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Financial Inclusion Status in Peruvian Households

The objective of achieving universal financial access by 2020, expressed by the president of the World Bank, is another attempt to recognize the important role of financial inclusion (hereafter, FI) for economic growth and alleviation of poverty. In this context, the coming years will present a worldwide challenge in terms of objectives and commitment to accomplishing the common goal of improving financial inclusion.

In this note, we focus on the determinants of FI for Peruvian households. Peru is considered one of the best environments for financial inclusion in the world. However, to the best of our knowledge, there are no studies from the point of view of demand that analyse the FI problem.

According to the latest World Bank estimates, there are still around 2.5 billion people in the world who do not have a bank account. Global Findex data for 2011 reveal that only around 50% of adults (people aged 15 and above) in the world have at least one bank account in the formal financial system. However, this percentage of individuals with a bank account varies considerably between developed and developing countries. In developing countries, banking penetration rates are far below the average. In Africa, the percentage of adults with a bank account is 20%, and in Latin America 39%. The problem of involuntary financial exclusion requires intervention to address market failures such as asymmetric information, lack of competition in the markets or insufficient infrastructure. These failures make it difficult for certain population groups, low-income population or those who have traditionally been more vulnerable, such as women, young people or people who live in rural areas, to use formal financial services.

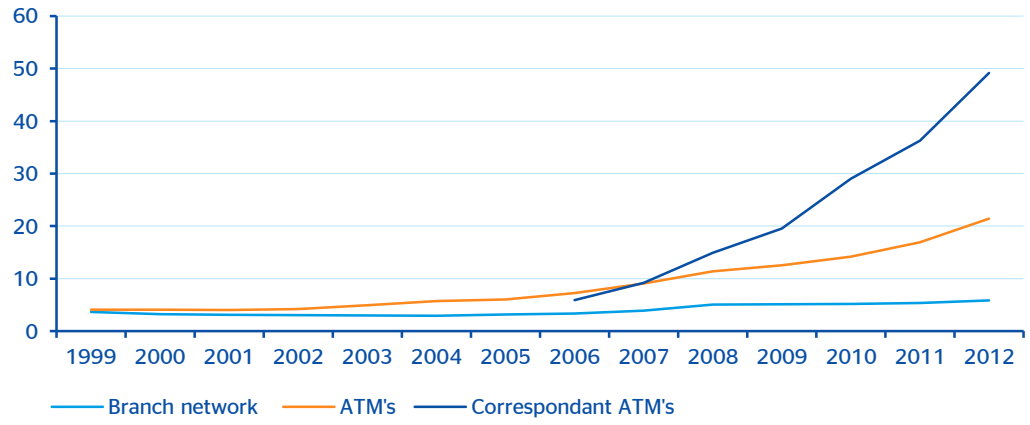
The year 2014 starts in Peru with a strong commitment for achieving greater levels of FI. The goal is to foster welfare of individuals by focusing on the poorer households that are the ones most affected by financial exclusion.

In the last 20 years, banking penetration (users of financial services over the GDP) in Peru has grown rapidly. According to ASBANC, the Peruvian banking association, the banking penetration ratio in 2013 is almost three times higher than in 1993. The Global Findex (2012) shows that 20.5% of the Peruvian population aged over 15 has a bank account[1]. This is far below the 42.2% in Chile and the more than 55.9% in Brazil.

1 The figures by gender show that the proportion of banked men, out of the total adult population age 15 and above, is higher than the proportion of women, at 23.4% and 17.6% respectively. People living in urban areas have a banked rate of 24.4% and people living in rural areas 13.3%. 5.3% of the bank accounts in Peru are inactive since there have not been any deposits or withdrawals in a given month.

In terms of access, it is interesting to see how new forms of banking have been gaining strength since their implementation in the mid-2000s. Correspondent banking is an alliance between the banking sector and other non-financial agents to expand the supply of banking services by offering broader access. The goal is to provide basic financial services, such as cash-in, cash-out, deposits, payments or insurance acquisitions, on behalf of banks and under the same conditions as at bank branches. Correspondent banking provides not only more extensive geographical coverage, particularly in remote areas, but also more intensive coverage, by lengthening opening hours. This promising way of offering banking services is an opportunity to improve FI in economies such as Peru where the geography makes access difficult. There are also other important advantages in the significant reduction in waiting times due to the congestion of traditional bank branches, easier communication between customers and banks[2], lower supply costs and greater security when carrying out transactions compared with ATMs in the street. According to the survey carried out by the Center for Financial Inclusion for Peru (2012), correspondent banking and mobile banking, the latter used by 1.8% of adults, are considered among the best opportunities for fostering FI. As shown in Figure 1, access to banking services through correspondent banking is now significantly greater than the sum of all traditional banking: bank branches and ATMs.

Chart 1
Coverage of banking services per 100,000 inhabitants



Source: BBVA Research with Asbanc data

Financial inclusion and individual characteristics

The CGAP defines FI as the situation that aims to ensure that everyone who wants to use financial services has access to them at affordable prices, provided for customers in a convenient and responsible fashion. We approach the study of FI through the concept of use of formal financial services. This is a commonly used definition that provides a first approximation to the link between a financial system and individuals[3].

We use information from the 2011 National Household Survey (ENAHO), developed by the *Instituto Nacional de Estadistica y Tecnologías de la Información* (INEI), to identify the

2: Correspondent banking can be at supermarkets, pharmacies, petrol stations, etc. that are part of a customer's daily routine. Customers feel more comfortable when interacting with these agents than with bankers, which in turn makes purchasing financial products easier. This also applies in terms of trust.
3: From a microeconomic perspective, the few attempts to measure FI focus on different indicators to proxy access and use of banking services (Allen et al., 2012; Demirgüç-Kunt and Klapper, 2012; AFI, 2013).

microeconomic factors affecting the likelihood of FI for households[4]. Although ENAHO is not a specific survey for FI, we can get useful information that allows us to address some of the issues in our analysis. The ENAHO is representative of the whole country and covers both urban and rural areas in the 24 administrative departments and the Constitutional Province of Callao[5]. These departments are divided into eight geographical regions: metropolitan Lima, Costa Norte, Costa Centro, Costa Sur, Sierra Norte, Sierra Centro, Sierra Sur and Selva. The population for our study is defined as all the households and their occupants living in urban and rural areas of the country. The survey is published both quarterly and annually[6].

We construct our variable of interest to proxy FI as the likelihood of an individual using financial services. A household is included in the banking system if falls into at least one of the following categories: it receives interest on one or more financial products, has a mortgage loan or carries out online banking transactions. Thus, FI is a binary variable that takes the value 1 if the person fulfils at least one of the three conditions, and 0 otherwise[7]. We consider households, in contrast to enterprises, as the individuals who are employees or independent workers, workers without wage (i.e. housekeepers) or employers with less than five employees. We decided to include this group of employers as representative of households due to the interaction between personal and business finance for small enterprises. In a recent paper, Attanasio et al. (2011) show that more than half of the microcredits granted to small businesses were used for household purposes and not for the business. The most common uses are the purchase of electrical appliances for the house, paying for household loans and smoothing the seasonality of consumption. So, in terms of finance, the behaviour of these agents is more similar to households than to enterprises.

Drivers of financial inclusion for households

We estimate several Probit models to compute the probability of an individual belonging to the group under study (those included in the formal financial system). Significant correlations get us some insights about factors that could affect the probability of FI for households, beyond idiosyncratic characteristics[8]. Table 1 shows the estimates and Table 2 a detailed description of the explanatory variables.

As observed in column 1 of Table 1, most of these variables are significant at conventional levels and all of them have the expected sign. Living in rural areas, being a woman, having a low educational level and low income, being single and more people with a wage in the household appear as significant factors that reduce the likelihood of using financial products. These results are in line with those of Allen et al. (2012). The factors with the biggest impact on the probability of using banking services include living in a rural environment (reduces the likelihood by 3% compared to an identical individual living in an urban area), literacy (increases the likelihood by 3% compared to an illiterate individual) and income (increases the likelihood by around 3.5% for each income quintile, taking as a control group the highest income level quintile). It is interesting to notice the substitution effect between the number of people receiving income in the household and the use of financial products, although these impacts on FI are lower than the previous ones. It could be reflecting the costs of accessing financial services, since they would use an only bank account for all the members in the household. Thus, if there is already a person in the household who has a financial product, the rest of the

4: ENAHO-2011 was based on a probabilistic multi-stage sample, stratified by geographical areas. The size of the sample is 26,456 households, 16,368 in urban areas and 10,088 in rural areas. See: http://www.inei.gob.pe for a detailed description of the methodology used for preparing the ENAHO
5: Members of the armed forces living in barracks, camps, on board ships, etc. are excluded from the sample since they are not part of the population under study. Also excluded are people who live in collective housing (hotels, hospitals, institutions, religious retreats, prisons, etc.).
6: Households are visited monthly, giving rise to quarterly and annual surveys with different levels of representativeness.
7: Although this proxy is far from perfect, it is relatively accurate.
8: Notice that in the definition of individuals we include those employers with fewer than four employees, since we consider that they represent the behaviour of households rather than enterprises.

members of the household probably share the product rather than buying a new product and using it exclusively.

The second column of Table 1 includes some additional variables of interest, such as whether a household runs a surplus or deficit. The results show that those households with financial needs are more likely to use banks than those having the capacity to save. This is one of the factors with the greatest impact on FI. Our estimates show that having the capacity to save is not a significant factor for FI. This result is in line with those obtained by Collins et al. (2009)[9].

Owning a house increases the probability of using banking services by 2%. This could be because ownership of an asset such as a house provides a guarantee that banks often seek as collateral for loans. Property owners are more likely to fulfil the documentary requirements and guarantees than those who do not own a house.

Finally, it is interesting to check how important access is for FI, particularly in developing countries. Once we control for aspects such as income, education and gender, town size appears to be a good proxy to analyse the effect of access as a driver for FI. Column 3 in Table 1 shows the link between spatial variables and FI. Living in very small towns (less than 401 households) reduces the likelihood of using banking services. Living in remote areas, where access to the financial system is generally more limited, seems to be a major problem for FI since financial institutions tend to locate branches in densely-populated areas to take advantage of economies of scale. However, this problem has been tackled recently with the development of mobile banking schemes. This new model of banking aims to promote FI and focuses on minimising the problems of access, through the use of technology or correspondent banking. The combination of technology (mainly the use of cell phones) and expanded coverage through an extensive network of banking correspondents (stores, drugstores or other establishments providing banking services on behalf of a bank) makes it much easier to foster FI[10]. Our results are robust to alternative specifications[11].

Conclusions

This note offers a basic approach to the link between FI and individual characteristics of Peruvian households.

FI is important for sustainable economic growth and the improvement of social well-being. How to build inclusive financial systems is a challenging subject on the agendas of researchers, policymakers, regulators and financial institutions. This is particularly important in developing countries and emerging markets, where banking penetration rates are relatively low. In addition to the macroeconomic determinants, the link between individual characteristics and FI is also important. It is necessary for people to be aware of the benefits of having access to financial systems, and to understand the consequences of involuntary financial exclusion.

We estimate some Probit models to analyse some of the relevant characteristics for FI, with the information in ENAHO. We find that being a woman, living in a rural area or having a low income and educational level may reduce the likelihood of being included in formal financial system. Also, households with cash flow problems are more prone to use banking services than those with savings. Finally, living in small cities is a disadvantage for FI.

9 For poor households, it is not easy to decide which is the most appreciated financial service. On the one hand, microcredits have focused on loans as an important product. On the other hand, those in favour of the savings programmes consider that saving is the fundamental need for these types of households and they claim more attention.
10: For a more detailed discussion on mobile banking in Peru, see Alonso et al. (2013).
11:Our definition of FI may be underestimating the number of households that use banking services. The reason is that there could be other relationships with banks that cannot be accounted for in the information from ENAHO. However, we consider that our definition is broad enough to get a good proxy for FI in Peru. It accounts for more than half of the households that use banking services in Peru, according to the estimates by the World Bank The definition for the endogenous variable is the best estimate that can be obtained using ENAHO information, which is not specifically financial. This is not a significant problem, given that our objective is not to predict the levels of financial inclusion, but to analyse the effects of the socioeconomic characteristics of individuals on financial inclusion (and exclusion).

Peru has already started to construct the basis for FI. The Peruvian government is designing the National Strategy for Social Inclusion, which includes the National Strategy for Financial Inclusion. In 2012, the government approved the *e-Money* regulatory framework that aims to promote FI by enhancing access to the financial system without a prohibitively expensive infrastructural investment. This kind of regulation, together with the improvement in technologies and the high penetration of mobile phones, would make mobile banking a more efficient alternative to traditional branch banking, especially in terms of the cost of product delivery. This seems very promising in a country like Peru, where the geography and the dispersion of the population make access one of the most important obstacles to FI.

Although a lot of work has already been done, there is still a long way for FI to go in Peru. The information for implementing inclusive strategies needs a strong commitment from both public and private institutions, working together to achieve the goals. Better financial information, including behavioural issues, is essential to make progress.

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Table 1
Household characteristics and banking

Banked household (1/0)	(1)	(2)	(3)
Rural	-0.0309324***	-0.0335627***	-0.0363028***
	(0.0037)	(0.00367)	(0.00479)
Woman	-0.0085476***	-0.0089877***	-0.0088927***
	(0.00327)	(0.00323)	(0.00323)
Single	-0.0067631*	-0.0088973**	-0.0091609**
	(0.00378)	(0.00381)	(0.00381)
Literate	0.0256241***	0.023656***	0.0238766***
	(0.00918)	(0.00893)	(0.00893)
Worker without wage	-0.0192492***	-0.0206411***	-0.0202361***
	(0.00445)	(0.00435)	(0.00435)
Independent worker	-0,0027933	-0,0035034	-0,00349
	(0.0038)	(0.00372)	(0.00372)
Employer (<5 people)	-0,0050841	-0,0053327	-0,0054119
	(0.00807)	(0.00788)	(0.00784)
Household expenditure	0.000000561***	0.000000531***	0.000000524***
	(0.000)	(0.000)	(0.000)
Net annual household income	0.000000137*	0.00000014*	0.000000144**
	(0.000)	(0.000)	(0.000)
Non-wage annual income	0.000000563**	0.000000515**	0.000000518**
	(0.000)	(0.000)	(0.000)
Annual income remittances from abroad	-0,00000027	-0,000000317	-0,000000343
	(0.000)	(0.000)	(0.000)
Annual income private transfers	-4,04E-07	-0,000000209	-0,0000002
	(0.000)	(0.000)	(0.000)
Annual income public transfers	-8,9E-08	-0,000000115	-0,000000108
	(0.000)	(0.000)	(0.000)
Age	0,0001064	0,0000813	0,000035
	(0.00064)	(0.00065)	(0.00065)
Age squared	-0,00000859	-0,0000094	-0,00000887
	(0.00001)	(0.00001)	(0.00001)
Education	0.0085157***	0.0084771***	0.008488***
	(0.0009)	(0.00089)	(0.00089)
Annual household cell phone expenditure	0.0000107***	0.0000102***	0.0000104***
	(0.000)	(0.000)	(0.000)
Household income recivers	-0.0072121***	-0.0084818***	-0.0084998***
	(0.00133)	(0.00135)	(0.00135)
Poor household	-0,0010699	-0,00177	-0,0019589
	(0.00556)	(0.00546)	(0.00545)
Income quintile 1	-0.0492952***	-0.048868***	-0.0477838***
	(0.00452)	(0.00436)	(0.00447)
Income quintile 2	-0.0414753***	-0.0414314***	-0.0406367***
	(0.00428)	(0.00415)	(0.00418)
Income quintile 3	-0.0304195***	-0.0315131***	-0.0308936***
	(0.00428)	(0.00413)	(0.00413)
Income quintile 4	-0.0148504***	-0.0157301***	-0.0154926***
	(0.00418)	(0.00407)	(0.00407)
Expenditure per capita (district)		-4,83E-08	-0,0000002
		(0.000)	(0.000)
Home ownership		0.0194931***	0.0199194***
		(0.0033)	(0.0033)
Surplus-household		0,0041189	0,0044836
		(0.00527)	(0.00528)
Overdrawn-household		0.0329358***	0.0327126***
		(0.00464)	(0.00465)
Towns of 20,001 to 100,000 homes			-0,0027653
			(0.00421)
Towns of 10,001 to 20,000 homes			-0,0005576
			(0.00568)
Towns of 4,001 to 10,000 homes			0,0050611
			(0.00609)
Towns of 401 to 4,000 homes			-0,0064287
			(0.00584)
Towns of with less than 401 homes			-0.0264015***
			(0.00603)

***, ** and * denotes significance to 99%, 95% and 90%respectively.
Values in brakets are the standard errors.
Source: BBVA Research with data from ENAHO 2011

Table 2.
Description of the variables in the household regressions

Variable	Description
Bank user (0/1)	A household is considered to be banked if it falls into one of the following categories: it has a mortgage, receives interest on some financial product (savings…) or carries out online banking transactions.
Rural (0/1)	Dummy that takes the value 1 if the respondent lives in a rural area and 0 otherwise.
Woman (0/1)	Dummy that takes the value 1 if the respondent is a woman and 0 otherwise.
Single (0/1)	Dummy that takes the value 1 if the respondent is single and 0 otherwise.
Literate	Dummy that takes the value 1 if the respondent can read and write and 0 otherwise.
Worker without wage	Person who works for the family business, house-wifes, etc…
Independent worker (0/1)	Dummy that takes the value 1 if the respondent is an independent worker and 0 otherwise.
Employee (0/1)	Dummy that takes the value 1 if the respondent works for a formal company and 0 otherwise.
Employer (0/1)	Dummy that takes the value 1 if the respondent is an employer and 0 otherwise.
Annual household spending	Total household spending (in soles)
Net annual household income	Annual household income (net), (in soles)
Non-wage annual income	Monetary income from property rental, (in soles)
Annual income remittances from abroad	Monetary income from remittances received by the household from abroad, (in soles)
Annual income private transfers	Monetary income from private transfers, (in soles)
Annual income public transfers	Monetary income from public transfers, (in soles)
Age	Age in years
Educational	Years of education
Age squared	Age in years, squared
Annual household cell phone expenditure	Household spending on mobile telephony, (in soles)
Recipients of income in household	Number of individuals in the household earning income
Poor household	Dummy that takes the value 1 if the household is in a condition of poverty or extreme poverty according to the national measurement (poverty/extreme poverty line) and 0 otherwise
Income quintile 1 (0/1)	Dummy that takes the value 1 if the respondent is in the lowest income quintile and 0 otherwise. Income quintiles depend on the income of a country's respondents.
Income quintile 2 (0/1)	Dummy that takes the value 1 if the respondent is in the second lowest income quintile and 0 otherwise. Income quintiles depend on the income of a country's respondents.
Income quintile 3 (0/1)	Dummy that takes the value 1 if the respondent is in the middle income quintile and 0 otherwise. Income quintiles depend on the income of a country's respondents.
Income quintile 4 (0/1)	Dummy that takes the value 1 if the respondent is in the second highest income quintile and 0 otherwise. Income quintiles depend on the income of a country's respondents.
Per capita income (district)	Average income of each of the households, in the districts of residence (in soles)
Home ownership	Dummy that takes the value 1 if the respondent owns a home and 0 otherwise.
Household saves	Dummy that takes the value 1 if the household has a surplus at the end of the month and 0 otherwise.
Household in debt	Dummy that takes the value 1 if the household has a deficit at the end of the month and 0 otherwise.
Towns of 20,001 to 100,000 homes	Dummy that takes the value 1 if the respondent lives in a population center of 20,001 to 100,000 homes and 0 otherwise.
Towns of 10,001 to 20,000 homes	Dummy that takes the value 1 if the respondent lives in a population center of 10,001 to 20,000 homes and 0 otherwise.
Towns of 4,001 to 10,000 homes	Dummy that takes the value 1 if the respondent lives in a population center of 4,001 to 10,000 homes and 0 otherwise.
Towns of 401 to 4,000 homes	Dummy that takes the value 1 if the respondent lives in a population center of 401 to 4,000 homes and 0 otherwise.
Towns of less than 401 homes	Dummy that takes the value 1 if the respondent lives in a population center of 401 homes and 0 otherwise.

Source: BBVA Research

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