

Financial Inclusion in Latin America

Facts, Obstacles and Central Banks' Policy Issues

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Financial Inclusion in Latin America: Facts, Obstacles and Central Banks' Policy Issues¹

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Abstract

This paper shows that, in spite of recent progress in the usage of alternative financial services by adult populations, Latin America's financial inclusion gaps relative to either high-income countries or the region's comparators (countries with a similar degree of development) have not reduced generally and, in some cases, have even increased during the period 2011-2014. An econometric investigation of potential country-level obstacles explaining these gaps finds that institutional weaknesses play the most salient role through direct and indirect effects. Lack of enforcement of the rule of law directly reduces depositors' incentives to entrust their funds to formal financial institutions. Indirectly, low institutional quality reinforces the adverse effects of insufficient bank competition on financial inclusion.

The paper also recognizes new challenges that the recent impetus for improving financial inclusion might bring to Latin America's central banks. Looking forward, a particular concern is that the entrance of non-traditional players, such as mobile network operators, providing digital financial services could increase financial system risks. In this regard, this paper endorses the recommendations of the 2016 CGD Task Force Report on Financial Inclusion whereby an overall financial regulatory framework that simultaneously meets the objectives of financial stability, financial integrity and financial inclusion needs to rest on three principles: (a) similar regulations for similar financial activities; (b) a risk-based approach that avoids discriminating against the provision of financial services to the poor; and (c) an adequate balance between ex-ante regulations (to ensure financial stability without discouraging innovation) and ex-post regulations (to contain the emergence of undesirable behavior; such as oligopolistic practices).

JEL Codes: D14, G21, G28

Keywords: Financial inclusion, Latin America, financial regulation, central banks, mobile money

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I. Introduction

Improvements in the usage of formal financial services are widely recognized by policymakers and academics as supportive to development.² In addition to facilitating payments in a timely and efficient manner—a central component of modern societies, financial inclusion allows individuals and firms to move away from short-term decision making toward an inter-temporal allocation of resources. This encourages savings and removes the straitjacket of self-finance, thus improving incentives for productive investments (including investment in human capital through education). Moreover, when properly designed, financial services and products can help the poor to manage and insure themselves against a multiplicity of risks (ranging widely from health problems to natural disasters affecting crops, property or other sources of income and wealth). In a nutshell, financial inclusion can have substantial effects on welfare and can contribute to the reduction of poverty.

Not surprisingly, financial inclusion has become a key development focus for the G-20 summits since 2010 and efforts to improve financial inclusion around the world have been significant, including in Latin America. However, in spite of progress, the region lags behind significantly not only with respect to high-income countries, but also with respect to countries that can be called *comparators*, in the sense of having a similar degree of development as Latin America. For example, based on World Bank data for 2014, the median value of financial inclusion in Latin America, measured as the percentage of the adult population that owns an account in a formal financial institution, was 40.8 percent. In contrast, the corresponding median for the region's comparators reached 60.3 percent and that for high-income countries was 97 percent. The overall picture is more worrisome when looking at country-level data: only in three Latin American countries (Brazil, Chile and Costa Rica) more than half of the adult population have account ownership and in some countries (Honduras, Peru and Nicaragua) less than one-third of the adult population is served. Data for usage of accounts for making payments, savings and borrowing also reveals substantial gaps between Latin American countries and their comparators.

This paper builds on previous research and new databases to understand three fundamental questions related to financial inclusion in the region: (a) where does Latin America stand in

² See, for example, GPMI (2014), Allen et al. (2012), Beck et al. (2008) and Dabla-Norris et al. (2015).

terms of financial inclusion, defined as the usage of formal financial services?; (b) what factors explain the significant financial inclusion gaps between Latin American countries and other country groupings?; and (c) what are the new challenges faced by Latin American central banks, in their role as regulators of the financial system, in light of recent global trends of new providers of financial services for the poor entering the market?

Data for the analysis is largely based on measures of *usage* of financial services, using a major World Bank project, named the *Global Findex Database* that started in 2011 with a follow-up in 2014. Data are based on worldwide surveys undertaken at the individual level, and designed to allow cross-country and time-series comparisons.^{3 4} The analytical framework in the paper is taken from Rojas-Suárez and Amado (2014), who undertook an econometric analysis to assess the relative importance of country-level obstacles in explaining differences in financial inclusion between Latin America and their comparators in 2011. This paper updates the econometric analysis with 2014 data and undertakes additional calculations to assess the relative importance of obstacles in explaining the region's financial inclusion gaps not only with respect to its comparators but also with respect to high-income countries.

The rest of this paper is organized as follows: Section II uses data from Global Findex database to characterize changes in financial inclusion in Latin America between 2011 and 2014. Based on alternative indicators of financial inclusion, the section addresses whether the region has improved financial inclusion gaps with respect to high income countries and Latin America's comparators. After identifying important obstacles to financial inclusion, Section III presents an econometric analysis in order to help explain Latin America's financial inclusion gaps; some important policy implications are derived from this analysis. Section IV acknowledges the evolving nature of the financial landscape in terms of providers and business models for serving the poor and identify new challenges that central banks might face for the implementation of

³ See <http://www.worldbank.org/en/programs/globalfindex> for a full description of this survey. In the 2014 Global Findex, the survey included about 150,000 adults in over 140 countries. Analysis of the survey results are in Demircuc-Kunt et al. (2015).

⁴ Other databases used throughout the paper include the *Financial Access Survey* by the International Monetary Fund (IMF), which compiles country-level indicators of financial access and usage with annual data starting in 2004 (<http://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&ss=1412015057755>) and the World Bank's *Enterprise Surveys*, which contain firm-level data that informs how access to credit affects enterprises of all sizes in emerging and developing countries (<http://www.enterprisesurveys.org/>).

policies conducive to increase financial inclusion that do not conflict with their key mandate of preserving financial stability. Finally, Section V concludes the paper.

II. Latin America's Financial Inclusion: Where Does It Stand?

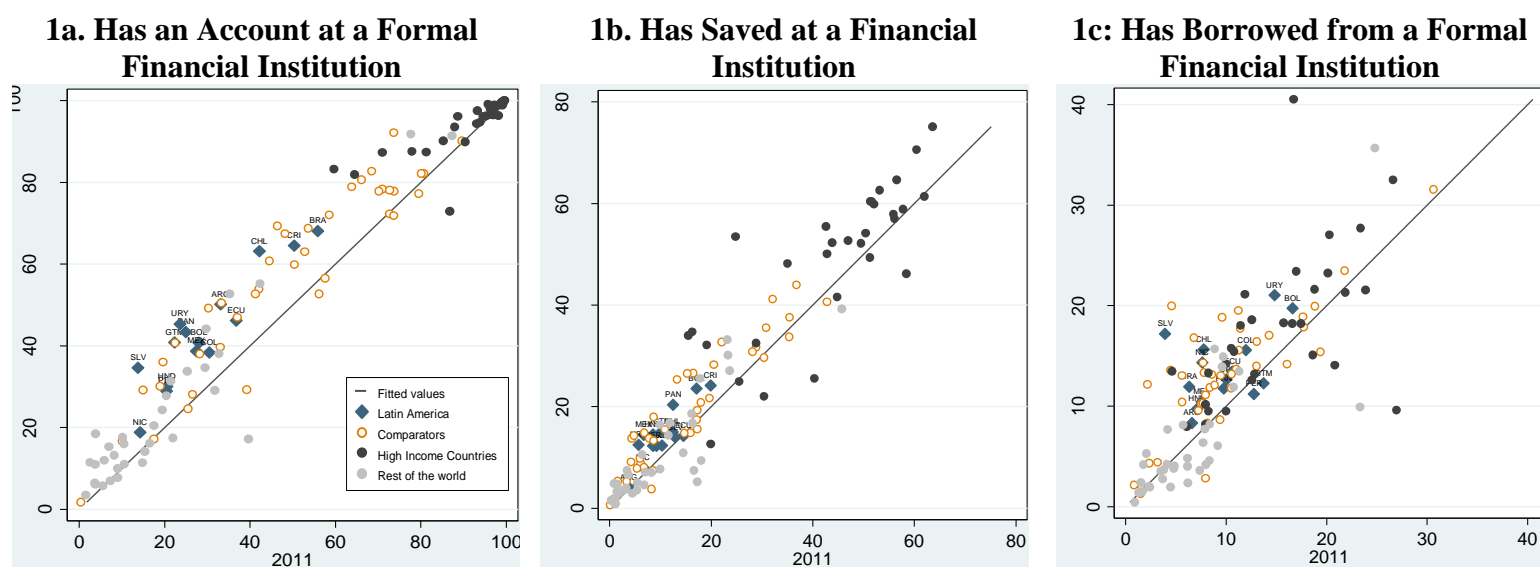
Based on the concept of *usage of financial services* to define financial inclusion, this section explores some characteristics of financial inclusion in Latin America across two dimensions: cross-country and (limited) intertemporal dimensions. Comparable data from Global Findex 2011 and 2014 databases are used for this purpose. Using data for 2011 only, Rojas-Suárez and Amado (2014) found that Latin American countries lagged behind significantly in terms of ownership and usage of accounts in formal financial institutions relative to both high income countries as well as the region's comparators, i.e., countries comparable to Latin America in terms of income per capita. With the new data available for 2014, this section explores the extent of progress achieved by the region in closing the financial inclusion gap.

For a straightforward intertemporal comparison, Charts 1a, 1b and 1c compare the 2011 versus the 2014 values of three indicators of financial inclusion taken from Global Findex: The first, and most commonly used indicator, provides a *stock* measure: the percentage of adults that have an account at a formal financial institution. The other two reflect *flows* measures of households' financial behavior: the percentage of adults that have saved at a financial institution over the past year and the percentage of adults that have borrowed from a financial institution over the past year. These three variables are chosen because of the availability of comparable data for 2011 and 2014.⁵ The comparisons are undertaken for four country categories: *high income countries*, *Latin America*, *Latin America's comparators* (countries with similar degree of development as defined by income per capita) and *rest of the world*. Annex I lists countries in each category. While Latin America's *comparators* are mostly emerging market countries, the category *rest of the world* includes the poorest countries in the world.

⁵ Data for variables reflecting the usage of insurance products are available in the Global Findex database for 2011 but not for 2014. Likewise, there is data on the usage of accounts through formal financial institutions for the purpose of making or receiving payments (such as using an account to receive wages or to send remittances) for 2014, but not for 2011.

To facilitate comparisons, a 45-degree line is included in the graphs. Countries placed to the left of the line are those whose value for the corresponding indicator has increased.

Chart 1. Indicators of Financial Inclusion 2011 vs. 2014 (% of adult population)



Source: Global Findex Database 2014, World Bank.

As shown in the charts, the indicators reveal progress for the world in general, and for Latin America in particular. Measurements of stocks (having an account) and flows (savings and borrowing) indicate that in 2014 a larger percentage of the Latin American adult population owned accounts, saved through those accounts and got loans through the formal financial sector than in 2011. Indeed, in Latin America the median value for account ownership at a formal financial institution increased by 15 percentage points from 2011 to 2014 (from 26.2 percent to 40.8 percent—see Table 1). The increase in the median value for the savings variable was much less impressive though: only 4 percentage points (from 10 to 14.3 percent).

With respect to the borrowing variable, the increase in the median value for Latin America is even smaller: less than 3 percentage points (from 10 to 12.7 percent). Assessment of this variable, however, requires some special consideration. For any given year, the desirability of observing an increase in the percentage of adults who borrowed depends on country-specific

economic conditions, quality of financial institutions and borrowers' characteristics. In contrast to payments and savings, it is important to rule out that the increase in borrowing does not reflect a case of households' over-indebtedness, even if starting from a very low base of debt. In this regard, it is not surprising to observe in Chart 1c that in some high income countries, the percentage of households that borrowed in 2011 is larger than in 2014: in some European countries, households were deleveraging after the financial crisis that started precisely in 2011.⁶

While a full understanding of the significant increase in ownership of accounts at formal institutions requires further analysis on individual countries' peculiarities and policies, Demirguc-Kunt et al. (2015) suggest that the use of government transfer payments to increase financial inclusion may be one of the reasons, not only in Latin America, but in many other developing countries. They highlight the case of Brazil, where 88 percent of the population receiving transfers (15 percent of the adult population), receive these payments directly into an account. The authors, however, also indicate that only 12 percent of Brazilians receiving government transfers into an account withdraw the money over time; 88 percent withdraw all the money as soon as it is received. Another reason lies in the expansion of banks' infrastructure through branches and ATMs (more on this below). With respect to the increased usage in some countries of banking correspondents (banking agents, such as retailers and small shops that provide financial services through their *points of sale (POS)*), current analysis suggests that this modality has faced important limitations in increasing the number of new clients who open bank accounts, especially among those in lower-income brackets. Brazil, Colombia, Mexico and Peru are examples of countries where banks are heavy users of the banking correspondent model.⁷

The saving story is much less encouraging. The Global Findex savings indicator still places almost all Latin American countries among the economies whose adult populations save the least

⁶ Not surprisingly, Cyprus is the country placed closest to the lower right corner in Chart 1c. The significant slowdown in economic growth in 2014 relative to 2011 in a number of European countries also explain the lower percentage of adults in those countries who saved in 2014 (Ireland, Greece, Portugal and Cyprus are among the countries to the right of the 45 degrees line in Chart 1b).

⁷ For example, De Ollouqui et al. (2015) argue that the banks' correspondent model in Latin America has had limited success in reaching the lowest income populations partly because of high costs involved in moving and protecting cash in remote and insecure areas. High levels of informality and a strong preference for undertaking cash transactions by low-income populations result in elevated ratios of cash-in/cash-out transactions which are very costly for financial institutions. Likewise, in an analysis on Brazil's banking correspondents, Sanford and Cojucaro (2013) concluded that while these agents networks have significantly facilitated person-to-person payments and bill payments, few users of these facilities have opened bank accounts or accessed credit through though the agent channel.

through financial institutions (Chart 1b). Based on Global Findex data, only about one-third of Latin American adults that have an account have saved through formal financial institutions in the past year. One can infer that accounts are mostly used for payments purposes.⁸ There are some interesting examples: Among Latin American countries, Brazil, the country with the highest ratio of adults having an account at a formal institution (68%) has the third lowest ratio of adults that have saved during the past year (12%).⁹ Likewise, in Chile, the country with the second highest ratio of adults having an account (63 percent), the percentage of adult population that has saved in the past year only reaches 15 percent.

While keeping in mind the caveats mentioned above in interpreting the behavior of borrowing, the story is similar to the one for savings: only a small proportion of Latin American adults that have an account have borrowed through formal financial institutions in the past year. Similar to the savings examples, even in Brazil and Chile, the countries with the highest ratios of adults owning accounts, the percentage of the adult population that has borrowed in the past year is very low (12 and 15 percent respectively).

What about the Latin America's financial inclusion gap with respect to advanced economies and Latin America's *comparators*? Has the increase in account ownership in formal financial institutions from 2011 to 2014 (and savings and borrowing to a much lesser extent) translated into reduced gaps? There are a few positive outcomes, but the overall results are not encouraging. These results are presented in Table 1 where, for each of the three financial inclusion variables, gaps are defined as the difference between Latin America's median value and the corresponding value for alternative country groupings. Thus, the smaller the median value for Latin America, the larger the Latin America's financial inclusion gap is.¹⁰

On the positive side, although Latin America's ownership of accounts lags behind significantly relative to high-income countries, the median gap has reduced by about 12 percentage points

⁸ The proportion of *dormant* accounts is also high in Latin America. On average, about 14 percent of accounts are dormant in the region (no deposit or withdrawal has taken place in the past year). This compares with 5.6 percent in high income countries. The Latin America average also disguises important differences between countries. For example, dormant account ratios are much higher for Central America, with the ratio reaching 25 percent in Nicaragua.

⁹ This is also consistent with the finding that the lion's share of government transfers in Brazil are withdrawn as soon as they are received.

¹⁰ Therefore, negative values imply that Latin America lags the country grouping under consideration.

(from 68.4 to 55.7). However, on the negative side, relative to its comparators (countries with a similar degree of development as measured by real income per capita), Latin America's financial inclusion gap, measured by ownership of accounts has not decreased significantly. Indeed, the reduction is only 0.7 percentage points (from 20.2 to 19.5). Measured by savings, Latin America's median financial inclusion gap has deteriorated relative to high income countries by 3 percentage points, while it has improved relative to its comparators by only 1 percentage point. Finally, the borrowing variable yields the worst results: Latin America's median financial inclusion gap has deteriorated with respect to both high income countries and Latin America's comparators.

**Table 1. Latin America's Financial Inclusion Gaps
Has an Account at a Formal Financial Institution (% age 15+)**

Has an account at a formal financial institution (% age 15+)				
	2011		2014	
	Median (percentage)	Latin America's gap (percentage points)	Median (percentage)	Latin America's gap (percentage points)
High Income Countries	94.59	-68.41	96.47	-55.68
Latin America	26.18	..	40.79	..
Latin America Comparators	46.42	-20.24	60.31	-19.52
Rest of the World	15.94	10.24	16.14	24.65
Has Saved at a formal financial institution (% age 15+)				
	2011		2014	
	Median (percentage)	Latin America's gap (percentage points)	Median (percentage)	Latin America's gap (percentage points)
High Income Countries	44.81	-34.85	52.51	-38.24
Latin America	9.97	..	14.26	..
Latin America Comparators	12.24	-2.27	15.17	-0.90
Rest of the World	7.90	2.07	7.05	7.21
Has Borrowed from a formal financial institution (% age 15+)				
	2011		2014	
	Median (percentage)	Latin America's gap (percentage points)	Median (percentage)	Latin America's gap (percentage points)
High Income Countries	12.56	-2.67	16.88	-4.22
Latin America	9.89	..	12.66	..
Latin America Comparators	8.55	1.34	13.16	-0.50
Rest of the World	6.13	3.76	4.19	8.47

Source: Own calculations based on Findex Database (2014).

To better assess diversity between countries, Table 2 presents the financial inclusion gaps for each Latin American country relative to its own set of comparators. That is, for each country the table shows the difference in financial inclusion between that country and the group of countries

with a similar degree of development.¹¹ For the large majority of Latin American countries, the financial inclusion gaps with respect to comparators is very high. A notable result is that some of the countries considered to be the best performers in the region in terms of macroeconomic policies (such as Colombia, Mexico, Peru and Uruguay) are among the countries with the largest financial inclusion gaps¹². Even in Chile, the relative high level of development among emerging markets has not translated into sufficiently high levels of financial inclusion.

**Table 2. Financial Inclusion Gaps in Latin American Countries
(relative to countries with a similar degree of development, 2014)
(percentage points) 1/**

	Has an account at a formal financial institution 2/	Has saved at a financial institution in the past year 2/	Has borrowed from a formal financial institution 2/
Argentina	-29.4	-25.8	-6.2
Bolivia	2.9	10.1	8.3
Brazil	-5.3	-12.8	-2.0
Chile	-10.2	-10.1	1.7
Colombia	-20.6	-7.9	3.3
Costa Rica	-8.9	-0.9	-1.2
Ecuador	8.4	0.8	2.0
El Salvador	-24.3	-6.1	4.9
Guatemala	-12.1	2.5	-1.9
Honduras	-7.7	1.1	-1.8
Mexico	-34.8	-10.6	-3.5
Nicaragua	-9.3	-0.8	7.0
Panama	-30.0	-4.7	-2.1
Peru	-29.9	-7.9	-1.1
Uruguay	-34.3	-17.4	6.5

1/ There is no 2014 data for Paraguay

2/ Percentage of adult population

Source: Own calculations based on Findex Database 2014.

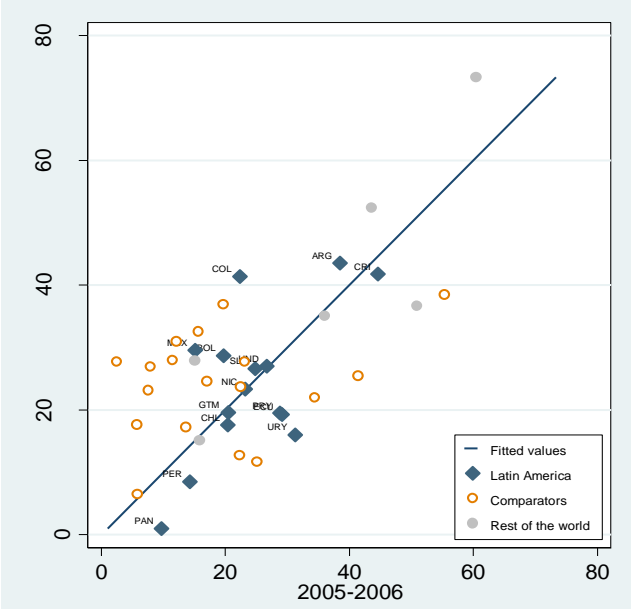
In order to complete the discussion before concluding this section, it is useful to provide some information on firms. Although, at the firm level, there is no information on financial inclusion comparable to that provided by Global Findex at the individual level, data from the World Bank *Enterprise Surveys* allows gauging firms' perceptions regarding access to finance. Chart 2

¹¹ The comparators for each country are defined as the group of countries belonging to the same decile of GDP per capita.

¹² With the exception of the borrowing variable in the case of Uruguay.

displays the percentage of firms that identify access to finance as a major constraint in their operations. This data, however, is not compiled at the same time for every country. Thus, to assess the recent evolution of this variable and to maximize available information, the Chart compares firms' perceptions during the period 2005-06 with the most recent data collected by the survey. Countries to the left of the 45 degree line report an increased concern regarding their access to finance.

Chart 2. Percentage of Firms Identifying Access to Finance as a Major Constraint, 2005-06 vs. Most Recent Data



Source: Enterprise Surveys, World Bank 2014.

The results are mixed. In about one-third of the countries, a significantly smaller percentage of firms reported lack of financial inclusion as a major problem for their business in the period 2009-2014 relative to the period 2005-2006. For some others, however, a larger percentage of firms reported lack of financial inclusion as a problem in recent years than in the early 2000s. Colombia stands out. Given economic instabilities in Argentina in the later period, it is not surprising that almost more than one-third of the enterprises in the country considered lack of access to finance as a major obstacle.

III. Obstacles Preventing Financial Inclusion in the Region: Are Some More Important than Others?

As reported in Section II, indicators of usage of financial services show that Latin America's financial inclusion gaps with respect to countries with a similar degree of development are significant and persistent (the gaps have barely reduced from 2011 to 2014). Moreover, for some indicators, such as savings and borrowing, Latin America's gap with respect to high-income countries has even increased in the period considered. This section discusses obstacles to financial inclusion in order to shed light on reasons behind the low levels of financial inclusion in Latin America and the region's gaps with respect to other country groupings.

Obstacles to the provision of financial services to large segments of the population are multidimensional and encompass factors affecting the demand for and supply of these services. A large number of studies have shown that aggregate features at the country level as well as individual-level characteristics play major roles in explaining financial inclusion.¹³ For example, Allen et al. (2012) show that in addition to country factors, individual characteristics such as age, sex, education level, income, employment and geographical location are significant determinants of populations' ownership and usage of accounts in the formal financial system.

In the case of Latin America, Rojas-Suárez and Amado (2014) conducted an empirical investigation that underlined the crucial role of the social, economic and institutional environment where the markets for financial services operate.¹⁴ This section updates and builds on that research to present a discussion on four categories of obstacles for financial inclusion: (a) socio-economic constraints that limit both the supply and the demand for financial services; (b) vulnerabilities in the macroeconomic environment that deters large segments of the population from using the services provided by the formal financial system; (c) institutional weaknesses, with emphasis on the quality of governability of countries; and (d) characteristics of the formal financial system's operations that impede the adequate provision of financial services. These operations respond both to the regulatory framework and to the specific features of the financial system (such as the competitive environment).

¹³ As reviewed in Rojas-Suárez (2007) and Allen (2012).

¹⁴ Based on data from Global Findex 2011, Rojas-Suárez and Amado (2014) also analyzed the effects of individual characteristics on financial inclusion. Unfortunately, at the time of this writing, individual-level data was not available in the Global Findex 2014 database.

The section is divided in two parts: the first presents graphs and simple correlations between financial inclusion and alternative obstacles to get some insights on the behavior of these obstacles in Latin America relative to other country groupings. The second part presents an econometric analysis that serves to assess the relative importance of these alternative constraints in explaining Latin America's financial inclusion gaps.

In the main text of this section, the metric presented as a measure of a country's degree of financial inclusion is the percentage of adult population that owns an account in a formal financial institution, taken from Global Findex 2014. Annex II presents results based on the other two alternative metrics (savings and borrowings) discussed in Section I as well as an additional variable that measures usage of payments services: percentage of the adult population that have used an account to receive wages.¹⁵

1. **Alternative Obstacles Constraining Financial Inclusion**

It is no surprise that **social** factors, the first category of obstacles considered in this section, have an important impact on financial inclusion. As expected, in general terms, countries with greater access to social services and a better quality of life are countries that have also developed a stronger "financial culture" in which the use of financial services through formal markets becomes essential. Indeed, using worldwide country data, the correlation between the financial inclusion indicator measuring account ownership and the UN Human Development Indicator, a well-known measure of social development, is very high.¹⁶

Income inequality is another variable that can affect the usage of financial services through formal institutions. As argued by Claessens and Perotti (2005), inequality can hinder financial reforms that can support improved financial inclusion. In highly unequal economies, with a highly skewed distribution of income, powerful interests are likely to block or manipulate reforms. Other authors, however, argue that improved financial inclusion can be a driver for

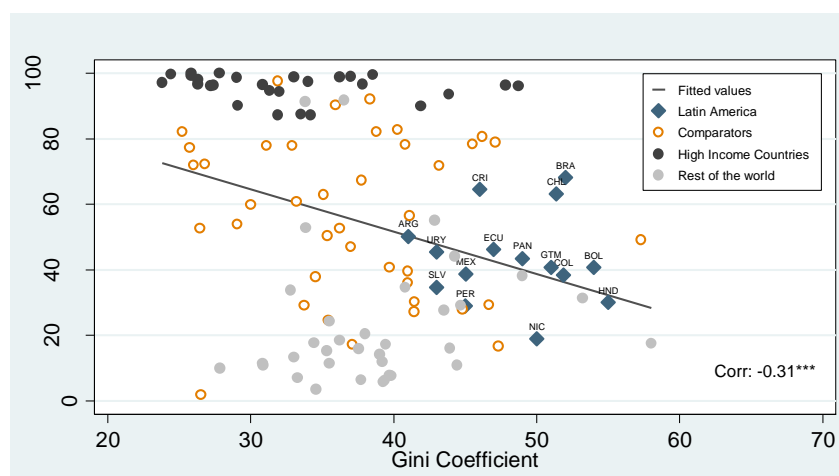
¹⁵ As mentioned before, this variable was not used in the intertemporal comparisons of Section I because of lack of available data for 2011.

¹⁶ The correlation equals 0.8 using either Global Findex 2011 or Global Findex 2014. Alternatively, real GDP per capita can be used as a proxy for social development. In that case, the correlation with the financial inclusion indicator was 0.83 and 0.87 in 2011 and 2014 respectively.

reducing inequality.¹⁷ Thus, there is the possibility of reverse causality between these two variables.¹⁸

Chart 3 presents the correlation between income inequality, as measured by the Gini coefficient and financial inclusion, measured by the percentage of the adult population with accounts in formal financial institutions. While the data for financial inclusion is for the year 2014, the data for the Gini coefficient is the latest available data from the World Income Inequality Database. As shown in the chart, there is a significant negative correlation between these two variables (significant at the 1 percent level).¹⁹ In this and the following charts in this section, countries are categorized as high-income (black dots), Latin American (dark diamonds), Latin American comparators (orange circles) and rest of the world (light-gray dots).

Chart 3. Financial Inclusion and Income Inequality



Source: Own calculations based on World Income Inequality Database (WIID - v. 3.3) and Global Findex Database 2014.

¹⁷ See, for example, Honohan (2007).

¹⁸ However, as will be shown in the econometric investigation below, causality seems to run from income inequality to financial inclusion.

¹⁹ Rojas-Suárez and Amado (2014) found a negative and significant correlation between these variables equal to -0.56 using Global Findex data for 2011 and values for the Gini coefficient taken from the World Income Inequality Database (WIID-v.2.0a).

A well-known stylized fact is that Latin America is the most unequal region in the world. This is shown in the graph, where a significant number of Latin American countries are located on the lower-right side, indicating a combination of high income inequality and low financial inclusion. In this worldwide chart, Honduras and Nicaragua are among the countries with very high Gini and very low financial inclusion.

As shown in Annex II.1, the basic results do not change for two of the three other measures of financial inclusion. The variables for payments and savings are also negatively and significantly correlated with the Gini coefficient. Perhaps the most interesting observation is that in terms of savings, a number of other Latin American countries (Brazil, Guatemala and Colombia) join Honduras and Nicaragua as countries with very high Gini and very low values for the savings variable.²⁰

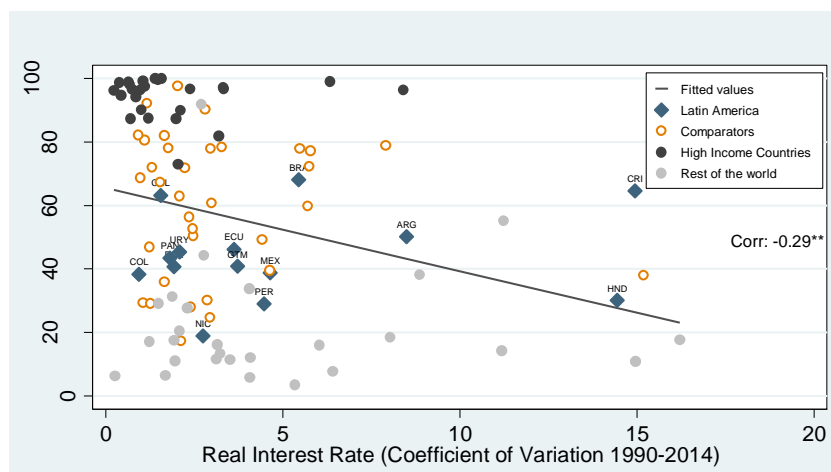
Macroeconomic stability can also have a significant influence on financial inclusion. Deep macroeconomic instabilities leading to financial crises drastically reduce the provision of credit and other financial services to small- and medium-sized firms as well as to non-wealthy individuals since banks attempt to restore their regulatory capital ratios by curtailing credit, especially to borrowers considered as riskier subjects of credit. The provision of payments services to low-income individuals and firms is also reduced to the extent that serving these populations involves higher costs than servicing wealthier groups.

On the demand side, macroeconomic stability plays a central role in determining people's willingness to entrust their funds to the formal financial sector. In many emerging markets, especially in Latin America, depositors have suffered large losses in the value of their wealth when following severe macro/financial problems, policymakers imposed policies that hurt depositors the most, such as deposit freeze, interest rate controls and/or forced conversion of deposits denominated in foreign currency (usually dollars) into local-currency denominated deposits at undervalued exchange rates. Moreover, memories of the losses in real terms suffered by depositors during periods of high and volatile inflation, and reflected in negative and volatile real interest rates, linger for a long period of time and are an important disincentive for savings through financial institutions.

²⁰ The correlation between the Gini coefficient and the borrowing variable is negative, but not significant.

Chart 4 and Annex II.2 show the correlation between alternative financial inclusion variables and real interest rate volatility (approximated by the coefficient of variation during the period 1990-2014). There is a significant and negative correlation between these variables

Chart 4. Financial Inclusion and Real Interest Rate Volatility



Source: Own calculations based on IMF International Financial Statistics (IFS) and Global Index Database 2014.

When considering the variable on account ownership (Chart 4), among Latin American countries, the hyperinflation experienced during the early 1990s and macroeconomic difficulties in the 2000s place Argentina among those with high real interest rate volatility. Costa Rica is an interesting case. Several periods of high inflation and negative real interest rates were behind a high volatility of real interest rates. In this country, the high level of financial inclusion (relative to other Latin American countries) can certainly not be attributed to *sustained* macroeconomic stability; other country-specific factors lie behind these advances. On the other hand, Chile stands out for having a combination of low volatility of real interest rates and “relatively” high financial inclusion. As illustrated in Annex II.2, the negative correlation between financial inclusion and real interest rate volatility also holds when considering the payments, savings and borrowing variables, with the strongest correlation for the payments variable.

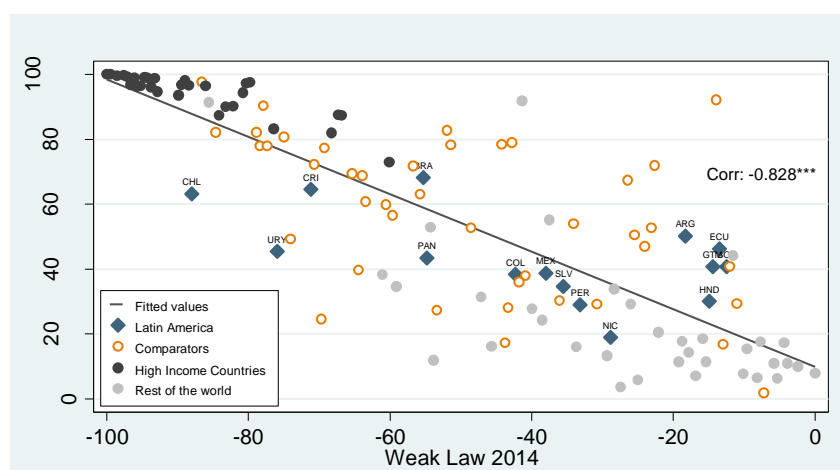
The **quality of institutions**, broadly defined as the set of rules and conventions that “constitute the framework for human interaction and determine the incentives for members of society”²¹ has

²¹ See IMF (2005).

long been recognized as an important factor affecting access to and usage of all type of financial services.²² As in previous studies, a country's quality of institutions is proxied here by the World Bank Governance Indicators, specifically the indicator *rule of law*, that measures agents' confidence in and commitment to abiding by the rules of society, the quality of contract enforcement, the police, the courts and the likelihood of crime and violence. When law enforcement is strong, contracts between creditors and debtors are observed. This gives depositors incentives to entrust their savings to banks and other financial institutions and increases bankers' willingness to lend to smaller and (relatively) riskier borrowers.

Chart 5 and Annex II.3 shows the relationship between financial inclusion and a transformation of the indicator *rule of law*, which we term *weak law* and ranges from -100 to 0.²³ The only reason for this transformation is to present the variable reflecting the (lack of good) quality of institutions as an *obstacle* to financial inclusion. The inverse relationship between *weak law* and all the financial inclusion variables considered is very strong and statistically significant. Indeed, the correlation value goes from -0.6 for the borrowing variable to -0.8 for the three other variables (ownership of accounts, payments and savings).²⁴

Chart 5. Financial Inclusion and Quality of Institutions



Source: Own calculations based on the Worldwide Governance Indicators (2015) and Global Findex Database (2014).

²² See Beck et al. (2003).

²³ The non-transformed *rule of law* indicator ranges from 0 to 100, where a larger number indicates stronger institutional quality.

²⁴ Using data from Global Findex 2011, the correlation between *account ownership* and the 2010 Governance Indicator for rule of law equaled -0.83.

Not surprisingly, high-income countries are concentrated in the upper left corner of Chart 5 and Annex II.3. Latin American countries do not look good relative to their comparators. The median value for the “weak law” indicator in Latin America reached 34.4 in 2014, while the corresponding value for comparators equaled 50. Among the region, Peru, Honduras, Guatemala and Nicaragua are among the countries with the lowest quality of institutions and a low value for financial inclusion. In contrast, Chile is the only country in the region where the indicator representing institutional quality is closer to those in high-income countries. Chile also displays the second highest value in the region in terms of financial inclusion.

Inefficiencies and inadequacies in the financial sector are one of the most discussed obstacles for explaining financial exclusion and encompass a number of financial institutions and market characteristics that could lead to prohibitive high costs for access to financial services by the poor. For example, based on results from the Global Findex database, Demircuc-Kunt et al. (2015) argue that in Latin America and the Caribbean, one of the most cited reasons for not having an account (after not having enough money) is that opening and maintaining accounts are too expensive. High costs for maintaining accounts or for applying for credit are directly related to the banking system’s method of operation. The causes, however, are varied; they may reflect inefficiencies in banking operations, lack of competition or simply the high financial costs of providing services on a small scale. Distinguishing among causes is, of course, extremely difficult. However, to the extent that operational inefficiencies, reflected in high administrative costs and/or high concentration in the financial sector, are present, they could restrict the availability and increase the price of financial services to low-income populations.²⁵

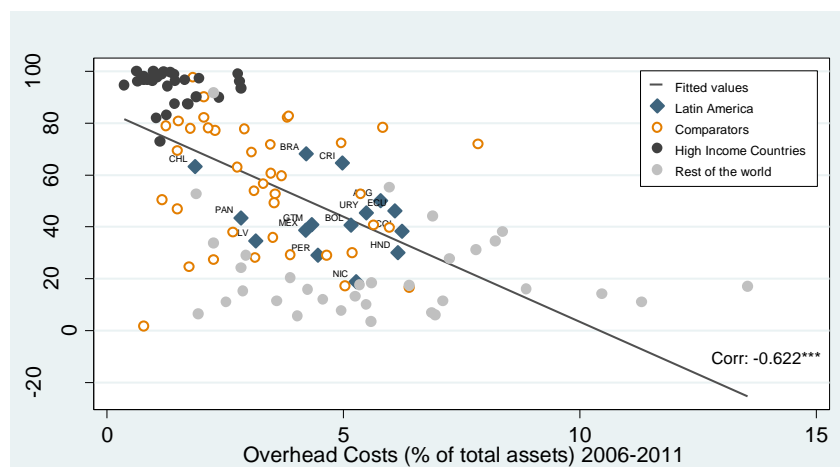
Chart 6 and Annex II.4 display the relationship between alternative variables of financial inclusion and the ratio of banks’ overhead costs to total assets, a common indicator of banks’ operational efficiency. To smooth annual fluctuations in this ratio, we considered the average covering the period 2006–2011.²⁶ For the variables reflecting account ownership, payments and

²⁵ Of course, there are many other characteristics of the financial system landscape where financial institutions operate that are not conducive to improvements in financial inclusion, especially distortionary financial regulations that reduce financial institutions’ incentives to deal with the poor; interest rate controls (caps on deposits and lending rates) as well as government-directed lending are two examples. Other features, such as sufficient economies of scale among scattered populations in distant locations, also constrain financial inclusion, but these features are mostly related to the socio-economic conditions of potential clients and individual-level, rather than country-level, analyses are needed to better understand their importance.

²⁶ We’ll try to update this number in the final version of the paper.

savings, the correlation equals -0.6 and is significant at the 1 percent level. The correlation for the borrowing variable equals -0.4 and is as significant as the rest of variables.²⁷

Chart 6. Financial Inclusion and Bank Inefficiency



Source: Financial Development and Structure Dataset 2013 (Beck et al.) and Global Findex 2014.

While Chile displays ratios of overhead costs similar to those of high income countries, the median value of overhead costs as a percentage of assets reached 5.07 percent in Latin America—about 62 percent higher than the median value for comparators (3.14 percent).

What about high levels of concentration? The argument is that oligopolistic behavior could be detrimental for financial inclusion as there are incentives for banks to focus on the least risky clients who can afford the higher prices of financial services (above those resulting from a more competitive system) due to insufficient competition. The data, however, does not show a significant correlation between financial concentration and financial inclusion. Instead, consistent with recent literature,²⁸ the effects of high levels of concentration in the financial system on financial inclusion seem to depend on the quality of institutions. More precisely, the hypothesis is that bank concentration is negatively associated with financial inclusion mostly in countries with weak institutional quality. In those countries, lack of contract enforcement combines with oligopolistic power arising from high bank concentration to discriminate against low-income customers (individuals) or small borrowers (SMEs). This pervasive combination

²⁷ The correlation equaled -0.55 using 2011 Global Findex data and the 2006-2010 average for overhead costs.

²⁸ See, for example, Claessens (2005).

also impedes the passing of regulation allowing new providers of financial services to enter the market.

Chart 7 and Annex II.5 relate financial inclusion and a ratio of bank concentration; the latter is defined as the percentage of total system assets held by the three largest banks. Countries are divided into two groups: countries with high institutional quality, which are simply defined as those with a value of the variable *weak law* below the full sample average; and countries with low institutional quality where the value of *weak law* is above the full sample average. Correlations are shown in Charts 7a and 7b respectively for the account ownership variable; and in Annex II.5a and II.5b respectively for the rest of financial inclusion variables.

Chart 7: Financial Inclusion and Bank Concentration

Chart 7a. High Institutional Quality

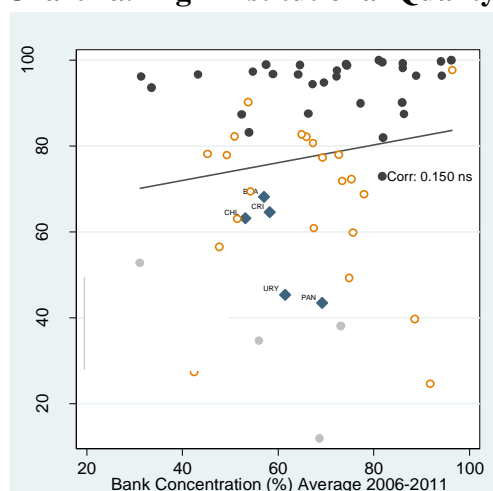
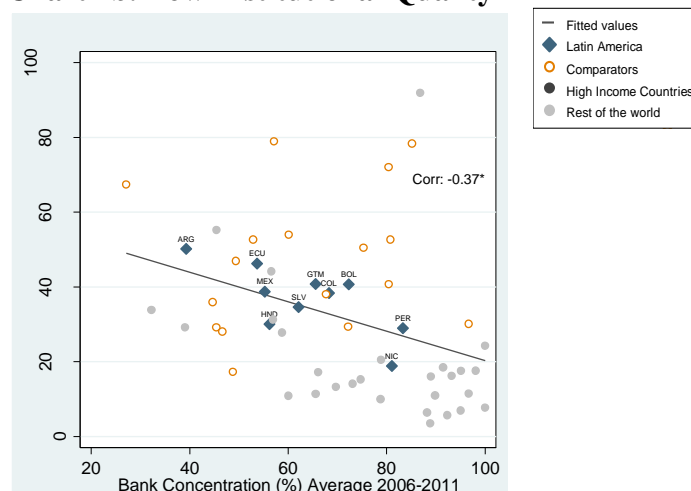


Chart 7b. Low Institutional Quality



Source: Financial Development and Structure Database (2013), Worldwide Governance Indicators (2015) and Global Findex Database (2014).

Note: Countries with high institutional quality are those with values of the rule of law index higher than 49.58 (sample average). Low institutional quality countries are the remaining countries in the sample.

The results support the hypothesis. There is no significant correlation between bank concentration and any of the financial inclusion variables for countries with high institutional quality (Chart 7a and Annex II.5.a), but the relationship is negative and statistically significant for the set of countries classified as having low institutional quality (Chart 7b).

Not surprisingly, and similar to results obtained using Global Findex 2011, most Latin American countries are classified as having low institutional quality and are, therefore, depicted in Chart 7b

and Annex II.5.b (only five Latin American countries can be classified as having high institutional quality). To exemplify the results, compare Chile and Costa Rica with Mexico and Honduras. The four countries have a similar degree of bank concentration, but the quality of institutions is much higher in the former set of countries than in the latter. This is consistent with much higher financial inclusion in terms of bank ownership, payments, savings and borrowing in Chile and Costa Rica.

2. The Relative Importance of Obstacles: An Econometric Analysis

The discussion above illustrated the association between a set of variables measuring the extent of populations' usage of financial services and obstacles for financial inclusion identified in the theoretical and empirical literature. This section builds on that discussion by presenting an econometric analysis to explain the determinants of financial inclusion. In this section, and for expositional purposes, financial inclusion is represented by the account ownership variable. Following Rojas-Suárez and Amado (2014), the following equation is estimated:

$$Fin_Inclusion_i = \alpha_0 + \beta Latin_America_i + \lambda Other_countries_i + \sum_{k=1} \alpha_k Y_{ki} + \epsilon_i \quad (1)$$

Where 'i' denotes a country, $Fin_Inclusion_i$ is the percentage of the adult population that holds an account at a formal financial institution in 2014, Y_k is a vector representing the different obstacles to financial inclusion, $Latin_America_i$ is a dummy variable that indicates if the country is from Latin America, $Other_countries_i$ is a dummy variable that indicates if the country is neither from Latin America nor their comparators²⁹ and ϵ_i is assumed to be a disturbance with the usual properties of zero mean and constant variance.

The estimation of equation (1) updates the work in Rojas-Suárez and Amado (2014) by using data from Global Findex 2014 and updated values of the explanatory variables. A number of methodological issues are discussed in the former paper and need not to be repeated here.

The explanatory variables used in the estimation of equation (1) represent the four categories of obstacles discussed above.³⁰ They are:

²⁹ Thus, countries in *Other_countries* are either high income countries or countries categorized as *rest of the world* (see Annex I).

³⁰ As in Rojas-Suárez and Amado (2014), additional variables were considered as proxies for the four identified obstacles to financial inclusion; however, lack of data availability or multicollinearity problems prevented their inclusion in the estimated equation.

Income Inequality is the latest observation of the Gini coefficient available since 2000. The variable is taken from the World Income Inequality Database (WIID) and represents the category of *socioeconomic factors*.

RealInterestRate_Volatility³¹ is the coefficient of variation of the real interest rate, measured as the ratio of the standard deviation of monthly real interest rates to its average, for the period 1990-2014. This variable was constructed from the Fisher equation, where the nominal interest rate (deposit rates) and inflation came from the IMF's International Financial Statistics (IFS) database and represents the category *macroeconomic constraints*.

Weak Law represents the lack of enforcement of the rule of law, which was taken from the Worldwide Governance Indicators for the year 2014. The original variable, *rule of law*, was rescaled to a range from 0 to 100, and the variable *Weak_Law* is calculated by multiplying the rescaled variable by minus 1. This variable belongs to the category *institutional factors*.

Overhead_Costs is an indicator of banking operational inefficiencies, measured as the ratio of overhead costs to total assets. This variable was taken from the dataset created by Beck et al., and updated in November 2013. The original data is from the *Fitch BankScope* database. The variable in the regression corresponds to 2011 (the latest available data) and it is under the category of *financial sector inefficiencies*.

Bank_Concentration is measured as the share of the three largest banks' assets to all commercial banks' assets. This variable was taken from the dataset created by Beck et al. and updated in November 2013. The original data is from the *Fitch BankScope* database. The variable in the regression corresponds to 2011 (latest available data) and belongs to the category of *financial sector inefficiencies*.

As discussed above, the literature suggests the potential presence of reverse causality between financial inclusion and income inequality. To tackle this possible endogeneity issue, we evaluate the convenience of using instrumental variables estimation (IV) to deal with this problem.³² The endogeneity test is shown in Annex III. The main result is that it is possible to reject the endogeneity of *Income_Inequality* in the regression. This suggests that OLS is an appropriate estimator; a consistent and more efficient estimator than the IV estimator.

Table 3 presents the OLS estimation of equation (1). Starting with the *Latin_America* and *Other_countries* dummies in the first column, each successive column in the table introduces one control variable at a time, with all the variables considered shown in column 7. This methodological presentation sheds light on the robustness of the variables included. In Table 3,

³¹ In Rojas-Suárez and Amado (2014), the volatility of inflation, rather than the volatility of real interest rates was used. While this does not modify results in any significant way, we decided to change variables since, conceptually, real interest rates volatility is a better determinant of the usage of financial services.

³² A similar exercise was conducted in Rojas-Suárez and Amado (2014).

the order in which variables were introduced simply follows the order in which alternative obstacles were discussed in this paper. We conducted alternative exercises (not presented here) to show whether the ordering mattered. It did not. For example, the variable *Overhead_Costs* had the right sign but was never significant; it did not matter whether this variable was introduced early on in the exercise or at the end (as in regression 7). Likewise, all other variables considered were always significant regardless of the ordering of variables.

Table 3: OLS regression – Dependent variable: Financial Inclusion Ratio (2014)
(percentage of adults owning an account)

	1	2	3	4	5	6	7
Latin_America (1/0)	-13.7284 *** (0.008)	-1.6422 (0.810)	3.5134 (0.650)	0.8775 (0.897)	3.7758 (0.565)	2.6872 (0.674)	2.5358 (0.694)
Income_Inequality		-1.1778 *** (0.003)	-1.5305 *** (0.000)	-0.53 ** (0.021)	-0.5392 ** (0.032)	-0.5521 ** (0.030)	-0.5439 ** (0.042)
RealInterestRate_Volatility			-1.6743 *** (0.005)	-0.8164 ** (0.013)	-0.8615 *** (0.010)	-0.8424 *** (0.009)	-0.8096 ** (0.027)
Weak_Law				-0.7926 *** (0.000)	-0.8133 *** (0.000)	-0.4401 ** (0.011)	-0.4196 ** (0.029)
Bank_Concentration					-0.1943 * (0.055)	-0.4447 *** (0.008)	-0.4506 *** (0.010)
Bank_Concentration*Weak_Law						-0.0051 ** (0.022)	-0.0052 ** (0.025)
Overhead_Costs							-0.2648 (0.804)
Other_countries (1/0)	-0.9498 (0.876)	-4.2369 (0.494)	-6.5596 (0.291)	-6.6041 (0.134)	-2.6756 (0.519)	-2.5486 (0.545)	-2.5766 (0.543)
Constant	57.2024 *** (0.000)	101.984 *** (0.000)	123.537 *** (0.000)	41.3839 *** (0.001)	51.5385 *** (0.001)	70.0531 *** (0.000)	71.787 *** (0.000)
Observations	122	117	99	99	94	94	94
R-squared	0.0184	0.0852	0.2165	0.6747	0.7096	0.7179	0.7182

***, ** and * denote significance at the 1%, 5% and 10% respectively

P-values in parentheses

The goodness of fit of the regression including all controls (column 7) or the regression excluding the non-significant variable *Overhead_Costs* (column 6) is quite high: the adjusted R-squared is above 0.7 in both cases. All the *obstacles* considered also had the expected negative sign: an increase in their values had an adverse effect on financial inclusion.

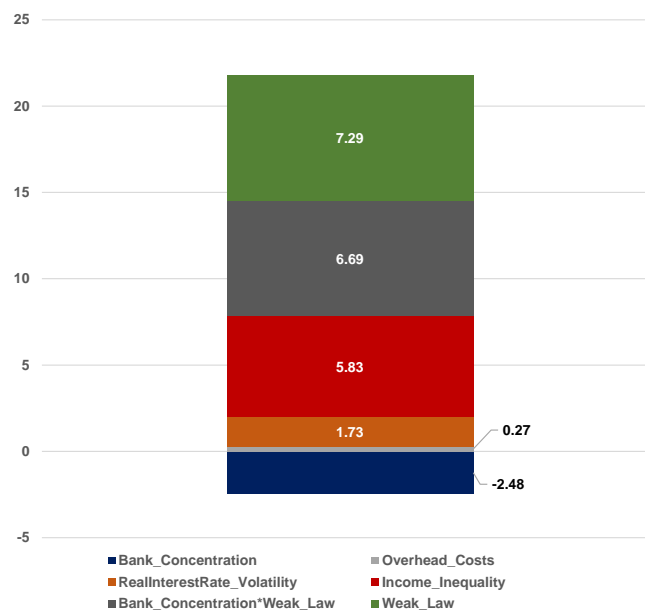
An important result from the analysis is that, with the exception of the regression in column 1, the coefficient for the *Latin_America* dummy in regressions 2 till 7 is not significant, implying that the controls included in the regressions are as good for explaining financial inclusion in Latin America as they are for any other country grouping. By construction, the value of the coefficient of the Latin America dummy in column 1 reflects the difference between the *average* financial inclusion in Latin America and its comparators (13.7 percentage points in absolute terms); that is, this value equals Latin America's financial inclusion gap relative to its comparators.³³ Using the estimated value of the coefficients from equation 7 and the average values of the variables considered for Latin America and its comparators, the predicted value of Latin America's financial inclusion gap equals 16.8 percentage points in absolute terms.³⁴

How important are the alternative explanatory variables considered in Table 3 to understand Latin America's financial inclusion gap relative to its comparators? Based on the estimated coefficients, Chart 8 presents the implied contribution of each non-idiosyncratic determinant of financial inclusion (that is, excluding the *Latin_America* dummy) to explain the financial inclusion gap.

³³ Notice that we are underscoring that here we are referring to the *average* gap for Latin America relative to its comparators. The value of the *median* gap for Latin America with respect to its comparators is presented in Table 1 (19.5).

³⁴ The estimated gap is calculated using the following formula: $Fin_Inclusion_Gap = \hat{\beta} \overline{Latin_America} + \sum_{k=1} (\overline{Y}_k^{Latin_America} - \overline{Y}_k^{Comparators})$. The resulting gap is a negative number. In order to facilitate the exposition, the values are multiplied by -1.

Chart 8: Decomposition of Financial Inclusion Gap between Latin America and Its Comparators (percentage points)



Source: Own elaboration.

Income inequality (Gini) and institutional quality deficiencies (weak law) are the most important obstacles for explaining the gap. The effect of macroeconomic instability (through the volatility of interest rates) follows, but is much less important. The effect of the overhead cost ratio in explaining the gap is minimal.³⁵

As discussed above, the role of the quality of institutions is dual: Low institutional quality has a direct adverse effect on financial inclusion, but it also has an indirect effect through its impact on the concentration of the banking system in affecting financial inclusion. These roles are clearly presented in the graph. First, through its direct effects, *Weak_Law* explained 7.3 percentage points of the predicted financial inclusion gap (in absolute values). Second, even though the variable *Bank_Concentration* reduced the gap (indicating that banking systems are more concentrated in comparator countries than in Latin America), the interaction between *Weak_Law* and *Bank_Concentration* significantly contributed to explain the financial inclusion gap (6.7 percentage points). That is, on their own, differences in bank concentration did not contribute to

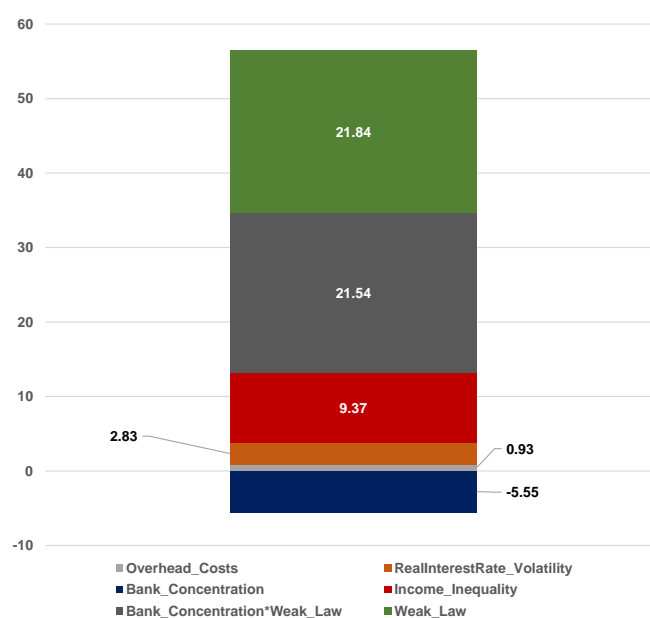
³⁵ Overhead cost is included in these calculation for completeness, but as mentioned before, the coefficient of this variable is not significant.

the financial inclusion gap, but they did have an effect when adjusted for the impact of institutional quality.

Because of the importance of this interaction, Annex IV further discusses its implications in Latin America by estimating the marginal effect of bank concentration on financial inclusion at the country level.

The results from Table 3 can also be used to calculate the relative importance of alternative obstacles in explaining Latin America’s financial inclusion gap with respect to high-income countries. In this case, the observed value of the average gap equaled 50.7 percentage points (in absolute value), while the predicted gap from the regression equaled 45.8 percentage points. The implied contributions of the non-idiosyncratic variables are shown in Chart 9.³⁶

Chart 9: Decomposition of Financial Inclusion Gap between Latin America and High Income Countries (percentage points)



Source: Own elaboration.

³⁶ The estimated gap is calculated using the following formula: $Fin_Inclusion_Gap = \hat{\beta} \overline{Latin_America} + \hat{\lambda} \overline{Other_Countries} + \sum_{k=1} (\bar{Y}_k^{Latin_America} - \bar{Y}_k^{High_Income})$. The resulting gap is a negative number. In order to facilitate the exposition, the values are multiplied by -1.

The results are similar to those obtained for the Latin America's financial inclusion gap relative to its comparators, with the effects (direct and indirect) of institutional quality being even more dramatic. Indeed, differences in institutional quality tell most of the story, but income inequality is also important.

To recapitulate, the four categories of factors discussed above affect financial inclusion in Latin America. Albeit having different degrees of importance, they are all relevant for improving the usage of financial services.

At the regional level, because of important advances in the conduct of monetary policy, inflation has been under control in many Latin American countries in recent years. Thus, the volatility of real interest rates, while important, is not a strong obstacle explaining the financial inclusion gap between Latin America and its comparators or between Latin America and high income countries at this time. Keeping inflation stability has not only helped macroeconomic stability but has also supported lower financial inclusion gaps. The role of Central Banks here is crucial, especially in light of current turbulence in international financial markets.

On the other hand, high income inequality and low institutional quality play key roles in explaining the Latin American financial inclusion gap. Efforts to improve the rule of law and other symptoms of institutional weaknesses are central to improving financial inclusion in Latin America, both in absolute and relative terms.

The analysis has been conducted at the regional level. Important differences between countries (reflected in the large difference between average and median values) suggest that further research is needed to identify country-specific importance of each type of obstacle and to guide policy recommendations. For example, high costs in the provision of financial services (reflected in overhead cost ratios) was not significant in the cross-country econometric analysis of Table 3. However, in many Latin American countries, it would be difficult to deny that advances in technology can help to leap-frog outdated payment systems and infrastructure for a more efficient delivery of these services.

IV. Looking Forward: The Evolving Landscape of Financial Inclusion and Key Policy Issues for Central Banks

So far, the discussion has focused on financial inclusion solely involving banks and other traditional financial institutions. The reason is that in Latin America the dominant model for the provision of financial services is bank-led through the rapid expansion of branches, ATMs and banking correspondents.³⁷ However, experiences around the world show that improvements in financial inclusion involve the continuous entrance of new institutions and agents as providers of financial services. In addition, development of innovations and business models is on the rise. More recently, the usage of digital means, especially for payments, but also for more complex forms of access and usage of financial services, has shown great potential in reaching large segments of the financially-excluded population.³⁸

Chart 10 shows the large differences between Latin America and other country grouping regarding mechanisms for provision of financial services. Among emerging and developing economies, Latin America stands out for having achieved the highest ratio of branches plus ATMs per 100,000 adults relative to the region's comparators and to other developing countries. This advantage has even increased from 2011 to 2013 (Chart 10a). However, with some notable exceptions, such as Brazil, Latin American banks' outreach through this type of infrastructure (plus their banking correspondent networks) does not map well with the still very low levels of financial inclusion in the region.³⁹ The region's comparators have lower ratios of outreach through branches and ATMs but higher ratios of financial inclusion. This suggests that to serve large segments of the population improvements in the effectiveness of existing infrastructure and

³⁷ Although, as discussed in Section II, recent research shows important limitations in Latin American banks' infrastructure to reach the poorest segments of the population.

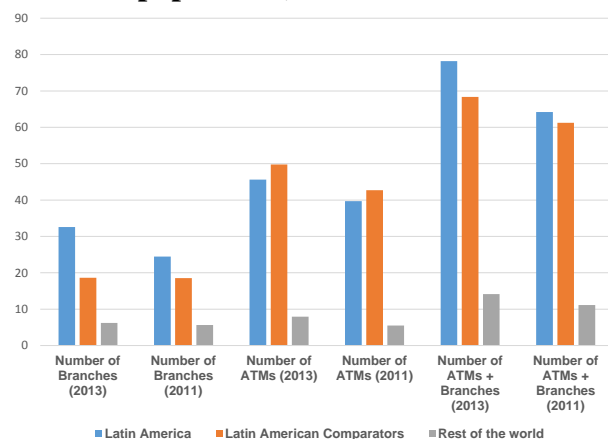
³⁸ As the case of Kenya demonstrates, payments and transfers through mobile phones can serve to provide information about customers' characteristics and, therefore, increase their probability of becoming attractive subjects of credit. In Kenya, with the approval of the Central Bank and the Telcom authority, Safaricom, a mobile network operator (MNO), used its extensive mobile phones network to offer electronic payment and transfer services. The product, called M-Pesa, does not require individuals to have individual bank accounts; instead cash received by M-Pesa agents (to be converted into electronic money) is pooled and deposited as a single account in trust banks. The big success of M-Pesa led to the development of other financial products linked to M-Pesa account. For example, M-Shwari is an individual deposit in banks; and other credit and insurance products also linked to M-Pesa have developed. Thus, from simple payment services, M-Pesa has allowed for an increase in ownership of bank accounts and greater financial inclusion through the traditional financial system.

³⁹ For example, Peru occupies the second place (after Colombia) in terms of number of branches per 100,000 adults. Peru, however, is among countries with the lowest ratios of adults who own bank accounts (with a ratio of 29 percent, Peru places in the second lowest position with respect to financial inclusion; Peru only ranks higher than Nicaragua, which has a ratio of 19 percent).

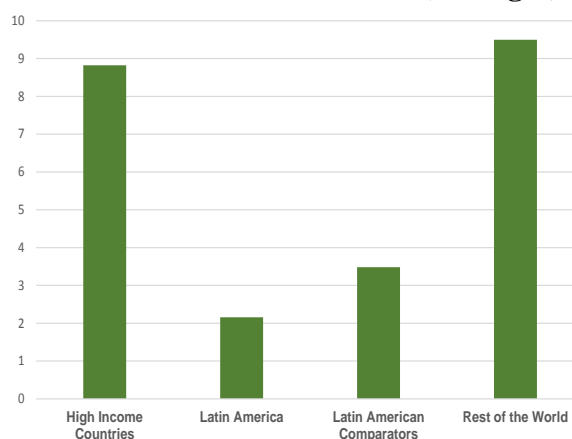
business models are needed and/or that alternative means of outreach need to complement existing ones.

Chart 10. Outreach through Branches, ATMs and Mobile Accounts

10a. Branches and ATMs (per 100,000 adult population): 2011 vs 2014



10b. Percentage of Adult Population that has a Mobile Account 2004 (averages)



Source: Own elaboration based on Global Findex Database (2014) and Financial Access Survey (2014), IMF.

In contrast, the percentage of adult population that has a mobile money account not necessarily linked to a bank account is the lowest in Latin America relative to its comparators and other developing countries. (Charts 10b).⁴⁰ Leadership of non-traditional players (such as mobile network operators (MNOs) and other digital service providers) in the provision of digital services, such as mobile money, remains limited in Latin America. One of the few exceptions is Tigo's Mobile Money in Paraguay.⁴¹ Mobile transactions are generally offered by banks and can be described more as *mobile banking* than *mobile money*. The main difference between these two concepts is that the former requires individuals to have a bank account in order to use cellphones and the internet for undertaking financial transactions while the latter does not. Some examples of mobile banking in Latin America include Colombia's Pay Easy, Pay Digital, which are mobile

⁴⁰ According to Global Findex, this ratio had reached 58 percent in Kenya in 2014.

⁴¹ Tigo, part of Millicom International Cellular SA, also has operations in Bolivia, Guatemala, El Salvador and Honduras.

payment transactions using bank accounts; Peru's Billetera Movil offered by Scotiabank; and Mexico's MiFon offered by Banorte.⁴²

There are multiple paths towards improvements in digital financial inclusion and they are country specific. However, given different comparative advantages, it is likely that the future will involve a combination of new and traditional providers. For example, while Mobile Network Operators and other Digital Service Providers (DSPs) have the low-cost technology for small transactions over distances, banks and others traditional providers have the institutional setup and processes to deliver a more complete menu of services for financial inclusion, including credit and insurance. There is no reason to believe that this will not be the case in Latin America, even though we might be talking about the *distant future* given the little progress achieved so far in most countries in the region in terms of provision of mobile money.

Against the background of new entities and new instruments entering the financial system for the purpose of improving financial inclusion, the rest of this section focuses on the issues that central banks are and will be facing in their roles of guarding the appropriate functioning and stability of the payments system and as overall regulators of the financial system.

An evolving financial landscape with more players and modalities, directly involves the regulatory functions of central banks⁴³. Regulatory changes are needed to assess/allow entrance of new providers of financial services and their networks as well as the authorization for offering of new products. Moreover, policies aiming at improving financial inclusion need to be compatible with the key mandate of central banks: financial stability. These policies also need to be compatible with financial integrity and financial consumer protection. In this regard, central banks' cooperation with banking supervisors and other authorities overseeing the functioning of the financial sector is, therefore, essential.

In what follows, this section presents concerns raised by central banks, discusses their relevance and suggests a regulatory framework that can help deal with these concerns.

⁴² Peru's new project: Digital Payment Platform, still untested, will be a new business model in the region. The model seeks a single, open and interoperable platform where banks, MNOs and other providers can participate in the provision of payment services through e-money.

⁴³ Even in countries where the supervisory role of financial institutions is assigned to a separate and independent institution, central banks maintain their role as regulators of a number of activities of financial institutions.

1. What Are the Concerns?

A common concern among central bankers is that the entrance of new players using technological innovations and new modalities to serve the financial needs of the poor could compromise the soundness of the overall financial system. In Latin America, this concern has often delayed or prevented approval of legislation for offering electronic money.

Generally speaking, central banks perceive three potential risks. The first risk relates to the potential decrease in effectiveness of monetary policy resulting from an expansion of means of payments outside the control of the central bank.

The second risk relates to the stability of the payments system resulting from eventually allowing non-bank digital payments providers, including MNOs, to access banks' retail payment systems. The fear is that entrance of non-bank players might increase the overall risk of the system.

The third risk is that financial innovations for the provision of credit to low-income households and small firms might result in excessively risky credit growth and lead to high rates of default and, in part due to financial system interconnections, lead to system-wide risks. The mortgage crisis in the United States exacerbated this concern among regulators around the world, as there was a widespread perception that mortgage loans provided to low-income households played a central role in triggering the crisis.

However, increased financial inclusion, whether technology-driven or traditional, does not need to reduce the effectiveness of monetary policy or create systemic financial instabilities.⁴⁴ Instead, the opposite can hold, where financial inclusion supports the conduct of monetary policy and enhances overall financial stability. For example, as discussed above, the experience in Kenya demonstrated that as the offering of digital payments by non-traditional providers matured, new products involving bank deposits developed. As a result, the demand for cash declined and that for deposits increased, leading to higher financial intermediation and an improvement in the effectiveness of monetary policy.

With regards to the participation of non-banks in retail payment systems traditionally used by banks, changes in the regulatory framework need to accompany the evolution of innovations for

⁴⁴ Evidence in Sahay et al. (2015) suggests that financial stability risks increase when access to credit is increased without appropriate supervision.

financial inclusion. As will be discussed below in more detail, a key feature of an adequate regulatory framework is to regulate by functions and not by institutions. If non-bank digital service providers are to ever share the banks' retail payments system, the business line offering payment services needs to be established as a separate legal entity and needs to meet equivalent requirements to those satisfied by banks when accessing the payment systems.

Likewise, innovations for providing credit to low-income segments do not have to be destabilizing. In the U.S. mortgage crisis, the problem was not deficiencies in the underlying technology used to provide financial services to the financially-excluded, but abuses in loan origination, securitization, and distribution. Once again, to prevent these abuses the appropriate regulation, supervision and corporate governance practices have to be in place. Indeed, greater financial inclusion can improve rather than challenge financial stability. The reason is that increased financial inclusion can lead to a wider customer base with more diversified risks, rather than the often much narrower and risky base of enterprises and connected lending typically found in many developing countries in general, and in Latin America in particular.

2. Three Pillars for an Appropriate Regulatory Framework that Supports Financial Inclusion

Recent analysis by a Global Task force at the Center for Global Development (CGD, 2016) has concluded that an appropriate regulatory framework that simultaneously meets the objective of financial stability, financial integrity and financial inclusion needs to rest on three pillars. These pillars are: (a) regulate by function, (b) follow a risk-based approach, and (iii) balance ex-ante and ex-post regulations. This paper endorses those recommendations.

Regulating by function implies that similar financial activities need to be subject to similar regulations regardless of the institution that conducts the activity. The fundamental reason is that advances in technology and the ongoing evolution of players and products in the provision of financial services is making increasingly difficult to map a type of provider with a type of financial service (think of the difficulty in defining “mobile money” and its distinction with “mobile banking”). Thus, regulating by function rather than by institutions seems appropriate, in general. Indeed, regulating by function *levels the playing field* for alternative providers of financial services. This supports competition, which in turn benefits financial inclusion.

Following a risk-based approach is at the core of financial stability. The Basel Committee recommendations on banks' capital and liquidity requirements rest on this principle. But a risk-based approach is also crucial for financial inclusion. For example, although acknowledged by international standard-setting bodies, very often local regulatory frameworks do not recognize that small financial transactions by low-income customers can imply very low levels of risk to the financial system when adequate regulation and oversight is in place. A good example is Know your Customer (KYC) regulations for fighting against money laundering and terrorist activities, where local regulations very often discriminate against the provision of financial services to the poor.

Balancing ex-ante and ex-post regulations means combining the traditional regulations for banks (ex-ante) with new regulations (ex-post) that cannot be anticipated given the novelty of the new and evolving markets of products to reach financially under-served population. The heart of the problem is that to support the incipient markets for financial inclusion, regulators face an important trade-off: Excessive ex-ante regulation might discourage innovation and hinder development of incipient financial markets and services. Insufficient ex-ante regulation can risk the emergence of instabilities.

Consistent with regulating by function and a risk-based approach, the right mix depends on the service provided. For example, mobile payment and transfer services provided by MNOs with limited risks to the financial system can be subject to light ex-ante regulation to allow for the development of the market. However, there would be a clear possibility of ex-post interventions if markets develop in undesirable ways (such as the emergence of a dominant player). As additional services beyond payments are provided and the MNOs activities converge to those of banks, stricter ex-ante regulations would be necessary.

While country-specific characteristics needs to determine the particular features of regulations, the simple principles sketched above can serve central banks and other regulators involved in the provision of the financial system to guide the development of inclusive and stable financial systems.

V. Conclusions

This paper has dealt with three key issues regarding financial inclusion in Latin America: (a) the recent evolution of the region's financial inclusion gaps relative to other country groupings; (b) the relative importance of alternative obstacles in explaining these gaps; and (c) recent challenges for the region's central banks arising from the entrance of new players offering financial services to the poor.

The analysis reveals that in spite of recent progress in the usage of alternative financial services by adult populations in Latin America, the region's financial inclusion gaps relative to its comparators (countries with a similar degree of development) have not reduced generally and, in some cases, have even increased during the period 2011-2014. Specifically, when measuring financial inclusion by the percentage of adults that own an account in a formal financial institution, a gap with a median value of about 20 percentage points (in absolute terms) has persisted in that period. While there was a slight reduction in the gap (1 percentage points) if financial inclusion is measured in terms of savings, the gap increased (by 2 percentage points) if financial inclusion is measured in terms of borrowing behavior. When compared with high-income countries, the results were mixed. In terms of account ownership, while remaining large (56 percentage points), the gap reduced between 2011 and 2014. However, the gap increased when savings and borrowing are used as indicators of financial inclusion.

An econometric investigation of potential country-level obstacles explaining Latin America's large financial inclusion gaps in terms of account ownership finds that institutional weaknesses play the most salient role. There are direct and indirect adverse effects from low institutional quality. Lack of contract enforcement between creditors and debtors directly reduces depositors' incentives to entrust their funds to formal financial institutions. Indirectly, low institutional quality reinforces the adverse effects of insufficient bank competition on financial inclusion. Efforts to improve the rule of law and other symptoms of institutional weakness in Latin America are key to improving the region's financial inclusion, both in absolute terms and relative to other country groupings.

Income inequality follows institutional quality in explaining Latin America's financial inclusion gaps. While important in determining the degree of financial inclusion in the region, macroeconomic instabilities, measured as the volatility of interest rates, do not play a major role

in explaining the gaps relative to other country groupings. Advances in the conduct of monetary policy in Latin America drive this result.

A caveat to the econometric results must be mentioned. The analysis was conducted at the regional level and due to restrictions on the sample size, no fixed effects to reflect individual country characteristics were included. Thus, to reach policy recommendations at the country level further research is needed. For example, high costs in the provision of financial services was not significant in the cross-country regressions. However, in many Latin American countries it would be difficult to deny that outdated payment systems and infrastructure, among other deficiencies, are important factors raising the costs of providing financial services.

Finally, the discussion in the paper recognized that the recent impetus for improving financial inclusion, while warranted, might bring new challenges to Latin America's central banks in their role as regulators of the financial system and guardians of financial stability. Looking forward, a particular concern is that the entrance of non-traditional players, such as mobile network operators, providing digital financial services to the poor could increase financial system risks. In this regard, this paper endorses the recommendations of the CGD Task Force on Financial Inclusion (2016) whereby an overall financial regulatory framework that simultaneously meets the objectives of financial stability, financial integrity and financial inclusion needs to rest on the following three pillars: (a) regulate by function so that in order to level the playing field between alternative providers, similar financial activities are subject to similar regulations regardless of the institution that conducts the activity; (b) follow a risk-based approach to avoid discriminating against the provision of financial services to the poor. For example, applications of *know your customer* regulations to combat money laundering need to be commensurate with the risks to the overall system; and (c) balance the amount and type of regulations because while insufficient *ex-ante* regulation can result in instabilities, excessive regulation might discourage innovation and hinder development of incipient financial markets. To prevent this trade-off, implementation of *ex-post* regulations needs to be a clear option when undesirable behavior emerges (such as oligopolistic practices).

References

- Allen, F.A., Asli Demirguc-Kunt, Leora Klapper and Soledad Martinez Peria, 2012, “The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Accounts”, Policy Research Working Paper No. 6290. World Bank.
- Arcand, Jean-Louis, Enrico Berkes and Ugo Panizza, 2012, “Too Much Finance?”, IMF Working Paper WP/12/161, June.
- Barro, Robert, 1991, “Economic Growth in a Cross Section of Countries”, *The Quarterly Journal of Economics*, Vol. 106, No. 2, May, pp. 407-443.
- Beck, Thorsten, Asli Demirguc-Kunt and Ross Levine, Martin Cihak and Erik H.B. Feyen, 2013, “Financial Development and Structure Database (updated)” <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20696167~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>
- Center for Global Development, 2016, “Financial Regulations for Improving Financial Inclusion”, A CGD Task Force Report chaired by Stijn Claessens and Liliana Rojas-Suárez, Washington DC.
- Beck, Thorsten, Asli Demirguc-Kunt and Patrick Honohan, 2008, “Finance for All? Policies and Pitfalls in Expanding Access,” Policy Research Report, Washington DC: World Bank.
- Beck, Thorsten, Asli Demirguc-Kunt and Vojislav Maksimovic, 2003, “Bank Competition, Financing Obstacles and Access to Credit”, World Bank Policy Research Paper No. 2996, Washington DC. World Bank.
- Calderon, C. and A. Chong, 2001, “External Sector and Income Inequality in Independent Economies Using a Dynamic Panel Data Approach”, *Economic Letters*, 71 (2), 225-231.
- Claessens, Stijn and E. Perotti, 2005, “The Links between Finance and Inequality: Channels and Evidence”, University of Amsterdam, March.
- Dabla-Norris Era, Yan Ji, Robert Townsend, and D. Filiz Unsal, 2015, “Identifying Constraints to Financial Inclusion and their Impact on GDP and Inequality: A Structural Framework for Policy”, IMF Working Paper, WP/15/22, January.
- Demirguc-Kunt, Asli, Leora Klapper, Dorothe Singer and Peter Van Oudheusden, 2015, “The Global Findex Database 2014” Policy Research Working Paper 7255, The World Bank, April.
- De Olloqui, Fernando, Gabriela Andrade and Diego Herrera, 2015, “Inclusión Financiera en América Latina y el Caribe: Coyuntura Actual y Desafíos para los Próximos Años”, Documento para Discusión No. IDB-DP-385, Instituciones para el Desarrollo, División de Mercados de Capital e Instituciones Financieras, Banco Inter-Americano de Desarrollo, Junio.

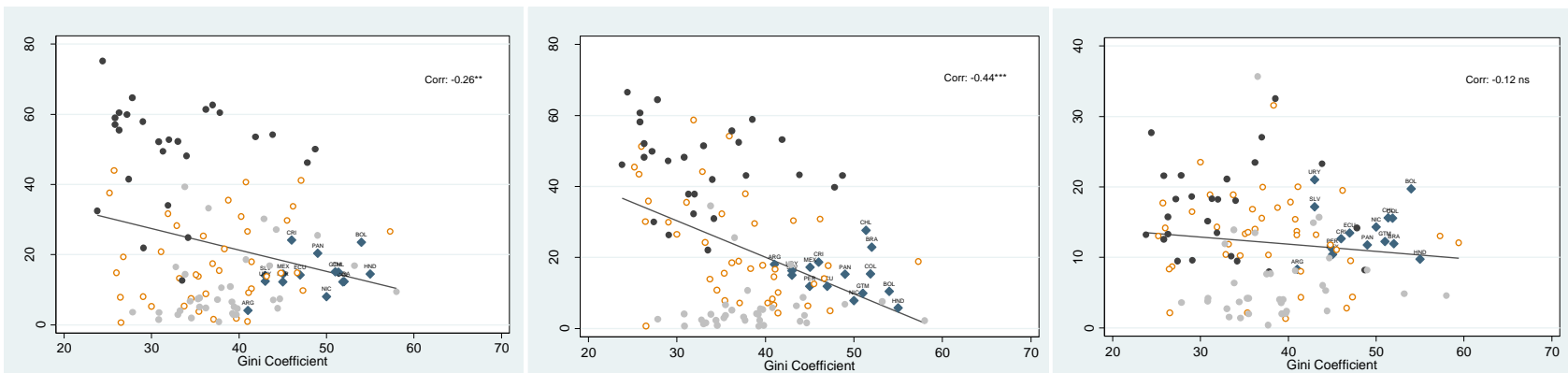
- GPIFI (Global Partnership for Financial Inclusion), 2014, “2014 Financial Inclusion Action Plan”, September.
- Honohan, 2007, “Cross-country Variation in Household Access to Financial Services”, The World Bank, January.
- International Monetary Fund, 2005, “World Economic Outlook”.
- Levy, Santiago, 2008, *Good Intentions, Bad Outcomes: Social Policy, Informality and Economic Growth in Mexico*, Brookings Institution Press.
- Loayza, Norman, and Romain Ranciere, 2005, “Financial Development, Financial Fragility and Growth”, IMF Working Paper No. WP/05/170, August.
- Rojas-Suárez, Liliana, 2007, “The Provision of Banking Services in Latin America: Obstacles and Recommendations, Working Paper No. 124, Center for Global Development, June.
- Rojas-Suárez, Liliana and Alejandra Amado, 2014, “Understanding Latin America’s Financial Inclusion Gap”, Working Paper No. 367, Center for Global Development, May.
- Sahay, Ratna, Martin Cihak, Papa N’Diaye, Adolfo Barajas, Srobona Mitra, Annette Kyobe, Yen Nian Mooi and Seyed Reza Yousefi, 2015 “Financial Inclusion: Can It Meet Multiple Goals?” IMF Staff Discussion Note SDN/12/17, September.
- Sanford, Caitlin, and Laura Cojocaru, 2013, “Do Banking Correspondents Improve Financial Inclusion? Evidence from a National Survey in Brazil”, Bankable Frontier Associates, November.

Annex I: Grouping of Countries by Category

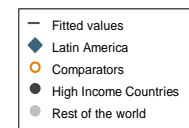
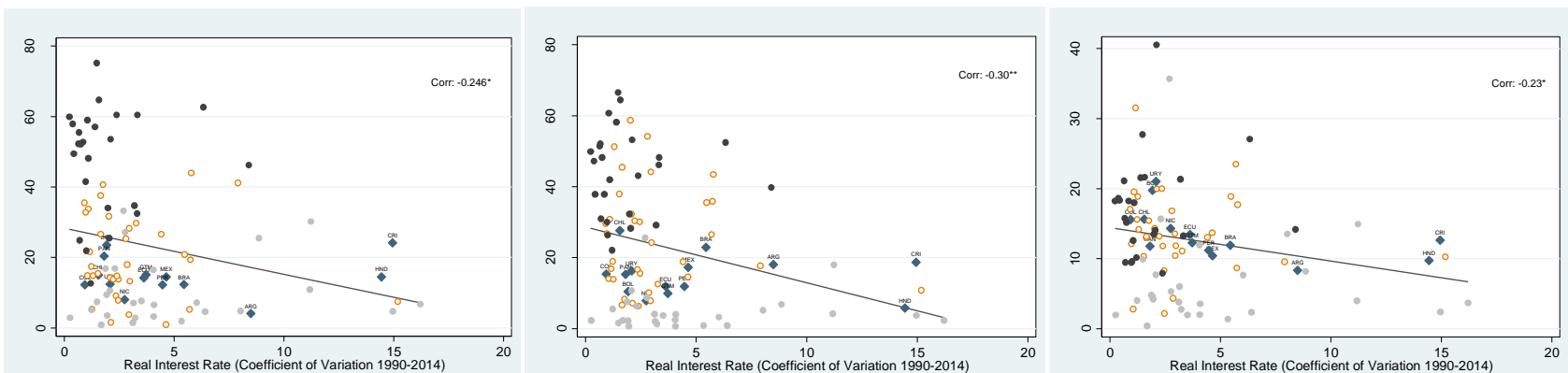
Latin America	Latin America Comparators			High Income Countries		Rest of the World		
Argentina	Albania	Indonesia Iran, Islamic Rep.	Saudi Arabia Slovak Republic	Australia	Kuwait	Afghanistan	Lesotho	Togo
Bolivia	Algeria			Austria	Luxembourg	Bangladesh	Liberia	Uganda
Brazil	Angola	Jamaica	South Africa	Bahrain	Malta	Benin	Madagascar	West Bank and Gaza
Chile	Armenia	Jordan	Sri Lanka	Belgium	Netherlands New Zealand	Burundi	Malawi	Yemen, Rep.
Colombia	Azerbaijan	Kazakhstan	Swaziland	Canada		Cameroon	Mali	Zambia
Costa Rica	Belarus	Latvia	Syrian Arab Republic	Cyprus	Oman	Central African Republic	Mauritania	Zimbabwe
Ecuador El Salvador	Bosnia and Herzegovina	Lebanon	Thailand	Denmark	Portugal	Chad	Mongolia	
	Botswana	Lithuania	Tunisia	Finland	Qatar	Comoros	Nepal	
Guatemala	Bulgaria	Macedonia, FYR	Turkey	France	Singapore	Congo, Dem. Rep.	Niger	
Honduras	China	Malaysia	Turkmenistan	Germany	Slovenia	Ghana	Nigeria	
Mexico	Congo, Rep.	Mauritius	Ukraine	Greece	Spain	Guinea	Rwanda	
	Czech Republic	Montenegro	Uzbekistan	Hong Kong SAR, China	Sweden	Haiti	Senegal	
Panama	Djibouti	Morocco		Ireland	Trinidad and Tobago	India	Sierra Leone	
Paraguay	Estonia	Philippines		Israel	United Arab Emirates	Iraq	Somalia	
Peru	Gabon	Poland		Italy	United Kingdom	Kenya	Sudan	
Uruguay	Georgia	Romania		Japan	United States	Kyrgyz Republic	Taiwan, China	
	Hungary	Russian Federation		Korea, Rep.		Lao PDR	Tajikistan	

Annex II: Alternative Measures of Financial Inclusion and Obstacles to Financial Inclusion

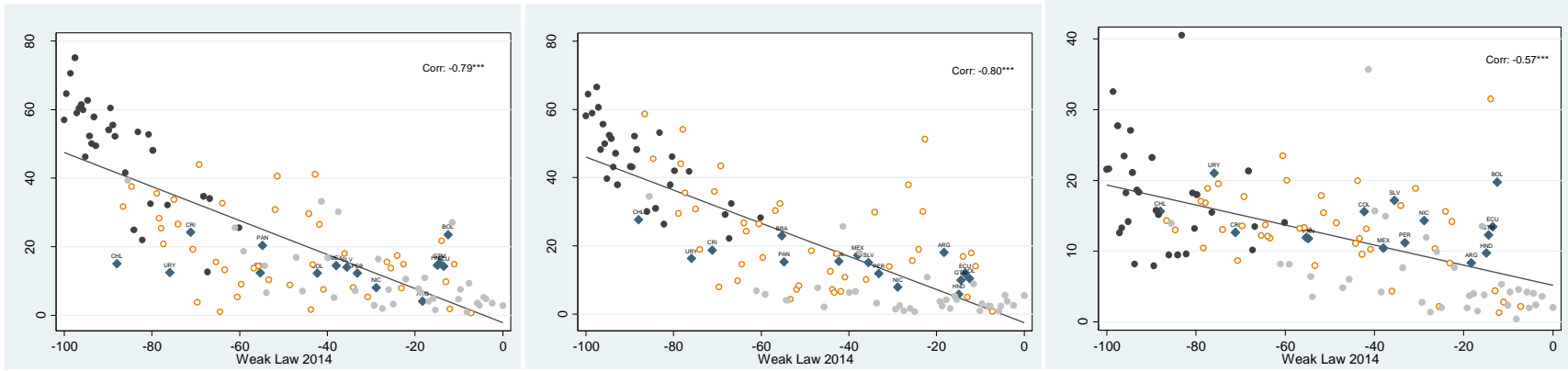
1. Income Inequality: Gini Coefficient



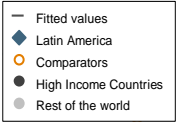
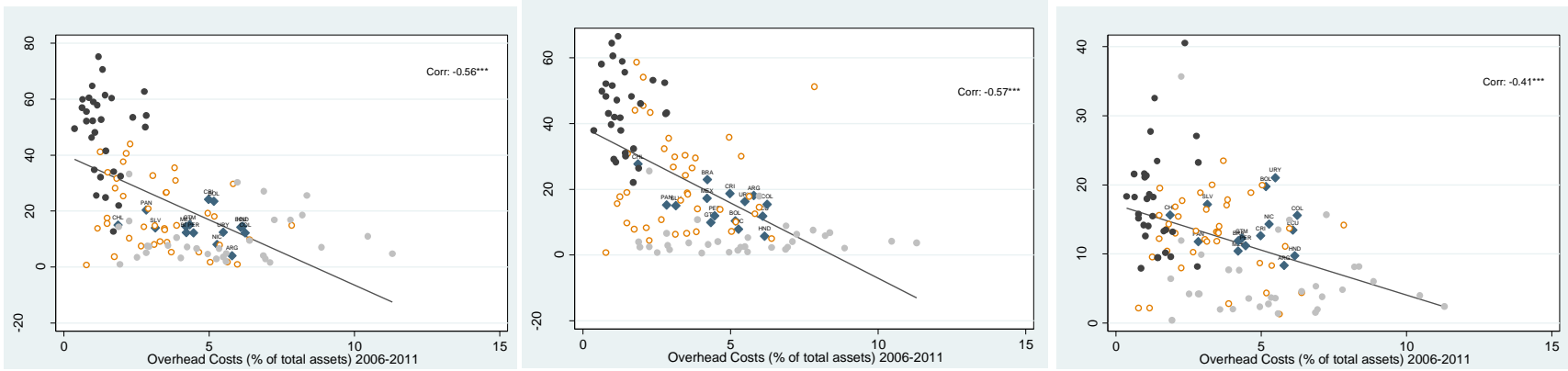
2. Macroeconomic Instability: Coefficient of Variation of Real Interest Rates



3. Quality of Institutions: Weak Law

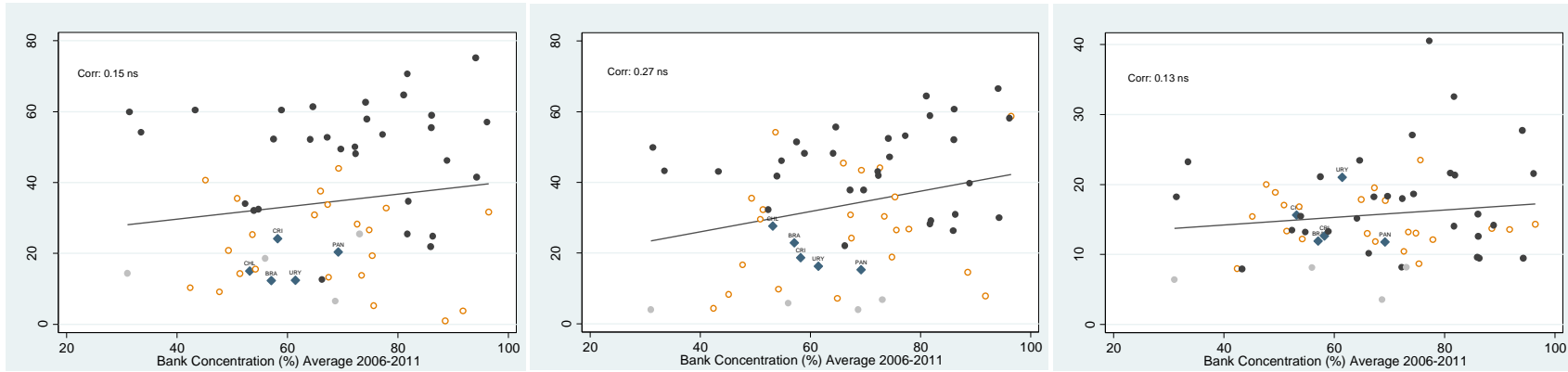


4. Inefficiencies/Inadequacies Financial sector: Overhead Costs/Total Assets

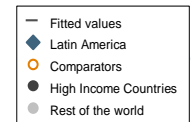
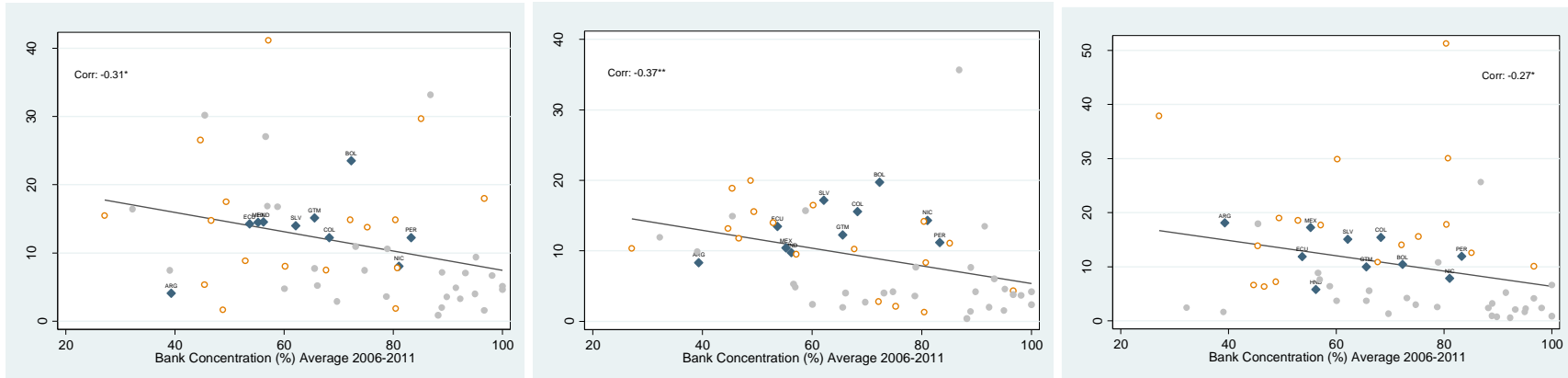


5. Inefficiencies/Inadecuacies Financial Sector: Bank Concentration

a. High Institutional Quality Countries



a. Low Institutional Quality Countries



Annex III: Endogeneity Test for *Income Inequality*

The Durbin-Wu-Hausman test is used to identify the potential endogeneity of *Income Inequality*. To this end, and following Calderon and Chong (2001), the following trade variables are used as instruments: (a) *Trade_Openness*: ratio of exports plus imports to GDP in 2013 from the World Bank database; and (b) the interaction between trade openness and trade concentration (*Trade_Openness*Trade_Concentration*): *Trade_Concentration* is a concentration index (HHI) of merchandise exports and imports for 2013, normalized to obtain values ranging from 0 to 1 (1 represents maximum concentration). The source of these data is the United Nations Conference on Trade and Development (UNCTAD).

Calderon and Chong (2001) argue that although higher level of trade openness decrease income inequality, the effect is reduced at high levels of trade concentration.

The following table shows the results from the Durbin-Wu-Hausman test

Instrumented Variable: *Income Inequality*

Excluded Instruments	Durbin-Wu-Hausman	P-value
Trade_Openness	0.2677	0.6048
Trade_Openness*Trade_Concentration		

** Null: variables are exogenous*

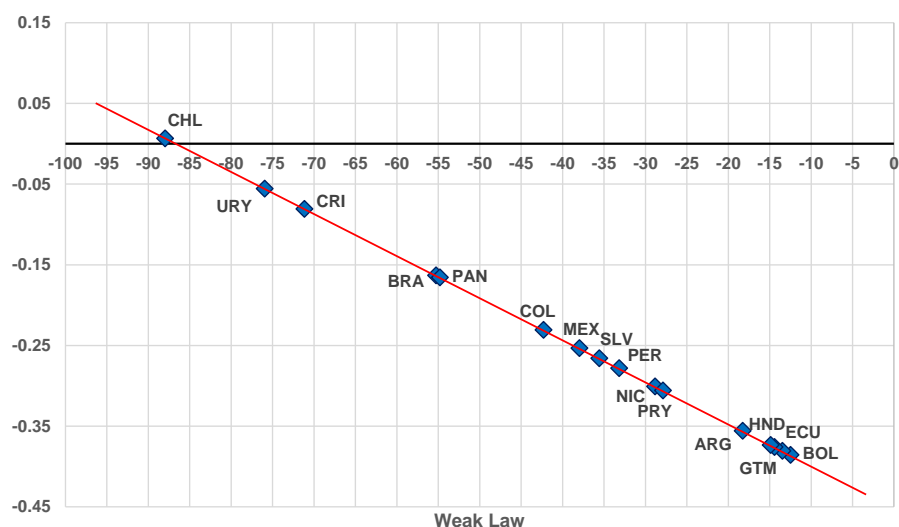
The p-value from the test shows that the endogeneity of *Income Inequality* in the regression can be rejected.

Annex IV: The Marginal Effect of Bank Concentration on Financial Inclusion in Latin American Countries

Taking into account the importance of the interaction between bank concentration and institutional quality to explain financial inclusion, the relevant coefficients from the regression discussed in Table 3 can be used to estimate the *marginal effect of bank concentration on financial inclusion*. This effect has two components: (a) the linear, direct effect of bank concentration (equal to the estimated regression coefficient of the variable *bank concentration*) and (b) the non-linear effect derived from the impact of institutional quality (*Weak_Law*) on bank concentration in affecting financial inclusion (equal to the value of the estimated parameter of the interaction, *Bank_Concentration*Weak_Law*, multiplied by the 2014 value of the variable *Weak_Law*).

Such a computation generates the straight line depicted in the chart below. Clearly, the marginal effect of bank concentration varies for every possible value of the variable *Weak_Law*. As shown in the Chart, the lower the quality of institutions (the higher the value of the *Weak_Law* variable), the larger the negative total effect of bank concentration on financial inclusion. The chart also shows that there is a range where institutional quality is high enough that increases in bank concentration do not have an adverse effect on financial inclusion (the most advanced economies are in that range).

Marginal Effect of Bank Concentration on Financial Inclusion



Source: Own calculations based on regression 7 of Table 3 in the main text and Worldwide Governance Indicators (2014).

For 2015 values of the variable *Weak_Law*, Chile is the only country that passes the threshold. In Chile the quality of institutions is high enough to more than offset the negative impact of bank concentration on financial inclusion. In the rest of Latin American countries, an increase in bank concentration affects financial inclusion negatively.