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DISCLAIMER

The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

UNIVERSITY *of* VIRGINIA HONOR CODE

On my honor as a University of Virginia student, I have neither given nor received unauthorized aid on the assignment.

María José Corvalán

María José Corvalán Cabañas
April 5, 2024

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Glossary

ACH: Automated Clearing House

BCP: Banco Central del Paraguay (Central Bank of Paraguay)

ENIF: Estrategia Nacional de Inclusión Financiera Paraguay (National Strategy of Financial Inclusion)

FDIC: Federal Deposit Insurance Corporation

LBTR: Liquidación Bruta en Tiempo Real (Gross Settlement in Real Time)

MEC: Ministerio de Educación y Ciencias (Ministry of Education and Sciences)

MSMEs: Micro, Small, and Medium-sized Enterprises

SIPAP: Sistema de Pagos del Paraguay (Payments System of Paraguay)

SPI: Sistema de Pago Instantáneo (Instant Payment System)

Executive Summary

Financial inclusion is a significant problem in Paraguay that must be addressed for the continued growth of the economy and citizen's financial stability. The low levels of financial inclusion in Paraguay are apparent in the predominant use of cash and the low percentage of adults with an account in a formal banking institution (Del Valle & Carrasco, 2022). Only roughly 50% of the adult population holds a bank account in a formal institution, with young adults aged 18-35 being among the excluded (Gómez Rojas, 2023). The high percentage of unbanked adults can generally be explained through three main areas: lack of access, poor financial literacy, and dominance of the informal economy. Access constraints are not a significant issue in Paraguay, as there are bank branches located throughout the nation and the most reported reasons for not having a bank account involve "having no need for it," "lack of money," or "documentation issues." However, low levels of financial literacy persist in Paraguay, as only 10% of adults report having received education on managing finances (ENIF, 2013). The dominance of the informal sector is also apparent in Paraguay, with cash being the primary form of payment, accounting for over 76% of employee salaries ("Estrategia Nacional," n.d.). This reliance on cash presents economic inefficiencies and safety risks, such as vulnerability to robbery. Increasing formal banking uptake and usage is crucial, as it is correlated with various positive outcomes, including enhanced savings (Breza et al., 2020; Blumenstock et al., 2018), a decrease in crime rates (Wright et al., 2017), more streamlined wage payments (Dusza, 2016), reduced fraud and administrative inefficiencies (Muralidharan et al., 2016), heightened female workforce participation (Field et al., 2021), and improved crop yields for farmers (Lasse et al., 2016). Moreover, the utilization of formal financial services holds significant implications for account holders' resilience to adverse economic shocks by facilitating savings (Pomeranz and Kast, 2022) and allowing individuals to easily share both money and risk with others (Riley, 2018; Jack and Suri, 2014).

Four policy options for increasing bank account ownership and usage in Paraguay to improve financial inclusion are explored:

1. Status Quo
2. Mandatory Financial Education in Primary and Secondary Schools
3. Financial Literacy Media Campaign
4. BCP Partnership with Private Sector Employers to Pay Wages/Salaries Digitally

The criteria by which these alternatives are evaluated include cost, efficiency in increasing bank account ownership, efficiency in increasing bank account usage, and administrative feasibility.

This paper's final recommendation is to pursue a BCP-Private Sector Partnership to persuade major employers to pay salaries/wages through direct deposits rather than cash. Analysis suggests this alternative will increase bank account ownership by 12.5 percentage points and usage in terms of increased savings by 5 percentage points at a low cost that is administratively feasible for the Central Bank to undertake.

Problem Statement

Financial inclusion is a significant problem in Paraguay as only roughly 50% of the adult population holds a bank account in a formal institution, with young adults aged 18-35 being among the excluded (Gómez Rojas, 2023). This exclusion exacerbates economic disparities and inhibits overall economic development as it hinders consumers' ability to manage risk effectively and smooth out consumption patterns. Additionally, there is widespread use of alternative methods to banking—such as Mobile Money—for everyday transactions that come with high transaction costs in time and money (3-6% of the value), imposing a burden on consumers and impeding the efficient allocation of resources in the economy (*Legales*, 2023).

Client Overview

Mission and Role

The Central Bank of Paraguay (BCP), is Paraguay's highest monetary authority and the country's governing body in finances and economics. The bank manages the printing and minting of the Paraguayan currency, the guaraní, and is actively involved in promoting financial inclusion policy in addition to the conduct of monetary policy and oversight of banking and financial markets. This applied policy analysis was conducted for the director of the payments system of the BCP, César Carvallo.

Significance to the Client

In addition to the conduct of monetary policy and oversight of banking and financial markets, involvement in the payment system is an integral component of a central bank to ensure safety and stability which is critical to the overall success of the country's economy. Although fintech products, such as the e-wallet example with Tigo Money, can help expand financial service access to traditionally underserved consumers, the inefficiencies and oftentimes high transaction costs associated with them (especially in comparison to the zero-cost offering with bank transfers) limit the ability of the Central Bank to combat economic informality and improve payment traceability—crucial for a sound economy. In addition, services such as Tigo money only offer digital remittances, and with no saving, investing, or other opportunities, it is not considered part of financial inclusion. The BCP can play a role in incentivizing a higher takeup of formal bank accounts through changes to current demand and supply-side barriers to increase economic formality and financial inclusion.

Background

Payments System Background

The Central Bank of Paraguay (BCP) has made great progress in modernizing the banking system. Just 10 years ago (2013), the majority of transactions in Paraguay took place with physical cash and checks, with credit card transactions requiring call authorizations which significantly slowed down economic activity due to the additional time and costs associated with such activities. To better align with modern best practices, reduce costs, improve competition, limit risk, and formalize the economy, the Central Bank of Paraguay launched the payment systems project known as SIPAP (Corvalan & Carvallo, 2023). The initial project began in 2003 and it went live in 2013 with high-value (LBTR) and low-value payment (ACH) options following the passage of Law 4595 in 2012. This initial system allowed for digital transactions and payments, helping reduce the use of cash yet it was not instantaneous. The latest launch of the program in late 2022 involved an Instant Payment System (SPI) and helped bridge that gap in time by offering instantaneous payments 24 hours, 7 days a week for retail payments with zero fees associated. Domestically, the benefits of such a program are clear in terms of streamlining transactions, improving payment traceability, and combating informality and tax evasion, not to mention it allows for improved security and convenience even in the more remote areas of the country that previously lacked banking access. Internationally, it's proven beneficial in the integration of Paraguay into the accelerated global economy through an improvement in the efficiency of international payments, which promotes greater foreign investment and international transactions that ultimately help the country's economic growth (Corvalan & Carvallo, 2023).

Clarifying causes of the problem

The low levels of financial inclusion in Paraguay are apparent in the predominant use of cash and the low percentage of adults with an account in a formal banking institution (Del Valle & Carrasco, 2022). The high percentage of unbanked adults (roughly 50%) can be explained through 3 areas: lack of access, poor financial literacy, and informal economic dominance. The high percentage of unbanked adults can generally be explained through three main areas: lack of access, poor financial literacy, and dominance of the informal economy. Access constraints are not a significant issue in Paraguay (see Panel A in Appendix), as there are bank branches located throughout the nation and the most reported reasons for not having a bank account involve "having no need for it," "lack of money," or "documentation issues." However, low levels of financial literacy persist in Paraguay, as only 10% of adults report having received education on managing finances (ENIF, 2013). The dominance of the informal sector is quite apparent in Paraguay given that cash is still king in the nation, with over 76% of employees receiving their salaries in cash ("Estrategia Nacional," n.d.). This is a serious issue as cash payments are not only economically inefficient and slow but also pose extra risks (of robbery, for example) to individuals. To address this, there is a law in the works to mandate that salary payments be made through bank transfers instead, which will serve to reduce individual risk, make the salary payments more efficient, and ideally increase the formalization of the economy by incentivizing employees to open bank accounts to receive their salaries ("Paraguay: First Review," 2023).

How did Mobile Money become popular?

When Mobile Money first launched in Paraguay, the Central Bank of Paraguay (BCP) and the Superintendency chose to cautiously watch its commercial development without issuing any regulation until three years later—creating a favorable regulatory environment for the growth of Mobile Money. The Mobile Money sector grew substantially in part due to the relative ease of registering and activating clients as all SIM card holders are required to undergo formal registration with identification, thus having the national ID requirement for client registry was easy to comply with (Tellez & McCarty, 2011). The telecommunications provider, Tigo, became the Mobile Money market leader since its Giros Tigo launch in 2010 as it carefully located agent points in strategic locations keeping in mind key remittance corridors and convenient locations for clients. Tigo also came in with competitive prices relative to other providers such as Personal and Claro, setting the total cost to 4% of the remittance but returning 2% to the client as airtime. In terms of marketing, Tigo launched Giros Tigo by introducing what it was, giving examples to consumers on how it could be useful to them in their daily lives, and explaining exactly how it worked. The Giros Tigo product is meant for domestic remittances and follows an over-the-counter model with a sender going to an agent point to send e-money to the recipient, who receives a notification via SMS and can then go to an agent point to cash out using a PIN (Tellez & McCarty, 2011). Currently, there are mobile money branches located throughout the nation and they are considered a very popular means for making money transfers (see Panel B in Appendix). However, Giros Tigo is not considered part of financial inclusion in Paraguay as it is only used for digital remittances and does not offer the possibility of saving money or other products banks offer.

Why is formal banking important?

The use of financial services is correlated with various positive outcomes, including enhanced savings (Breza et al., 2020; Blumenstock et al., 2018), a decrease in crime rates (Wright et al., 2017), more streamlined wage payments (Dusza, 2016), reduced fraud and administrative inefficiencies (Muralidharan et al., 2016), heightened female workforce participation (Field et al., 2021), and improved crop yields for farmers (Lasse et al., 2016). Moreover, the utilization of formal financial services holds significant implications for account holders' resilience to adverse economic shocks by facilitating savings (Pomeranz and Kast, 2022) and allowing individuals to easily share both money and risk with others (Riley, 2018; Jack and Suri, 2014). Utilizing formal financial services also holds significance for promoting gender equality. Women's ownership of accounts is linked to heightened financial independence and empowerment, providing them with increased decision-making authority within their households and enabling more targeted spending on essential needs (Ashraf et al., 2010). Additionally, female account ownership correlates with increased expenditure on nutritious food (Aker et al., 2016; Prina, 2015), and can contribute to shifting societal norms related to female employment (Field et al., 2021).

What initiatives have been implemented to address the problem?

Based on a survey in 2013, the second-highest (24%) self-reported barrier to financial inclusion was documentation, with the first being lack of money. AML Law No. 1015/1997, articles 14 and 16 require obliged subjects to identify and verify their customers, and the most common document required has been a national ID which is to be presented with the original ID or through a notarized true copy. An initiative to implement electronic IDs which residents could apply for after acquiring a national ID card was meant to allow non-face-to-face onboarding in financial institutions through the "certified/notarized true copy" channel. However, as of July 2021, only 152,386 citizens had obtained an electronic identity as it's a relatively new initiative but it shows promise in reducing the documentation barrier, especially for those in rural areas (AFI, 2022). Another initiative that has been promising has been the 2013 launch of basic savings accounts, through resolution No. 25 by the BCP, meant to lower the entry barrier to opening accounts. These basic accounts have no minimum value requirements for opening, nor minimum value for account maintenance (BCP, 2013). Since its launch, the public's acceptance of this financial product has been quite positive as the number of open accounts in 2023 (1,234,520) grew by 18 times the number seen in 2015 (63,657). These basic accounts have been successful in providing access and use opportunities to segments of the population that have been outside the formal financial system. Overall, the consistent growth in the total number of basic accounts and the equal participation of men and women in holding these are positive indicators of the effectiveness of the initiative in promoting both financial inclusion and gender equality (BCP, 2023).

The launch of the SIPAP, previously discussed in this paper, has also been successful in modernizing the financial sector and making transactions cheap and instantaneous. Lastly, it's important to note there's a Transparency and Financial Inclusion Law Project No. 556 that has been debated in the Senate since late 2021 that, if passed, would require wage payments to be done exclusively through electronic transfers into bank accounts (*Expediente S-211733*, 2021). The passage of this law could catalyze using other financial services, increasing transparency, and overall improving financial inclusion in Paraguay. That being said, despite significant efforts to improve financial inclusion there is still work to be done as there is still a significant percentage of the adult population (50%) without a bank account in a formal institution, with many reporting having "no need for it" (Gómez Rojas, 2023) despite the many positive outcomes associated with having one. Additionally, low levels of financial literacy persist in the country, as only 10% of adults report having received education on managing finances (ENIF, 2013).

Literature review

Financial Literacy

A common information asymmetry problem arises on the demand side of financial services due to a failure to understand the products being offered (either due to a failure to comprehend or because providers fail to disclose information) that can cause consumers to make poor decisions or fully withdraw from the market. A common intervention to tackle information asymmetry on the demand side has been educational financial literacy programs despite inconclusive benefits. Based on the framework of the OECD International Network on Financial Education (OECD/INFE), financial literacy can be defined as a “combination of awareness, knowledge, skills, attitude, and behaviors necessary to make sound financial decisions and ultimately achieve individual financial wellbeing” (Atkinson and Messy, 2011). In terms of impact, financial literacy and financial management skills are correlated, where people with lower financial literacy use more costly forms of borrowing, have lower consumption growth, tend to use informal sources of borrowing, plan worse for retirement, are less likely to invest in stocks, and even when they do participate in financial markets, they earn a lower return on their investments. Empirical data verifies that the overall financial literacy levels of the global population are notably deficient, particularly among low-income groups, women, and the elderly (Lusardi & Mitchell, 2008). Consequently, various initiatives have emerged to enhance financial literacy. While certain research studies have demonstrated a positive connection between financial literacy and sound financial decision-making, others have not identified a significant correlation. A meta-analysis (Miller et al., 2014) from evaluations of 188 financial education programs found that on average these programs had no significant positive effects on financial knowledge or behavior, and in the cases where it did work such improvement was still minimal and uptake was low.

Traditional attempts at increasing financial literacy involve conventional educational methods to increase knowledge about financial concepts, products, and markets based on the assumption that poor financial outcomes are due to a lack of information and that improved knowledge will translate into behavior change (IOSCO & OECD, 2018). However, knowledge is not enough to change behavior, various cognitive and social factors can influence behavior. Participants may be unable to understand, retain, or apply the knowledge gained in the classroom, they may lack motivation or self-control, they may be dealing with social influences of peer pressure, and more. Due to all these factors affecting behavior, an effective financial literacy program must not only provide participants with financial knowledge but also help them overcome behavioral biases. Programs that use simplified behavioral insights have proven successful (Drexler et al., 2014) in improving financial literacy by teaching simplified rules-of-thumb, for example.

This is likely the case, as mentioned earlier, due to the range of cognitive, social, and psychological factors that can act as barriers and prevent people from using newly acquired financial knowledge to make satisfactory or rational financial choices (IOSCO & OECD, 2018).

In sum, as the OECD report posits, effective financial literacy and investor education initiatives need to have elements that access both System 1–our near-instantaneous process that occurs intuitively–and System 2–our slower, more conscious and logical cognitive process. A program must deliver information and education to raise participants' awareness and motivate them to change their behavior consciously (System 2) but also create contexts and environments to induce individuals to behave in ways they consider to be in their best interests by accessing System 1 (through nudging, for example). Some particularly promising examples include tools capable of engaging learners emotionally and visually (e.g. videos, interactive programs, games) as they are more effective than text-based or passive educational programs, and providing financial literacy at "teachable moments" to ensure relevance and prompt action (IOSCO & OECD, 2018).

Digital Payments

Based on a World Bank report, receiving payments into an account can catalyze using other financial services such as using an account to save, borrow, or store money for cash management. In fact, 83 percent of adults in developing economies who received a digital payment also made one, up from 66 percent in 2014 and 70 percent in 2017. Almost two-thirds of digital payment recipients also used their accounts to store money for cash management; 40 percent used their accounts for saving; and 40 percent borrowed formally. In short, payments may pave the way for wider adoption of financial services when it is easier to leave transferred money in an account until it is needed and then make a payment directly (*Global Findex*, 2021). Furthermore, once money is in an account it is relatively easier to leave it there for savings, and receiving a regular income stream over time can help ease the process of borrowing money formally.

In an experiment conducted in Bangladesh, workers were randomly assigned the treatment to continue receiving wages in cash, or begin receiving them through a bank or mobile money payroll account. The researchers measured treatment effects on learning and real outcomes using panel surveys and administrative data. The results provide compelling evidence of consumer learning as a result of active engagement with financial technology, with those receiving wages in their accounts making deposits, sending money, and accumulating higher account balances. Furthermore, this learning is accompanied by an increase in trust, which was measured by whether the respondent would feel comfortable leaving BDT 1,000 (US$12) in an account. Other real outcomes from treatment included savings and the ability to cope with unanticipated shocks, with an increase in the likelihood of having savings by 4-11 percentage points and more than doubling the likelihood of individuals having savings in a formal account. In sum, the results of this experiment showed that financially inexperienced consumers can benefit significantly from payroll accounts when the employer and financial service providers play active roles in the process (Breza et al., 2020).

Policy Alternatives

Alternative 1: Status Quo

Background

The 2013 launch of basic savings accounts, through resolution No. 25 by the BCP, lowered the entry barrier to opening accounts. These basic accounts have no minimum value requirements for opening, nor minimum value for account maintenance (BCP, 2013). Since its launch, the public's acceptance of this financial product has been quite positive as the number of open accounts in 2023 (1,234,520) grew by 18 times the number seen in 2015 (63,657). These basic accounts have been successful in providing access and use opportunities to segments of the population that have been outside the formal financial system. Overall, the consistent growth in the total number of basic accounts and the equal participation of men and women in holding these are positive indicators of the effectiveness of the initiative in promoting both financial inclusion and gender equality (BCP, 2023). Additionally, the launch of the SIPAP, allowing for instantaneous payments, has been successful in modernizing the financial sector and making transactions cheap and instantaneous. Lastly, the ENIF program of 2014-2018 set out to reduce poverty and promote economic growth in the nation through a holistic and logical sequence of activities derived from a strong diagnostic base of evidence. Initiatives for this program include increasing savings account ownership, increasing responsible credit to MSMEs, increasing insurance coverage, and more (Grace, 2014). It may be the case that with the implementation of all these various programs around 2018, it simply has not been long enough for the results to fully materialize in the economy, and we may see the positive desired outcomes in the next few years.

Solution

The first option entails letting the current situation play out without further intervention. That is, letting the latest initiatives such as the basic savings, SIPAP, and ENIF materialize with time. This will require no further intervention and incur no additional costs other than time.

Alternative 2: Mandatory Financial Education Based on Behavioral Insights

Background

Low levels of financial literacy have been an ongoing problem in Paraguay, with the National Strategy of Financial Inclusion (ENIF) launching a program meant to double the share of adults (from 10 to 20%) reporting having received education on how to manage finances (ENIF, 2013). The program involved a collaboration between the BCP and the MEC (Ministry of Education and Sciences) in 2010 to create a MEC-BCP Office with a designated representative and the approval of the Economic and Financial Education Program, which was implemented by the MEC as an optional plan for students in their third year of secondary education, consisting of 105 hours of teaching duration that launched in 2012. Then, Resolution 861 of January 29th, 2014 of the Ministry of Education and Culture provided the curricular update of the scientific baccalaureate of secondary education to address the modifications in the aforementioned provision to be implemented starting in 2014 in universal character for the first, second, and third years of the Scientific Baccalaureate of the secondary school in private and public educational institutions (Milciades-Roa & Espínola-González, n.d.). Additionally, many financial institutions provide financial education on their websites and the BCP hosts speakers and financial literacy-related events each year in March to celebrate the "Financial Education Week." Despite efforts, financial literacy in Paraguay remains alarmingly low and attempts at passing legislation in 2019-2020 to mandate financial education in primary and secondary schools have proven unsuccessful (Última Hora, 2020). In a research paper using a multidimensional approach to study financial literacy, which included financial attitude, financial behavior, and financial knowledge, it was found that among three Southern Cone Countries, Argentina, Chile, and Paraguay, the latter had the lowest level of financial literacy (Espinoza-Delgado & Silber, 2022).

Solution

This policy option entails improving the current financial literacy levels by mandating a financial literacy curriculum in primary and secondary schools with an emphasis on using simplified behavioral insights such as rules of thumb that engage learners visually and emotionally rather than more passive traditional approaches. A successful program to model it after is the Peruvian *Finanzas en el Cole* initiative. The Peruvian financial literacy initiative stands out as one to emulate because it uses two approaches to behavioral insights with significant success. The first approach involves the "golden rules" more commonly known as rules-of-thumb which convey concrete messages and rules that are easy to apply by all participants. Rule-of-thumb training has proven successful when teaching financial literacy as it takes advantage of the human tendency to use heuristics to tackle complexity, lack/excess information, uncertainty, or other difficulties when making choices and there is evidence that learners generally implement rules-of-thumb faster than financial knowledge, reducing the risks of procrastination and misunderstanding (IOSCO & OECD, 2018). The second approach involves providing information according to the "life cycle" of the participant. That is, information is taught when it is most useful for the financial decision-making process of the participant's life. In terms of behavioral frameworks, *Finanzas en el Cole* applies the EAST framework, using clear language, simple concepts, and short messages to facilitate comprehension ("Make it Easy", in EAST terms). The program leverages edutainment elements, such as comics and videos, to make information delivery more entertaining and familiar ("Make it Attractive"). The program also involves the community around the school to give support by proposing income-generating activities. Lastly, the program is delivered at a teachable moment, as many high school students for example will move into the labor market ("Make it Timely") (IOSCO & OECD, 2018).

The results of the program have been very encouraging, with a World Bank evaluation of students in the 3rd, 4th, and 5th grades showing an overall 0.14 standard deviation improvement in students' financial literacy, and a 0.30 standard deviation improvement in teacher's financial knowledge (Frisancho, 2017). The program also concluded with significant improvements in self-control abilities, financial autonomy, and better purchasing habits in students. Additionally, the proportion of teachers who saved money increased by 9 percentage points, with the proportion of formal savings increasing by 14 percentage points. In terms of savings increases for students, a modest but statistically significant 1.1 percentage point increase was found for 5th graders, granted these results are expected to be larger in magnitude for students in secondary school where they may have greater access to funds relative to primary school. Lastly, the intervention was found to be cost-effective, with a total cost of $6.6 per student (Frisancho, 2017). More specifically, the return on each dollar spent on a student equates to 2.2 points more on the PISA 2015 financial literacy test. Since the program's pilot launch in 2016, it has received many recognitions such as the 2022 Money Awareness and Inclusion Award (The MAIAs), a certificate for Good Practice in Public Management in the years 2016 and 2022, and more (SBS, 2023.

Supporting policy actions include:

1. Conducting a baseline study and impact evaluation, with a control group, of the current optional financial education curriculum for secondary school
2. Developing an improved National Strategy for Financial Education that implements behavioral insights and engages learners visually and emotionally, building on *Finanzas en el Cole* but adapting it for the Paraguayan financial system with a target audience of primary and secondary school students
3. Drafting the legislation for a mandatory financial education program in primary and secondary schools

Alternative 3: Financial Literacy Mass Media Campaign

Background

Currently, many financial institutions provide financial education or general money management tips on their websites, and the BCP hosts speakers and financial literacy-related events each year in March to celebrate "Financial Education Week." Financial literacy is something that is recognized by both the private and public sectors to be crucial both for citizens' financial decisions and for the economic development of the nation. However, only about 10% of the adult population reports having received education on managing finances (ENIF, 2013), implying that there is still significant room for improvement.

Solution

This policy option entails launching a national financial education media campaign, targeting the youth and young adults. The campaign can be done solely through digital media or include printed materials for distribution at schools and universities. This policy alternative should also leverage behavioral insights in the creation of engaging and accessible financial content materials, and can still draw from the *Finanzas en el Cole* content for the youth. An important tool that is available as well is the use of video content to engage the audience through storytelling or real-life examples they may relate to given that storytelling is one of the most effective strategies for holding an audience's attention and relating financial topics to common sense, with particular power in being able to stir feelings and leave lasting impressions (Joglekar, 2023).

The creation of a successful financial education media campaign will involve the following actions:

Developmental Plan for Financial Literacy through Mass Media Campaign

1. Targeting the Audience	➢ Identifying the demographics and psychographics of the audience ➢ Segmenting the audience for effective outreach ➢ Understanding the audience's financial needs and concerns
2. Setting Educational Goals and Objectives	➢ Defining clear learning objectives ➢ Aligning educational goals with the target audience ➢ Establishing measurable outcomes
3. Developing Educational	➢ Developing engaging and accessible financial content

Content	➢ Using storytelling and real-life examples ➢ Incorporating interactive and multimedia elements
4. Selecting the Appropriate Marketing Channels	➢ Digital marketing strategies for outreach ➢ Traditional outreach methods
5. Budgeting for Educational Campaigns	➢ Allocating resources for marketing and educational content ➢ Maximizing impact with limited budgets ➢ Securing funding for financial education initiatives
6. Measuring and Assessing Educational Outcomes	➢ Data collection and analysis ➢ Evaluating learning outcomes and behavioral changes ➢ Continuous improvement through feedback
7. Fostering Long-Term Financial Literacy	➢ Strategies for ongoing financial education ➢ Encouraging continuous learning and financial wellness ➢ Building a sustainable framework for financial literacy

Source: (Joglekar, 2023)

Alternative 4: Partner up with Private Sector Employers

Background

Given the high percentage of adults in Paraguay (76%) that receive wages/salaries in cash, the Financial Inclusion Law was introduced in 2021 to mandate private sector employers to pay wages/salaries through bank direct deposits but has yet to be approved in the Senate. The pending law would also require financial intermediaries to provide workers with free payroll direct deposit accounts and to allow at least one free cash withdrawal per month. The draft legislation also contemplates tax incentives to ensure compliance with regulations and laws, yet despite obtaining favorable opinions from two congressional committees, it continues to await the start of discussions in the National Congress (IMF, 2022).

Solution

This option entails partnering with the biggest private sector organizations/companies to incentivize them to provide wage/salary payments through bank transfers rather than cash. Given the pending legislation to mandate this change has not made much progress in the Senate, the Central Bank can speed up the process by partnering with the major employers in the private sector and guiding them on the transition to bank transfer payments. Convincing them to transition may entail providing a benefit-cost analysis to prove its added efficiency and helping them set up necessary accounts. Doing so will help increase the share of adults with an account at a financial institution, and is also expected to boost account usage. According to the Global Findex Database 2021, roughly 1 million of account owners in Paraguay were considered inactive–having no deposits or withdrawals and no incoming or outgoing digital payments in the past year. Additionally, about 1 million account owners in Paraguay paid utility bills in cash and made no digital merchant payments. Receiving wage/salary payments can help pave the way for greater account usage both in the form of money management and digital payments, reducing the numbers previously stated. Furthermore, roughly a million adults in Paraguay receive private sector wages in cash only and don't currently have an account at a financial institution, thus partnering with large private sector employers will prove highly successful at increasing account ownership for that group (World Bank Group, 2022).

Criteria

Quantitative Measures

Cost
Measured in the present value of US dollars the BCP would spend on planning and implementing each policy alternative. This criterion is essential for understanding the financial implications of each option. Costs may include initial costs and ongoing operational expenses.

Account Ownership
Measured by the total number of new accounts in formal financial institutions relative to the baseline. That is, the new accounts estimates for each alternative are to be understood as an addition to the expected baseline growth. This criterion focuses on evaluating the effectiveness of each alternative in improving financial inclusion by increasing the percentage of adults formally banked.

Account Usage
Measured by the number of people using bank accounts to save money. There is not much literature on how each alternative will affect the number of transactions individuals will make with their new accounts thus savings rates, which are accounted for, will be used instead. This is going to underestimate actual account usage but given the low baseline savings rate (15% of the adult population), it is still an important metric to explore.
For the baseline case, this will be done in terms of the baseline savings rate, and for the rest of the alternatives in terms of the changes in savings rates that result from each policy action. This criterion focuses on evaluating the effectiveness of each alternative in improving financial inclusion by increasing the usage of bank accounts through savings.

Qualitative Measure

Administrative Feasibility
Measured by the likelihood each policy alternative can be effectively implemented given available resources, complexity of alternatives, capacity, and monitoring needs. This criterion will be evaluated qualitatively based on four key measures: resources, complexity, capacity, and monitoring needs. Each measure will be rated from low to high based on need (i.e. if an alternative necessitates resources beyond the BCP's available resources, it will be rated "high").

Finally, each alternative will be rated from low to high based on the following breakdown:
Low: if 3 or more measures (i.e. resources, complexity) are deemed "high" or 4 measures are deemed "medium"
Medium: if 2 measures are deemed "high" or if up to 3 measures are deemed "medium"
High: if 1 or fewer measures are deemed "high" or if up to 2 are deemed "medium"

Analysis

Alternative 1: Status Quo

Given historical trends in the number of LBTR (Gross Settlement in Real Time) accounts and their respective transaction numbers (see Figures 1 and 2 below), and using the moving averages method of analysis with the added condition of minimizing the mean squared errors, the number of accounts was forecasted for the following year (2024) to act as the baseline. The blue line represents the historical data provided and the orange line shows the estimated values using moving averages. That being said, as with any estimates, the forecasted values should be taken with prudent skepticism.

Figure 1

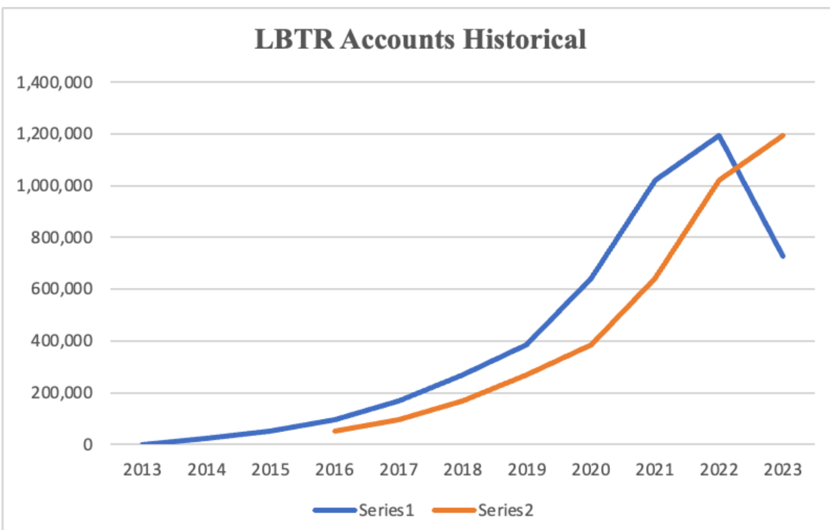
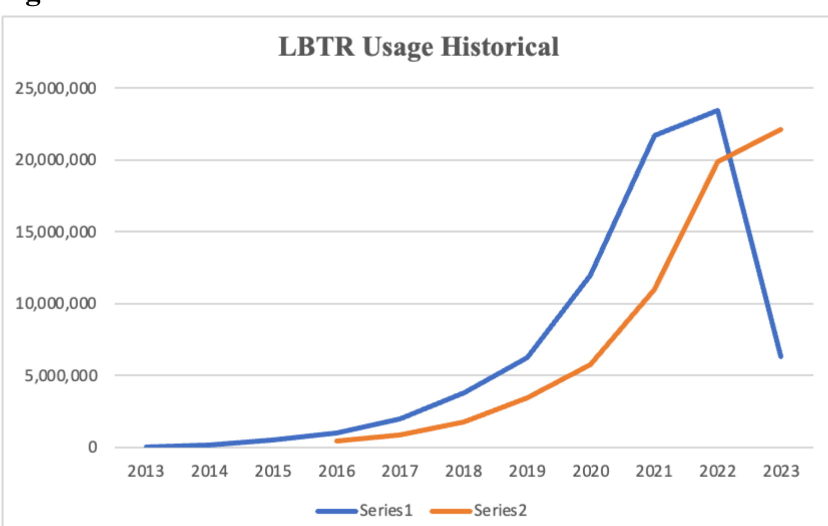


Figure 2



Source: Own elaboration based on data from the BCP.

Cost: No additional cost.

Account Ownership: 0 *new* accounts predicted (See Appendix Figure 1 for details)
Roughly 50% of the adult population holds a bank account in a formal institution. That is, out of 4M adults in the 15-64 age range (Statista, 2023) only an expected 2M have a bank account. Based on the historical trendline of accounts, however, the number of adults with an account varies significantly year-to-year with only 1,194,820 accounts in 2022, for example. However, this analysis explores the marginal increases from the baseline, and based on the moving averages analysis, zero new accounts are estimated so this will be set to zero.

Account Usage: 0 *new* people saving
Thirty-nine percent of adults in Paraguay report saving money, either formally or informally. However, just 14 percent of all adults report having saved at a formal financial institution (Grace, 2014). That is, out of roughly 4M adults in the 15-64 age range only 560,000 adults save money at a formal institution. It can be assumed that this number will remain relatively the same in 2024, giving a baseline of 560,000 adults saving money formally. However, this analysis explores the marginal increases from the baseline, thus this will be set to zero so each alternative shows the *marginal increases* in savings relative to the baseline.

Administrative Feasibility: High
As this policy alternative entails no further changes to the current situation, there would be no additional resources needed, no complexity in implementation, no capacity constraints, and no further monitoring needs. That is, it ranks "low" in all 4 measures translating into a final evaluation of "high" administrative feasibility.

Alternative 2: Mandatory Financial Education Based on Behavioral Insights

Overview

Cost: \$8,838,739
Account Ownership: 629,330 estimated new accounts
Account Usage: 495,430 students, 8,745 teachers saving formally
Administrative Feasibility: Low

Breakdown of estimates

***Cost*:** \$6.6 per student, with 1,339,000 students it totals \$8,838,739
The cost includes full planning and implementation of the program and is based on the per pupil cost results of \$6.6 from the *Finanzas en el Cole* program in Peru (Frisancho, 2017). That is, it already takes into account the development of the curriculum, materials, workbooks, training, and more. It's important to note that this cost is likely an overestimate for Paraguay, as most of the materials developed in Peru would be ready for use with minor adjustments to align with the Paraguayan financial system needed. That is, the cost that would be incurred in the development of the curriculum and materials is likely lower. The program would be implemented in primary and secondary schools, reaching approximately 1,339,000 students (fhi360, 2018). Adjusting the dollar estimate based on purchasing power parity[1] in Peru vs. Paraguay, it would cost the latter \$6.601 per student for an estimated total of \$8,838,739.

Account Ownership and Usage

Given the limited literature studying the effect of financial literacy improvements on actual financial behavior and decisions such as bank account ownership and savings rates, these estimates are based on a study of *Money Smart*, an FDIC nationwide initiative to enhance money management skills, understand basic financial services, and build financial confidence to use banking services more effectively. This study was chosen as it examines the long-term effects of financial literacy, with measured outcomes such as opening bank accounts and savings rates post-treatment. Additionally, one of the most typically cited reasons for not having a bank account in Paraguay is having "no need" for it, as most people resort to mobile money providers for everyday transactions and tend to not engage in saving, or they do so in cash. Similarly, the *Money Smart* pre-training survey also cited "no need for an account" as the most frequent response participants gave for not having a checking account.

To analyze the effects of the *Money Smart* financial literacy program, a pre-training, post-training, and follow-up survey was conducted. Overall, significant support for the effectiveness of the financial literacy program was found in improving financial behavior. Respondents reported positive changes in savings level, amount of debt, likelihood to

[1][Calculation: \$6.6 equates roughly to 24.27 Peruvian Soles, 24.28 Peruvian Soles is roughly 48,764 Paraguayan Guaranies, which equates to approximately \$6.601]
Source: https://www.xe.com/currencyconverter/convert

comparison shop for financial products at the end of the training, and significant positive changes in their opinions about their financial comfort levels. After training, 83% of respondents intended to save money in a savings account–a 25 percentage point increase relative to those who were already saving at the start of the program, with African Americans and Latinos being more likely to have increased their savings. Additionally, nearly half (47%) of respondents starting the class without a checking account opened one post-training–with Latinos being among the most likely to have opened an account. Of those who did not have a savings account before the program, 37% reported opening one afterward (FDIC, 2007).

Due to the lack of quantitative analysis on the effect of behavioral insight-based financial literacy programs and account ownership changes, the previous study mentioned can be used to estimate the effect of improved financial literacy on the decision to open an account as the positive effects were most pronounced for Latino populations, and the initial reason for not having an account was "having no need for it," which is also the most cited reason for unbanked Paraguayans. That being said, using these estimates is likely to underestimate the true effect of behavioral insights on increased financial literacy and thus account ownership and usage, as the current literature asserts the behavioral insights method is more effective at producing behavior change than typical passive financial education programs–as is the case with the *Money Smart* program. Regardless, the conservative estimate for the effect of this policy alternative will be an increase of 47% in account ownership of those without an account at the beginning of treatment. Given that this policy alternative would involve ideally mandating financial education in primary and secondary schools, thus reaching roughly 1,339,000 students of which roughly 629,330 will open an account post-training if they don't already have one which is safe to say is likely the case as the most excluded from formal banking services are the youth (fhi360, 2018). Additionally, since post-training 37% reported opening a savings account thus having an intent to save money formally, and assuming there are similar results in Paraguay as in the study, an estimated 495,430 students will use their accounts to save money formally. The Peruvian program *Finanzas en el Cole* which the Paraguayan financial literacy program will be modeled after also found an effect on savings behavior on teachers, thus this should be taken into account as well. The effect of financial education on teachers translated into a 14% increase in formal savings post-program (Frisancho, 2017). On average, there is one teacher per 24 pupils in primary schools, per 20 pupils in lower secondary schools, and per 18 pupils in upper secondary schools. There is a student breakdown of 727,000 students in primary schools, 329,000 in lower secondary, and 283,000 in upper secondary schools (fhi360, 2018). This translates into about 30,292 teachers in primary schools, 16,450 in lower secondary, and 15,722 in upper secondary school. This adds up to a total of 62,464 teachers of which 14% or 8,745 are estimated to increase their savings in formal institutions.

Administrative Feasibility

This policy alternative entails the creation of a new financial education curriculum, following best practices found in Peru, and the drafting of legislation to make such curriculum mandatory in primary and secondary schools. This would require the collaboration of the BCP, the Ministry of Education and Sciences, and the Ministry of Finance. That is, the collaborative nature of this alternative translates into increased complexity of successful implementation and would require substantial resources, above and beyond those of the BCP. This alternative would also need to address the capacity constraints of educational institutions, requiring an evaluation of available school resources, current curriculum space or the potential integration into existing frameworks, the need for additional teacher training, and support. It would also entail significant monitoring, establishing clear metrics and benchmarks to assess the progress and effectiveness of the educational program implementation. That is, it ranks “high” in all 4 measures, translating into a final evaluation of “low” administrative feasibility.

Alternative 3: Financial Literacy Mass Media Campaign

Overview

***Cost*:** $500,000 (digital only), $590,290 (digital and printed materials)
Account Ownership: 376,000 estimated new accounts
Account Usage: 296,000 new people saving formally
Administrative Feasibility: Medium

Breakdown of estimates

Costs

Upfront Cost: Financial experts and graphic designers to create digital images/videos teaching financial literacy $500,000
Material Cost: Paper and ink for printed tri-fold materials, zero cost for digital materials
For a regular 8.5" x 11" trifold, color-printed on both sides, the average unit cost is $0.06 (UPrinting, n.d.)
For roughly 1,339,000 students in primary and secondary schools, it would total $80,340 (fhi360, 2018).
Distribution Cost: Deliver printed materials to primary and secondary schools for teacher distribution to students, zero cost of distribution for digital materials (can be done through social media platforms such as Instagram, Twitter, Facebook, Tiktok, etc)
There are roughly 2,000 public and 421 private schools, totaling 2,421 institutions to be reached. Hiring a delivery provider such as Punto a Punto charges a flat fee of Gs. 30,000 or $4.11 per delivery (Punto a punto, n.d.). Thus, the estimated cost of delivering printed materials to schools will be roughly $9,950.
Note: It may be more economically feasible to simply engage in a digital campaign as this would incur no physical material and delivery costs.

Account Ownership

The estimates for account ownership and usage follow the same *Money Smart* financial literacy program results. Paraguay has a population of 6,922,659 individuals (Worldometer, 2024), of which roughly 4 million are in the 15-64 age range (Statista, 2023), and using a conservative estimate of 40% reach, we can estimate roughly 1.6M youth and adults will be reached. Given that roughly 50% of the adult population already has an account, this gives us a potential pool of 800,000 new accounts, of which the previous literature estimates 47% will actually open an account, thus leading to an effect of 376,000 new accounts from the financial literacy media campaign.

Account Usage

Out of a potential pool of 800,000 new accounts, and based on the study's results of 37% opening a savings account, it is estimated that 296,000 people will use their accounts to save money formally.

Administrative Feasibility

This policy option entails the creation of financial education materials and the launch of a national media campaign to educate the youth and young adults. The BCP maintains a division focused on financial inclusion, suggesting that the necessary financial and human resources are likely available to implement this policy alternative. However, graphic designers will need to be hired to translate the financial expertise of BCP staff into appealing materials for the youth. The complexity of execution for this alternative is low, as the financial expertise is available, it just needs to be crafted into effective messaging and launched in appropriate communication channels to reach the target audience. Capacity constraints may be present, as the successful launch of the campaign would demand a team of staff to oversee and coordinate the campaign which may pose a challenge if the staff within the financial inclusion branch of the BCP are already engaged in other initiatives and lack the capacity to take on additional responsibilities. Ongoing monitoring of the campaign will be needed, with the establishment of key performance indicators (KPIs) to measure reach, engagement, and effectiveness in increasing financial literacy and influencing financial behavior among the target audience. That is, it ranks "medium" in resources, "low" in complexity, "medium" in capacity, and "high" in monitoring, translating into a final evaluation of "medium" administrative feasibility.

Alternative 4: Partner up with Private Sector Employers

Overview

Cost: $24,659.4
Account Ownership: 500,000 estimated new accounts
Account Usage: 415,000 adults may use their accounts to make digital payments; 335,000 may use their account to store money for cash management; and 200,000 may use their account for savings.
Administrative Feasibility: High

Breakdown of estimates

Cost

The average monthly salary of more junior employees at the BCP is roughly Gs. 6,000,000 or $821.98 (ABC, 2023). Assuming engaging with major private sector employers will require about 5 junior employees representing the BCP's interests, and take about 6 months to identify and reach key private sector employers, persuade them to make the switch, and provide ongoing support through the transition, this will cost $24,659.4 in total.

Account Ownership and Usage

Based on the 2021 Global Findex Report, roughly 1 million adults in Paraguay without an account at a financial institution received private sector wages in cash, and assuming that half of the major private companies will be convinced to make the switch to digital payments with this BCP-Private Company partnership, about 500,000 adults would open an account to receive wages. According to the literature, there is clear evidence that receiving digital payments can serve as a catalyst for adopting other financial services. Previous research found that 83 percent of those who received digital payments also made one, 67 percent used their account to store money for cash management, and 40 percent used it for savings. That is, we expect to see an increase in the usage of digital bank accounts as well as an increase in account ownership as all private sector employees working for large companies would need to have an account to receive their wages. Assuming similar results in the case of Paraguay, roughly 415,000 adults may use their accounts to make digital payments, 335,000 may use their accounts to store money for cash management, and 200,000 may use their accounts for savings. These estimates may understate the true effect of digitizing wage/salary payments as it's only based on adults who did not have an account and received private wages/salary in cash. It may be the case that receiving digital private sector wages/salaries increases the account usage of those who already had an account but did not use it regularly, which based on the Global Findex Report, is roughly equivalent to another million adults.

Administrative Feasibility

This policy alternative entails persuading big private sector employers to pay wages/salaries through digital transfers rather than cash. Either the payments branch or the financial inclusion branch of the BCP could take on this initiative, suggesting the available resources are more than sufficient as this option demands minimal financial and human capital. This alternative is also low in complexity as it is relatively straightforward in its technical requirements but demands strong communication skills. It involves identifying the biggest private sector employers, persuading them to make payments through banks, and providing support during the transition to employees as well as employers. Capacity constraints may be present, however, as the successful implementation of this alternative demands a team of dedicated staff to persuade employers and provide support during the transition which may pose a challenge if the staff at the BCP are already engaged in other initiatives and lack the capacity to take on additional responsibilities. Finally, there will be low monitoring needs after private employers make the switch to digital payments, but medium monitoring will be needed during the process to ensure a smooth transition and successful implementation. That is, it ranks "low" in resources and complexity, "medium" in capacity, and low/medium in monitoring, translating into a final evaluation of "high" administrative feasibility.

Outcomes Matrix

Criteria	Alternative 1: Status Quo	Alternative 2: Mandatory Financial Literacy	Alternative 3: Financial Literacy Media Campaign	Alternative 4: Partner with private sector employers
Cost	$0	$8,838,739	$590,290 (print and digital) $500,000 (if only digital)	$24,659.4
Account Ownership	0 *new* accounts	629,330 *new* accounts	376,000 *new* accounts	500,000 *new* accounts
Account Usage	0 *new* people saving	495,430 *new* students*, 8,745 *new* teachers saving formally	296,000 *new* people saving formally	200,000 *new* people saving
Administrative Feasibility	High	Low	Medium	High

*Student estimates are based on a similar education initiative; *Finanzas en el Cole* has been studied only in primary school and it is too soon to determine actual savings and account ownership results post primary and secondary school.

Recommendation

Based on the decision matrix results, the recommendation is for the Central Bank to create a BCP-Private Sector Partnership to transition wages/salary payments to be made digitally rather than through cash. This policy course of action is estimated to significantly increase bank account ownership and usage, is administratively feasible, and is the lowest-cost alternative other than the status quo. Additionally, this alternative is expected to provide the fastest impact relative to other alternatives as it would roughly take just 6 months to be fully operational. With the support of the BCP in making the transition to digital wage/salary payments, private businesses will be better off by saving time and potentially money, as a study in Bangladesh found that factories reduced wage distribution costs by more than 50% within two years after they began paying workers directly via digital bank accounts (Klapper, 2023). This is due to the cost inefficiencies involved in making wage/salary payments through cash and the security benefits of eliminating cash transactions. The benefits of the transition to digital payments also reach employees, as studies support findings of improved savings behavior, risk management, and increased abilities to make digital transactions without assistance relative to workers paid in cash (Klapper, 2023). Additionally, digital payments are also more secure for employees than physical cash payments which can be more easily stolen or misplaced. Overall, this alternative will help improve financial inclusion levels in Paraguay, with 500,000 new accounts created, and 200,000 new people saving money formally. This equates to a 12.5 percentage point increase in the share of adults holding a bank account, and a 5 percentage point increase in the share of adults saving money formally.

Implementation

Implementation Plan (6-month timeline)

1. Select 5 junior-level employees to take on the BCP-Private Sector partnership initiative
    a. Client Cesar Carvallo, director of the Payments Systems, and Luis Molinas, director of Financial Inclusion, may be in charge of introducing the initiative and selecting the 5 junior-level employees to take on the project
2. Identify key political stakeholders opposing the pending legislation
    a. Understand why they are against it and assess how much of a political pushback they may exert on this BCP-Private Sector partnership
3. Identify the biggest private sector employers that don't currently pay salaries/wages electronically
    a. Of those, research their stance on the pending legislation to assess whether they may be influenced to join the BCP-Private Sector partnership initiative to narrow down the list
    b. Conduct a needs assessment to understand their current payments system and potential barriers to adopting bank transfers (may lack the infrastructure, are used to do it a certain way, etc)
4. Reach out to the narrower list of big private sector employers to meet virtually or in-person to discuss the potential partnership
    a. Highlight benefits of making payments digitally, such as the wage distribution cost reduction by more than 50% within two years found in the literature, increased efficiency, transparency, and progress in reaching financial inclusion in the nation
    b. Establish formal partnership with willing private sector employers, outlining mutual commitments, responsibilities, and timelines
5. Technical Assistance
    a. Provide needed training and technical assistance to partnering companies such as guidance on setting up bank transfers, establishing payroll accounts, and complying with relevant regulations
    b. Facilitate account setup and address any logistical or operational issues that may arise during the transition period
6. Monitor project implementation
    a. Establish monitoring procedures to track progress and measure the impact of the initiative with metrics such as the percentage of private sector employees receiving electronic payments, account usage rates, and reduction in cash transactions

Challenges

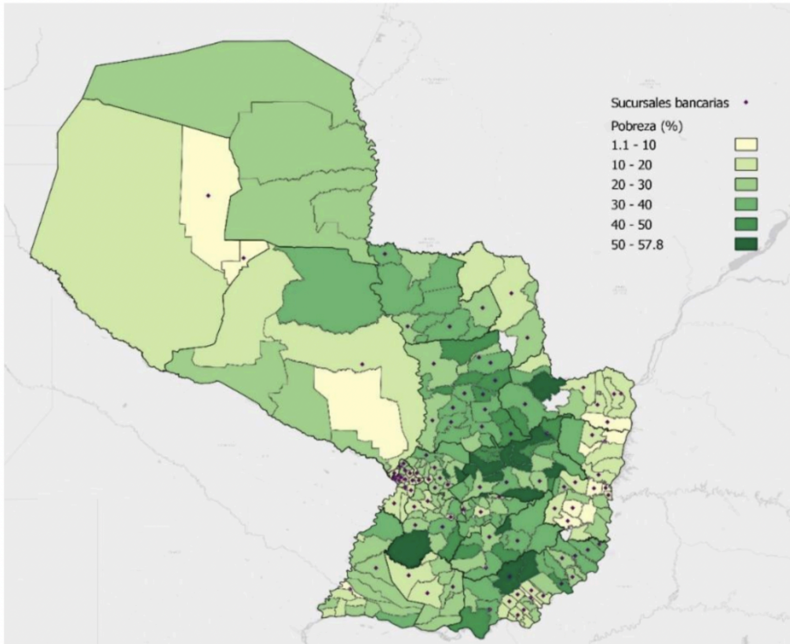
The success of the BCP-Private Sector Partnership relies on private companies being willing to switch to digital forms of salary/wage payments. Although making this transition poses benefits to employers in terms of time and money saved, it may be the case that private companies would not be willing to switch. It could be the case that private sector companies are against the switch due to a lack of infrastructure to accommodate digital payments, or due to being used to operating a certain way and wanting to avoid disruptions, concerns that employees will not receive the change well, or other reasons. However, given that there is pending legislation to mandate digital wage/salary payments, it is likely in the best interest of private companies to switch to digital payments sooner rather than later.

Conclusion

The implementation of the BCP-Private Sector partnership is expected to take six months to complete, with the first three months being allocated to identifying key private sector employers and potential political opponents and their respective contact information. The following three months will involve reaching out to selected private sector employers and setting virtual or in-person meetings to persuade them to join the initiative. From then on, the BCP should provide support at the initial stages of the cash to digital payments switch. This can be done through a presentation on how employees can open and use their new bank accounts or through the provision of a help hotline to answer any questions they may have during the transition to electronic payments. Overall, this initiative will help improve financial inclusion levels in Paraguay, with an estimated 500,000 new accounts created, and 200,000 new people saving money formally. This equates to a 12.5 percentage point increase in the share of adults holding a bank account, and a 5 percentage point increase in the share of adults saving money formally.

Appendix

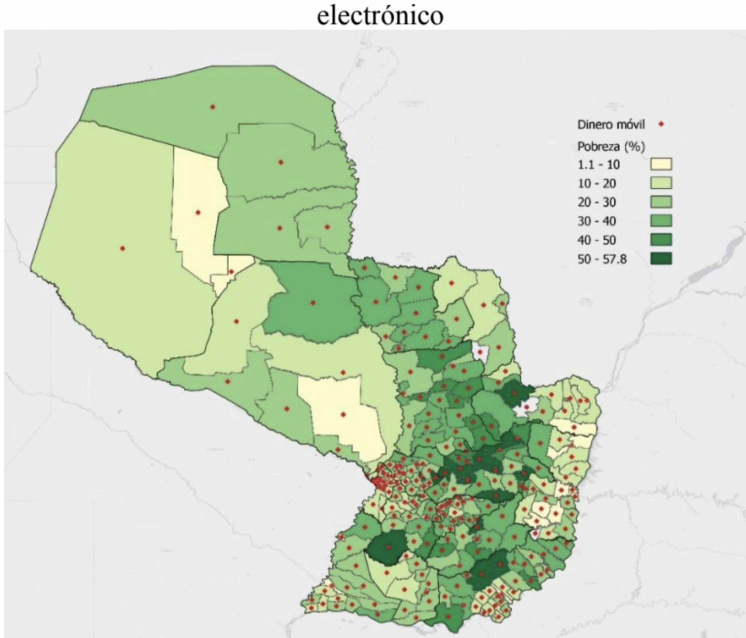
Panel A: Porcentaje de hogares pobres por distrito y sucursales bancarias



The figure above shows the percentage of poor households by district and bank branches. The legend to the right shows the percentage of poverty, and the red dots represent the presence of bank branches in that district.

Source: (Roa & Villegas, 2022)

Panel B: Porcentaje de hogares pobres por distrito y puntos de atención dinero electrónico



The figure above shows the percentage of poor households by district and mobile money branches. The legend to the right shows the percentage of poverty, and the red dots represent the presence of mobile money branches in that district.
Source: (Roa & Villegas, 2022)

Figure 1

System	Year	# Accounts	3 Moving Avg	Error	Abs Error	Error-squared	% Error
LBTR	2013	812					
	2014	21,425					
	2015	52,101					
	2016	94,598	52,101	42,497	42,497	1,805,995,009.00	45%
	2017	166,700	94,598	72,102	72,102	5,198,698,404.00	43%
	2018	268,190	166,700	101,490	101,490	10,300,220,100.00	38%
	2019	383,500	268,190	115,310	115,310	13,296,396,100.00	30%
	2020	640,784	383,500	257,284	257,284	66,195,056,656.00	40%
	2021	1,021,223	640,784	380,439	380,439	144,733,832,721.00	37%
	2022	1,194,820	1,021,223	173,597	173,597	30,135,918,409.00	15%
	2023	728,608	1,194,820	-466,212	466,212	217,353,628,944.00	64%
	2024	**Prediction**	**728,608**		**MSE**	61,127,468,292.88	
					MAPE	39%	

Weights
0.00
0.00
1.00

Conditions		
1.00	`=	1

Source: Own elaboration based on data from the BCP.
The graph above was generated using historical LBTR (Liquidación Bruta en Tiempo Real / Gross Settlement in Real Time) data provided by the Central Bank to show the historical growth in the number of accounts. This data is used to assess account ownership trends over time.

Figure 2

System	Year	# Usage	3 Moving Avg	Error	Abs Error	Error-squared	% Error
LBTR	2013	4,496					
	2014	165,976					
	2015	482,362					
	2016	984,896	426,064.05	558,831.95	558,831.95	312,293,147,078.60	57%
	2017	1,959,246	888,418.08	1,070,827.92	1,070,827.92	1,146,672,427,844.72	55%
	2018	3,815,398	1,785,252.58	2,030,145.42	2,030,145.42	4,121,490,428,710.76	53%
	2019	6,226,541	3,481,933.27	2,744,607.73	2,744,607.73	7,532,871,593,966.95	44%
	2020	11,966,890	5,723,806.02	6,243,083.98	6,243,083.98	38,976,097,627,670.10	52%
	2021	21,667,792	11,006,553.25	10,661,238.75	10,661,238.75	113,662,011,615,796.00	49%
	2022	23,473,752	19,848,640.27	3,625,111.73	3,625,111.73	13,141,435,035,094.40	15%
	2023	6,350,722	22,118,115.21	(15,767,393.21)	15,767,393.21	248,610,688,754,384.00	248%
	2024	**Prediction**	**8,155,243.82**		**MSE**	53,437,945,078,818.30	
					MAPE	72%	

Weights
0.12
0.00
0.88

Conditions		
1.00	`=	1

Source: Own elaboration based on data from the BCP.
The table above was generated using historical LBTR (Liquidación Bruta en Tiempo Real / Gross Settlement in Real Time) data provided by the Central Bank to show the historical growth in the number of transactions done. Something to note is that there is no data for the low value transactions known as ACH (Cámara Compensadora de Cheques y la Cámara de Compensación Automatizada/ Automated Clearing House), thus the figure is understating the total number of transactions.

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