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BANKING THE POOR THROUGH MOBILE TELEPHONY: UNDERSTANDING THE CHALLENGES FOR EXPANDING MOBILE-BASED FINANCIAL SERVICES IN PARAGUAY*

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INTRODUCTION

This paper summarizes the findings of a study analyzing the ecosystem for deployment of Mobile Financial Services (MFS) in Paraguay. The study was part of an effort to examine that ecosystem in four countries in the region, examining them from a comparative perspective. The countries chosen are in an early phase of MFS development and show great potential for MFS deployment, and the goal was to gain an understanding of both the conditions for and the bottlenecks affecting MFS expansion. Besides Paraguay, the study covered Peru, Guatemala and El Salvador, resulting in four case studies (one per country) and a comparative analysis based on those case studies.

The studies were made possible by support from the Institute for Money, Technology and Financial Inclusion at the University of California, Irvine, as well as the Regional Dialogue on the Information Society (*Diálogo Regional para la Sociedad de la Información*, DIRSI) and the Proyecto Capital.[1] These latter initiatives are supported by the Ford Foundation and the IDRC and are among the activities of the eco-

* The complete document is available at the Capital Project: <www.proyectocapital.org>.

1. This study and the others will be available on the Web sites of DIRSI (<www.dirsi.net>) and the Proyecto Capital (<www.proyectocapital.org>).

nomics area of the Institute of Peruvian Studies (*Instituto de Estudios Peruanos*, IEP).

This study adapted the Telecommunications Regulatory Environment (TRE) methodology (LIRNE*asia*, 2008), which involves surveying key stakeholders about their perceptions. Questionnaires were sent (and responses received) between September and November 2012, which was the time frame for this and the other case studies. Each study was carried out by a local team, coordinated by the DIRSI project and implemented by the IEP.

Potential of MFS

In economics, the importance of providing financial services to the lowest-income population is a given. There are many barriers, however, including high infrastructure costs, requirements for opening accounts, the limited number of financial institutions and services, etc. MFS are emerging as an alternative for overcoming these obstacles. MFS are financial services, such as transfers, withdrawals, etc., provided by mobile telephony. The key is that these services take advantage of the existing penetration of mobile telephony, which, because it reaches the bottom of the income pyramid, solves the infrastructure problems inherent in serving this population. This significantly lowers costs, as well as some of the other barriers mentioned above. Optimism about this potential is reinforced by prior experience in several developing countries.

In recent years, Paraguay has seen a significant increase in mobile telephony penetration in households at various socio-economic levels, including those in poverty and inhabitants of rural areas.[2] There has also been expansion of financial institutions, such as banks, finance companies and cooperatives, although financial inclusion is still far from optimal. As a result, there has been a strong deployment in telecommunications, which has not been as notable in the financial sector. Meanwhile, Tekoporâ, the conditional cash transfer (CCT) program that began in 2005, offers the possibility of using MFS for transfers.

With these developments, MFS show a strong potential for increasing financial inclusion in Paraguay. The purpose of this study is to analyze the MFS ecosystem, which is key for MFS deployment. This summary will begin by describing some indicators of investment in the financial sector.

Investment indicators

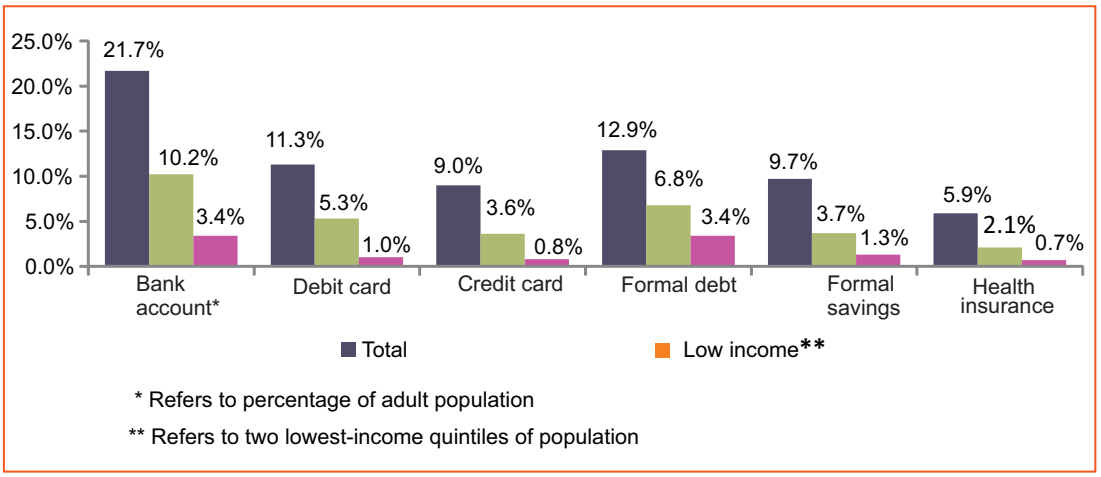
The Paraguayan financial system is headed by the Central Bank of Paraguay (*Banco Central de Paraguay*, BCP) and the Office of the Superintendent of Banks (*Superintendencia de Bancos*, SIB). In general, it has shown healthy investment and profitability indicators in recent years. Data from the SIB show that the sector's assets grew in 2011 by 21 percent over the previous year, while profits increased by 16.8 percent. Our main interest, however, is financial deepening, as well as access to the financial system and the way in which the system is used.

There has been progress in financial deepening, with loans (as a percentage of GDP) increasing from 27.7 percent to 41.8 percent between 2006 and 2011 (IMF, 2012), while deposits increased from 21.2 percent to 36 percent during the same period. Financial access

2. For example, mobile density increased from 53.8 lines to 99.8 between 2006 and 2011, according to the National Telecommunications Commission (*Comisión Nacional de Telecomunicaciones*, CONATEL), the regulatory agency. During the same period, the proportion of households with mobile telephones increased

shows moderate improvement, with the number of commercial bank branches per 100,000 adults increasing from 4.0 in 2005 to 9.5 in 2011. This advance is considerably smaller when viewed as branches per 1,000 square kilometers, which expanded from 0.4 to 1.0 during that period. The number of ATMs in 2011 totaled 18.8 per 100,000 adults or 2.0 per 1,000 square kilometer (Ibid). Figure 1 shows indicators for use of the financial system.

Figure 1: Financial use in Paraguay (% of population with account), 2011



Source: World Bank Group (2012), "Global Findex"

Compiled by authors

Methodology

The methodology used is an adaptation of the TRE methodology (LIRNEasia, 2008), which involves surveying key stakeholders in appropriate sectors about their perceptions of important dimensions for MFS deployment. These dimensions are divided into three environments established a priori, based on a literature review: (i) institutional environment, (ii) market environment, and (iii) end-user environment. The first consists of six dimensions, the second of five, and the third of three; the 14 dimensions are explained in Appendix 1. A questionnaire was sent to the identified experts,[3] who were asked to score each dimension of the MFS ecosystem using a Likert (1932) scale ranging from 1 (very ineffective) to 5 (very effective). A dimension is considered effective if scores higher than the threshold of 3.

Key stakeholders were divided into three categories: (i) those directly affected by the regulation of the sectors involved, (ii) those who analyze the sector from a broader perspective (e.g., consultants from financial institutions), and (iii) those interested in improving the public sector (e.g., academics and research organizations). Questionnaires were sent to members of the three categories, and the number of responses differed by category. Because it is desirable for the categories to have equal weight when calculating the final result, the responses were weighted, with greater weight given to each response in categories with fewer responses. Appendix 2 shows the number

3. Experts were identified by the local team in each country, following implementation of the methodology.

of experts identified, the number of responses received and the weight given to each.

To understand the results, which are based on perceptions, a prior assessment was done of both the telecommunications and financial sectors. The latter included an assessment of the ecosystem for MFS, which is especially important for understanding the results. The following section explains the latter assessment and key results.

Ecosystem for MFS and key results

In Paraguay, mobile telephone companies have partnered with banking entities to offer MFS. Examples include partnerships between Tigo and Banco Visión and between Personal and Banco Atlas, which already offer these services in the marketplace. This paper, however, is interested in analyzing the ecosystem for MFS – the conditions that promote the investment and deployment of these services. Based on a literature review, three areas were identified for analysis: (i) institutional environment, (ii) market environment, and (iii) end-user environment. Each was divided into several dimensions.

Institutional environment

The institutional environment analyzes characteristics associated with regulatory aspects and the role of the main public agencies involved. It is evaluated based on six dimensions:

First, ***financial system regulation for MFS*** shows that there is still no specific regulation in this area, although the BCP is making some strides. There is a proposal to establish requirements for enterprises offering MFS, differentiating them according to whether or not they provide the service linked to a bank account. Those that do not link to a bank account will face stricter requirements, such as a minimum level of capital, solvency and a guarantee fund.

The BCP is also spearheading financial system regulations to encourage financial inclusions. It has launched one proposal related to microfinance[4] and another related to basic bank accounts (low entry barriers).[5] In both cases, the goal is to include sectors of the population that are traditionally excluded from access to the financial system, offering a wider range of services.

There has been very slight ***progress in telecommunications sector regulation for MFS*** and financial inclusion. The regulatory agency has not been involved in MFS regulation, partly because MFS are considered value-added services that should be left to free competition among operators.

Coordination and joint policies for MFS supply are also lacking because of a lack of communication between the sectors' regulatory agencies. Nevertheless, the BCP has coordinated with the mobile telephone companies Tigo and Personal to develop regulations for MFS.

Finally, there are not yet any ***specific regulations for MFS-related consumer protection.*** Nevertheless, the BCP has ordered (i) the creation of an office to handle financial user' complaints, (ii) the creation of a link on its Web page for consultations and complaints, and (iii) information about consumer-protection rules on the Web. Meanwhile, CONATEL, based on its Resolution 1063/2001, established rules for handling complaints, although they refer to mobile services in general, not specifically MFS.

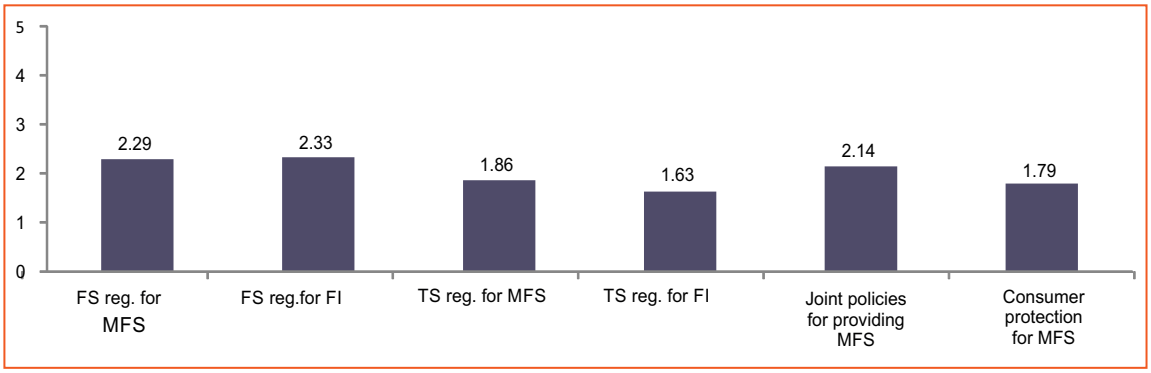
This shows that regulation is either non-existent or in a very early stage. Paraguay lags behind in all dimensions, especially those re-

4. The project seeks to improve articles referring to credit in Law 4457/12 on microenterprises and small and mid-size enterprises, which took effect in 2012.

5. These proposals stem from a consultancy by the Inter-American Development Bank (IDB) in 2011.

lated to the telecommunications sector. This is evident in Figure 2, which shows the results for this environment, in which no dimension exceeds the efficacy boundary.

Figure 2: Results of evaluation of institutional environment



Market environment

Evaluation of the market environment examined aspects associated with competition among private operators, the degree of innovation and catalysts for development of the MFS ecosystem. This environment was divided into five dimensions:

First, ***competition in the financial sector*** reflects a relatively unconcentrated industry in comparison with other countries in the region, although with a slight upward trend. The three largest banks' market share increased from 45.4 percent in 2006 to 51 percent in 2012 for loans and from 43.1 percent to 48.5 percent for deposits during the same period.

Competition in the telecommunications sector shows a market dominated by Tigo, followed by Personal. These two companies represented 94.4 percent of the market in 2001, up from 78.5 percent in 2006; currently (as of the end of 2012), they have 87.8 percent of the market, according to CONATEL data. It should be noted, however, that there is healthy, dynamic competition in efforts to attract and keep customers.

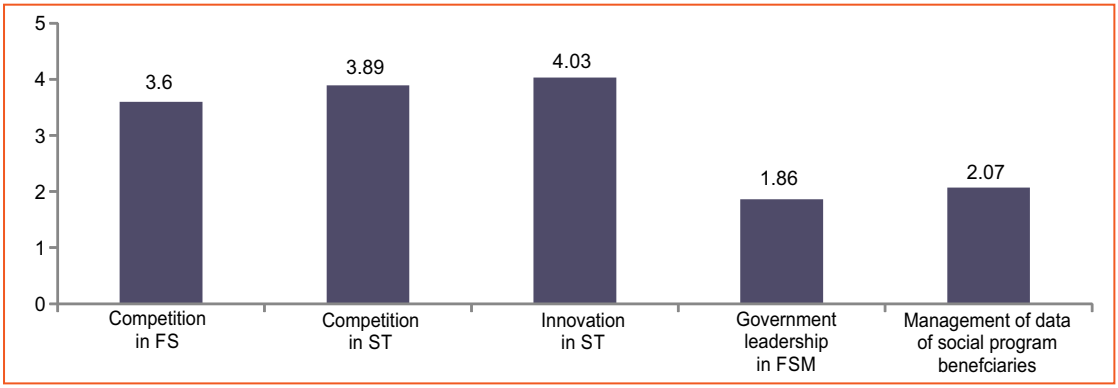
Innovation in the telecommunications sector is dynamic, with high levels of technology. HSPA and HSPA+[6] technology are used, and a proposal has been presented to CONATEL to move to «Long Term Evolution» (LTE) technology.[7,8]

In the area of ***government leadership on MFS,*** it seems clear that the government is not serving as a catalyst. The country has had CCT programs since 2005, but has not arranged for payments to be made using MFS. There have, however, been efforts to link these programs with others for financial education and inclusion for beneficiaries.

Finally, ***management of data about beneficiaries of social programs*** shows partial progress. Their socio-economic characteristics are being recorded in a database called the «household form»; this information is not public, however, and access is difficult.

Based on this evaluation, it is clear that the first three dimensions are healthy and dynamic, while the latter ones, which are related to the government's role, lag significantly behind. This corresponds to the findings resulting from the TRE methodology, as shown in Figure 3.

Figure 3: Results of evaluation of market environment



End-user environment

The end-user environment stresses the role of agents and infrastructure for MFS. It is divided into three dimensions:

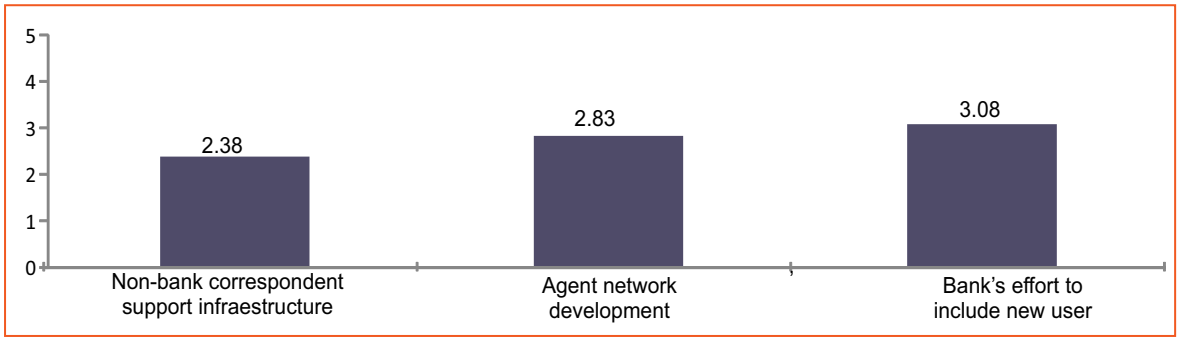
Support infrastructure for non-bank correspondents (agents) is relatively scant, although data are lacking. This could be because legislation in this area is very recent, having been approved in late 2011.

In addition, ***agent network development (penetration)*** is very weak and recent. In 2012, there were just 15 non-bank correspondents in the country. Financial entities are concentrated in the country's most developed urban areas, neglecting rural areas.

Finally, there have been some interesting ***efforts by banks to include/attract new users.*** The El Comercio finance company has a microcredit program for the farming, ranching and hotel sector, as well as the traditional commercial sector. It also has a Community Banking product targeting low-income rural and marginal urban dwellers, which would lend itself to being provided by MFS. Banking entities are also working on microcredit to be offered via mobile banking or MFS.

The last dimension is the most highly developed, therefore, while progress is still minimal in the other two. The results are consistent, with only the third dimension surpassing the efficacy boundary, as seen in Figure 4.

Figure 4: Results of evaluation of end-user environment

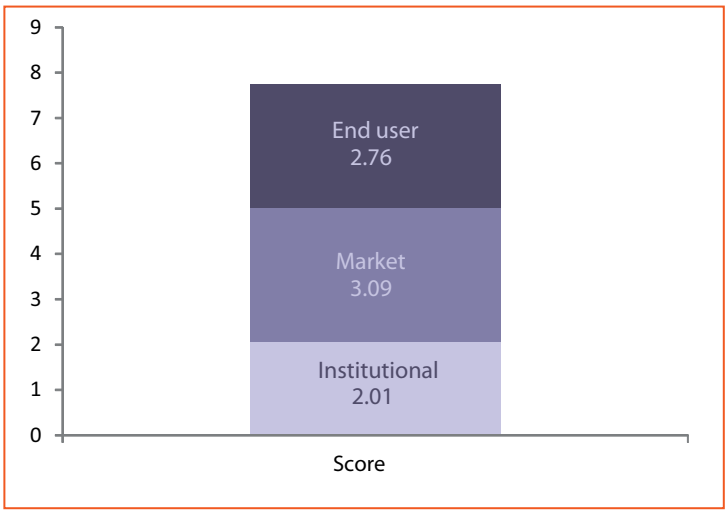


Overall results

Figure 5 shows overall results, with the average for each environment. As the previous sub-sections indicate, the institutional environment is the weakest, with incipient development, reflected in the fact that no dimension surpasses the efficacy boundary. The market environment is perceived as the most effective, espe-

cially because of the scores in the first three dimensions. Finally, the end-user environment is at a mid-point, with only one of the three dimensions above the efficacy boundary.

Figure 5: Evaluation results, by environment



Conclusions

This paper describes existing conditions for MFS deployment. It begins by highlighting development in the financial sector, although it still lags behind other countries in the region.

Regarding the MFS ecosystem, the prior assessment and the results from adaptation of the TRE methodology coincide closely. The institutional environment is weakest, because there is still no regulation in the financial sector, although some steps have been taken in that direction. The telecommunications sector has not been involved in regulation; as a result, coordination is also minimal. In the market environment, the results are significantly better in areas associated with competition and innovation. The government's role in leading and overseeing this process is seen as inefficient, however, receiving a much lower score. Finally, the end-user environment reflects the scant deployment and development of the agent network and infrastructure, but there have been efficient efforts by banks to attract new users.

Based on this data, some recommendations can be made. First, the BCP should formalize progress in consumer protection in MFS. Telecommunications sector entities must also become more involved in regulation for MFS and financial inclusion, as that sector is a key stakeholder. Coordination between the sectors should also improve considerably. The government's role should be emphasized, as it must be a key catalyst for MFS development; linking these services with CCT programs is crucial. Support should also be provided for deployment of the agent network, as well as adequate associated infrastructure. Finally, in the academic sphere, this study should be followed up in the coming years to analyze how the dimensions evolve over time. That will provide valuable information for policy makers, which would be difficult to obtain in any other way.

Appendices

Appendix 1: Dimensions for evaluating the MFS ecosystem

Environment	Dimension	Aspects covered
Institutional environment	Financial system regulation of MFS	Licensing: complexity of process and specifics for issuing electronic money
	Financial system regulations for financial inclusion	Incorporation of mandates for financial inclusion
	Telecommunications sector regulation of MFS	Universal service and coverage requirements, regulation of quality, know-your-customer rules
	Telecommunications system regulations for financial inclusion	Incorporation of mandates for financial inclusion
	Coordination and joint policies for offering MFS	Joint policies of financial and telecommunications regulators
	Consumer protection for MFS	Measures for protection of MFS customers
Market environment	Competition in financial sector	Market concentration, profitability indicators and quality-of-service indicators
	Competition in telecommunications sector	Market concentration, profitability indicators and quality-of-service indicators
	Innovation in telecommunications market	Degree of innovation
	Government leadership on MFS	Government's degree of interest and openness
	Management of data and information management about users/beneficiaries of social programs	Databases to understand behavior and needs
End-user environment	Support infrastructure for non-bank correspondents	Infrastructure deployment (ATM, POS)
	Agent network development (penetration)	Agent distribution networks (retail outlets, sellers of prepaid cards, etc.)
	Bank efforts to include/capture new users	Policies for capturing new users

Source: The Mobile Financial Services Development Report 2011 / Compiled by: IEP

Appendix 2: Experts identified, responses received and weighting by category

Category	Experts (N)	Responses (N)	Wheiting of responses
Category 1	14	6	1.1
Category 2	9	6	1.1
Category 3	10	8	0.83
Total	**33**	20	--

References

IMF (2012). Financial Access Survey, database available at: <http://fas.imf.org/>

Likert, R. (1932). *A Technique for the Measurement of Attitudes.* Archives of Psychology, 140, 1–55

LIRNE*asia* (2008). *Manual of instructions for conducting the Telecom Regulatory Environment (TRE) assessment*. Colombo: LIRNE*asia*.

World Bank (2012). Global Findex [database available at:<http://datatopics.worldbank.org/financialinclusion/>.

World Economic Forum (2011). The Mobile Financial Services Development Report 2011. Geneva-New York.

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