



## The Impact of Banco Azteca in Peru

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## Executive summary

From a macroeconomic perspective, financial system deepening has been identified by multiple studies as an important driver of economic growth. However, its linkage with the reduction in poverty and inequality is less well documented or uncontroversial. Through economic growth, at least in theory, financial development increases everyone's wellbeing, including that of the poor. Nonetheless, previous theoretical studies suggest that at earlier stages of development inequality may even increase, as only the rich have access to credit, which allows them to become even richer. Generally, however, empirical evidence suggests that financial development is pro-poor and indeed decreases both poverty and inequality.

The empirical evidence on the topic of financial inclusion is mixed. Digitization of payments is translated into time-saving, which in turn means higher income. It also increases control and confidentiality, which benefits women in particular. Some empirical studies also show benefits linked to access to savings products such as savings accounts. Access to formal credit can offer not only the means to invest in business or human capital, but it can also represent an important means of dealing with emergencies and income shocks, thus helping to avoid falling into poverty.

Peru enjoys a favorable regulatory climate and has been steadily growing economically. Nonetheless, its level of financial inclusion, although improving, is still low. Moreover, there are disparities between urban and rural areas and among regions. The poor are, as everywhere else, more likely to be financially excluded.

Grupo Elektra first launched Banco Azteca in Mexico in 2002, targeting low- and middle-income clients, many of whom had previously been unbanked. The impact of the over 800 branches in Mexico was overwhelmingly positive, reducing the usage of pawn types of credit as well as having a significant impact on labor market activities and income levels in the areas where they operated. Banco Azteca went on to open branches in five additional Latin American countries. This study explores the impact of Banco Azteca opening in Peru. Given Banco Azteca's social mission and its target--low-income clients--the study has focused on the effect on outcomes related to poverty.

For the analysis we used panel data from Peru's annual National Household Survey (Encuesta Nacional de Hogares) from the National Institute of Statistics and Informatics (Instituto Nacional de Estadística e Informática) for the period 2004-2015, and additional information on the presence of Banco Azteca and other banks from the National Superintendency of Banking, Insurance and AFPs (Superintendencia de Banca, Seguros y AFP). The methodology used is difference-in-differences.

There are two outcomes where we found that Banco Azteca branch openings had statistically significant effects. The first one is unemployment. On average, the locations where Banco Azteca opened branches historically had higher levels of unemployment. Over time, this average decreased to be the same or even lower than that of locations without a Banco Azteca presence. The statistical analysis shows that Banco Azteca's presence is in part responsible for this trend. The results are similar both when looking at the country-level data and when looking at locations outside of Metropolitan Lima. While the data at hand does not provide additional insights behind this result and we do not see an increase in either business ownership and independent work or salaried employment, there is an increase in the odds of reporting unpaid work for the family.

The second outcome where we find a significant impact of Banco Azteca's presence is poverty. Looking at the odds of a respondent being either extremely or moderately poor, we find that they decrease following the opening of Banco Azteca branches. The impact is seen when looking at the entire country, but it is stronger in areas of Metropolitan Lima. The data does not allow us to uncover the channels and mechanisms behind the observed reduction in poverty: it could be related to either a reduction in unemployment, more profitable small enterprises, or the safety nets allowed by financial products that could prevent people from falling into poverty when facing emergencies or income shocks.

The results of the study need to be qualified by the inherent weaknesses of the econometric method. We can't say with certainty that the areas where Banco Azteca opened branches were not chosen because they were promising due to unobserved factors that could have contributed to the observed reduction in poverty and unemployment. Nor do we have information on whether a respondent did indeed use or even have access to Banco Azteca products; we used the existence of a Banco Azteca in the area as a proxy. Part of the observed impact may also be only indirectly due to Banco Azteca: competitive pressure may have pushed microfinance institutions (MFIs), which share a similar market target as Banco Azteca, to improve the terms they offered to their clients. Nonetheless, this study adds to the existing evidence that financial access can play a positive role in alleviating poverty.

## Financial inclusion: the evidence on impact

A large body of literature focuses on the impact of financial development (measured by macro-level indicators) for national-level economic growth, and on the effects on poverty alleviation and on reducing income inequality.

To date, the macro-level positive linkage between well-developed financial systems and long-term economic growth has been documented by multiple empirical studies (for a thorough review, see Demirgüç-Kunt and Levine, 2008),<sup>1</sup> which consistently show that countries with better-developed financial systems tend to grow faster. One of the channels through which financial development affects growth is by easing access to external capital for firms, thus allowing them to expand.

More recently, economic literature has focused on documenting the correlation between access to finance and poverty alleviation at the country level. Theory suggests that through its impact on growth, access to finance may increase everyone's income--including that of the poor. However, access to finance may also increase inequality, at least in the short term, since financing may, for example, increase the income of a successful entrepreneur but not that of her neighbor. Nonetheless, although the evidence is less abundant, empirical studies tend to show that financial development and improved access to credit are pro-poor and tend not only to accelerate economic growth but also to lower household poverty and inequality.<sup>2</sup>

Financial inclusion--a concept related to but distinct from financial depth--can be defined as individuals' access and effective use of a range of formal financial services. Financial inclusion at the most basic level can mean access to deposit or transactional accounts, which can be used for storing and saving money and for making and receiving payments. It may also include access to formal credit and insurance products.<sup>3</sup> The relationship between financial inclusion and economic growth, inequality and poverty is less understood and studied, mainly due to limited data availability.

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<sup>1</sup> Demirgüç-Kunt, Asli and Ross Levine, "Finance, Financial Sector Policies, and Long Run Growth", World Bank, 2008.

<sup>2</sup> "Finance for all? Policies and pitfalls in expanding access", World Bank, 2008.

<sup>3</sup> Demirguc-Kunt, Asli, Klapper, Leora and Singer, Dorothe, "Financial Inclusion and Inclusive Growth: A Review of Recent Empirical Evidence", World Bank, 2017.

A recent World Bank review<sup>4</sup> of the available evidence is organized around the main roles played by financial services, namely providing payment services and offering savings products, credit and insurance.

**Payment services** Evidence shows that digitizing cash savings benefits both senders and receivers by improving efficiency and convenience through decreased costs and higher speed. Evaluations indicate that these time-savings are converted into higher income. Digitizing payments benefits governments as well by lowering administrative costs. The near-instantaneous transmission of digital payments is also extremely beneficial in emergency and crisis situations, when the speed of money being sent to affected areas is of the essence. Transporting cash carries an inherent risk of theft and loss, but digitization has been shown to decrease crime rates by as much as 10%.<sup>5</sup> Digital payments are more transparent, and the opportunities for theft by the middlemen or for bribery are curbed, making government transfer payments, for example, more likely to fully reach their recipients and lowering the incidence of “fake” recipients.

Another positive side-effect of digital payments is the fact that payment information and transaction history can be easily incorporated into credit files. This is beneficial for potential borrowers, who would be excluded without a credit history, but also for institutions, which can better assess risk and decrease the proportion of non-performing loans.

Digitizing payments may be disproportionately beneficial for women, for whom the increased confidentiality and control over their own earnings or remittances translates into economic empowerment and more decision-making power.

**Savings products** In the developing world, saving cash at home, or “under the mattress”, is the most common form of saving. Formal saving, such as in a bank or another formal financial savings institution, offers multiple advantages over cash at home. For one, it is much safer, as savings at home can often be pilfered. Moreover, it restricts impulse-buying on the part of the saver herself, encouraging better cash management. It also limits demands from friends and family and is more confidential.

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<sup>4</sup> Ibid.

<sup>5</sup> Wright, Richard *et al.*, “Less Cash, Less Crime: Evidence from the Electronic Benefit Transfer Program”, *The Journal of Law and Economics*, 2017.



Some evidence also suggests that savings accounts may lead to increased private expenditure and business investments for certain groups of people.<sup>6</sup> In a study from Nepal, female household heads who were provided with savings accounts were able to cope better with income shocks, allowing them to spend more on education and health. The benefits of a savings account may be greater for women, as it can offer them increased control and restrict the access of others to their own savings, thus improving their ability to save and make household decisions.

**Credit** Occasional borrowing is necessary for investments in education, business, buying large assets, or dealing with emergencies or income shocks. The ability to borrow from a financial institution removes the constraint of funds being available only from one's friends and family, and it may offer better terms. The evidence regarding the impact, however, is mixed, with some studies showing a positive impact, while others show none.

A 2015 article in the *American Economic Journal: Applied Economics*<sup>7</sup> summarizing six studies on the impact of microfinance credit in different countries finds “modestly positive, but not transformative effects”. One of the studies (from Bosnia and Herzegovina) finds that microcredit for entrepreneurial activities increased self-employment and business ownership, although this was at the expense of salaried employment. The evidence regarding profits is mixed, with some of the studies showing a reduction in savings and consumption, which may have been due to the fact that these credits were too small to satisfy the investment needs of the businesses. Research on microcredit in India and Mexico has shown that although it has not increased entrepreneurial activity, on average it did increase the investments and profits of the existing businesses. In India, there was also an observed shift in consumption patterns towards more durable goods.

A South African study<sup>8</sup> of the impact of access to individual consumer loans shows a clear increase in income, economic self-sufficiency and maintaining employment as well as in optimism

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<sup>6</sup> Dupas, Pascaline and Robinson, Jonathan, “Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya”, *American Economic Journal: Applied Economics*, 2013.

<sup>7</sup> Banerjee, Abhijit, Karlan, Dean and Zinman, Jonathan, “Six Randomized Evaluations of Microcredit: Introduction and Further Steps”, *American Economic Journal: Applied Economics*, 2015.

<sup>8</sup> Karlan, Dean and Zinman, Jonathan, “Expanding Credit Access: Using Randomized Supply Decisions to Estimate the Impacts”, *Review of Financial Studies*, 2010.

and the perception of socioeconomic status, although stress and depression measures also increased. In India, research on bank expansion found a decrease in rural poverty.<sup>9</sup>

**Insurance** is an essential tool for risk management. When large, unexpected expenses such as those related to illness, crop failure, death of an income earner etc. are incurred, formal insurance products can offer broader coverage than relying on one's own savings, borrowing or help from family and friends, especially in the case of widespread risks that can affect entire communities. In the absence of insurance, people may choose to take on lower payoff activities and avoid higher risk but higher payoff endeavors.

Indeed, evidence shows that with insurance farmers move from low-risk, low-return crops to higher-risk but higher-return crops.<sup>10,11</sup>

## Financial inclusion in Peru

As one of the most dynamic economies in Latin America, over the past years Peru has enjoyed significant drops in its poverty rates. It is estimated that between 2004 and 2014 poverty rates dropped by more than half (from 59% to 23%), with much of this progress being attributed to economic growth.<sup>12</sup> Peru also benefits from an enabling environment for financial inclusion: for ten years in a row it was scored at the top of an overall ranking of countries.

Nonetheless, financial inclusion levels in Peru are still low. According to the 2014 Global Financial Inclusion (Findex) database, only 29% of Peruvian aged 15 years or more had an account at a financial institution, 11% borrowed from a financial institution, and 12% saved at a financial institution. Among people able to come up with funds in case of an emergency, fewer than 4% said they would get it from a financial institution or credit card. Geographical isolation,

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<sup>9</sup> Burgess, Robin and Pande, Rohimi, "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment", *American Economic Review*, 2005.

<sup>10</sup> Cole, Shawn, Giné, Xavier and James Vickery, "How does risk management influence production decisions? Evidence from a field experiment", World Bank, 2015.

<sup>11</sup> Cai, Hongbin *et al.*, "The effect of microinsurance on economic activities: Evidence from a randomized natural field experiment", *Review of Economics and Statistics*, 2015.

<sup>12</sup> Lustig, Nora *et al.*, "Deconstructing the Decline in Inequality in Latin America", Policy Research Working Papers, World Bank, 2013.

high costs, informality and lack of trust in the banking system are often cited as key barriers to greater financial inclusion.

With no access to formal financial services, building up savings or assets, buying insurance or starting or expanding a small business is extremely difficult. By encouraging investments in education, business and health, financial access has the potential not only to help the poor climb out of poverty but also to prevent them from falling into poverty in the first place. As mentioned before, digitizing transactions can also benefit governments, firms and citizens by allowing safer and more efficient transactions.

The financial sector in Peru is dominated by banks, which account for 80% of financial sector assets and 40% of GDP. The total microfinance sector represents around 3.5% of GDP, while finance companies and savings and credit companies account for less than 3% of GDP. Microfinance institutions are particularly relevant for low-income and rural customers.

Recent indicators point to an evolution towards greater financial access and usage in Peru. For example, the number of access points to commercial banks as well as micro finance institutions (MFIs) has been rising almost continuously (Figure 1).

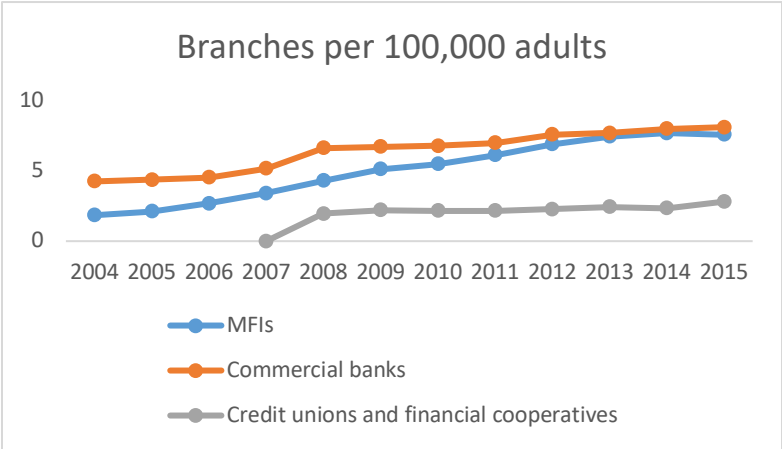


Figure 1 Access points (Source: Financial Access Survey)

Similarly, the number of borrowers at commercial banks increased from 2004 to 2015, and this trend is quite dramatic in the case of depositors (Figure 2).

Ratings agency Equifax has calculated that in total 10.7 million Peruvians have access to credit from the financial system. However, financial access shows pronounced geographical differences. It is estimated that around half of the country's local districts do not have a "banking

presence”, defined as a bank branch, a retail outlet offering banking services for or on behalf of a bank, or an ATM. Credit penetration is reportedly lowest in the departments of Huancavelica, Apurímac, Amazonas, Ayacucho, Cajamarca, Huánuco, Pasco, Cusco, Puno and Loreto. Figure 3 shows that there are still Peruvian districts with no access points.

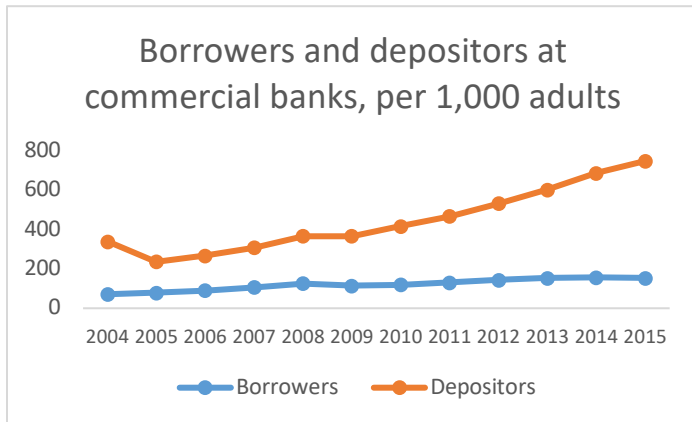


Figure 2 Customers (Source: Financial Access Survey)

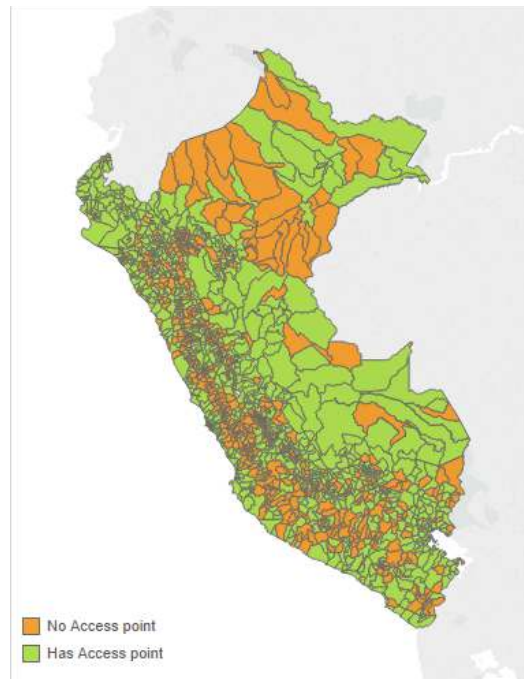


Figure 3 Districts without access points (Source: MixMarket)

The contrast between rural and urban areas is also very sharp, with rural areas lagging considerably behind urban areas in terms of financial access.

Urban

Rural

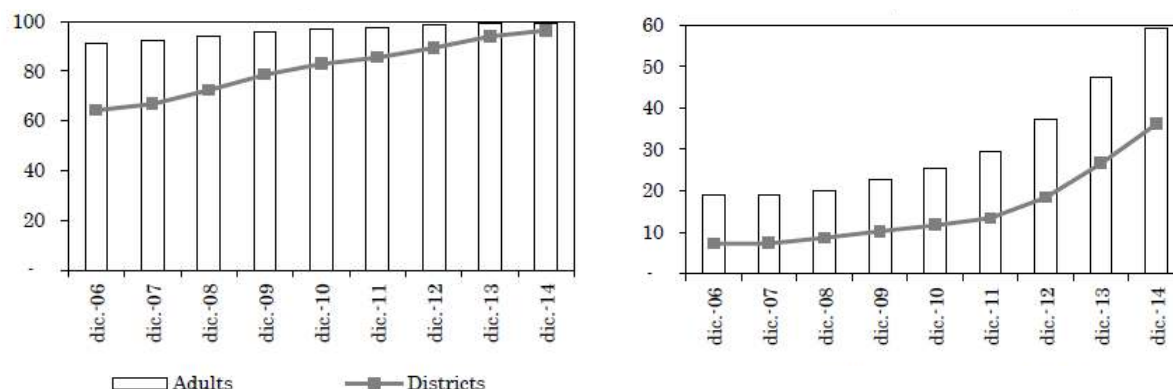


Figure 4 Financial service coverage (%) (Source: SBS)

Moreover, there are also disparities in terms of access based on demographic factors. A study of factors that affect financial inclusion in Peru identifies the traditionally more vulnerable groups as those with the greatest difficulties in accessing the formal financial system.<sup>13</sup> For enterprises, formality and education stand out as significant factors for financial inclusion, and for individuals it is factors such as age, gender, education and income level that are barriers to financial inclusion. The study also indicates that loans and mortgages may drive financial inclusion, and more so than savings products.

Measuring the impact of access to finance poses challenges in Peru (as well as in other countries), mainly due to a lack of micro-level data and experimental or semi-experimental conditions that would allow us to establish causation. One recent study<sup>14</sup> examines the impact of introducing financial retail agents in Peru post-2006. Offering services through retail agents carries a low relative cost compared with bank branches and thus allows to extend financial services in remote geographical areas of the country, where branch offices or ATMs would not be profitable, to individuals and enterprises that have previously been without access. The study

<sup>13</sup> Clamara, N., Peña, X. and Tuesta, D., "Identifying factors for financial inclusion in Peru", BBVA, February 2014.

<sup>14</sup> Aparicio, C., Huayta, K. Bohórquez, D., "Access to Financial Services through Retail Agents and Household Expenditures: Evidence from Peru", SBS, 2016

found that the introduction of financial retail agents in Peru was associated with a reduction in household expenditure and transportation costs, although the effect is not proven for rural areas that still have low coverage.

To close the financial inclusion gap and expand access and usage of financial services, the Peruvian authorities have launched several initiatives aimed at improving regulation and supervision, transparency, consumer protection and financial education in the country. In 2015 Peru launched its National Financial Inclusion Strategy. Recognizing the importance of financial inclusion, the government committed that by 2021 at least 75% of adults will have access to a transactional account. The Superintendency of Banks, Insurance Companies and Private Pension Funds (SBS, the Superintendencia de Banca, Seguros y AFP) recognizes financial inclusion as a policy priority and sees financial inclusion as “a critical engine of the social and economic development of the country”.

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*“All [citizens] can save and access their savings accounts, and receive their payments through cards and not cash in hand”*

*President Humala*

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The dramatic increase in financial access in Peru means that many new customers have access to financial services for the first time, and many are likely to be low-income. Thus, regulation aimed at enabling consumer protection and financial literacy is essential. Currently, complaint resolution and arbitration are generally handled by the SBS and the Instituto Nacional de Defensa de la Competencia y de la Protección de Propiedad Intelectual (INDECOPI). INDECOPI resolves disputes between consumers and private companies in all sectors, including financial services. Additionally, the SBS's Client Service Platform (Plataforma de Atención al Usuario) works in cooperation with INDECOPI's Consumer Support System (Sistema de Atención al Consumidor) to process and resolve consumer grievances with financial providers. Nonetheless,

many low-income customers are not fully aware of the existence of these mechanisms or how to employ them.<sup>15</sup>

## Banco Azteca and its impact

### Banco Azteca presence in Mexico

Grupo Elektra, one of Mexico's largest retailers of electronic and household goods, launched Banco Azteca in 2002. At that time, Banco Azteca opened a large number of branches (815) targeting low- and middle-income customers typically underserved by the more traditional banks. Furthermore, through Grupo Elektra's knowledge of its customers, its database and a labor-intensive but effective collection system, Banco Azteca is able to offer credit to customers with little or no credit history or documentation, thus allowing previously unbanked, low-income customers to receive credit. With respect to its target clients, credit sizes and low documentation requirements, Banco Azteca is similar to MFIs. However, its Mexican portfolio greatly exceeds that of the largest MFIs by several orders of magnitude.

However, in addition to credit for households and small businesses, Banco Azteca also offers interest-bearing deposit accounts, which can be opened with a single peso and no commission. Deposit accounts can protect savings and increase client assets, but they also lower the cost of capital for the bank. Furthermore, unlike traditional MFIs, Banco Azteca's operations are subject to banking regulations, and it is required to comply with reporting regulations.

With a portfolio of more than 11 million active deposit accounts and a similar number of credit accounts, Banco Azteca is a key actor on the financial inclusion scene in Mexico. As of March 2017, Banco Azteca Mexico had a balance of Ps102,509 million in deposits and a gross credit portfolio of Ps66,530 million.

The opening of Banco Azteca had a nontrivial impact on the availability of financial services in municipalities where its branches were present. In a 2013 policy research paper for the World

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<sup>15</sup> "Client Voices Peru Country Report: Progress and evolving risks in an advanced consumer protection environment Findings from the Client Voices project in Peru", BFA, 2015.

Bank, “From pawn shops to banks: the impact for formal credit on informal households”, Claudia Ruiz showed that individuals in municipalities where Banco Azteca opened were three times more likely to use bank credit and 46% less likely to obtain pawn-shop credit.

An acclaimed 2014 paper by Miriam Bruhn and Inessa Love<sup>16</sup> researched the impact of Banco Azteca branch openings in Mexico and found a large effect of access to finance on labor market activities and income levels, especially among low-income individuals and those located in areas without pre-existing bank penetration.

To this day, Banco Azteca’s institutional mandate is a commitment to the development of financial products with the potential to create progress and well-being in the communities in which it operates.

## **Banco Azteca presence in Peru**

Following the opening of its branches in Mexico, Banco Azteca started operations in Panama, Guatemala, Honduras, El Salvador and Peru. According to Equifax prospecting studies (2013, 2015),<sup>17</sup> the bank leads in financial inclusion in the last three countries. The report found that a significant portion of the target client segment of Banco Azteca did not previously have access to financial services. Since the opening of Banco Azteca, a substantial portion of the general mass market of Banco Azteca has obtained loans for the first time.

In Peru, 64% of Banco Azteca’s prospective clients had previously lacked access to formal financial services. Of these, 55% obtained their first loan through the bank following the start of its operations in the first quarter of 2008 with the opening of 70 branches. In the following years it opened 34 more branches, but not all branches remained open.

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<sup>16</sup> Bruhn, Miriam and Love, Inessa, “The Real Impact of Improved Access to Finance: Evidence from Mexico”, *The Journal of Finance*, 2014.

<sup>17</sup> <http://www.gruposalinas.com.mx/en/visor/19561>



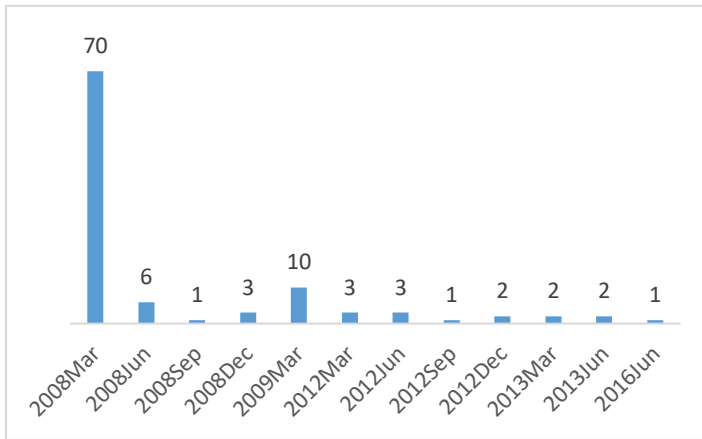
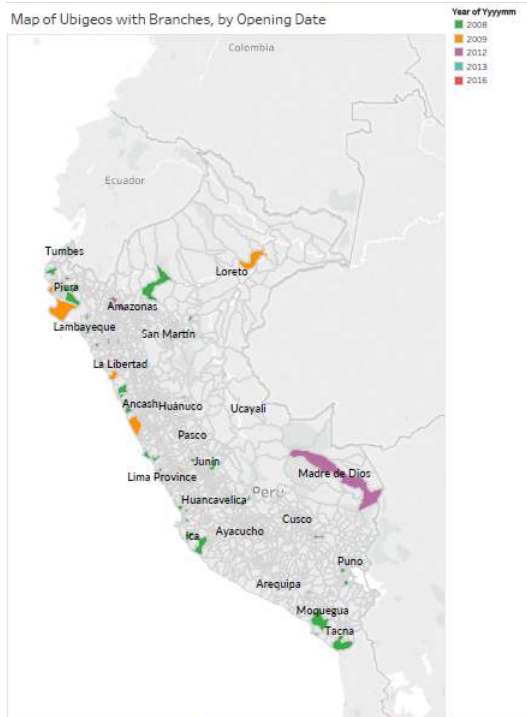


Figure 5 Banco Azteca branch opening, by date

The majority of areas (ubicacion geografica) with a Banco Azteca presence are located on the coast, although some are also further inland.



Following its opening, Banco Azteca Peru increased its portfolio over time, both in terms of credit as well as deposits.

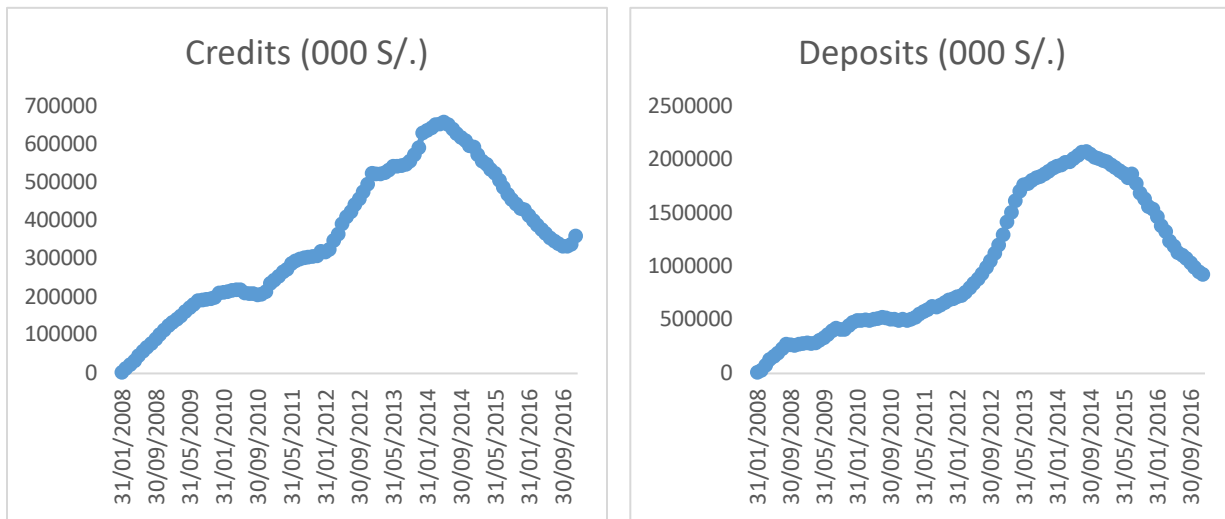


Figure 6 Banco Azteca portfolio, over time

## Estimating Banco Azteca’s impact in Peru

### Methodology

Evaluating impact is best achieved through an experimental setup, where random people receive a service while others do not. Nonetheless, such setups are not usually available in real-life situations. Many impact evaluations need to rely on econometric techniques to estimate the impact of an intervention or service with a credible level of rigor in establishing causation.

For this study, we used the same statistical technique to that used by the previously cited paper by Miriam Bruhn and Inessa Love, “The Real Impact of Improved Access to Finance: Evidence from Mexico”, called difference-in-differences (DiD). This method compares the average change over time in an outcome variable and compares it between two groups: those that received the treatment and those that did not. The main assumption behind this method is that in the absence of the treatment the two groups would have evolved similarly.

In the analysis we used the locations where Banco Azteca opened its initial 70 branches as the treatment group. Peruvian locations without Banco Azteca branches were considered as control group.

The model estimated was:

$$y_{ict} = \alpha + \beta_c + \gamma_t + Azteca\ dummy_{ct} + \pi Z_{ict} + \varepsilon_{ict}$$

where:

$c$  stands for location (ubicacion geografica- ubigeo)

$t$  stands for time

$i$  stands for individual and

$y$  is an outcome variable

$\alpha$  is a constant

$\beta_c$  is a set of municipality fixed effects

$Z_{ict}$  is a set of individual characteristics

Azteca dummy is the interaction between having a Banco Azteca branch and post-2007 (after Banco Azteca branches were opened).

The variable of interest is Azteca dummy.

Control variables used were age, gender, education, marital status, Metropolitan Lima dummy.

It should be noted that the data did not include information on whether an individual was indeed using Banco Azteca services or not, and only if Banco Azteca was present at that location. Moreover, distance to a branch may make the service in fact unavailable even for people who live in a location with a Banco Azteca presence, and people from locations without Banco Azteca presence may use its services from neighboring locations.

## Data

For the analysis we used panel data from the annual Peruvian ENAHO survey (Encuesta Nacional de Hogares) from INEI (Instituto Nacional de Estadística e Informática) for the period 2004-2015, and additional information on the presence of Banco Azteca and of other banks from SBS Peru (Superintendencia de Banca, Seguros y AFP).

Since the Banco Azteca branches opened in 2008 were almost exclusively in locations that already had a bank presence, we also excluded locations that had no bank branch in that year. A similar approach was used by Bruhn and Love. Locations where Banco Azteca opened branches later than 2008 were also excluded from our analysis, as they would not have had branches for the same amount of time as the others in the control group, but would still have benefited from the treatment, and therefore were not similar to the control group either. We also excluded very small-sized locations, as Banco Azteca did not open branches in any such locations. The resulting dataset had 361,616 individual observations, of which 207,714 were from locations with a Banco Azteca presence.

Results

- Unemployment

The first outcome analyzed was unemployment, defined as people who do not currently work, who do not have a job or own a business to which they will return in the next week, and who have been looking for a job in the past week.

Jobs are one of the most important pathways to escaping poverty. Small and medium-sized enterprises (SMEs) provide a sizable portion of the jobs in developing countries, and financial services have the potential to offer entrepreneurs access to much-needed capital to start or grow their own businesses.

Banco Azteca opened branches in places which on average had a higher average unemployment rate than the rest. Following the opening of Banco Azteca branches in 2008, the decrease in unemployment is prominent. In fact, by 2015 average unemployment had become lower in locations with Banco Azteca branches.

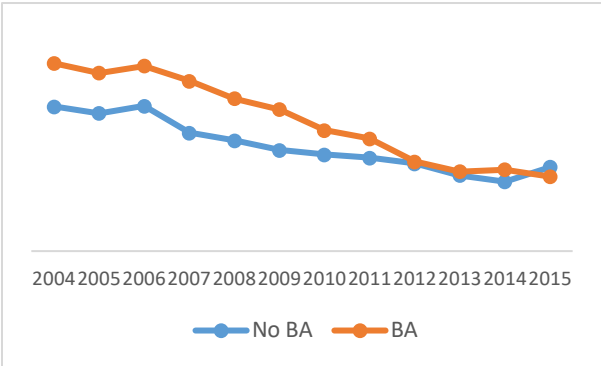


Figure 7 Unemployment in locations with and without Banco Azteca

Using more formal analysis, the estimation from the DiD model shows that the presence of Banco Azteca branches had a positive effect in decreasing the odds of being unemployed. For example, the odds ratio from Model 1 (see Annex) shows that living in a location with Banco Azteca brings the odds of being unemployed down to .88 compared with those of an individual living in a non-Banco Azteca location. Note that this result is obtained after controlling for time trend, location size and individual characteristics. Similar results are obtained when looking only at locations that exclude Metropolitan Lima.

These findings suggest that access to financial services, such as credit and savings products, has enabled more Peruvians to stay out of unemployment.

The data at hand does not provide enough evidence to understand the channels behind these results. The evidence suggests a slight decrease in the probability of being a business owner or independent worker (considered jointly) in areas with a Banco Azteca presence. The probability of working for wages is also slightly lower, suggesting a possible shift away from employed work. Thus, we do not have clear evidence whether access to finance in this case has increased the number of small businesses or their size. We do, however, find an increase in the odds of reporting unpaid work for the family. While we do not have the data to support such a conjecture, it is possible that some of the respondents who work for their family's business reported this activity as unpaid work. One channel behind the unemployment decrease may be at least in part attributable to an increase in the number of unpaid family members who work for very small businesses.

- Poverty

While financial development is generally credited with a positive impact on economic growth, the link between financial access and poverty reduction is less obvious, and the research on this topic is still nascent. Earlier studies suggest that in the early stages of development only the rich obtain access to finance, which in turn exacerbates inequality in a country. However, as the economy develops, finance becomes more available to the poor. Newer studies find evidence on the importance of access to finance to reduce both poverty and inequality.<sup>18</sup>

A second outcome explored in this paper is the impact of Banco Azteca branch openings on poverty levels. Poverty is defined here as respondents who were classified as extremely or moderately poor in the ENAHO survey. We see that on average locations with Banco Azteca branches started out as better off than locations without a Banco Azteca presence. Over time, poverty levels decreased in both types of locations, without any clearly visible trend differences.

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<sup>18</sup> "Finance for all? Policies and pitfalls in expanding access", World Bank, 2008

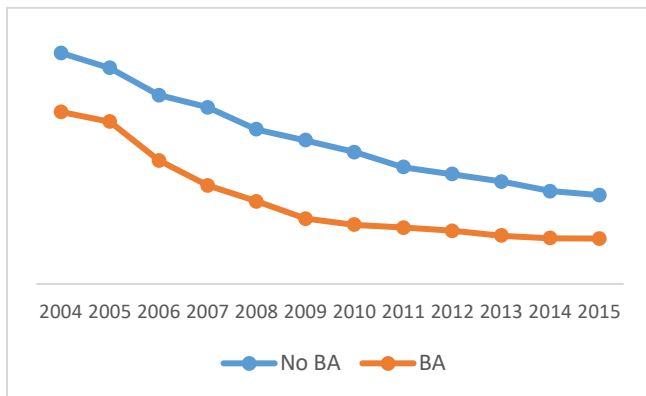


Figure 8 Poverty levels in locations with and without Banco Azteca

Nonetheless, using regression analysis, we find that living in an ubigeo (geographical location) with Banco Azteca presence in fact does decrease the probability of a respondent being moderately poor or extremely poor. In a model using data for the entire country (Model 1), the results show that living in a Banco Azteca location makes an individual's odds of being poor .88 of those of a similar individual living in a non-Banco Azteca location. The effect is stronger when estimating the model for Metropolitan Lima areas only, where the odds ratio is .75 (Model 3). These results suggest that Banco Azteca's presence had a positive effect in decreasing poverty levels, but this effect was much stronger in Metropolitan Lima. It can be speculated that the opportunities of turning capital into a lucrative activity were higher in these urban areas.

In unreported models, we also find that Banco Azteca presence did not impact extreme poverty, which is in fact not surprising, given that its clients are not typically extremely poor. The channels behind this reduction in poverty are not clear, given the data. One possible channel is the above-mentioned reduction in unemployment. However, other explanations are also possible. For example, credit from Banco Azteca may have been used to invest in equipment to increase the productivity of small enterprises or to change the focus to more profitable activities. Another possible explanation is the use of formal credit to deal with emergencies or other types of shocks, either by avoiding the fees charged by a money lender or by simply being able to bridge a difficult period and thus avoid falling into poverty.

Since the data at hand does not include information related to financial inclusion, we do not know which of the respondents in reality had access or used Banco Azteca services. In addition, Banco Azteca's presence may also have had an indirect effect. The presence of Banco Azteca branches has increased the level of access to credit and other financial instruments for the poor in these areas—a direct effect. However, by increasing the level of competition it may also have improved the market conditions in these areas. For examples, local MFIs may have been forced

to improve the terms of their own credit offerings, thus further benefiting the lower-income population.

## Conclusions

The development of the financial sector has a recognized positive impact on economic growth. To date, the impact of financial depth on poverty reduction is not equally well studied or unquestionable. The research on the effect of financial access on poverty is still in its infancy, but there is evidence which suggests that access to finance may help the poor make strides toward escaping poverty.

This study adds to the existing evidence that financial access can, under the right conditions, be pro-poor. The research focused on the impact of Banco Azteca opening over 100 branches in Peru. In particular, we were interested in estimating whether Banco Azteca had an impact on outcomes related to poverty. Using difference-in-differences as our econometric method, we find evidence which strongly suggests that financial services that are open and accessible to the lower-income population have a positive impact on poverty reduction and on unemployment levels. The odds of being poor (extremely or moderately) or of being unemployed are lower in regions where Banco Azteca opened branches, post-branch opening. The results need to be qualified by known weaknesses of the methodology, and in particular the fact that the regions where Banco Azteca opened its branches were likely not randomly chosen.

The mechanisms and channels behind these findings are not clear, and Banco Azteca's impact may be not only direct, by extending credit to clients who may not have had sufficient access previously, but also indirect, by increasing competition in the market.

## Annex

Table 1 Dependent variable: Unemployment

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
Treatment dummy	0.0994**	(Excluding Metropolitan Lima) 0.124***	0.0999**	(Excluding Metropolitan Lima) 0.124***
	(-3.07)	(-4.12)	(-3.09)	(-4.11)
After dummy	-0.460***	-0.416***		
	(-15.70)	(-15.20)		
DiD	-0.123***	-0.116***	-0.121***	-0.113**
	(-3.50)	(-3.31)	(-3.44)	(-3.22)
Male	-1.016***	-1.065***	-1.019***	-1.067***
	(-57.42)	(-58.84)	(-57.49)	(-58.87)
Age	-0.0181***	-0.0185***	-0.0174***	-0.0179***
	(-19.79)	(-19.81)	(-18.95)	(-19.14)
Education dummies	Yes	Yes	Yes	Yes
Marital status dummies	Yes	Yes	Yes	Yes
Location size dummies	Yes	Yes	Yes	Yes
Year dummies	No	No	Yes	Yes
Const.	-3.237***	-3.051***	-3.183***	-2.963***
	(-22.49)	(-19.98)	(-21.82)	(-19.16)
Obs.	348797	280388	348797	280388

t statistics in parentheses

\* p<0.05,

\*\*

p<0.01,

\*\*\*

p<0.001



Table 2 Dependent variable: Poverty

	<b>Model 1</b>	<b>Model 2</b> (Metropolitan Lima only)	<b>Model 3</b>	<b>Model 4</b> (Metropolitan Lima only)
Treatment dummy	0.224***	0.972***	0.215***	0.993***
	-11.01	-10.9	-10.49	-11.11
After dummy	-1.062***	-0.969***		
	(-62.60)	(-7.47)		
DiD	-0.124***	-0.283*	-0.110***	-0.318*
	(-5.47)	(-2.15)	(-4.83)	(-2.41)
Male	0.140***	0.119***	0.141***	0.119***
	-11.91	-5.25	-11.88	-5.18
Age	-0.0292***	-0.0262***	-0.0286***	-0.0256***
	(-49.05)	(-23.00)	(-47.46)	(-22.11)
Education dummies	Yes	Yes	Yes	Yes
Marital status dummies	Yes	Yes	Yes	Yes
Location size dummies	Yes	Yes	Yes	Yes
Year dummies	No	No	Yes	Yes
Const.	-1.980***	-1.222	-1.567***	-1.235
	(-10.66)	(-1.14)	(-8.39)	(-1.15)
Obs.	348797	68409	348797	68409

t statistics in parentheses

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

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