details			
	Min	Max	Mean	SD
Account at a formal financial institution (% age 15+)	27.4%	99.73%	86.49%	0.176
Automated teller machines (ATMs) (per 100,000 adults)	41.65	250.29	101.14	54.566
Branches, commercial banks (per 100,000 adults)	11.39	93.58	32.98	18.941
GNI per capita, Atlas method (current US$)	$8,930	$76,980	$33,531.94	1.671
Inflation, consumer prices (annual %)	0.95%	8.57%	2.25%	0.017
Population, total	507,000.00	309,000,000.00	39,467,377.03	60.377
Retail store is main mode of deposit (% with an account, age 15+)	0.03%	4.80%	1.06%	0.010
Retail store is main mode of withdrawal (% with an account, age 15+)	0.01%	39.91%	5.40%	0.087
Unemployment Harmonized (2011)	3.40%	20.90%	8.51%	0.040
Corruption Index (1-10)	3	9.5	6.75	1.950
Gini Coefficent (0-1)	0.15	0.5	0.311	0.065
Real Hourly Minimum Wage	$0.79	$39.44	$6.86	7.229
Education Ratio	0.0003	0.70	0.14	0.179
Spread Variable	-0.55%	16.38%	4.097%	0.047
Long-Term Interest Rates	0.00%	15.75%	4.527%	0.031

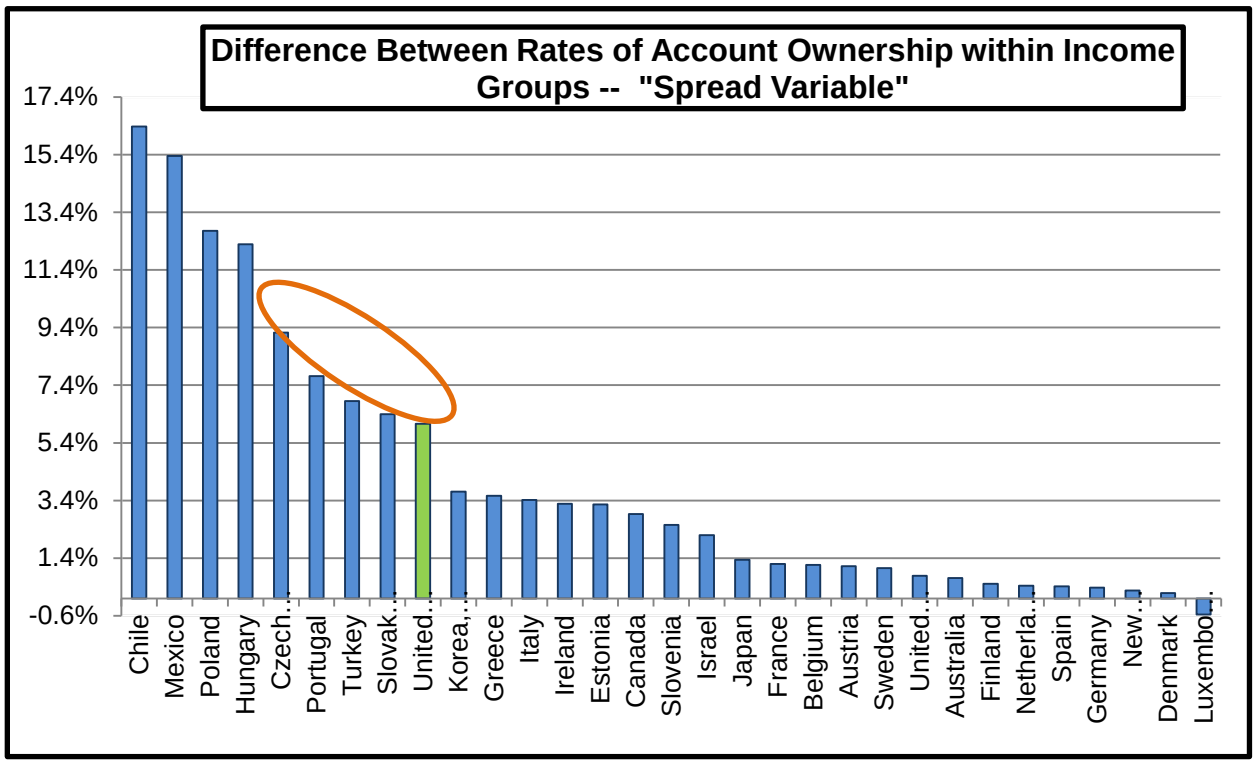

Figure 1.

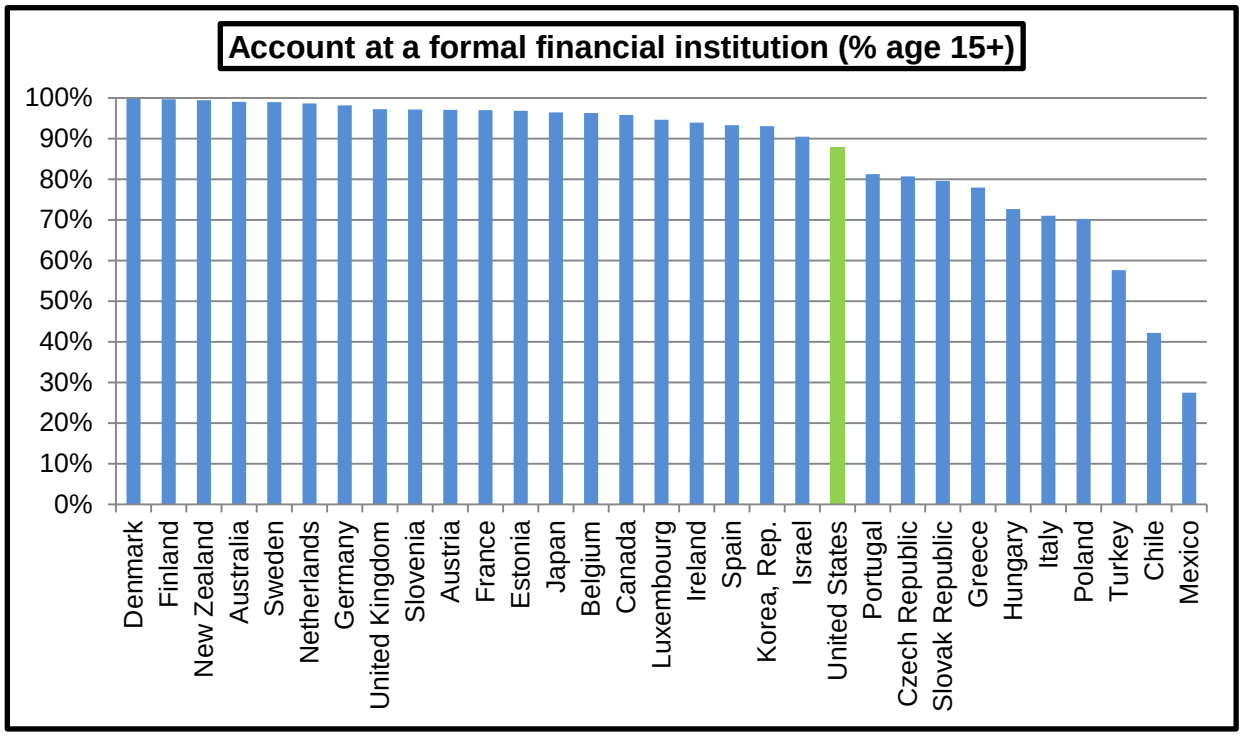

Figure 2.

Econometric Methodology

The relative explanatory power of the various predictive factors discussed above was analyzed using an iterative process. From the literature review, it was safe to conclude that education and unemployment were predictors of a banked population. These two variables became the foundation for the regression analysis and were included in all models.

Multiple approaches toward regression analysis were applied throughout this study. The dependent variable was the percentage of adults age 15 and over using a formal financial institution. Each model revealed a different set of facts that shed light on the different predictors. Some variables such as inflation and harmonized unemployment had values that were not widely spread. When a variable does not vary it can lead to skewed statistics within regression analysis. For this reason, some variables were transformed using the natural log of these values.

To begin the process, analysis started with ordinary linear regression models to find variables that were both significant and had implications for policy or practice. This not only gave an initial perspective, but also helped narrow down the number of variables used for further regressions. The number of ATMs and commercial banks per one hundred thousand people, the GINI coefficient, the corruption index, gross national income per capita, hourly minimum wage, the spread variable, and total population were significant. From this, probit regressions were run with the same listed input variables. While traditionally economists do not use multiple models, because this study is an exploratory exercise, we include multiple specifications. This study does not attempt to answer all questions of financial inclusion in developed economies, rather it is an attempt by the authors to dip their toes into an intricately complicated topic. Additionally, using probit binary regression analyze allowed for another perspective and more concrete conclusions. While the OLS and limited dependent variable models showed some consistent results, new variables were significant, allowing for a fresh look at the implications.

Ordinary Least Squares

We tested three unique linear regression models with different variable sets. In Model 1, the GINI coefficient was significant (see Table 2). This variable had a coefficient of -.95; for every increase in the GINI coefficient there was a .95 percentage point decrease in the proportion of the population that was

banked. Another significant variable was number of ATMs per 100,000 people. This variable was significant but had a magnitude of only .0007.

The Model II linear regression revealed some of the same significant variables. Again, the GINI coefficient was significant with a coefficient of -1.181; for every unit increase in this coefficient there was a 1.181 percentage point decrease in the proportion of the population that was banked. The corruption index in this model was also significant and had a coefficient of .043. The final significant variable in this model was one of the most interesting throughout this analysis. The "spread" variable was significant, with a value of -2.2. For every unit increase in the spread value there was a 2.2 percentage point decrease in the proportion of the population that was banked. This finding speaks to the macro importance of the distribution of income on the financial access in a country.

In Model III again the significant variable was number of ATMs per 100,000 people. This variable has a coefficient of .0008, implying that for every unit increase in number of ATMs per 100,000, there was an increase of .0008 in the proportion of banked consumers in the country. Within this model, gross national income (GNI) per capita was significant with a coefficient of .09. For every $10,000 increase in GNI per capita, there was an increase in the proportion of the population that was banked of .09 percentage points. Within a cross-country comparison of the GNI variable, the United States ranked relatively high, at sixth out of thirty-one. Bearing in mind that greater income equality is associated with higher levels of financial inclusion, the finding with respect to GNI also implies that overall standard of living is associated with financial inclusion.

Table 2

OLS Models

	Model I		Model II		Model III	
	Coeff.	SE	Coeff.	SE	Coeff.	SE
Education (In Millions)	0.1082	0.1209	-0.0894	0.0746	0.1674	0.1412
Unemployment	0.5342	0.5155	0.0194	0.0439	0.0695	0.0670
GINI Coefficient	-0.9532	0.524**	-1.1799	0.353*		-
Hourly Minimum Wage	0.0327	0.0273	-0.0004	0.0028		-
Corruption Index	-0.0034	0.0249	0.0426	0.016*		-
Inflation	0.5454	1.7686	0.8202	1.3445		-
Number of ATM's	0.0007	0.0003*	-	-	0.0008	0.0005**
Gross National Income (In Ten Thousands)	0.0059	0.0432	-	-	0.0855	0.018*
Interest Rates	-0.1146	0.0667	-	-		-
Total Population (In Millions)	-0.0003	0.0004	0.0003	0.0002		-
Retail Store for Deposit	-	-	0.0074	0.0219		-
Retail Store for Withdrawal	-	-	-0.0295	0.0170		-
Spread Variable	-	-	-2.1913	0.491*		-
Number of Banks	-	-	0.0002	0.0013	-0.0017	0.0019
R-squared	0.8737		0.9652		0.5739	
Note:* denotes variables are significant at .05 level, ** denotes variables are significant at .1 level.						

Probit Regression

Probit regression analysis was used to get another perspective on the data. As with the OLS model, the OECD corruption index was significant (see Table 3, which reports marginal effects). For every unit change in the corruption index, there was a .21 percentage point change in the probability of being in the highly banked group. Again, this is unsurprising. The more consumers trust the financial system, the more likely they are to have bank accounts.

The second model revealed hourly minimum wage a significant variable. For every unit increase in the minimum wage, there was a 0.22 percentage point change in the probability of being in the highly banked group of countries. Unlike with the OLS model, this finding supports the theory that more "excess" cash within a population is associated with higher rates of financial inclusion.

Model III was run with a set of variables designed to capture banking infrastructure in the countries. These were number of banks per 100,000 people and number of ATMs per 100,000 people. In this model, number of commercial banks was significant. A unit increase in the number of banks per 100,000 people was associated with a .02 decrease in the probability of being in the highly banked group. This finding seems somewhat counterintuitive and will be discussed later. Total population was also significant in this model; for every unit increase in population, there was a 0.006 percentage point decrease in the probability of being in the highly banked group.

Table 3

Probit regression models

Probit Rgression						
Marginal Effects y = Pr(Binary Variable) (Predict)						
	Model I		Model II		Model III	
	dy/dx	SF	dy/dx	SF	dy/dx	SF
Unemployment	0.1427	0.2392	0.0992	0.3241	0.4565	0.3927
Education	0.5407	1.0358	-0.1960	1.0143	-0.3021	0.6511
Corruption Index	0.2134	0.096**	-	-		-
Long-Term Interest Rates	-0.3424	0.3147	-0.2340	0.4448		-
Inflation	-	-	-2.2745	14.0180		-
Hourly Minimum Wage	-	-	0.2200	0.093*		-
Number of Banks	-	-	-	-	-0.0234	0.013**
GINI Coefficient	-	-	-	-		-
Population Density	-	-	-	-		-
Number of ATM's	-	-	-	-	0.0058	0.0038
Gross National Income (In Ten Thousands)	-	-	-	-	0.4855	0.2041
Total Population (In Millions)	-	-	-	-	-0.0061	0.003*
Prob > chi2	0.0016		0.0161		0.0003	
Pseudo R2	0.5200		0.5172		0.6843	
Note: * denotes variables are significant at .05 level, ** denotes variables are significant at .1 level.						

Further Analysis

Many papers, studies, and research have revealed that when the number of ATMs, bank branches, mobile services, and agents increases so does inclusion (Diaz et al., 2011; Love, 2009; Ravi & Tyler, 2012; World Economic Forum, 2011). However, as seen in the OLS and probit analysis on the proportion of banked individuals, both number of ATMs and commercial banks per 100,000 people resulted as significant variables with regards to margin of error. They were, however, insignificant predictors for having an account at formal financial institution. In the regression analysis found in Table 2, ATM coefficients were .0007 and .0008. To put that into perspective, even in high-population countries such as Mexico, the .0007 coefficient translates into relatively small absolute numbers of individuals who gain financial access. For example, if the private sector doubled the amount of ATMs per 100,000 people (from 47 per 100,000 people to 94 per 100,000 people) by adding around 53,000 new ATMs, holding all else constant, Mexico would see an increase of 3,731,617 banked people. While this number may seem large, it is not even a 3 percent increase in the banked population; more than likely, the direct costs of setting up that many ATMs would be too high to justify.

With the variable number of commercial banks per 100,000 people, the probit model found in Table 3 reveals a commercial bank coefficient of -.023. This is especially interesting considering that this variable's coefficient is significant in value, but is contrary to that found in past studies. The amount of commercial banks per 100,000 people has a negative coefficient that actually reduces the probability of a highly banked population. Both of these coefficients are either insignificant in value within the banked equation or decrease the probability of being banked, further acknowledging that when looking from a macro perspective at developed economies, access is not a major predictor of highly banked populations.

Furthermore, throughout all these models, education was not a significant variable. As cited above, the FDIC and Federal Reserve have shown through studies that education drastically improves

the odds of being banked at the micro level. This hypothesis, however, was not supported within this analysis. While the FDIC and Federal Reserve are not necessarily incorrect, this analysis does reveal that there are more complex factors within these countries that are causing populations to be banked. More than likely, on a national level, education does drastically increase the banked population; but when macro comparison is made, education's predictive value is diminished by more telling variables. For example, education increases overall wealth in a country. As shown in this study, the greater distribution of wealth the more likely a country is to be banked.

Limitations

Even though a cross-country analysis allows for a fresh perspective, with this perspective there are many limitations. Cross-country analysis allows researchers to further understand issues but may overlook some individual details of each country. One of the major problems with discovering break-through findings is the fact that every aspect of the different economies cannot be accounted for. To really understand and compare why some countries are more banked than others, researchers would need information on regulatory environments, how government benefits are distributed, government structures, religion, macro-economic condition of the economy, and social and cultural factors. For example, having some measure of how much people trust the government and how much they trust banks may factor into the decision between keeping money in an institution versus using alternative products such as pre-paid cards. With this in mind, even if one could provide every individual the perfect product, if they lack trust in government and formal institutions, they would most likely not use a formal financial institution. While this analysis provides an initial attempt at a macro country comparison, this analysis reveals a fresh perspective indicating that non-economic factors are important contributors to financial inclusion.

Discussion, Implications, and Conclusions

Further Discussion

As the spread variable within this study reveals, the United States has a large gap between the overall banked population and the proportion of the lowest 40 percent (by income) of the population that is banked. Researching and analyzing what other OECD countries with smaller spreads are doing could possibly provide information for more informed polices and products.

Another research topic would be to simply ask respondents, why they do or do not have an account? This could provide an easy means of understanding the culture of the banked and unbanked. The Global Findex suggests what people do with their accounts (for example, use them to receive government payments, wages, or remittances), but does not ask or answer the question of why people have and do not have accounts. Do they have these accounts because it is a secure place for their money? Do they have these accounts because it is the only way they can receive their wages or government payments? By answering questions like these, specifically within the OECD, polices and products can be created to help change the behavior of the unbanked.

Implications: Private and Governmental

As mentioned, education, employment, and other micro factors undoubtedly play an important role in banking the unbanked. Additionally, within developed economies an array of financial products that are tailored to consumer demand is essential to banking the unbanked. However, when considering the results from this study, addressing macro scale financial inclusion through education, employment, and product designs may be important, but these approaches seem to be marginally less significant to increasing the banked population. Factors such as a countries' income, distribution of equality, and the trust in the financial institution are the most important. Below we discuss private and governmental suggestions for promoting financial inclusion (These suggestions are not strictly backed by literature, research, or pilot projects, but rather implications the author has derived from data results and perception of literature research. Furthermore, these suggestions are from an apolitical view, not necessarily what the author would promote beyond increasing financial inclusion).

Private

Instead of the private sector attempting to create products that are innovative and responsive to the demand of the unbanked market needs, these results imply that the private sector should focus on

changing a consumer's behaviors and perceptions. Arguably, the most citied reason for not having a bank account within these economies is lack of funds to save. Part of this is true—some people do not have any money left over after expenses. However, some of this group does have cash left over after expenses, even if it is very small amounts. More than likely, they cite lack of excess cash because they have a preconceived idea that there is a high minimum balance needed to start an account. While this may be true for many types of accounts, there are accounts that are geared towards those who carry low balances. Furthermore, there is a perceived higher than actual cost associated with having a bank account (Desmond & Sprenger, 2007). If banks spent more time promoting these accounts and changing the preconceived ideas about opening deposits then, it is likely that more people would venture into the formal financial sector.

The financial sector has come under increased scrutiny in recent years because of events like the financial crisis of 2008, LIBOR scandal, and other high profile events. While there are most likely factors beyond the scope of this paper contributing to this behavior, what is important about this corruption is that the more these issues come to light, the more the general public will distrust these institutions. As shown throughout this study, peoples' trust is an essential factor for a highly banked community. While the private sector cannot solve all corruption, senior management should begin to realize that scandals like LIBOR affect more than just the mortgages, investors, and customers; scandals change the perception on the whole industry. It is critical within the next years, if financial inclusion is to truly be a part of a global movement, that policy makers, regulators, and management within the private sector do more to punish this type of behavior. More accountability of bankers will help to create and restore trustworthy relationships between banks and the populations whom they serve.

Government

Unlike the private sector, governments are responsible for more than just selling a product. Governments are established to improve the lives of the overall population within a country. Therefore, while the promotion of financial inclusion is critical, it is not a core function of the government. Even if inclusion is a high priority, it must be balanced on a scale with many other issues, both large and small. That being said, the government can play a large role in improving inclusion.

As shown in this study, the most banked countries are more socialistic, and have greater income equality among the overall populations. Politics aside, focusing solely on financial inclusion, this is the most important factor in the macro equation. To foster inclusion, governments should create initiatives and laws that promote equality among their populations through initiatives like income support and healthcare. This study suggest that the greater the equality and overall standard of living for all individuals, the more banked a population will be.

The next factor, which the government can influence, is the public's trust of formal financial institutions. While the government cannot directly change the behavior of individuals who cheat within the private financial sector, regulators can create laws and act firmly towards institutions that disregard those laws. If strong action is taken, most likely scandals and corruption will decline and trust of these institutions will improve. As shown in this study, with greater trust and less corruption populations are more likely to be highly banked.

Conclusions

The subject of financial inclusion is increasingly on the minds of all policy makers and private sector stakeholders. Recently, the G-20 put financial inclusion on their agenda. Furthermore, the State Department supported financial inclusion by saying, "And it doesn't only benefit poor customers, but service providers and government as well. By bringing more people into the formal financial system, we can create more transparency and accountability in otherwise shrouded sectors of the economy" (Otero, 2012). With all the research and focus on financial inclusion, it is hoped that through this paper, and countless other papers on this subject, product innovators and policy makers will have a better understanding of the most important foundation to the supply chain—the consumer. Governments and the private sector can create as many initiatives and products as financially plausible, but if they do not create something the consumer needs or will use, it is a wasted resource. As the World Economic Forum reports, "To serve the unbanked consumers better, stakeholders need to have a fundamental understanding of consumers' behaviors and spending patterns" (World Economic Forum, 2012, p.10). With this in mind, it is the authors' hope that this paper will help to scrape the surface, allowing

governments and private sectors to have a better macro understanding of these unbanked consumers in need of financial stability, protection of assets, and most of all, a better life.

Our study revealed rather worrisome data about the United States' financially included population relative to OECD developed economies. The analysis showed that countries that have a more equal distribution of income, higher disposable income, and higher levels of trust in formal system (as measured by the corruption index) are more banked. Furthermore, the data shows that predictors such as education and unemployment, which have been studied by the FDIC and Federal Reserve as predictors in microeconomic analysis, are not predictors within this macro study. Within the developing world, studies show factors such as number of ATMs and commercial banks as significant predictor variables to banking a population. In this analysis, this was not found to be accurate. These data show that one can live in the largest economy, have extensive access to banks and bank branches, be educated from a well-developed school system, and be employed, but still live in an economy without higher levels of inclusion in the formal financial sector. However, the most important and encouraging aspect within financial inclusion is the recent push by the government, private, and NGO sectors to create products and polices that promote and improve financial inclusion in the United States. Lawmakers and firms have realized that this is an important issue that needs to be addressed from multiple angles and with multiple strategies. As inclusion initiatives evolve, maybe one day the United States will lead, as one of the most banked and financially literate countries in the world.

References

Appel, J., & Karlan, D. (2011). *More Than Good Intentions.* New York: Dutton.

Barclays Economist Intelligence Unit-The Economist. (2010). Banking for Billions: Increasing Access to Financial Services.

Central Intelligence Agency. (2010). *The World Factbook.* Available from: https://www.cia.gov/library/publications/the-world-factbook/rankorder/2172rank.html

CGAP and The World Bank Group. (2010). Financial Access 2010: The State of Financial Inclusion.

Chakravarty, S. R., & Pal, R. (2010). Measuring Financial Inclusion: An Axiomatic Approach. Scholarly Report, Mumbai.

Demirguc-Kunt, A., & Klapper, L. (2012). Measuring Financial Inclusion:The Global Findex Database. Washington, DC: World Bank Policy Research Working Paper 6025, World Bank.

Desmond, T., & Sprenger, C. (2007). Estimating the Cost of Being Unbanked. *Communities and Banking.* Federal Reserve Bank Boston, 24-26.

Diaz, J. N., Ledesma, J., Anjana, R., Singh, J., & Tyler, E. (2011). *Saving for the Poor In the Philippines.* The New American Foundation and MicroSave.

Dobbie, L., Gillespie, M., Lindsay, K., McHardy, F., & Sinclair, S. (2009). *Understanding Financial Inclusion: Using action research and a knowledge exchange review to establish what is agreed, and waht remains contested.* Friends Provident Foundation.

FDIC. (2009). FDIC National Survey of Unbanked and Underbanked Households. Survey Report.

FINRA Investor Education Foundation. (2009). Financial Capability in the United States National Survey-Executive Summary. Survey Report.

Hogarth, J. M., & O'Donnell, K. H. (1999). Banking Relationships of Lower-Income Familes and Governmental Trend toward Electronic Payment. *Federal Reserve Bulletin*, 85, 459-473.

Hogarth, J. M., Anguelov, C. E., & Lee, J. (2003). Why Households Don't Have Checking Accounts. *Economic Development Quarterly, 17* (1), 75-93.

Hogarth, J. M., Anguelov, C. E., & Lee, J. (2005). Who Has a Bank Account? Exploring Changes Over Time, 1989-2001. *Journal of Family and Economic Issues, 26* (1), 7-30.

Kendall, J. (2010). *Improving People's Lives Through Savings.* Scholarly Report, Bill and Melinda Gates Foundation.

Khashadourian, E., & Tom, S. (2007). *The Unbanked Problem in Los Angeles.* United Way of Greater Los Angeles.

Love, I., & Bruhn, M. (2009). *The Economic Impact of Banking the Unbanked: Evidence from Mexico.* Policy Research Working Paper 4981, The World Bank Development Research Group.

Marshall, N. J. (2004). Financial institutions in disadvantaged areas: a comparative analysis of policies encouraging financial inclusion in Britain and the United States. *Environment and Planning*, *36* (1), 241-261.

Moury, Y., & Zimmerman, J.M. (2009). *Savings- Linked Conditional Cash Transfers A New Policy Approach to Global Reduction.* A Global Assets Project Policy Brief, New American Foundation.

OECD. (2011). *OECD Library.* Available from http://www.oecd-ilibrary.org/sites/soc_glance-2011-en/08/02/index.html?contentType=&itemId=/content/chapter/soc_glance-2011-27-en&containerItemId=/content/serial/19991290&accessItemIds=/content/book/soc_glance-2011-en&mimeType=text/html

Otero, M. (2012). ""Smart Power": The U.S. Government's Role in Promoting Financial Inclusion by Under Secretary of State for Civilian Secuirty, Democracy and Human Rights." CGAP Advancing financial access for the world's poor.

Ravi, A., & Tyler, E. (2012). *Savings for the Poor In Kenya (SPINNAKER).* Washington, DC: New American Foundation.

Sahrawat, R. (2010). "Financial Inclusion-From Obligation to Opportunity." Retrieved from: http://www.tcs.com/SiteCollectionDocuments/White%20Papers/Government_Whitepaper_Financial_Inclusion_09_2010.pdf

Stegman, M., Rocha, M., & Davis, W. (2005). *The Role of Technology in Serving the Unbanked.* The Ford Foundation.

Transparency International (2012). *Corruption Perceptions Index 2011*. Available from: http://www.transparency-usa.org/

World Bank Indicators. (2012). *Financial Inclusion Data.* Available from: http://datatopics.worldbank.org/financialinclusion/ .

World Economic Forum. (2012). "Galvanizing Support: The Role of Government in Advancing Adoption of Mobile Financial Services."

World Economic Forum. (2011). *The Mobile Financial Services Development Report 2011.* New York: World Economic Forum.

