PARAGUAY: BEYOND MACROECONOMIC STABILITY

ACHIEVEMENTS AND CHALLENGES

The pictures in this book are from the Central Bank of Paraguay building complex, inaugurated on November 5, 1984. The images highlight its modern architecture: spaces formed by lines, angles and curves, textures and shapes contrasts and the excellent use of natural light.

This architectural work with modern and rational style presents simple geometric shapes, orthogonal structures and predominance of exposed concrete, glass and aluminum. Likewise, the prevalence of open floor plans, free façade and rooftop gardens stresses Le Corbusier's considerations.

Paraguay: Beyond macroeconomic stability. Achievements and challenges

ISBN 978-99967-735-2-5

Printed in Paraguay.
First edition: September, 2016
First edition of the Spanish version: March of 2016
Printed by Servipress

Coordinating Team: Viviana Garay Estepa, Natalia Cristina Escobar Rivarola, Jazmín Gustale Gill and Felipe González Soley.

Edition of the Spanish version: Andrés Benítez Ruiz Diaz and Maria J. Peralta Heisecke

Translation: Ana Laura Arias
Design and layout: Karina Palleros
Cover and interior photographs: Karina Palleros

Translation Editing Team: Carolina Avello León, César Carvallo Canas, Enzo Casabianca Laterza, Irene Cristina Escribá, Zulma Espinola González, Viviana Garay Estepa, Felipe González Soley, Juan Manuel Gustale, Ángel Lille González, Luis Carlos Matto, Edgar Mendoza Cáceres, Maria Rosa Ortellado, Fernando Rivarola Angulo, Ana Laura Rojas, Sebastian Romero Robertti.

Any views expressed in this document are solely those of the authors and so cannot be taken to represent those of the Central Bank of Paraguay.

In application of the Intellectual Property Code, any full or partial reproduction or representation for any use what so ever is prohibited without the prior agreement of the holders of the rights.

PRESENTATION

The *golden years* for Latin America and Paraguay have come to an end. A recent IMF study points out that, due to poor prospects for commodity prices, the growth of commodity-exporting economies could slow down even further in coming years. According to this research, the recent drop in prices could potentially cut back the growth rate of commodity exporting countries by one percentage point per year. The study also concludes that the slowdown is not just cyclical, but that it also has a structural component, given that investment—and, consequently, potential output— tends to grow at lower rates among exporting countries during slumps of commodity prices.

Over the past twelve years, Paraguay has benefited from tailwinds that helped the economy grow at an average rate close to 5%. All of this was supported by prudent macroeconomic policies (fiscal and monetary), a key factor in the country's shift in sovereign credit rating from a situation of selective default to currently being one step away from investment grade. However, in the new global scenario, macroeconomic stability – although a necessary condition – will not suffice to sustain high growth rates and achieve higher income and welfare levels. Therefore, to continue building a better future, Paraguay needs to design and implement public policies that are sustainable over time, and are not solely limited to the monetary and fiscal front.

For instance, it will now be essential to redouble efforts to promote financial inclusion based on the stable and solid growth of the financial system; to improve the quality of infrastructure and public services; to deepen the stock market; to prioritize the quality of institutions; to adjust the management of international reserves to international best practices; to modernize the regulatory framework of the financial system; and to seek greater diversification and complexity of our production structure.

Our quest for these reforms motivated the publication of this book titled *Paraguay: Beyond Macroeconomic Stability*, with two objectives in mind. On one hand, to describe and document Paraguay's long road towards macroeconomic stability. On the other hand, through critical and prospective lens, to discuss some of the challenges that lie ahead in achieving growth above the regional average, supported by a more efficient and inclusive financial system. Naturally, the list of issues covered in this second part is limited, but the topics reviewed are among the most relevant.

The Board of the Central Bank of Paraguay looks forward to this publication's contribution in the enhancement of knowledge on the Paraguayan economy, serving to value the importance of macroeconomic stability, and becoming a useful tool in discussing public policies that must be implemented in Paraguay.

Asuncion, March 2016

Carlos Fernández Valdovinos

CONTENTS

PROLOGUE

Felipe Larraín B.[1]

Paraguay has experienced numerous episodes of high volatility in its path towards economic growth, some of them brought about by its high economic openness and strong reliance on the agricultural sector. In consequence, the GDP has become significantly vulnerable to fluctuations in the international prices of such products, and may sometimes be severely affected by said shocks. However, while some volatility is caused by variations in international export prices, macroeconomic institutionality takes also a share of the responsibility. For instance, fiscal policy in the past was rather pro-cyclical: in times of negative shocks, the fiscal authorities could have reacted to the fall in tax revenues by shrinking public spending, thereby also worsening the drop in GDP levels. Fiscal institutions are, however –and on a more positive note–, currently undergoing a process of revision and improvement, especially as of the implementation of the 2013 Law on Fiscal Responsibility.

This book aims to show how Paraguay is shifting, in several dimensions, towards a new and improved economic institutionality. As detailed by the authors, this process has developed over a decade and covers fiscal, monetary and financial institutional frameworks.

Such improvements in economic institutionality go beyond helping in the reduction of volatility in economic growth. Moreover, macroeconomic stability is a necessary, albeit insufficient, condition in stimulating economic growth. Facing greater levels of stability and less uncertainty, private investment tends to become more dynamic, spurring national growth at higher rates.

Let's consider an example on how an improved institutional framework may affect economic growth. As long as there is a responsible fiscal management, implying that tax authorities save in years of economic expansion and dis-save in times of recession, creating fund with liquid assets to be used in the latter case, the risk premium required for the issuance of public debt is likely to decline, acting as benchmark for the rest of the economy. This phenomenon is clearly represented by the Chilean economy in the last decade resulting in lower interest rates for the economy and boosting investment.

1 Director, Latin American Center for Economic and Social Policies (CLAPES UC) and Senior Lecturer, PUC Chile. Former Finance Minister of Chile (2010-2014).

This book seeks to illustrate the country's efforts in improving its economic institutionality and stability, thereby facing higher economic growth rates, as well as the possibility of higher levels of employment, wages and tax revenues, all resulting from greater economic dynamism in the near future.

The book covers practically all the institutions relevant for financial markets and economic growth, boarding topics such as fiscal and monetary policies, financial inclusion, the stock market and management of international reserves. Recent advances are also discussed, as well as the next steps required to move forward with the Paraguayan institutional framework.

Within the first part of the book, the chapter "A Decade of Stability", by Jorge Corvalán is dedicated to a discussion on the main reforms in Paraguayan institutional improvements since the last decade, based on three pillars: the fiscal, monetary and financial sectors. Next, Correa, Colman and Tello analyze how to improve coordination between the fiscal and monetary institutional frameworks, while Carlos Carvallo describes the implementation process of inflation-targeting scheme and how an efficient fiscal policy has been crucial in the advent of the recent monetary management success.

At the beginning of the second part, Carlos Fernández discusses productivity and economic growth, arguably the most relevant issues for Latin American economies seeking to reach the GDP levels seen in developed nations. He explains that a boost in productivity can lead to fundamental changes in standards of living by ushering higher levels of GDP per capita. In 2015, according to projections by International Monetary Fund, Paraguay's per capita GDP was US$ 8,670, a fair distance from the of US$ 22,000-23,000 per capita levels seen in Chile and Argentina, and a far cry from the US$ 41,000 per capita GDP of the United Kingdom and the approximate US$ 56,000 per capita of the United States. Understandably, it has become imperative for Paraguay to alter its production scheme in order to allow for a sustained, rapid, period of growth.

Santiago Peña addresses financial inclusion, a key issue concerning both the general population as well as economic growth. He also outlines the objectives and goals to be reached in this area in the coming years in a challenging yet interesting agenda that illustrates both the recent institutional improvements as well as pending achievements.

Ernesto Velázquez analyzes the financial system's regulation and discusses potential improvements to be implemented in order to advance macro-prudential regulations and risk-based supervision, creating more favorable tools to address financial issues, as eventual banking crises. Rafael Lara discusses potential measures to be applied in the development of the Paraguayan stock market, as there is still room for improvement regarding market liquidity.

Roland Holst also addresses a highly relevant topic: how to obtain higher returns for assets by improving the management of international reserves while maintaining their liquidity. Such reserves act as the first line of defense in times of economic crises given that they allow the implementation of countercyclical policies, as well as help mitigating drops in GDP. Next, Aníbal Insfrán provides a detailed prediction of where the Paraguayan financial system is heading, and describes the tensions between the regulation and rapid expansion of the financial system in recent years. He highlights the importance of modernizing legislation in order to foster innovation, while also ensuring stability in the financial system.

As final thought: it is encouraging to see the large number of qualified economists that collaborated in the creation of this book, many of them with postgraduate degrees from prestigious institutions both in US and our region. This is a sign of hope for the future of economic policies in Paraguay, as it evidences the strength of their commitment towards future economic policy and towards a country making a rapid transition into an economy with more advanced human capital, a necessary component for competition in the current global economy.

This book is not only an excellent summary of the reforms implemented in Paraguay over the last decade, but it also serves as a roadmap for future reforms to be carried out. As such, it is a propitious starting point for future economic discussions that need be carried out as a country.

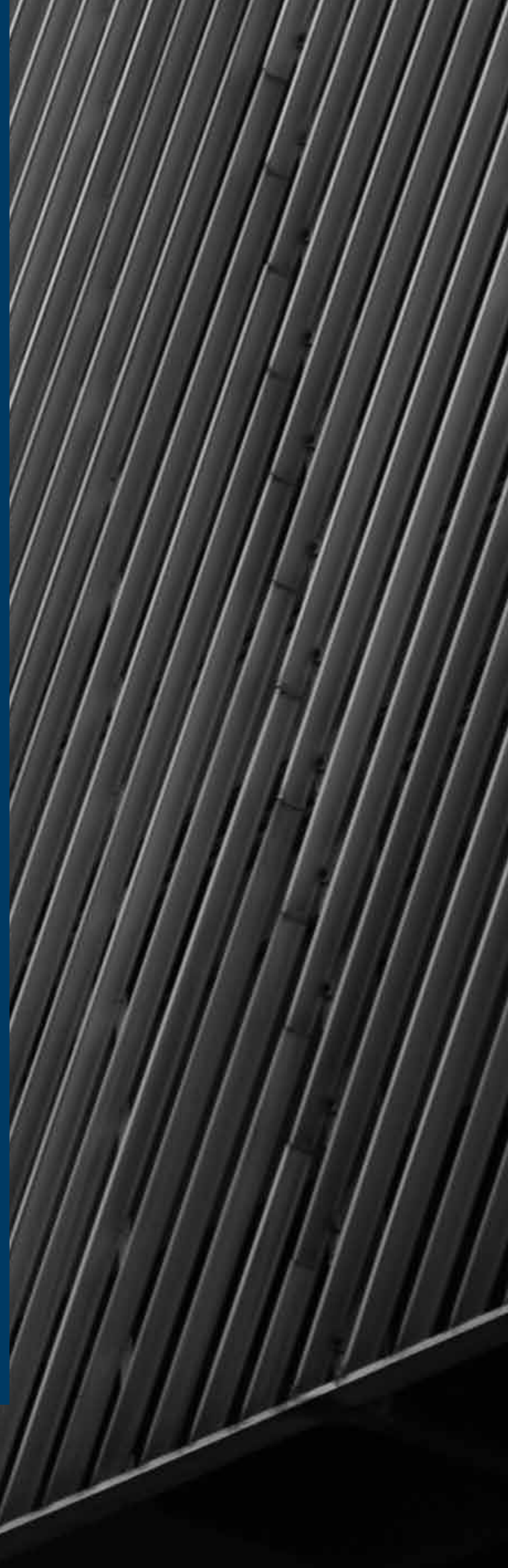
PART 1
RECENT ACHIEVEMENTS

A Decade of Stability*

Jorge Corvalán Mendoza

The author would like to thank Jazmín Gustale Gill, Edgar Mendoza, Dionisio Coronel, Andrés Benítez and Felipe González Soley for their contribution to this chapter.

* Revised and updated version of the chapter "Paraguay in the FLAR" included in the book Building a Latin American Reserve Fund: *35 years of FLAR, April 2015.*



Paraguay is a country with a small and open economy, therefore exposed to shocks derived from changes occurring in the world, these can be both positive and negative. Since mid-nineties, the process of learning to coexist in a globalized and more interconnected world was strongly felt in Paraguay. The constant changes in the regional and global economy were transmitted to Paraguay mainly through capital flows, terms of trade and interconnections from the financial system. These dynamic changes put to test the shock mitigation mechanisms available at that time in the country. The experience was instructive. The economic system needed stronger mitigating mechanisms to address negative shocks, and better amplifiers to enhance the positive ones. The road to meeting the demanding needs of the population that calls for improvement in their quality of life is long and there is still much to be done. Many weaknesses detected in economic policy have already been addressed and others are underway.

Twelve years ago the country revitalized its macroeconomic framework, a process that formally started in late 2003 with the signing of a precautionary agreement with the International Monetary Fund. The results of the strengthening are expressed in improvements in fiscal accounts and a more comfortable panorama to start the migration of monetary policy to an inflation targeting regime, an initiative that formally started in 2011, i.e. eight years later.

Without changing its existing scheme of low taxes, a process of broadening the tax base was introduced to improve revenue mobilization (VAT 10 percent, corporate tax 10 percent and since 2012, personal income tax 10 percent). Additionally, the General Budget of the Nation was improved and adjusted through a process of expenditure prioritization and justification, and the refinement of the institutional performance was sought through organizational strengthening of various departments.

The work to build mechanisms to help mitigate negative shocks and amplify positive ones benefiting the country is permanent. In this context, the regulations already in place include: i) the Fiscal Responsibility Law, passed in 2013, to guide the behavior of the tax authority in the medium and long term, and ii) the Public-Private Partnership Law, to expand and modernize the necessary infrastructure and reduce transportation and logistics costs. To this we add the constant supervision of the local financial system, the maintenance of relatively low levels of public debt, a flexible exchange rate in a single free market, and a pricing system for goods and services responding to supply and demand, to list the main actions.

After a period of political instability that began in 1998 and was intensified between 1999 and 2002, in August 2003, the situation of stability returned with the inauguration of a new constitutional government resulting from direct elections. Authorities took office with priorities to improve the wellbeing of the population through the fight against poverty. In this way they undertook an accelerated period of institutional restructuring to improve public management.

The following are among the first financial reforms: i) the creation of the Deposit Guarantee Fund providing coverage to small depositors to safeguard their funds; and ii) the creation of the Financial Development Agency, a second-tier bank which brought together several institutions with very similar goals and objectives in order to avoid the duplication of efforts and facilitate coordination. The latter fostered the environment to generate medium and long-term credits (nonexistent in the recent past), which nowadays have exceeded the ten-year term in domestic currency.

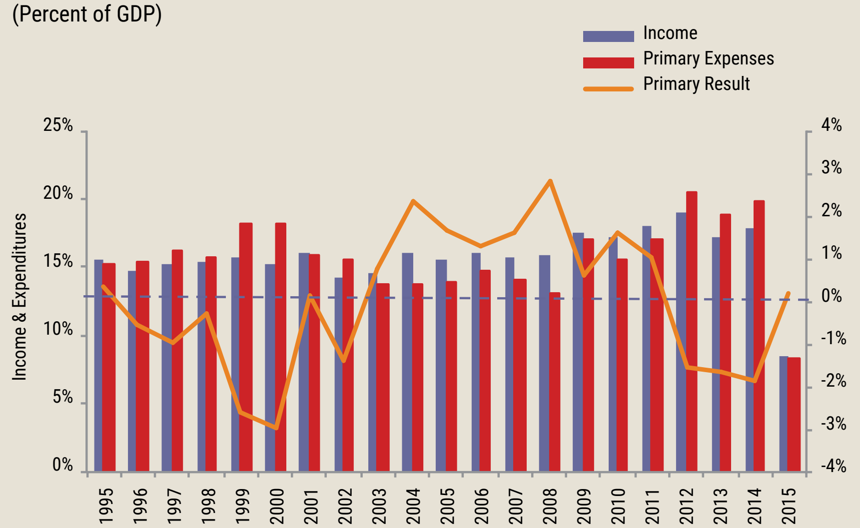
The Paraguayan ability to implement these reforms was primarily due to the achievement of a broad consensus of several sectors. In 2003, an Institutional Agenda was signed between the Executive Branch, the Legislature and the political parties, with clear objectives to contribute to the development of the country. Among the reforms that were implemented thanks to this agreement were: the reform of the Fiscal Pension Fund (public pension system) to phase out the fiscal deficit, the aforementioned fiscal adjustment, the Customs Code, the public debt restructuring, the management of the public banking system, and a monitoring system for state owned enterprises. At the same time, an agreement was signed with local banks and financial institutions to restructure the domestic debt.

The perfected pillar: the Fiscal Responsibility Law

In 2013, the Fiscal Responsibility Law (FRL) is enacted; it is considered an essential tool to reinforce the macroeconomic policy framework. It becomes an effective and transparent fiscal pillar, with which current expenditure is limited to predetermined ceilings, and a more predictable medium-term fiscal policy is promoted. The FRL became effective as of the 2015 budget.

As shown in Figure 1, Paraguay managed to reverse the fiscal deficit to a surplus for several consecutive years (2004-2011) without increasing the level of taxes, which was the result of management reforms and new tax and customs laws, in a process of greater internal order and consistency in the long-term macroeconomic policy.

Figure 1
Primary result of the Central Government
(Percent of GDP)



Source: Central Bank of Paraguay (data to June 2015).

Since 2015, the FRL sets out the new rules for public spending, as well as the budget deficit level, consistent with a manageable level of medium-term debt. The rules are simple to understand and appropriate to safeguard fiscal sustainability in the medium and long term. In short, the FRL specifies that the central government's deficit may not exceed 1.5 percent of GDP, a ceiling that can be modified by the National Congress by up to 3 percent in exceptional cases, and the average deficit may not exceed 1 percent of GDP for three consecutive periods. The FRL also specifies that current primary expenditure in the public sector has a limit. The growth rate of such spending may not exceed 4 percent plus inflation.

The monetary pillar: inflation targeting

The option a central bank has of deploying its monetary policy framework depends mostly on the objective it pursues, on the challenges that the domestic economy is going through and on the structure of the financial market in which it operates. As a result of several factors, the monetary policy framework is expected to change over time, accompanying the developments of the domestic economy and of the international financial system.

The exchange rate regime is essential for small and open economies like ours, which in the last decade has experienced significant capital flow movements (both inflows and outflows) and greater financial interconnectedness with the global economy. While this finding is encouraging public and private financing needs and increasing financial interconnectedness, it creates new challenges for monetary policy.

In general, central banks of developing economies have broken away from the objective of controlling the amount of money as part of their monetary policy. This process coincides with the evolution and maturity of the economic system in these countries. As it is well known, the effectiveness of keeping inflation within tolerable ranges, by controlling the amount of money, depends on the stability of the money demand function and on the structural relationship between monetary aggregates and macroeconomic variables, among others.

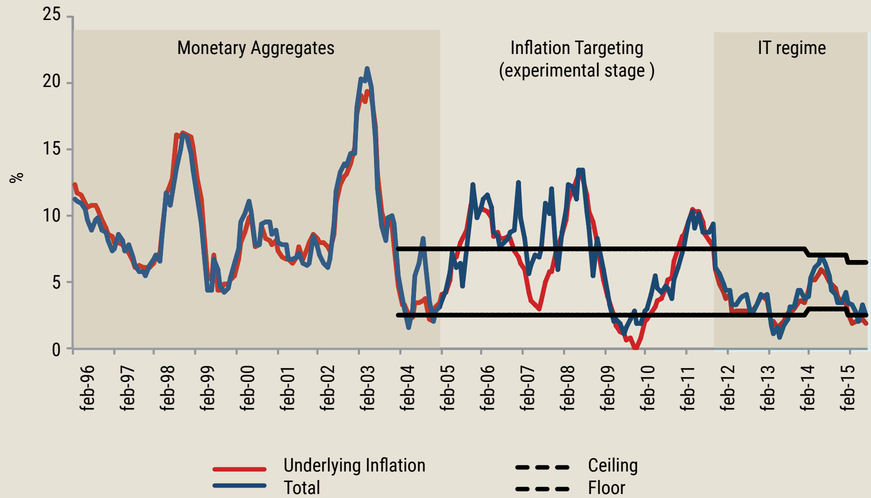
However, international experience shows that this structural relationship tends to shift to the extent in which the financial system develops. The end result is that monetary aggregates are becoming less effective at maintaining inflation, as can be inferred from the historical experience of monetary policy in developed countries. Therefore, developed countries dropped monetary aggregates to effectively control inflation, as did several developing countries, one of them being Paraguay.

Nowadays, many central banks have opted for a monetary policy framework known as inflation targeting. Under this regime, the short-term interest rate is the main instrument of monetary policy, executed by the central bank through open market operations, in order to control liquidity in the economy.

Thus, in 2011, after several years of studies and assimilation of regional and international experience, the Central Bank of Paraguay initiated an inflation-targeting regime. At that time the inflation target rate was established at 5 percent. Today, that objective is more ambitious and beneficial for the sound functioning of the economy, with the inflation target set at 4.5 percent.

The adoption of the monetary policy regime reinforces the commitment to comply with the legal mandate of the central bank of ensuring price stability of the at all times. It also complies with the purpose of establishing a more fluid communication channel with the various economic agents and helps to make the monetary policy decision-making process more transparent. With the support and collaboration of multilateral agencies and central banks of the region, Paraguay successfully implemented this new regime for monetary policy management.

Figure 2
Inflation



Source: Central Bank of Paraguay.

Figure 2 shows the trajectory of inflation under the monetary aggregates regime; then under the inflation-targeting regime (experimentally) and, since 2011, under an explicit inflation-targeting regime.

In this series, whose timespan covers about two decades, we see that the volatility of this variable declined in the last five years. The communicational action of the central bank is gradually reinforced, and economic agents understand better the benefits of the monetary pillar.

Without a doubt, the central bank will continue its adaptation process to the challenges the economy faces over time. In that regard, it is important to underscore the significant challenges addressed during the last decade by the public and private sector on issues such as strengthening the financial system and promoting greater financial inclusion. These channels are of great importance to achieve greater wellbeing of economic agents and greater monetary policy effectiveness.

Strengthening of the financial system[1]

The work of building mechanisms to help mitigate negative shocks and amplify positive ones that benefit the country is permanent and it can be seen through the last decade. According to the Financial Sector Assessment Programs (FSAPs) carried out by specialized international organizations, whose reports are usually published every five years, Paraguay has systematically strengthened its public and private financial system.

The first assessment was carried out in 2005 and the second one in 2010. A significant event in the area of supervision is the recognition that the country increased its level of compliance from 17 percent to 63 percent in the 25 Basel Core Principles for Effective Banking Supervision. These 25 Core Principles refer to international best practices that supervisors around the world pursue in order to minimize the inherent risks of the financial business, and thus protect the savings-investment relationship, private and public, local or international, that is crucial for economic growth.

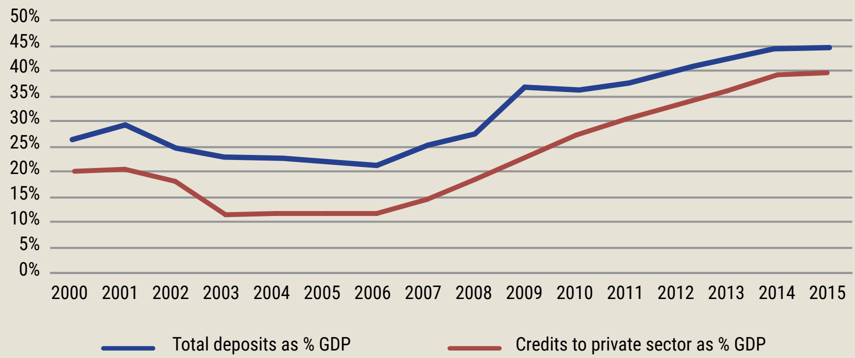
This innovative program allows many developed and developing countries to identify the strengths and weaknesses of their financial systems. With globalization, these systems are increasingly connected and interdependent, and therefore require a standard unit of measurement at the global level. This unit of measurement now allows the objective comparison of different financial systems.

In this regard, the Superintendence of Banks undertook a series of reforms in the past decade in order to improve the quality and effectiveness of the supervisory process and of the regulatory framework of the country's banking entities. This reform process is in line with international best practices and seeks to preserve stability and solvency, at all times, of the agents operating as financial intermediaries.

As shown in Figure 3, the evolution of credit to the private sector and the deposits regain their momentum since 2007. Prudential standards and supervisory regimes and techniques, adjusted after the experience of the nineties, allow greater levels of financial deepening today, never experienced before. This is reflected in a sound, stable and growing financial system.

1 Revised and updated version of the working paper "Monetary policy and Macroprudential measures". 2012.

Figure 3
Financial deepening



Source: Central Bank of Paraguay.

After the sobering experience of the nineties with the financial system, the country launched substantive reforms in terms of regulation and supervision. Important laws were enacted and many measures were applied in this regard, all of them to support and protect financial assets of individuals and companies, and to foster a normal economic operation.

The financial system is the natural transmission channel from savings to investment and consumption. In this sense, international best practices for monitoring and permanent control of the financial system were incorporated to the national legislation. Prudential rules were applied to risk management, the Basel Committee's recommendations were adopted, and the idea that the supervisory body had to be a specialized and autonomous technical entity to better fulfill its role was reinforced.

The increase from 17 percent to 63 percent in the level of compliance with the 25 Core Principles for Effective Banking Supervision evidences the firm conviction that the economy is more likely to achieve progress and prosperity with intermediaries optimizing resources, i.e. they can lend at lower costs and pay more for savings, in a framework of security and solvency. In addition, the Strategic Plan of the Paraguayan State against money laundering and terrorist financing (AML/CFT) was formalized in mid-2013. This plan is part of the process of mitigating negative shocks. The main vulnerabilities identified by the Financial Action Task Force of South America (GAFISUD), a regional organization within the Financial Action Task Force (FATF), during their assessments were: weaknesses in the penalization of money laundering, absence of a legal framework to penalize terrorist financing, and limitations on the number of reporting entities required to comply with preventive rules and regulations.

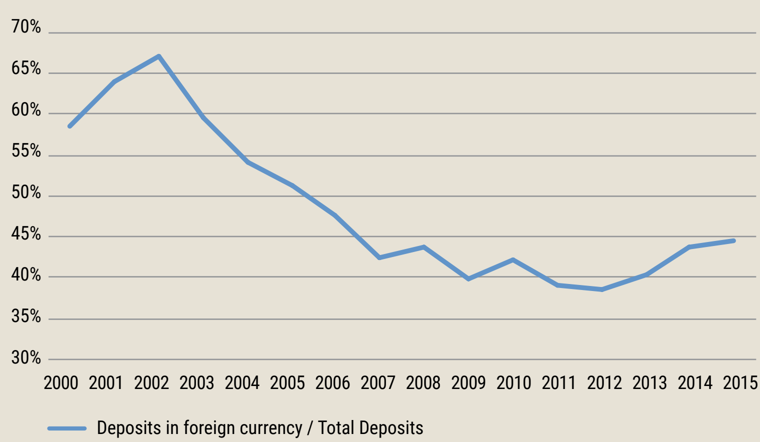
Due to these vulnerabilities detected in successive assessment rounds, in 2008 the country was included in an uncomfortable *grey list* affecting the integrity of the financial system. However, the reaction of the three branches of government was swift and a process to mitigate that risk was undertaken.

Among the main measures taken were: changes in the Paraguayan Criminal Code, expansion of the list of money laundering predicate crimes, changes in the structure of the SEPRELAD (the money laundering prevention agency) and the enactment of the law that criminalizes acts of terror and terrorist financing. In 2012 Paraguay was excluded from the grey list. This had a positive impact on the financial system and confirmed the commitment, both public and private, to safeguard the integrity of the financial system at all times.

A broad review of some ratios of the financial system indicates that most solvency indicators have improved substantially. The 11.5 percent of non-performing loans (NPL) in 2005 declined to 2.6 percent in mid-2015. Additionally, the 81.6 percent coverage provision of NPL's recorded in 2005 rose to 112.7 percent in June 2015.

Financial efficiency levels remained comfortable, as the 27.1 percent average return on equity (ROE) in 2005 remained almost constant at 26.9 percent in June 2015. Furthermore, there is currently a lower balance sheet risk considering that in 2005 the financial system began with 54 percent exposure to foreign exchange risks, and by mid-2015 that exposure does not exceed 44 percent, as shown in FIGURE 4.

Figure 4
De-dollarization of the Banking System

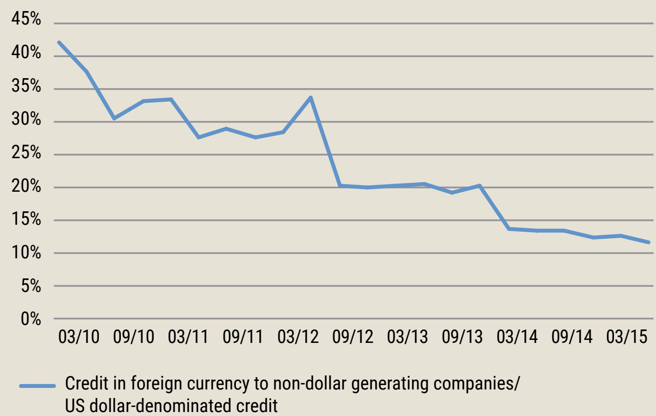


Source: Central Bank of Paraguay, Statistical Annex.

Although the decline in exposure still seems to maintain a high degree of dollarization, this high rate is due to the natural coverage of companies whose income and costs are mainly in US dollars, such as agriculture and livestock.

Therefore, when comparing the credit of non-dollar generating companies against total credits of the banking system, we can see the mismatch risk declining in recent years and currently affecting a maximum of 11.6 percent of loans in US currency, as detailed in Figure 5.

Figure 5
Credit in foreign currency to non-dollar generating companies



Source: Central Bank of Paraguay, Superintendence of Banks.

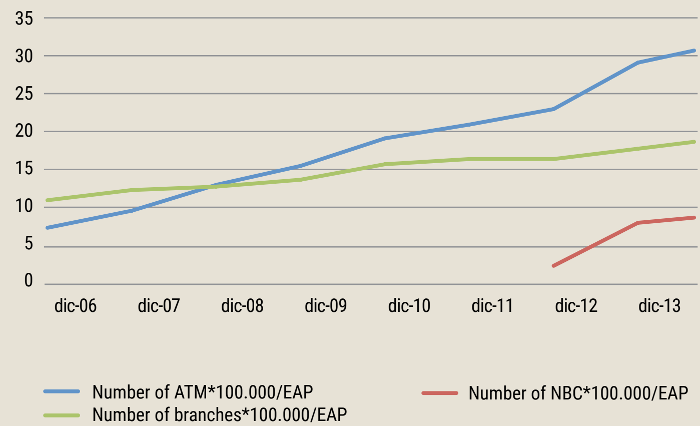
This indicator is relevant for the country due to the degree of Paraguay's trade and financial openness. Let's bear in mind that the constant changes in the regional and global economy were transmitted to Paraguay mainly through capital flows, terms of trade and interconnections of the financial system. In this sense, sound management of foreign exchange risks mitigates vulnerabilities in the balance sheet of households and businesses.

Financial Inclusion

The National Financial Inclusion Strategy has defined financial inclusion as "the access to and the use of a full range of quality financial services in a timely, convenient, informed and affordable manner, with appropriate regulation to ensure consumer protection and promote financial education to build financial skills and rational decision-making by the different segments of the population".

FIGURE 6 shows how the deepening of the financial system has gone hand-in-hand with the expansion of the channels of access. It shows the expansion of the main channels of access to the financial system, such as automated teller machines (ATMs), non-banking correspondents (NBC) and bank branches.

Figure 6
Channels of Access



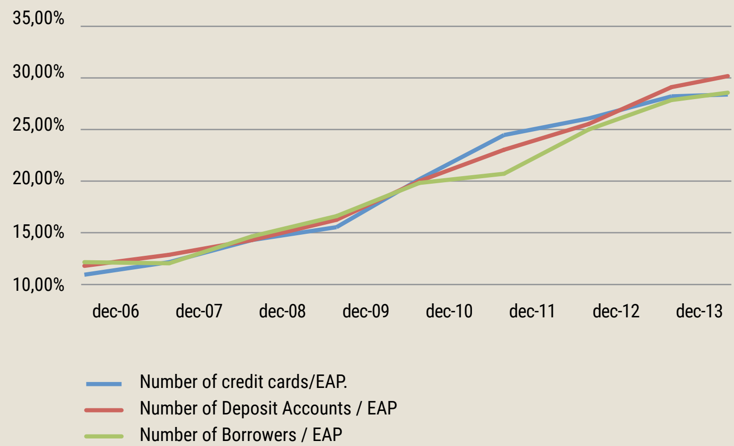
Source: Central Bank of Paraguay, Superintendence of Banks.

Hence, the first channel of access i.e. the number of ATMs per 100,000 people, divided by the economically active population (EAP), has seen a growth of 342 percent during the analyzed period, followed by bank branches with a 72 percent growth and, lastly, non-banking correspondents which, although they account for a smaller proportion among the channels of access, have grown considerably over the past three years.

In this regard, the Superintendence of Banks has been working intensely, through the Financial Inclusion Department, to meet the goal of monitoring the development of quality financial services for all citizens. Efforts have been measured through two approaches. On the one hand, there is the offer of financial products and services generally called channels of access, as detailed in FIGURE 6, and on the other hand, the demand for such services or indicators of use.

Furthermore, when analyzing the channels of use, we can observe a steadier growth of their main components than that observed in the channels of access, which have risen from 11.6 percent on average to 29 percent by the end of 2014, i.e. an increase of 150.3 percent over an eight-year period.

Figure 7
Channels of use



Source: Central Bank of Paraguay, Superintendence of Banks.

Although these data provide a guideline and support to the process of financial deepening, much remains to be done. Therefore, the Central Bank, in collaboration with the Ministry of Education & Culture (MEC), is coordinating activities in order to promote the understanding of economic, financial and regulatory issues.

In this regard, through the Interagency Cooperation Framework Agreement signed in 2010 by the MEC and BCP, a training plan for teachers on economic and financial education issues was developed. Some of these topics included the role of money and credit, financial budget, concepts of fiscal and monetary policy, and public spending and taxes.

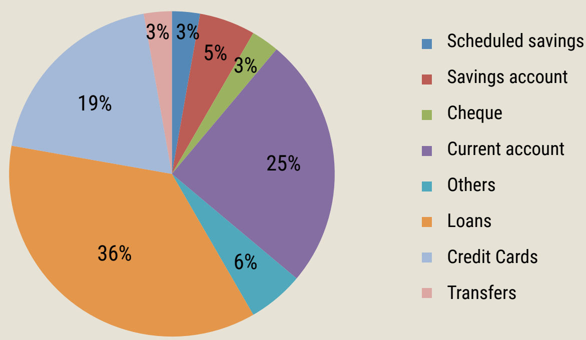
During this period beginning in 2010, the central bank has had the privilege of working with many teachers from the departments of Alto Paraná, Amambay, Canindeyú, Caaguazú, Itapúa and Central. In addition, with the intention of measuring the impact of the training, the Financial Inclusion Department has taken ex ante and ex post metrics of the courses provided under the agreement, in all cases finding a positive reaction to the topics discussed.[2]

2 The degree of absorption of topics varies according to the departments of the country that have received training in recent years, according to the Financial Inclusion Report – December 2014.

Lastly, and to maintain and protect individuals who have been included in the system, the BCP and the SIB have given emphasis to hearing the complaints of users of the financial system in order to provide advice and greater negotiating power to individuals vis-à-vis financial institutions.

The most common topics were those relating to loans, current accounts and credit cards as detailed in Figure 8, and they have led to the creation of a project whose primary goal addresses the provision of more information on the financial products offered.

Figure 8
Complaints on Products



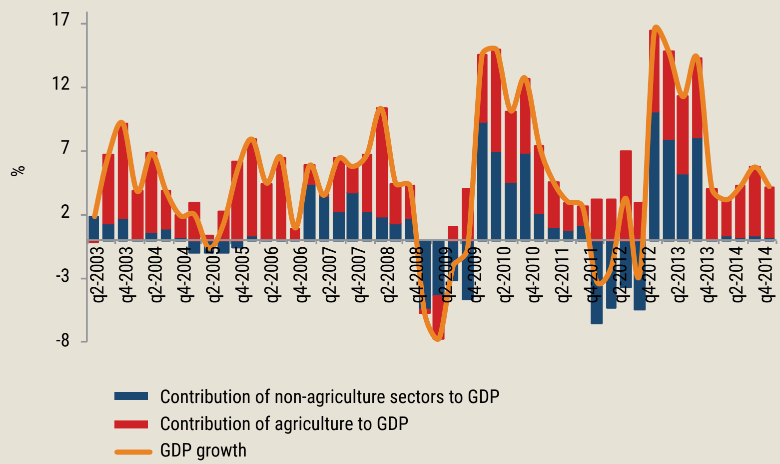
Source: Central Bank of Paraguay, Superintendence of Banks.

Ensuring transparency in the compliance of business relations or in the contracts signed by clients with financial institutions is no trivial matter. It is important to protect financial product consumers through the creation of a unit to receive and process complaints, settle disputes and protect consumers, in order to encourage a more harmonious development of the inclusive financial system. Evidence shows that poverty and inequality are greater in countries with low access to financial services, plus the fact that monetary policy has more transmission capacity to the extent in which more agents participate in the financial system.

Volatility of the economy: a challenge

Over the past decade, the Gross Domestic Product (GDP) in Paraguay experienced a significant volatility, caused mostly by climate change. The agricultural sector, whose share in the GDP is significant, bears important volatilities derived from droughts and flooding that strongly impact the performance of this sector, as can be seen in GDP behavior in 2009 and 2012, respectively (Figure 9).

Figure 9
GDP Behavior



Source: Central Bank of Paraguay.

However, such GDP volatility did not impact the rest of the economy in an impactful way, due to the relatively low spillover of the agricultural sector. Based on a presentation of the Governor of the Central Bank of Paraguay,[3] the series of figures below depict the response of different economic sectors such as electricity, industry, livestock, and construction services to shocks in agriculture (Figure 10).

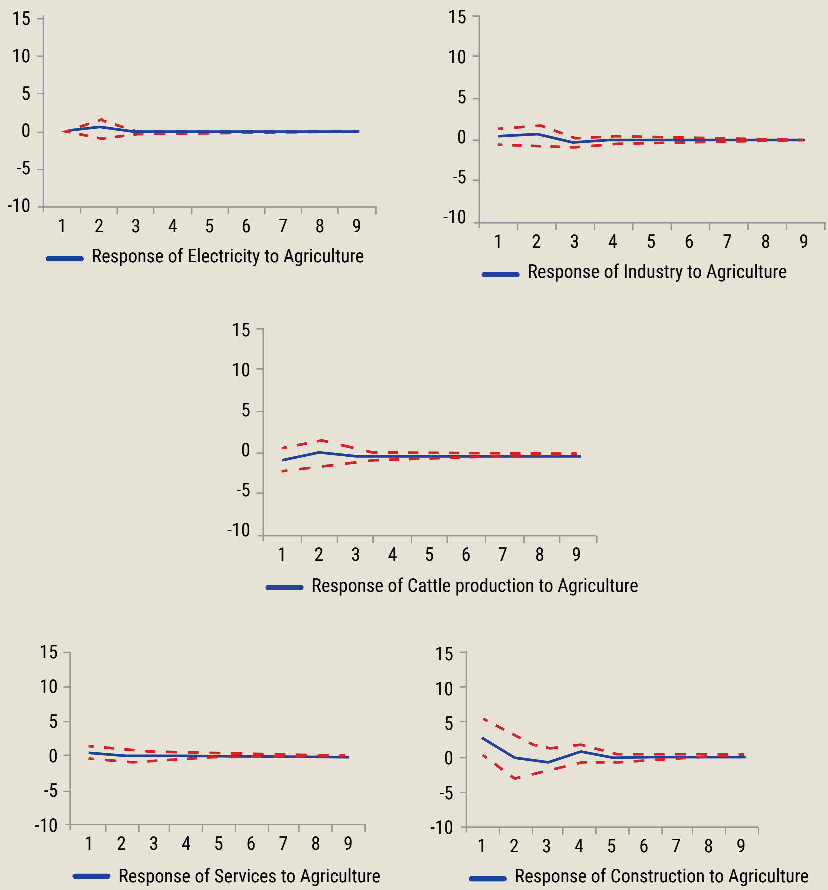
In this regard, the Public-Private Partnership Law, passed in 2013, responds to the logic of expansion and modernization of the country's infrastructure, which is necessary to mitigate GDP volatility in the medium term.

Projects regarding roads, bridges, power grids, modern irrigation systems, improvement of logistics, airports, among others, aim to mitigate GDP volatility through further diversification of the economy and generation of added value in products that are highly competitive today. The purpose of this new tool is to reduce transport and logistics costs, foster physical integration of markets for goods and services, and create the conditions for greater diversification of the economy.

3 Carlos Fernández Valdovinos, Paraguay: Walking towards investment grade, May 2014.

This new tool is not risk-free and, in that sense, fiscal authorities are working on expanding the proper institutional capacity to manage large-scale projects, in order to obtain sufficient economic returns and carefully manage fiscal risks.

Figure 10
Spillover effect of agriculture to other sectors
(2003-2013 period)



Source: Central Bank of Paraguay.

Conclusion

The work carried out at the national level by the public sector, accompanied by the private sector, is yielding positive results. The continuous improvement of Paraguay, noticed by international credit rating agencies, confirms that this decade of greater economic growth and stability is an achievement of society. The institutional arrangement for fiscal stability, low inflation and solvency of the financial system were significant developments to take advantage during the boom of the world economy and to project the future growth of the economy.

The consistency and persistence of economic policy, applied over a long period of time, generates a higher degree of trust from both domestic and foreign economic agents. It is finally them who voluntarily make the decision to invest and expand their business in our country and therefore make up the largest generators of employment and wealth.

Several countries undertook this process at different times. Looking into events in the region, we find encouraging examples in the economies of Chile, Colombia, Peru and Uruguay. In these countries, the process of implementing economic policies has taken more than two decades, and in them we find positive results. Both economic and social indicators have improved. The Paraguayan case has been underway for slightly more than a decade working continuously to improve the tools that help mitigate negative shocks on the economy and amplify the positive ones.

The ultimate goal is to promote the greatest satisfaction possible, with the resources available, to the demanding needs of the population that calls for improvements in their quality of life.

Bibliography

Central Bank of Paraguay. (2014). *Financial Inclusion Report- December 2014*. Asuncion, Paraguay.

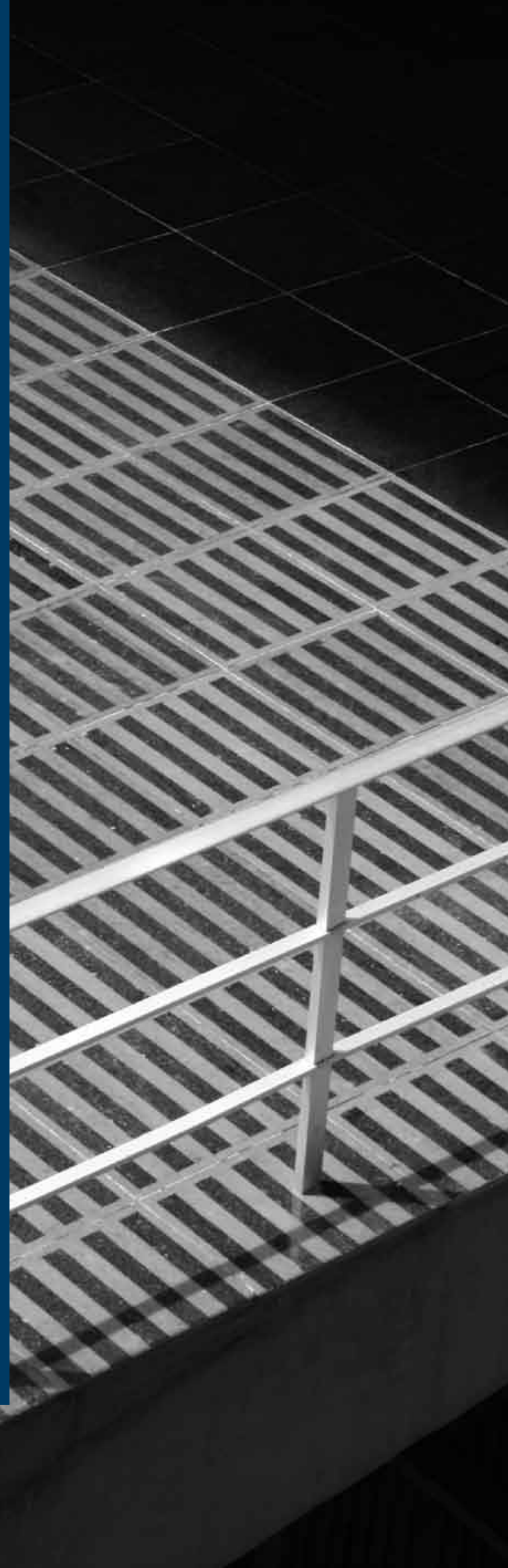
Corvalán, J. (2012). *Monetary policy and Macroprudential measures*. Central Bank of Paraguay. Asunción, Paraguay.

Fernández, C. (2014). *Walking towards investment grade*. Asunción: Banco Central del Paraguay.

Monetary and Fiscal Policy Coordination

Daniel Correa Ramírez

Co-authored with Humberto Colmán and José Tello.
The authors express their gratitude for the valuable support of Rolando Sapriza, Rodrigo Franco and Juan Galeano.



Introduction

In the current economic context, with several economies in the region experiencing a slowdown, or even a contraction of their economic activity, the action of macroeconomic policy becomes crucial. In the case of Brazil, its fiscal and monetary policy is clearly contractive, while in other countries such as Paraguay, interest rates have been reduced. These changes in macroeconomic policy seek to alleviate a given situation that is expected to have an impact in the short term. The appropriate combination of macroeconomic policies also plays a role in explaining growth and especially, in substantiating stability.

The discussion of the right combination of policies or, more simply, macroeconomic policy coordination, has drawn the attention of economists. In theory, there would be potential efficiency gains through macroeconomic policy coordination, which raise the question, from an empirical point of view, on whether policies in Paraguay have been coordinated and aimed at macroeconomic stability. Initially, there is the question of whether there has been coordination, and then to assess if, empirically, this coordination had significant effects.

An analysis of macroeconomic policies in Paraguay suggests the degree of coordination and orientation towards the growth and stability registered in the period of over a decade -ending in 2014. In particular, the set of macroeconomic policies has contributed to the stabilization of the economy during 2003-2014. The document provides a bibliographical review analyzing the effect of macroeconomic policies on stability and econometrical evidence to support the mentioned working hypothesis.

Later, the document introduces a characterization of monetary and fiscal policy during 2003-2014 to assess the institutional features and policy position at different stages of the economic cycle. Based on historical analysis it introduces an empirical estimate of the degree of policy orientation and coordination to conclude finally on what Paraguay should aim at regarding institutional coordination.

Effect of policies on stability

Macroeconomic policies can have an impact on long-term stability and growth. If policies are credible and have room to maneuver, then they can help to smooth the economic cycle –in the short term– and make the Gross Domestic Product' slope steeper –in the medium term. If policy coordination comes alongside these actions, the impact of macroeconomic policies can be reinforced and intensified.

Therefore, policy coordination could reduce the severity of shocks on the economy and contribute to welfare.

The document initially outlines the different dimensions of coordination to address the most relevant aspects of economic literature on policy coordination. The first worth emphasizing is that the focus is on fiscal and monetary policy. In this regard, economic policy coordination may be at the level of top objectives (economic growth, inflation), but also at the level of implementation of prudential measures through its instruments.

Coordination of objectives takes place in the political or legal discourse of institutional goals. In general, the objective of the Central Bank is price or currency stability, while the Ministry of Finance is in charge of fiscal or debt sustainability. In this case, the objectives are coordinated, since the two institutions pursue to anchor macroeconomic stability.

Nevertheless coordinated policies do not always imply that changes in the instruments are directly correlated since there could be a coordinated inverse correlation. This is usually the case when there is a major discretionary government spending and low monetary policy interest rate. Clearly the two policies could be coordinated in pursuit of common objectives with correlated instruments in the same orientation. A contractionary fiscal policy (less discretionary spending), implemented along with an expansionary monetary policy, can also result from coordinated actions because, in this particular case, it pursues to accommodate fiscal consolidation in order to reduce pressure on domestic interest rates and capital flows.

Blinder (1982), one of the most quoted authors, questions if greater monetary and fiscal policy coordination has effects on economic activity. To answer this question, one must first full understand the effects of different policies on the economy. Likewise, these policies are generally formulated to reach specific objectives based on indicators influenced by instruments.

Despite what Tinbergen (1952) suggested[1], Blinder advocated that for effective policy coordination, it is better to have more instruments than objectives. Still, having more instruments than objectives can lead to lower coordination since there is room for independent policy management, which would not be the case with few instruments available to each policymaker. This ends up in a situation of limited or lack of coordination, which, however, might not be undesirable considering that if each policy pursued its objectives, such objectives would interact with the reaction function of the other agent.

Regarding the type of coordination, policymakers have different objectives and concepts regarding the effects of fiscal and monetary instruments on the economy.

1 Tinbergen suggested managing at least as many instruments as objectives in order to achieve policy goals.

In particular, each one has their interpretation of how the economy functions and their models to assess the impact of their policies.

Recent literature on the effect of fiscal policy in determining the price level has led to the Fiscal Theory of Price Level (FTPL), which indicates how real primary surplus and nominal debt are fundamental to achieve price stability and, hence, macroeconomic stabilization. In fact, based on the experiences of the countries of the region, it could be argued that the fiscal anchor (or lack thereof) has been decisive in the results of macroeconomic stability and price level.

Leeper (1991), Woodford (1994), Sims (1994) and Cochrane (1998), among others, collaborated with the research on FTPL agreeing that monetary policy alone does not provide the required price level stability and assumed that an interaction of monetary and fiscal policy is required to preserve stability. This matter refers to the management of the internal credit that the Central Bank provides to the economy and, to the extent that knowledge is available on the fiscal plan regarding revenues, expenditures, and financing, the actions and effectiveness of monetary policy would be eased. The statement makes sense in developing countries such as Paraguay.

FTPL promoters consider that fiscal policy must act first establishing a discretionary path for spending and taxes, forcing monetary policy to manage the path of debt involved in electing the tax authority, also adjusting the path of seigniorage. This situation is considered as a non-Ricardian regime, in the sense that more information and predictability on fiscal policy performance does not result in displacing of private savings.

The fundamental difference with the conventional approach to monetary policy lies in the intertemporal government budget equation, indicating that the value of public debt is equal to the future value of the net income. Sala (2004) considers that from 1960 to 1979, the non-Ricardian policy regime in place in the United States determined the level of domestic prices. Therefore, before FTPL, the analysis of the interaction between monetary and fiscal policy was incomplete and signaled the need to coordinate policies, and even when the Central Bank is committed to the interest rate rule, total liabilities of the government play a significant role in price setting.

Canzoneri et al. (2011) mentioned that the interaction between monetary and fiscal policy has been previously considered to be a non-cooperative game between the Central Bank and the Government, where each had their priority regarding inflation and growth. Nevertheless, this has changed and now the question is: What level of monetary and fiscal policy coordination is required to provide a stable nominal anchor within the economy? The authors also provide a positive and regulatory review on the relationship between both policies.

From the positive perspective, non-cooperative games between the Government and the Central Bank have given way to an analysis of monetary and fiscal policy requirements to provide stable nominal anchoring. From the regulatory perspective, cooperative solutions have given way to Ramsey's allocation, which does not provide a simple characterization of optimal policy because, for example, it does not specify whether the optimal fiscal policy is Ricardian or non-Ricardian.

Schmitt-Grohe & Uribe (2007), described four key findings: 1) welfare under optimized rules is virtually identical to welfare under Ramsey's solution (decentralized solution); 2) optimal fiscal policy is passive; 3) the interest rate should react strongly to inflation; and 4) the interest rate should ignore production (the optimal rate is zero or close to zero), where a strong reaction to the output gap is associated with a significant loss of welfare. The optimal fiscal policy is passive when the fiscal authority can resort to lump sum taxes; under an active fiscal policy, solvency is achieved through shocks in the price level acting as lump-sum taxes or subsidy to the nominal ownership of assets.

Moreover, macroeconomic policies can play a significant role in stabilizing the economy. In particular, it is advisable to coordinate macroeconomic policies with the implementation of development policies to promote objectives related to increaseing welfare. Certainly, requirements for effective coordination can be demanding, whereby there can also be room for optimal results without coordination or with non-cooperative games.

In the particular case of the countries in the region, including Paraguay, economic policy has less freedom, less independent instruments, and is less effective due to the relatively lower level of development. This may mean that the benefits of coordination can be greater, which would require an active institutional dialogue, as well as strengthening internal and external communication channels to enhance the impact of policies.

Recent macroeconomic history

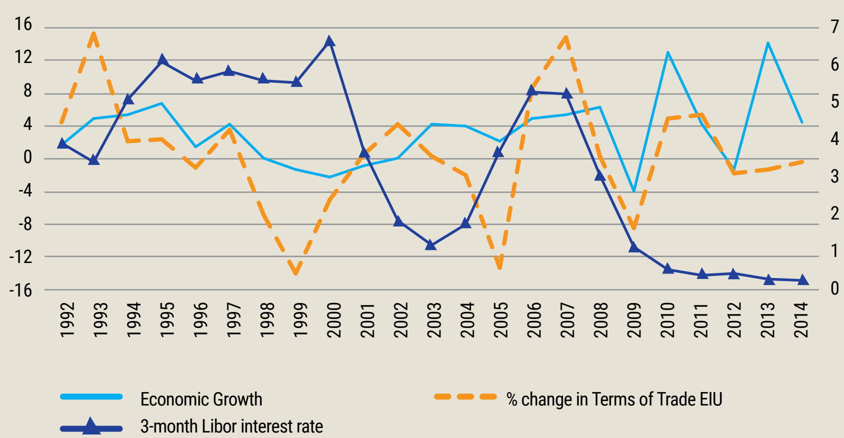
The recent macroeconomic history of Paraguay can be divided into two periods. The first half of the nineties experienced modest growth and almost no growth during the second half of the nineties up to 2003. From 2003 to 2014, a new trend began, with an average annual growth of 4.8 percent. Besides the recent increased volatility in the economic activity, it can be emphasized that 2003-2014 was the longest period of growth along with price stability in the recent history of Paraguay.

External factors explained the good performance, such as the improvement regarding trade by 0.6 percent annually,[2] as well as very low international interest rates. As a result capital inflows increased in the economies of the region and also Paraguay, a country that strengthened its macroeconomic fundamentals and took advantage to improve its main economic indicators. In this regard, the level of international reserves over GDP increased by more than 7.5 percentage points between 2003 and 2014 (to 22.4 percent of GDP). The burden of external public debt declined to 25.6 percent of GDP (to 12.0 percent of GDP) and the level of financial intermediation in the economy increased (credit rose to 39.4 percent of GDP in 2014).

Internal factors also explained the period of stability with growth during 2003-2014. Among the internal factors can be highlighted the proper administration of the business cycle on the spending side, which supports the hypothesis that "the set of economic policies applied during slightly more than the last decade (2003-2014) has contributed positively to macroeconomic stability, which has fostered growth".

The above entails that macroeconomic policies (fiscal and monetary) were countercyclical during the period evaluated. Previous analysis typically provided evidence of pro-cyclical policies in the region and in Paraguay, which tend to worsen the macroeconomic scenario.[3]

Figure 1
Evolution of economic growth, terms of trade and international interest rate



Source: Authors' calculations with the Central Bank of Paraguay and The Economist Intelligence Unit (EIU).

2 Data of The Economist Intelligence Unit.

3 World Bank (2013).

Different sets of policies represent different combinations of fiscal and monetary policies. During some periods, there was an explicit and directly correlated policy coordination of objectives and instruments. In other periods, conversely, there was accommodation on the one hand, with a more restrictive policy on the other, in a context of explicit policy coordination.

For a time the restriction of action in one policy (fiscal policy) has been compensated by a greater flexibility of the other (monetary policy). However, given the explicit legal mandates and actual results, it can be argued that there has been direct and implicit coordination of recent policy objectives, which at various times has resulted in explicit coordination of the implementation of policy instruments.

The next section reviews data that is later compared with macroeconomic policy measures in order to determine the degree of coordination.

Recent evidence on policy coordination

Based on graphic evidence of macroeconomic variables, a description of the macroeconomic policies applied during 2003-2014 is provided below. For this analysis, it required high-frequency data on the economy in order to show the changes in macroeconomic policies and their coordination. In particular, the evolution of the output gap (GAP_y) as well as other variables to a real extent, illustrates decisions on fiscal and monetary policy.

Given the working hypothesis, the study focuses on 2003-2014 using quarterly data of the Paraguayan economy. In the case of the output gap, the analysis uses the real GDP series –excluding agriculture–, annualized, seasonally adjusted and its trend-, which would best reflect the situation of the economic cycle. To evaluate discretionary changes in fiscal policy, the author uses the Primary Fiscal Balance (PB) of the Central Government, annualized and corrected for the effect of the economic cycle. In the same way, as a measure of monetary policy, the author uses the average yield or interest rate (IR) on Central Bank Bills (LRM is the acronym in Spanish)

Upon reviewing the evolution of quarterly growth, Figure 2 shows up growth in a context of price stability in the last period considered (2003-2014). Indeed, in 1998Q1-2003Q2 average growth was negative 1.6 percent, while average year-over-year growth in 2003Q3-2014Q4 was 4.6 percent. The economic expansion occurred with price stability since during the recent period average year-over-year inflation was 6.1 percent (2003Q3-2014Q4), while in the previous period (1998Q1-2003Q2) it was 9.9 percent.

The contribution of fiscal policy to the macroeconomic stability of the recent period deserves special attention. Indeed, fiscal policy made structural and cyclical contributions to the stability of the period and, in any case, the contribution of fiscal policy to macroeconomic stability has been key to set the foundations for growth.

During most of the period fiscal surpluses were generated, which structurally reduced the pressure on domestic credit (related to the structural liquidity of the system) for the Central Bank of Paraguay (BCP is the acronym in Spanish) and thus, resulted in lower costs for monetary policy and perhaps even resulted in greater efficiency in its interventions in the market. From the cyclical perspective, at certain times, fiscal policy acted decisively and contributed to stabilize domestic spending.

Figure 3 shows the non-agricultural output gap, and fiscal and monetary policy variables. Events related to macroeconomic policy coordination aimed at stabilization can be clearly identified.

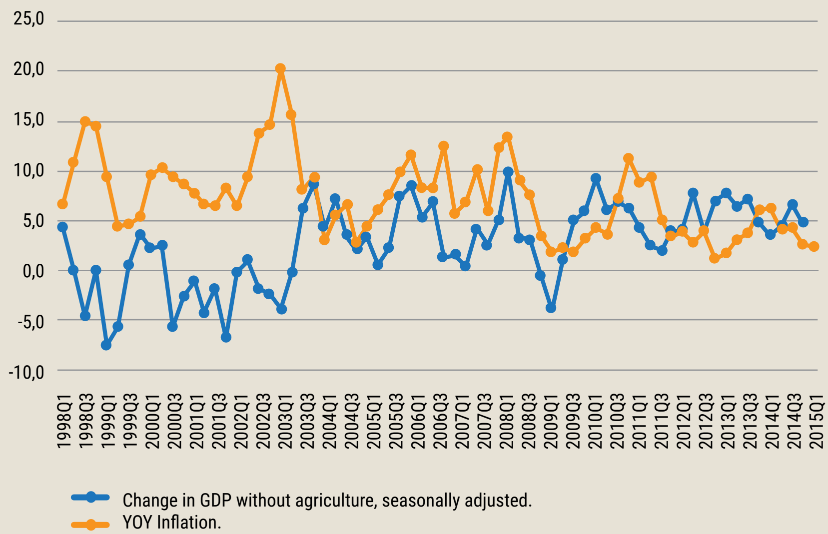
At the beginning of the period, between 2003 and 2004, two noticeable events occurred: the implementation of the Stand-By Agreement with the International Monetary Fund (IMF) and the introduction of Law 2421 on Fiscal Reorganization and Adjustment in order to expand the tax base and increase transparency of the tax administration. This period stands out for the monetary accommodation of the fiscal contraction during much of the length of the Agreement. During the first year of the program, seasonally adjusted real primary spending was reduced substantially, leading to an increase in primary fiscal balance during 2003 and 2004.

The implementation of the Stand-By Agreement with the IMF was a turning point in terms of fiscal results, and fiscal surpluses generated were interrupted only in 2012. In fact, the Ministry of Finance consolidated its management using technical criteria, giving priority to achieving surpluses in order to reduce the debt burden and established a fiscal anchor for macroeconomic stabilization.

In the same period, another relevant event was the *de facto* onset of a new monetary policy system: the implementation of an inflation targeting regime. In particular, the BCP started to declare explicitly an inflation target of 5 percent per year, with an acceptable deviation of 2.5 percentage points and the use of the interest rate of short-term LRM as reference or policy instrument. As of this period, changes in LRM rates can be interpreted as clear signals of monetary policy decisions.

In 2003-2004, there was a significant reduction in the monetary policy rate from levels higher than 20 percent in early 2003 to only 4.1 percent at the end of 2004 suggesting a normalization of the monetary policy, as well as monetary accommodation of fiscal contraction that was clearly part of a coordinated package of measures. This implies that there were coordinated fiscal and monetary policy measures during this period, articulated under the IMF program.

Figure 2
Quarterly evolution of economic growth and inflation



Source: Authors' calculations with official data.

As depicted in the Figure, the economy achieved sustained economic growth as of 2003, which, although related to a more favorable external scenario, can also be attributed to the coordinated management of macroeconomic policies under an economic program that gained market credibility.

Later, with the economic recovery, spending started to generate inflationary pressures as of early 2005, giving way to contractionary monetary policy adjustment, with some lag in its level of adjustment. Short-term LRM yields rose from 4.8 percent in 2005Q3 to 10.5 percent in 2006Q4. Contractionary monetary policy sought to reduce inflationary pressures experienced during the period of positive output gap (2005-2006) which, to some extent, related to an increase in credits financed with increases in deposits originating from capital inflows. Still, annual inflation reached 9.9 percent in 2005Q4 and 12.5 percent at the end of 2006, in part due to the rise in international food prices.

Regarding fiscal policy, during the same period (2005Q3 - 2006Q4) it was rather neutral because the cyclically adjusted primary result did not record significant change in relation to the average standard deviation of the entire sample. However, fiscal policy generated primary and global surpluses, structurally contributing to stabilization.

Later, from the end of 2006 to the first half of 2007, the output gap became negative, suggesting an economic slowdown, confirmed by three consecutive quarters of very low growth of quarterly GDP. This occurred with inflation converging within the margin of tolerance of the inflation target up to the close of the second quarter of 2007.

Monetary policy reacted lowering the interest rate of short-term LRM in order to maintain a countercyclical policy. Between mid-2006 and mid-2007 the reduction in the policy rate was more than 6 percentage points. During that period, the indicator of the cyclically adjusted primary fiscal balance remained almost unchanged, indicating a neutral fiscal position.

In general, a higher number of restrictions are applied to the actions of fiscal policy than to those of monetary policy. Precisely, during that period, fiscal accounts and public finances were in a process of consolidation, with little room for countercyclical policy. In any case, this was an episode of a temporary slowdown, which did not entail a reduction in growth, thanks to the timely response of monetary policy. In fact, the BCP focuses on inflation, with the tools available to it.

From mid-2007 to mid-2008 the economy regained its expansion, this time with inflationary pressures; to the extent that some analysts indicated that the economy was overheated. In particular, year-over-year GDP growth, without agriculture, reached 10 percent in the second quarter of 2008, with a positive output gap that reached 1.9 percent of GDP and year-over-year inflation of 13.4 percent in the same period. Therefore, inflationary pressures reflected, in part, the strong increase in credit (financed with higher deposits resulting from capital inflows), which required macroeconomic policy measures aimed at containing prices.

The reaction was swift, and monetary policy acted raising LRM benchmark rates by 2.7 percentage points from the second quarter of 2007 to the second quarter of 2008. At the same time, the tax authority increased its cyclically adjusted primary surplus, with an increase of 1 percent of GDP, thus placing total surplus at 2.5 percent of GDP. These actions helped to contain inflationary pressures.

However, we must recognize an interesting fact about Paraguay's recent political cycle, which relates to pre and post-election political transition periods. Unlike other countries, in Paraguay spending has tended to decline in pre and post-election periods, which, to a certain extent, would be the result of a transition period of several months.

Precisely as of the third quarter of 2008, there was a sharp slowdown in the growth of real primary spending and, consequently, in the cyclically adjusted primary outturn, which reached a surplus of more than 3 percent of GDP by the end of 2008. Possibly the political change deepened the situation of lower spending that tends to occur during the political transition to a new Government.

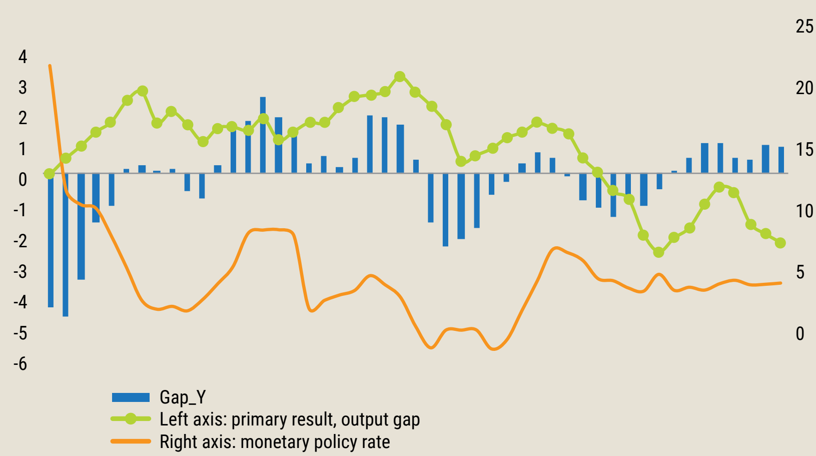
While this could be interpreted as a necessary contractionary fiscal policy as the output gap remained positive, in fact, it was due to the typical electoral political cycle of the Paraguayan economy.

Either way, the structural contribution of fiscal surpluses followed the moderation of domestic credit. Indeed, it is fair to note that the rise in the monetary policy rate in the second quarter of 2007 did not reach pre-stand-by or the pre-2006 levels because the tax authority was better organized. Therefore, the lower adjustment required in the monetary policy rate is further evidence of coordination.

It is also important to mention that higher inflation in 2008 was due, in part, to rising international food prices, which somehow were contained by currency appreciation in the same period. In fact, the increase in interest rates could also have contributed to further currency appreciation.

Then, from the second half of 2008 to the first half of 2009, two exogenous events had a major impact on the economy. Internally, a drought strongly and negatively affected agricultural production, while externally the so-called Great Recession, which began with the sub-prime crisis in the United States of America, triggered an important crisis on the world economy.

Figure 3
Evolution of primary spending and the monetary policy interest rate



Source: Authors' calculations based on official data.

Clearly the drought produced the largest impact which, in conjunction with the international situation, led to a drop in real GDP of -4.0 percent in the second quarter of 2009, rate that was confirmed at the close of 2009. During that period, inflation was only 1.8 percent, and even if this situation had overtones of decline caused by supply factors, it was also accompanied by a contraction in spending. This entailed the need to implement a package of anti-cyclical measures given the negative scenario expected.

The first measure was at the level of monetary policy, with a strong reduction in LRM rates, to bring their average level to only 1 percent at the end of the second quarter of 2009. The monetary stimulus was accompanied by fiscal policy, with the package of measures called Anti-Crisis Plan. This countercyclical and explicit fiscal policy was unprecedented in the recent macroeconomic history of the country and could be stated that, after several years of accumulated fiscal surpluses and maintaining orderly accounts, the State had the fiscal margins and the conditions to implement an aggressive package of anti-cyclical measures. Nonetheless, it remained the fiscal prudence bias given that the fiscal balance remained with a surplus.

In particular, at the end of the third quarter of 2009, seasonally adjusted real primary spending registered an average growth of 10 percent during the year. This resulted in a cyclically adjusted primary result that dropped from a surplus of 3.1 percent of GDP to the close of 2008, to a surplus of barely 0.4 percent of GDP to the close of 2009, implying an anti-cyclical fiscal stimulus of 2.7percent of GDP. We can state with certainty that fiscal policy was clearly discretionary and expansionary, to sustain or counteract the decline in domestic demand and output gap that became strongly negative (-2.3 percent in 2009Q2).

It could be argued that macroeconomic policies were aligned and coordinated in pursuit of the common objective of stabilizing the economy. In the recent economic history of Paraguay, this joint and coordinated action of expansionary macroeconomic policies has no comparison.

The subsequent strong recovery of the economy, with an annual real GDP growth without agriculture of 9.1 percent to the second quarter of 2010, was surely the result of soil recovery after the drought in rural areas, and also of expansionary macroeconomic policies. Indeed, the demand stimulus injected into the economy, along with the rise in international oil and food prices, started to generate inflationary pressures, with annual inflation reaching 11.2 percent in the first quarter of 2011.

As a result, a clear contractionary monetary policy was applied to contain inflationary pressures. The interest rate rose from 0.9 percent in 2010Q1 to 1.6 percent in 2010Q2 and then again to 4.0 percent in 2010Q4. Inflationary pressures and the Central Bank's objective of keeping inflation at around 5 percent were the grounds for this more restrictive monetary policy position.

At the same time, fiscal policy contributed to higher fiscal surplus. In fact, the seasonally adjusted real primary spending had slowed down significantly, with an average growth of only 0.4 percent from the third quarter of 2010 to the first quarter of 2011. Therefore, the cyclically-adjusted primary fiscal balance recorded higher surplus, rising from only 0.6 percent of GDP to the close of the first quarter of 2010, to a surplus of 1.6 percent of GDP a year later in the first quarter of 2011. This is an effective fiscal contraction of 1 percent of GDP, which was the expected response policy and must have contributed significantly to contain inflationary pressures.

This is another combination or set of policies that were clearly countercyclical and, above all, coordinated or at least aligned in pursuit of a common goal. This example, as well as the anti-crisis plan and the previous IMF Stand-By program, are cases of direct correlation in the implementation of macroeconomic policies, with clear common goals. All of which reinforces and tends to confirm the working hypothesis that the "set of macroeconomic policies has contributed to economic stabilization in the 2003-2014 period." It is worth emphasizing that these macroeconomic policies have been countercyclical, which becomes relevant considering pro-cyclical policies used in the past.

An important institutional breakthrough occurred in 2011 with the formal adoption by the BCP of an inflation targeting regime. In particular, in Article 31 of Resolution dated May 22, 2011, the BCP Board formally decided to implement an inflation-targeting regime. This formalized a monetary policy framework that, to a good extent, had already been internalized by the market, which strengthened the institutional framework in this area.

In 2012, another drought significantly affected economic growth, with a decline in activity of 1.2 percent at the end of 2012. This had an impact on aggregate spending in the economy, and to some degree, might have affected the political events leading to the departure of former President Fernando Lugo and the inauguration of the new government of Dr. Federico Franco.

Although the output gap -without agriculture- recorded negative values, inflation was only 4 percent at the end of 2012, below the official target value. Therefore, such a dramatic situation as the one experienced in 2009 or the period before 2003, where the slowdown and negative output gap were much more severe, was not expected. In the same way, the decline in activity which, to a good extent, is caused by specific situations of certain sectors (agriculture), poses a dilemma for economic policy. If the decline is due to an exogenous decline in agriculture, which is transitory, then macroeconomic policy should not necessarily react, at least not very strongly.

Monetary policy reacted with a moderate reduction in the LRM rate, which declined from 8 percent in the fourth quarter of 2011 to 5.5 percent in the fourth quarter of 2012. In fact, monetary policy aimed at offsetting the decline in economic activity as the inflation target was already, to some extent, attained. Furthermore, with a more expansive tax authority, the BCP had no room to maneuver a more expansionary monetary policy.

In this regard, the strong increase in spending, led to a fiscal deficit of 2.0 percent of GDP in the cyclically adjusted primary result at the end of 2012, in contrast with the 0.5 percent surplus experienced at the end of 2011. This change is substantial and meaningful, unrelated to a discretionary measure of the fiscal policy of the Executive Branch but instead related to an increase in current spending imposed by the Legislative Branch with the approval of the 2012 Government Budget.

Therefore, while a fiscal stimulus was desirable to counteract the decline in economic activity, this was not a deliberate action of discretionary countercyclical policy. Likewise, this increase in spending imposed by Congress marked a turning point in fiscal results, which shifted from a surplus in 2011 to a deficit as of 2012.

However, not all the fiscal deficit by the end of 2012 and early 2013 can be attributed to expansion in spending imposed by Congress. In fact, the cyclically-adjusted primary fiscal balance reached a deficit of 2.5 percent of GDP in the first quarter of 2013, which seems to confirm that the strong discretionary increase in government spending, accounting for the higher deficit that would have been caused by political electoral considerations.

Indeed, the increase in spending in the fourth quarter of 2012 and the first quarter of 2013 are clearly discretionary expansionary policies of the Executive Branch. But that occurred at a time when the economy was already beginning to experience a strong recovery regarding 2012, which may have exacerbated the political pressures on spending and prices.

In 2013, the economy experienced strong economic growth of 14.2 percent, with inflation at 3.7 percent. In this situation, a more neutral stance on macroeconomic policies was to be expected. This is what indeed happened in the case of monetary policy, with an average LRM rate that remained at 5.6 percent at the end of 2013, a rate that can be considered close to the neutral rate, given the inflationary effect. Meanwhile, public finances recorded a deficit of -1.0 percent of GDP in the cyclically adjusted result at the end of 2013.

Both at the fiscal and monetary levels, institutional changes have been the key for a credibility in macroeconomic policies. At the monetary policy level, Article 1 of Resolution dated January 15, 2014, and Article 88 of Resolution dated December 8, 2014, were issued, whereby the BCP Board decided, firstly, to reduce the tolerance range or interval for the inflation target and subsequently to reduce the core value of the inflation target. Currently, the official BCP inflation target rate is 4.5 percent per year with a +/- 2 percentage points of margin or range.

Increased spending in 2012 and the subsequent fiscal deficit reduced the fiscal space to implement countercyclical fiscal policies. We could state that in response, now with President Horacio Cartes in office, the Executive Branch encouraged the passing of the Law on Fiscal Responsibility (LRF is the acronym in Spanish). This law establishes quantitative targets or limits on the fiscal balance and on the growth of primary current expenditure, applicable to the preparation and approval of the Budget of Expenditure of the Nation. In particular, a ceiling on the Central Government's fiscal deficit of 1.5 percent of GDP was established, with a maximum growth of real current primary expenditure of 4 percent plus inflation.

It was also established that the average deficit of the Central Government could not exceed 1 percent of GDP in three years. These limits on deficits have a safety valve to raise the deficit to a maximum of 3 percent of GDP in a given year, with authorization from Congress only for situations of national emergency, international crises or decline in domestic economic activity.

In addition, the LRF includes other rules to adjust public salaries linked to the adjustment of the minimum salary and the execution of expenditure during election periods, to avoid behaviors motivated by the political electoral cycle.

The LRF designed as an instrument to control current expenditure growth, could not have been passed without society's clear awareness on the importance of prudent fiscal management. In this regard, it is noteworthy that the 2015 Government Budget has already been drawn up based on quantitative rules of the LRF, with the added self-imposed challenge of the Executive Branch to comply with the rules on budget execution.

Lastly, during the last period analyzed, from 2014 to early 2015, monetary and fiscal policy remained neutral, i.e. without significant changes in spending (fiscal) levels and without major changes in the interest rate on the side of monetary policy. Economic activity remained close to the trend or medium-term growth, with controlled inflation close to the BCP target.

Coordination in the management of financial instruments and short-term advance payments

There is evidence of fiscal and monetary policy coordination that is somewhat more specific and related to the presence of government securities in the market and liquidity management. In particular, The Ministry of Finance and the BCP are coordinating their actions in all matters related to the placement of financial instruments (treasury bonds and LRM) and in liquidity management through short-term loans to the Ministry of Finance.

In this regard, Decree 268/2013 on Public Debt Management establishes a consultation advisory team between the Ministry of Finance and the BCP to analyze the current macroeconomic conditions regarding the economic, monetary and fiscal policy and define short and medium-term estimates. Internal and external market conditions are also analyzed to issue treasury bonds.

This consultation team seeks to coordinate the offer of government securities in all matters related to the management, placement, and definition of relevant prices of government debt instruments of both the Ministry of Finance and the BCP. This would improve the placement of instruments while minimizing undesirable impacts on market conditions.

Accordingly, we should emphasize the issuance of treasury bonds in the international markets (known as sovereign bonds). The issue of these securities is based on a coordinated strategy of action between the Ministry of Finance and the BCP to promote and negotiate with international investors. The success of these issues, judging by the conditions in which 1.78 billion USD worth of sovereign bonds were placed until 2015, is another clear sign of good macroeconomic policy management and coordination.

Unlike many countries in the region, the BCP can grant short-term loans to The Ministry of Finance. This is a figure established in Article 286 in the National Constitution of Paraguay and the Charter of the Central Bank of Paraguay (BCP). These regulations have set the limit of short-term loans that the BCP may grant to the Ministry of Finance: up to 10 percent of the estimated tax revenues for that fiscal year or up to 1 percent of the Government Budget for that fiscal year.

The purpose of this tool is to cover temporary or seasonal cash deficit of the Treasury, in order to stabilize public spending. Given fiscal and macroeconomic history, this tool could have been used and even abused in any other country in the region where in most cases there is no such possibility. However, Paraguayan policymakers have used this tool very responsibly and prudently.

Looking into history, from 2005 up to the publication of this book, only eight short-term loans to The Ministry of Finance advance payments have occurred, in all cases with repayment maturities to seven months and up to only one month, within the limits set by law. We can see a large number of operations in 2013 and 2014, with the main objective of smoothing the flow of State expenditures given the seasonality of tax revenues.

This tool has been a space of fine-tuned macroeconomic policy coordination because with knowledge of liquidity management, it is easier for institutions and the Central Bank, in particular, to forecast changes in domestic credit and, therefore, program the State's financial operations.

The experience with short-term loans to the Ministry of Finance is compelling evidence of the degree of institutional development of macroeconomic policies in Paraguay. Indeed, the history of prudent and responsible macroeconomic management of the country has been notable, whereby this space of monetary financing provided by the BCP to the Ministry of Finance is further proof of the above assertions.

Econometric evidence of policies characterization

This section presents econometric evidence supporting the hypothesis that the set of newly implemented policies, both fiscal and monetary, has been coordinated, and decisions have obeyed objectives of macroeconomic stabilization.

First, greater macroeconomic stability involves, among other things, maintaining a lower inflation and lower volatility and, on the one hand, maintaining a less volatile economic growth close to the trend level, on the other.

To analyze these issues, the authors estimate two behavioral equations, one for fiscal policy and one for monetary policy, i.e. the Ordinary Least Squares (OLS) and the Generalized Method of Moments (GMM),[4] for the period from 2004QI to 2015QI; during which it is assumed that policy coordination was higher than in the previous period and that it contributed to greater stability.

The econometric strategy seeks to be parsimonious, with the idea that reaction functions characterizing policies should be corroborated by a simple method such as OLS and using GMM, to control for endogeneity characteristics of policies and fiscal policy in particular.

The role of fiscal policy

Assuming that fiscal policy acted to reduce the economic cycle (countercyclical), through increased spending in a recessionary period or to reduce taxes in order to obtain higher fiscal deficit when the economy is in recessionary cycle, or vice versa, fiscal policy reduces or maintains the level of expenditure and/or increases taxes to reduce aggregate demand when the economy is in an expansionary cycle, whereby a positive fiscal balance or deficit reduction is expected.

The following equation determines the cyclical position or fiscal policy function, where the primary fiscal balance in % of GDP (sp), adjusted by the economic cycle, would be the dependent variable. The output gap –without the agricultural sector– (gap y) as a measure of the cyclical position of the economy is used as an independent variable and, in a second estimate; the average interest rate (ir) of monetary regulation instruments is included as a measurement of the monetary policy position or independent variable.

4 GMM utilizes the conditions of orthogonality of the selected instrumental variables to obtain the combination of parameters leading to minimization of the quadratic form of the conditions of orthogonality in the sample version. With this method, consistent estimators are obtained and with normal asymptotic distribution.

$$sp=\beta_0+\beta_1\,(gap\_y)+\varepsilon \quad (1)$$

$$sp=\beta_0+\beta_1\,(gap\_y)+\beta_2\,(ir)+\varepsilon \quad (1.a)$$

In the theoretical approach, the output gap would be the variable to which fiscal policy reacts in order to obtain certain results in terms of stabilization of economic activity. In principle, a positive output gap should lead to saving resources by the tax authority, while a negative gap should lead to an expansionary fiscal policy, whereby the expected sign is positive.

Clearly there are restrictions operating in fiscal policy action or in its cycle utilization, which would determine the value of coefficient β_1. The value of this elasticity could be higher or lower depending on the interaction or coordination with monetary policy. Hence the second function proposes that monetary policy decision influences fiscal policy decision. The significance of the coefficient β_2 would determine the existence of policy coordination and its sign, their correlation.

The results are shown in the table below, where the countercyclical fiscal policy in the period analyzed is highlighted. This is depicted with positive β_1 parameters. OLS regressions could have endogeneity, but in GMM regressions endogeneity is controlled, and in both methodologies the output gap parameter is positive.

In a negative economic cycle (negative output gap) the primary result declines due to increased fiscal spending to sustain domestic demand and/or a reduction in tax revenues. Also, and more importantly, this significance implies that fiscal policy has contributed or has taken active measures to stabilize economic activity (which is the same), thus validating the countercyclical policy hypothesis discussed in the previous section.

Furthermore, when considering the impact of monetary policy on the fiscal policy result or position, according to the results of the equation (1.a) and included in Table 1 in the OLS column (2) and the GMM column (4), we see that fiscal policy responds contemporaneously and negatively to the monetary regulation rate. Given an increase in the LRM rate –contractionary monetary policy–, fiscal policy was expansionary. This result of *conflicting* economic policies is consistent with periods in which the IMF Stand-By Program was applied where on the one hand, fiscal policy was characterized by ordering its finances and obtaining positive results (reducing spending and increasing taxes), while the policy interest rate declined considerably in a context of GDP gap close to zero. Something similar occurred in late 2005 and 2006, when fiscal policy remained neutral, but monetary policy recorded increases in its interest rate over a period of positive output gap and inflationary pressures.

Table 1
Fiscal policy and policy coordination in Paraguay

Dependent variable: Cyclically-adjusted primary fiscal balance
Estimation Method: OLS and GMM
Sample: 1st quarter 2004 - 1st quarter 2015

Regressors	OLS (1)	OLS (2)	GMM (3)	GMM (4)
Dependent variable lagging one period	0.982	0.972	0.845	0.825
standard error	*0.058*	*0.060*	*0.113*	*0.258*
p-value	*0.000*	*0.000*	*0.000*	*0.003*
Output gap	0.196	0.246	0.270	0.587
standard error	*0.059*	*0.079*	*0.065*	*0.107*
p-value	*0.002*	*0.004*	*0.000*	*0.000*
Monetary Regulation Rate		-0.085		-0.090
standard error		*0.041*		*0.033*
p-value		*0.044*		*0.011*
Monetary Regulation Rate lagging one period		0.065		-0.169
standard error		*0.048*		*0.129*
p-value		*0.180*		*0.198*
Monetary Regulation Rate lagging two periods		-0.022		-0.046
standard error		*0.039*		*0.086*
p-value		*0.585*		*0.601*
Statistical				
F-test	218.283	86.077		
p-value	*0.000*	*0.000*		
Cusum of Squared	Stable	Stable		
Cusum Test	Stable	Stable		
J-stat			1.012	1.901
p-value			*0.603*	*0.593*
Number of instruments outside the model			4	8

Note: Standard errors are robust to autocorrelation and heteroscedasticity of residuals (HAC correction).

The 2009 event, when monetary policy was expansionary and after a few months fiscal policy also became expansionary -decline of the primary surplus-, is not captured by the model -the lagging of the monetary regulation rate is not significant-. The absence of reiteration of this kind of coordination would have impeded its econometric relevance.

The role of monetary policy

The monetary policy function in the reference period is estimated to analyze the position or characterize the actions. In particular, equations are used to determine how the average interest rate of the LRM (ir) reacts to the inflation gap (gap_p), to the output gap without agriculture (gap y), and to a gap of the real exchange rate coefficient (gap_rir). Lastly, the model includes the primary result variable (pr) in order to explain the interaction or impact of the fiscal policy position on monetary policy decisions.

$$ti=\alpha_0+\alpha_1\ (brecha\_p)+\alpha_2\ (brecha\_y)+\varepsilon \quad (2)$$
$$ti=\alpha_0+\alpha_1\ (brecha\_p)+\alpha_2\ (brecha\_y)+\alpha_3\ (brecha\_tcr)+\varepsilon \quad (2.1)$$
$$ti=\alpha_0+\alpha_1\ (brecha\_p)+\alpha_2\ (brecha\_y)+\alpha_3\ (brecha\_tcr)+\alpha_4\ (rp)+\varepsilon \quad (2.2)$$

With this specification represented in equation (2) the following are expected: on the one hand, given a positive inflation gap, i.e. when inflation is above its trend, the monetary authorities would react by raising the policy interest rate and, through it, directly impacting the market interest rates and spending, thus reducing inflationary pressures. On the other hand, the monetary authority is expected to react to deviations of the output gap, i.e. that in expansionary cycles or positive output gaps are generating pressures on the demand side to the price level, by increasing the monetary policy interest rate to contain inflationary pressures (and vice versa).

Additionally, equation (2.1) includes a real exchange rate gap, which seeks to capture the interventions of the monetary authority in the exchange market when the real exchange rate deviates from its trend levels. To a certain extent, currency depreciations can influence pass-through to inflation and the Central Bank can react raising the rates to contain inflationary pressures.

Moreover, equation (2.2) includes a variable that summarizes the fiscal policy position to determine or find some relationship or impact on the interest rate. Again, as in the above case, the significance of the coefficient would imply some degree of coordination and its sign would define the sign of policy correlation. A negative coefficient associated with the fiscal policy variable would validate the results of the above section.

The monetary policy proved to be a-cyclical since the impact of the economic cycle was not significant in explaining policy decisions. Also, this could imply that the primary objective of the monetary authority is prioritized, which in fact is verified in the significance of the inflation gap as an explanatory variable of the changes in the policy rate. However, it is an active monetary policy because the long-term elasticity of inflation on the LRM rate is greater than 1 (when the model is estimated with GMM, ensuring the consistency of estimated parameters). This result is important since implies that policy decisions seek to affect the real interest rate.

Table 2
Monetary policy and policy coordination in Paraguay

Dependent variable: Monetary regulation rate Estimation Method: OLS and GMM Sample: 1st quarter 2004 - 1st quarter 2015						
Regressors	**OLS (1)**	**OLS (2)**	**OLS (3)**	**GM (1)**	**GM (2)**	**GM (3)**
Dependent variable lagged one period	0.701	0.759	0.749	0.732	0.826	0.685
standard error	*0.074*	*0.080*	*0.104*	*0.114*	*0.094*	*0.139*
p-value	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Inflation gap	0.230	0.223	0.236	0.276	0.275	0.438
standard error	*0.077*	*0.067*	*0.064*	*0.124*	*0.108*	*0.255*
p-value	*0.005*	*0.002*	*0.001*	*0.031*	*0.015*	*0.095*
Output gap	0.177	0.214	0.418	-0.090	-0.096	0.616
standard error	*0.268*	*0.226*	*0.287*	*0.347*	*0.347*	*0.550*
p-value	*0.511*	*0.349*	*0.154*	*0.796*	*0.783*	*0.271*
Real exchange rate gap		0.055	0.054		0.053	0.042
standard error		*0.019*	*0.018*		*0.024*	*0.021*
p-value		*0.006*	*0.004*		*0.034*	*0.056*
Cyclically-adjusted primary balance			-0.415			-1.290
standard error			*0.291*			*0.327*
p-value			*0.162*			*0.000*
Cyclically-adjusted primary balance, lagging one period			-0.326			-0.587
standard error			*0.252*			*0.265*
p-value			*0.204*			*0.034*
Cyclically-adjusted primary balance, lagging two periods			0.684			1.857
standard error			*0.336*			*7.760*
p-value			*0.049*			*0.000*
Statistics						
F-test	41.807	35.456	22.473			
p-value	*0.000*	*0.000*	*0.000*			
Cusum of Squared	Stable	Stable	Stable			
Cusum Test	Inestable	Stable	Stable			
J-stat				6.715	6.235	6.384
p-value				*0.243*	*0.182*	*0.172*
Number of instruments outside the model				8	8	11
Inflation gap elasticity (long-term) on the monetary policy rate	0.770	0.922	0.943	1.031	1.579	1.390

Note: Standard errors are robust to autocorrelation and heteroscedasticity of residuals (HAC correction).

Considering equation (2.1), that includes the real exchange rate gap, the coefficient associated with this variable is positive and significant, meaning that the hypothesis, suggesting that real currency depreciation is considered for monetary policy decisions, is accepted. The same result is obtained estimating the equation with GMM and, in this regard, the component of imported products in the basket of consumer price index (CPI) goods is important, therefore there is pass-through from the exchange rate to inflation.

In the third equation (2.2) the cyclically-adjusted primary result (pr) is included, to determine whether there is some monetary policy response to changes in fiscal policy; the variable is included contemporaneously and lagging one and two periods respectively. The effect of the cyclically-adjusted primary result on the reaction function of the Central Bank is contemporaneously negative and lagging up to one-quarter. Nevertheless, to the second quarter lagging, monetary policy partially reverses the initial *coordination* with an increase in monetary regulation rates. Lastly, the long-term effect of fiscal policy on monetary policy is negative and has a value of (-0.06); these results are obtained from the GMM equation (3) on Table 2.

Regarding the above results, the application of a contractionary fiscal policy will probably be accompanied by an expansionary monetary policy in order to mitigate or accommodate the contractionary impact on aggregate demand, or, conversely, to contain the impact on demand and prices of an expansionary fiscal policy. In any case, it would be evidence of a degree of policy coordination, based on the historical account of the macroeconomic policy decisions, where there have been episodes of monetary accommodation of fiscal adjustments and active monetary policy with neutral fiscal policy.

Final thoughts

The experience of the 2003-2014 period, and even until 2015, has been instructive. It underscored the importance of establishing expectations on macroeconomic policy, with responsible policies, towards the objective of providing predictable and stable grounds for business development. Then the economic stability of the 2003-2014 was possible, largely, thanks to macroeconomic policy coordination between the Ministry of Finance and the BCP.

There has been coordination based on explicit cooperation programs, such as the IMF Stand-By Program, stimulus packages such as the 2009 Anti-Cyclical Plan and measures for inflationary pressure containment, such as measures taken in 2011. Additionally, the experiences of fine-tuned macroeconomic policy coordination through cooperation in the management and implementation of government debt securities and short-term advance payments, account for the substantial improvement in the degree of effective coordination.

Empirical models on the monetary and fiscal policies reaction have corroborated much of the historical account of the benefits of monetary and fiscal policy coordination in macroeconomic stabilization. In particular, the document has been able to confirm the countercyclical position maintained by macroeconomic policies during 2003-2014, in all cases pursuing the ultimate goals of stabilization with significant degrees of coordination.

This has been consolidated with the official adoption of the Inflation Targeting Regime (IT) by the BCP in 2011 and the adoption of the rules of the Law on Fiscal Responsibility (LRF) by the Ministry of Finance in 2013. Macroeconomic policy is today not only explicit and known; but is credible, given the results and responsible management of the period analyzed.

Looking ahead, the challenge is for macroeconomic stability further economic growth with sustained gains in social welfare. For this reason, it is critical to preserve macroeconomic balances and strengthen the institutional framework of macroeconomic policies.

At present the Government of the Republic of Paraguay seeks to give greater impetus to public investment, which is fully justified and necessary to close gaps in physical infrastructure. This could be categorized as major pro-investment fiscal activism and will require greater a degree of macroeconomic policy coordination, given the complementary objective of strengthening the institutional framework of the Law of Fiscal Responsibility.

Abiding by the rules to anchor expectations on macroeconomic policies is critical, but flexibility to adapt to changes that may occur in the macroeconomic scenario will also be important. Therefore, looking to the future, we must be prepared to discuss, agree and implement the required changes in policy rules, as the BCP did recently with the adjustments in the Inflation Targeting Regime. Certainly it will then be necessary to revise the rules of the Law on Fiscal Responsibility, according to the changes taking place in the national and international economic scenario, to continue improving policies.

The next step required is a countercyclical fiscal policy rule that takes into account forecasts of the agreed economic cycle and also the financial management of public funds saved in stages of the expansionary cycle.

Lastly, if under sometimes explicit and sometimes circumstantial cooperation, frameworks have achieved good results in macroeconomic stabilization, then it is imperative to move towards a greater degree of institutionalization of the dialogue channels between BCP and the Ministry of Finance.

In this regard, it might be the right time to resume the agenda to create the Financial Stability Committee, as a space to deepen the discussion on macroprudential and coordination policies.[5] The Ministry of Finance could also be included in the discussions of the Executive Committee on Open Market Operations of the BCP, based on the experience of other countries with inflation targets explicitly allowing this possibility.[6] A technical space for policy discussion and communication of the Ministry of Finance and the BCP could be created, and expand the discussion on macroeconomic policy coordination at the level of the National Economic Team.

The need to evaluate all the possibilities to strengthen ties and spaces of cooperation and coordination is important and would strengthen macroeconomic policies with greater credibility by economic agents.

Bibliography

Tinbergen I. (1952). *On the theory of economic policy*, Amsterdam: North-Holland.

Blinder, Alan S. (1982). "Issues in the Coordination of Monetary and Fiscal Policy" NBER Working Papers 982, National Bureau of Economic Research.

Canzoneri M., Cumby R., y Diba B. (2011). "The Interaction Between Monetary and Fiscal Policy", *Handbook of Monetary Economics*, vol. 3B: Elsevier.

Banco Mundial (2013). "Growth Volatility in Paraguay: Sources, Effects, and Options", Documento del Banco Mundial.

Colman, H. (2012). "Evaluación de la Política Macro con un Modelo Simple para la Economía Paraguaya", Subsecretaría de Estado de Economía, Ministerio de Hacienda.

Leeper, E. (1991). "Equilibria under Active and Pasive Monetary and Fiscal Policies", *Journal of Monetary Economics 27*.

Woodford, M. (1994). "Monetary Policy and Price Level Determinacy in Cash-in-Advance Economy", *Economic Theory* vol. 4, pp. 345-380.

Sims, Ch. (1994). "A Simple Model for the Study of the Determination of the Price Level and the Interaction of Monetary and Fiscal Policy", *Economic Theory* vol. 4, pp. 381-399.

Cochrane, J. (1998). "A Frictionless View of Inflation". Graduate School of Business, University of Chicago.

Sala, L. (2004). "The Fiscal Theory of the Price Level: Identifying Restrictions and Empirical Evidence". IGIER – Università Bocconi, Working Paper n. 257, April.

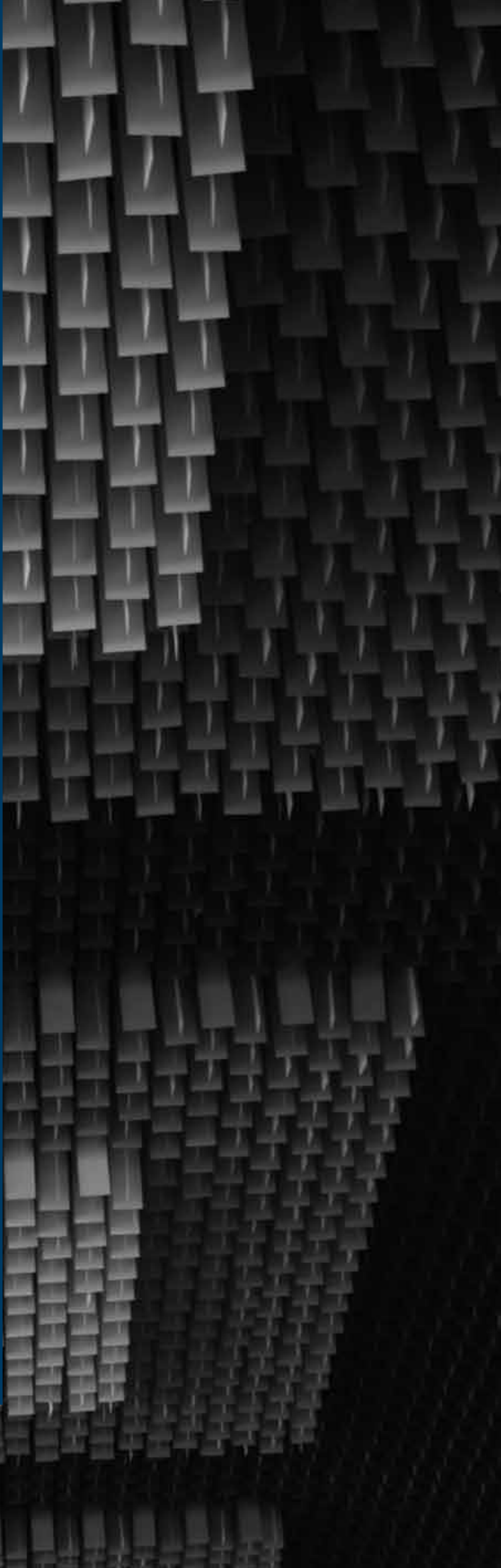
Schmitt-Grohe, S., Uribe, M. (2007). "Optimal Simple and Implementable Monetary and Fiscal Rules. J. Monet. Econ. 54. 1702-25.

5 The Financial Stability Committee would be made up of the top authorities of the Ministry of Finance and the BCP, the Superintendency of Banks, the President of the Stock Exchange, the President of the National Cooperativism Institute.

6 The Finance Minister may participate in the discussions but without the right to vote.

Sustainable Effectiveness of Monetary Policy

Carlos Carvallo Spalding*



The author acknowledges the valuable contribution of: Marcelo Diz, Samuel Cañete, Darío Ruíz Díaz and Luis Matto in the production of this article.

Introduction

Paraguay is recognized for its achievements in terms of macroeconomic stability, at a national and international level. This acknowledgement is supported by the evidence that the economy operates in an environment of both internal and external balances, reached through prudent fiscal and monetary policy management.

The contribution of the Central Bank of Paraguay (BCP for its acronym in Spanish) to the country's macroeconomic stability is evidenced when analyzing the inflation path which, although historically effectively controlled, has displayed greater stability and predictability during the last years as a result of the further improvement of policy instruments.

The document highlights that, in order to accomplish an effective monetary policy it is extremely important to hold an ongoing *dialogue* with the other types of economic policies, as well as an explicit commitment of the macroeconomic policy with economic stability. Based on this statement, the document provides concepts, evidence and reflections regarding the relevance of coordination of macroeconomic policies to achieve the objectives set by monetary policy, focusing the attention in the case of Paraguay.

The theory and empirical evidence in economic literature show that well-coordinated macroeconomic policies lead to better results in terms of economic stability, rather than policies applied in an isolated or even worse, uncoordinated manner.

An analysis of Latin American economic history provides sufficient and also illustrative evidence on how several countries in the region have addressed times of economic instability resulting from poorly designed or poorly applied policies. These experiences have generated valuable lessons. In the last decades this has led many countries to adopt different economic and institutional reforms to prevent situations that might lead to macroeconomic imbalances, with negative consequences for economic stability and population welfare.

An example of these measures are the legal reforms aimed at granting independence to central banks and providing them with effective instruments for compliance with their main goals. However, these measures do not necessarily entail that the decisions made in other areas of macroeconomic policy, such as fiscal policy, will not affect the objectives of monetary policy.

Beyond the effects of fiscal policy based on its financing needs, even when the central bank is not forced to monetize fiscal deficits, it might be equally conditioned to use its policy instruments in the event of fiscal expansions threatening the economy's price stability, through its effect on aggregate demand. The discussion regarding the implementation of cyclically-adjusted fiscal rules has become relevant since these rules pursue the discipline in the political economy of fiscal policy while also generating conditions for the execution of anti-cyclical economic policies.

This is why the interaction between macroeconomic policies, and particularly between monetary and fiscal policy, has been always a topic for discussion. In fact, the issue has remained relevant over time because, although many countries of the region have made progress in strengthening their economic institutional framework, some economies still lack rationality or coordination between their policies.

As of Paraguay's economy, proper management of fiscal policy has contributed to maintaining low and stable inflation, over long periods. Nevertheless, there have also been episodes of relative fiscal imbalance but without much effect on inflation, which is mainly due to the use of external financing given margins that did not entail major risk to the solvency of the public sector. These episodes were characterized by weak economic activity, growth in public debt and low levels of international reserves.

In the last ten years, Paraguay pursued the consolidation of its macroeconomic fundamentals. In this period average economic growth doubled compared to the 1993-2002 decade, fiscal balance was strengthened, international reserves increased and financial sector indicators evolved positively.

In this context, the BCP decided to migrate from the monetary-aggregate scheme to the Inflation Targeting (IT) regime. On the other hand, another significant step towards institutional strengthening of the tax authority was taken more recently: the approval of the Fiscal Responsibility Law (LRF by its acronym in Spanish). Both the IT regime and the LRF provide appropriate *anchors* for economic policies and have been critical to achieve greater credibility and, therefore, greater effectiveness of the monetary policy.

Finally, this document aims to further the dialogue regarding the development of a formal and informal institutional framework for economic policy coordination. This framework should have the core objective of maintaining economic stability and looking for stable and sustained economic growth. At the same time, it should lay the foundations for greater connection between economic and social policies, promoting entrepreneurship and including more Paraguayans people in the formal economy.

Macroeconomic Coordination and Monetary Policy

After the analysis of the economic policy decisions and performance of the Paraguayan economy, we can infer that while different political parties alternated the administration, there has been a consensus regarding the need for public policies that ensure macroeconomic stability. Indeed, *macroprudence* has been a constant topic in the official discourse as a necessary condition to sustain economic growth. Therefore, it could be argued that economic stability and prudent management of policy instruments have generated political and social consensus, forming a sort of State Policy.

Even if the primary objective of central banks is price stability and the management of policy instruments must pursue this priority, the current trend, particularly after the international financial crisis in 2008, supports the idea that monetary policy must also contribute to the promotion of sustained economic growth and adequate levels of employment.

Under the current IT regime, the central bank manages the monetary policy interest rate as its instrument, being able to simultaneously influence the inflation target –in the relevant policy horizon– and the level of economic activity. On this subject, strict monetary aggregate rules, a currency band or the adoption of the exchange rate as a nominal anchor of inflation, formerly used in the region, would not be aligned with the idea of a more flexible and discretionary scheme allowing "what needs to be done in each situation to achieve a sustainable inflation trend" when considering the effect on the path of output growth (Clavijo, 2000).

This positive aspect of the IT regime also includes the risk of exploiting the short-term Philips curve, which means a trade-off between achieving the inflation target and stabilizing output, over a certain period. This shows the delicate balance between macroeconomic objectives and how these objectives –and the institutional design– must be clearly defined and designed so as to avoid dynamic inconsistencies.

The need for macroeconomic coordination in order to achieve different objectives can be verified when the actions of the Central Bank and other institutions responsible for economic policy work together. The coordination, besides stimulating confidence in the policies, must seek to align expectations in order to make the right decisions. Therefore, the sustainability of the inflation target depends on the existence of different macroeconomic balances.

The equilibrium between domestic demand and national income can be seen not only in inflation, but also in the outcome of the external sector of the economy. A current account deficit in the balance of payments means that the economy will be a net debtor. If this current account deficit is caused by a strong increase in investment, then it will be sustainable; but if it is consequence of current fiscal imbalances it will introduce a source of vulnerability and risks for the economy as a whole.

In addition, higher levels of inflation affect the competitiveness of the economy –by appreciating the real exchange rate– which allows for a sustainable growth. This induces economic agents to make spending and investment decisions that are not compatible with sustained economic growth in a small open economy, which reinforces the exposure to external deficits.

Where the price of foreign currency is determined by the market, economies use exchange rate flexibility to absorb external shocks in order to minimize the effect on the level of activity and employment. However, if macroeconomic balances, and in particular fiscal balance, are not considered, the effect on the nominal exchange rate on the current account financing and the inflationary pressures will be strengthened and affect the competitiveness of the economy. Then, a contractionary monetary policy that seeks to correct inflationary pressures will do so by increasing the interest rate, at the expense of further loss in competitiveness.

Another objective of the economic policy is greater social welfare, which can be achieved through income policies that improve social indicators, in particular those regarding poverty, homelessness and income distribution. Though, once again, an income policy that does not consider other areas of macroeconomic policy would have negative effects on competitiveness, consequently affecting jobs and real wages in the long term. Likewise, when not supported by productivity improvements, higher salaries end up causing inflation and are, therefore, unsustainable.

In order to achieve economic growth in the long term, including sustainable increases in real wages, productivity growth is essential. This increased productivity requires coordination of long-term policies in education, health, logistics -the most critical ones- but also strong real investments that increase the productive capacity of the economy, and introduce technological and infrastructure improvements. Therefore, high levels of macroeconomic coordination are desirable, necessary and complementary, with the fundamental objective of controlling inflation.

Maintaining fiscal balance and a sustainable current account, through a competitive real exchange rate around its equilibrium, are key factors for an effective monetary policy that consolidates single-digit inflation in an environment of sustained economic growth.

Indeed, fiscal discipline is very important. If it does not cooperate with the monetary policy by increasing primary savings, an endogenously adjusted real exchange rate could introduce temporary inconsistencies between short-term policies and the growth target based on a competitive exports sector.

Using a semi-structural neo-Keynesian model, Valdivia & Pérez (2013) provide empirical evidence on how negative impacts experienced during the 2007-2010 crises decreased as a result of macro policy coordination. According to the authors[1], this helped to reduce external vulnerabilities, react to shocks and mitigate the macroeconomic instability contagion.

The responsible macroeconomic policy management, observed in several countries of the region in the recent years, helped reduce the uncertainty regarding domestic economies. At the same time, this provided room to implement the countercyclical measures which helped alleviate the impact of the external crisis spillovers.

Macroeconomic policies can be coordinated in different ways when seeking to maintain economic growth close to its potential in an environment of economic stability. For example, in Colombia the Finance Minister chairs the Board of the Bank of the Republic, this being a natural domain of macroeconomic coordination; in Uruguay, monetary policy is defined by the Monetary Policy Committee (COPOM, for its acronym in Spanish), in coordination with the Macroeconomic Coordination Committee where representatives of the Central Bank and the Ministry of Economy interact.

In Paraguay the natural domain of economic coordination is the National Economic Team (EEN, for its acronym in Spanish), in which the Finance Minister and the President of the BCP participate, in addition to the Ministers of Industry & Trade, Planning, Public Works & Communications and Agriculture & Livestock.

There is no optimal institutional design. Yet there is certain consensus on the fact that it must contain the principles of a sound economic framework that involves: price stability, given that low and stable inflation fosters economic growth by sending clear signals for proper allocation of the economy's scarce resources, fiscal austerity, exchange rate flexibility as an automatic stabilizer of the real economy to external and internal shocks, and building effective institutions.

Effective coordination of economic policies also involves the reduction of the economy's transaction costs by sending appropriate information to economic agents, thus facilitating economic transactions and helping restrict business risks to those related to the nature of business.

Regardless of institutional design, what becomes really important is that coordination among institutions lead to consensus on public policies. In addition, informal institutional framework needs to enforce policy decisions that include the economic growth along with economic stability.

1 This coordination is understood as the implementation of monetary, fiscal and exchange policies aiming at price stability.

Certainly, the independence of the monetary authority is relevant for the credibility of the measures adopted –which fosters their effectiveness; however, coordination of other policies, and vice versa, is also important for design. Thus, the pursuit for macroeconomic policy harmonization should be based on an appropriate framework and dialogue between the Government and the Central Bank, securing the autonomy granted by law to the Central Bank, since its main objectives are maintaining low and stable inflation rates, and a sound financial system.[2]

If society sees economic stability as a necessary condition for sustained economic growth, macroeconomic coordination that includes an explicit objective of fiscal prudence and price stability will make short-term fiscal and monetary policies consistent with the long-term development strategy. Furthermore, low and stable inflation is a fairly relevant contribution to improve income distribution and anti-poverty objectives, which favors the most vulnerable population (Dollar & Kraay, 2000).

These reflections illustrate the need to coordinate macroeconomic policies with transparency, even in a broader framework of coordination of the stabilization policies along with policies oriented to structural reforms. Lastly, in Paraguay the most relevant imbalances have come from the fiscal side. The next sections offer a detailed analysis of the coordination between fiscal and monetary policies, based on the understanding that the coordination required goes beyond mere fiscal policy to include other areas of economic policy.

Interaction between fiscal and monetary policy

Even though monetary and fiscal policies are implemented by two different public entities, their effects are correlated, so that the actions taken by each one of them will influence the effectiveness of the other. In practice, tensions or lack of coordination often arise between the two, since both could be giving priority to different, and sometimes even conflicting, objectives.

In the eighties, academic discussions related to the interaction between actions taken by monetary and fiscal authorities focused on the inflationary consequences arising from monetary financing of fiscal deficits. The high inflation and public spending financed through monetization in many developing countries have highlighted the relevance of the matter.

2 The autonomy of central banks seeks to provide them with institutional stability, isolating them from political cycles or influences, but this cannot mean "autism" from the rest of the institutions and public policies.

Among the authors who study this subject, Sargent & Wallace (1981), introduced the concept of *fiscal dominance*[3] (subordination of monetary to fiscal policy). They point out that, in a regime of fiscal dominance, the Central Bank loses power to control the price level, basically when the real interest rate on public debt exceeds the economy's growth rate, a situation that requires continuous money issuances to cover the deficit and comply with the government's budget constraints.

Consequently, a tight monetary policy to contain inflationary pressures would end up increasing market interest rates and increasing the fiscal deficit. To ease tensions in financial markets and support government, the monetary authority will probably be forced to increase the monetary base, to meet the Government's budget constraint, increasing the pressure on prices and reversing the initial anti-inflationary policy.

Accordingly, an expansionary fiscal policy would end up leading to an expansionary monetary policy, which, in turn would generate inflationary pressures and an appreciation of the real exchange rate, affecting the sustainability of the current account in the balance of payments.

Furthermore, even if governments finance their deficits through domestic markets –without monetization– there could be a source of concern for economic policy through the crowding out effect on private investment which could lead to a reduction in credit availability and/or rise in costs for the private sector, with its following contractionary effect in economic activity.

In the nineties, the quantitative theory of money[4] was confronted by the fiscal theory of price level (FTPL)[5] which concludes that when fiscal decisions do not respect the Government's intertemporal budget constraint, the Central Bank will not be able to control inflation –even if it is independent and there is no need to finance the government with seigniorage. For this reason, the coordination between policies is emphasized, bearing in mind that the objective of price stability cannot be achieved if the primary deficit fluctuates unpredictably.

Fiscal policy can also affect other variables relevant for the monetary authority, such as the country risk premium and the exchange rate. For example, if the public debt-GDP ratio is significantly high and also short-term basis, eventual hikes in the monetary policy rate could lead to debt sustainability problems and to an

---

3 If there is fiscal dominance, for example, due to the existence of structural fiscal imbalances, macroeconomic coordination needs to create room to mitigate the impact of these imbalances on monetary and financial markets in the short-run.

4 According to this theory, inflation is always and at all times a monetary phenomenon. In this context, the fundamental cause of inflation is seigniorage. Therefore, an independent central bank, with the power to impose a temporary path for seigniorage, is sufficient to ensure price stability.

5 Woodford(1995).

increase in the country risk perception, causing *sudden stop* of capital flows with the subsequent depreciation of the real exchange rate.

In an eventual scenario of accelerated depreciation, the exchange rate pass-through effect will affect the expected inflation and its trend. In this context, if the Central Bank decides to raise its policy rate, in order to curb inflation, it will face the same cycle of increasing the cost of serving public debt and its consequences, without achieving its inflation target objective. [6]

There is a direct channel connecting fiscal policy with monetary policy, i.e. the tax channel. If governments are forced to increase indirect taxes rather than taxes on income, this measure would have a direct impact on prices.

Fiscal policy can also affect the effectiveness of monetary policy via the expectations channel. Lack of confidence in fiscal sustainability is a potential destabilizing factor. The effectiveness of monetary policy depends heavily on agents perception related to soundness of the economic system and, in particular, the credibility regarding compliance with the macroeconomic policy objectives.

In this context, as the basis of their policy, monetary authorities have taken steps such as giving central banks greater independence and changing to monetary regimes based on inflation targeting.

Fiscal authorities also took steps to control their deficits after these reached unsustainable levels in the eighties. Among these steps, these are some worth mentioning: the rationalization and improvement in the quality of fiscal expenditure, the increase in fiscal income through tax reforms and greater efficiency in tax collection and, in recent years, the adoption of formal fiscal rules seeking fiscal sustainability in the medium and long term.

In many countries this has created a new environment of policy coordination, in which monetary authorities are committed to control inflation, while fiscal authorities no longer arbitrarily resort to seigniorage in order to finance their deficit and debt services.

Recent literature highlights that the interaction between fiscal and monetary policy is not based solely on how fiscal policy can affect the setting of the price level, but instead analyzes macroeconomic performance in a broader sense. For instance, how coordination –or the lack thereof– between fiscal and monetary authorities can affect other key macroeconomic variables such as output, investment, private consumption, tax collection, etc.

The main conclusion of this new literature is that, business cycle stabilization will also be achieved through a monetary policy focused on stabilizing inflation.

6 The scenario could be even more complicated when a significant portion of the debt is denominated or indexed to the US dollar.

Studies have also shown that fiscal policy should focus on controlling the fiscal deficit and the sustainability of public debt. Hence, the need for coordination between the two policies is highlighted.

In recent years, some countries in the region managed their macroeconomic policy prudently, generating sufficient room that enabled advances in the management of the economic cycle. The carefulness in macroeconomic policy management can be evidenced when analyzing the implementation of coordinated fiscal and monetary policies that helped reduce the impact of the global economic crisis and promote a faster recovery of economic activity. According to empirical evidence provided by Valdivia & Perez (2013), the effectiveness of applying coordinated macroeconomic policies to control episodes of crisis, to varying degrees, is high.

Inflation Targeting and Fiscal Rules

As mentioned, during the last decades many countries applied a series of reforms to their macroeconomic policy framework. On the one hand, central banks gained independence and some migrated to an IT regime. Accordingly, governments also began to foster measures to tackle fiscal issues by establishing fiscal rules, which helped the fiscal authorities face pressures for increased public spending, while becoming a tool that eased greater macroeconomic policy coordination.

Regarding the IT regime, it has led to important developments in monetary policy management of the central banks, because it allows to consider diverse macroeconomic topics, such as foreign exchange, fiscal and debt trajectory, financial system and economic cycle, among others.

A positive aspect of the IT regime is that allows a combination of rules and discretion. The margin of discretion is possible by setting the inflation target over the relevant policy horizon, which allows the release of *degrees of freedom* in the short-run. While setting the monetary policy rate, central banks are able to observe different macroeconomic variables since this institutional framework[7]

7 The country has met the conditions required, according to Bernanke & Mishkin (1997), for the effectiveness of IT monetary policy. Among these conditions is worth mentioning that the objective of price stability needs to be a clear and explicit priority over other objectives, that the decisions must consider a comprehensive set of information, with operational autonomy of the monetary authority, transparency in decision-making, limiting time inconsistency issues, credibility of policies and policy makers, explicit announcement of the target, among others. Paraguay meets these conditions reasonably. The number of members (5) of the Executive Committee of Open Market Operations (CEOMA, for its acronym in Spanish) is within the average of the 27 economies currently applying the IT regime, the inflation target is reasonable, the CEOMA is among those that meet most often in the year (12 times), and the mandate of Board Members does not coincide with those of the Government.

does not restrict their operation like before, with tight rules to reach the inflation target every time. From the economic policy perspective, the IT regime recovered the ability to conduct an active monetary policy.

A distinguished aspect of this monetary policy scheme is the opportunity to have a flexible exchange rate, which acts as an automatic stabilizer in the economy when exogenous shocks happen, avoiding that the real sector bears the weight of the adjustment.[8] It also prevents further crises caused by exchange rate misalignments resulting from less flexible monetary-exchange policies.

Extensive literature shows that structural reforms to enhance the role of monetary and fiscal policies have a significant impact on the effectiveness of these policies when jointly applied. Combes et al. (2014) found evidence that the IT regime, implemented together with fiscal rules, helps improve fiscal performance and reduce inflation. Using data from 152 developed and developing countries, the authors found that the interaction between the IT regime and fiscal rules generated positive effects on the fiscal balance and inflation trends, suggesting complementarities between these two rule-based policy frameworks.[9]

According to Blanchard (2004), the coordination between fiscal and monetary policy is important. A scenario of high initial debt levels, combined with a large proportion of debt denominated in foreign currency, along with high risk aversion –under an IT regime– would increase the default risk, when increasing the interest rate as response to inflationary pressures. This default would lead to real depreciation, which would generate further increases in price levels. This is the opposite of what is expected with the standard approach of open macroeconomics, in which a rise of the real interest rate makes government debt instruments more attractive and leads to real exchange rate appreciation. In this case, fiscal policy –not monetary policy– is the appropriate instrument to reduce inflation.

Similarly, Zoli (2005) evaluates the impact of fiscal policy in the country risk premium and the exchange rate. The empirical analysis studies the impact of news on fiscal variables and fiscal policy, on the sovereign spread and daily exchange rate movements in Brazil during the 2002 macroeconomic crisis. The results show that fiscal events have significantly influenced sovereign spreads and the exchange rate during this period. In conclusion, the analysis suggests that through the channel of credit risk, an emerging economy such as Brazil, exposed to capital flow swings and a high level of public debt, can be pushed to a regime of fiscal dominance.

On the other hand, Baig et al (2006) analyzed the reaction function of the Central Bank (Taylor Rule) measuring the reaction of the interest rate to inflation, in terms of the countries' degree of indebtedness, and pointed out that fiscal

8 In a context of natural rigidities in real wages and public tariffs, such adjustment is processed in the level of economic activity and employment.

9 See Combes et al (2014).

situation can have a significant impact on the monetary policy effectiveness, either directly or through expectations. A high level of public sector debt can reduce the independence of monetary policy, as well as the effectiveness of the transmission mechanism.

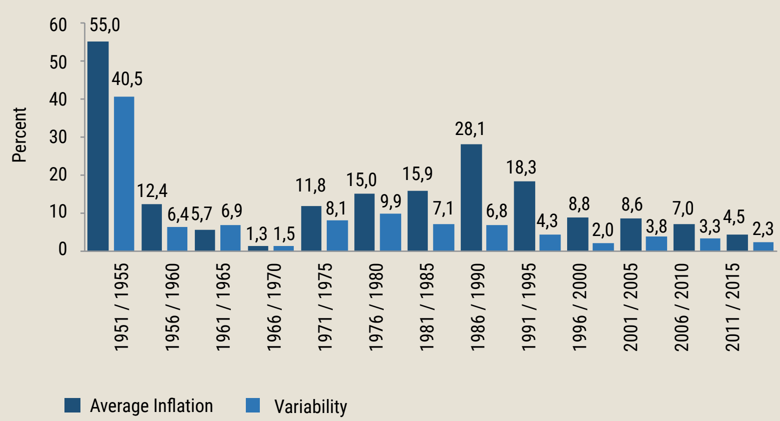
Considering the findings, a clear lesson is that, in complex fiscal environments, the results from a deflationary policy can be entirely different to what was previously expected. This reinforces the importance of an orderly and predictable fiscal policy to guarantee the success of the monetary policy.

In a context of fiscal policy pressures, due to high and legitimate demands for social spending, corporate pressures and infra and infrastructure deficits, the existence of a fiscal rule sufficiently empowers the authorities to effectively execute the policy with sustainability criteria.

Economic Stability in Paraguay

Two years ago, Paraguay celebrated the seventieth anniversary of its domestic currency unit: Guarani, one of the oldest currencies in the region. It is worth mentioning that from its adoption, hyperinflation led many countries to adopt a new currency or even suppress ceros. This fact reflects that the proper monetary policy management in the country helped maintain a relatively stable value of the currency.

Figure 1
Average inflation and volatility
Annual average inflation and standard deviation



Source: Central Bank of Paraguay.

In the same way, fiscal policy also contributed to maintain low and stable inflation. After a period of very high inflation during the first half of the fifties (Figure 1), rates declined significantly after the adoption of the first Stand-by Agreement with the International Monetary Fund (IMF). The Agreement included measures to consolidate fiscal balance through tax system reforms, which led to increased revenues and the rationalization of public expenditure. As a result, sound fiscal policy accompanied the central bank's work of maintaining a stable monetary scenario in the subsequent decades.

Later, in the 1980s, in the context of the debt crisis in Latin America, the country experienced successive fiscal deficits caused by increases in spending, especially in infrastructure, due to anti-cyclical policies applied to mitigate the recession. During the financial crisis in the late nineties and early 2000s fiscal deficits were registered. However, none of these cases showed significant impact on inflation, as deficits had not been financed with monetary issuing.[10]

At the beginning of the first decade of this century, although inflation was not a concern, the economy showed unfavorable results. In addition, successive fiscal deficits had generated a significant increase in domestic and foreign debt.

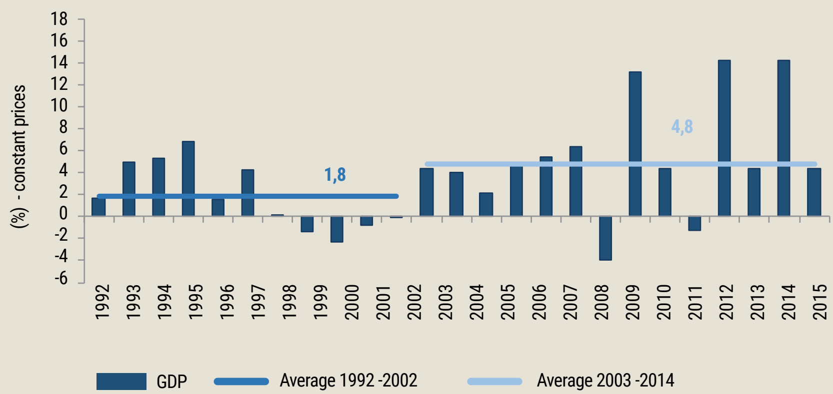
Nevertheless, as of 2003 the Paraguayan economy began a period of consolidation of macroeconomic fundamentals, with the signing of a new Stand-By Agreement with the IMF, through which a series of measures were implemented, including measures to reorient fiscal policy management, aiming for public finance sustainability in the medium term, adopting an inflation-based monetary policy, maintaining a floating exchange rate and implementing structural reforms on the public sector(recapitalization of the Central Bank, financial sector reforms, and improvements in the transparency of public administration, among others). This set of measures acted as the pillars for economic growth in an environment of monetary and fiscal stability.

Based on this favorable economic scenario, between 2003-2014 the GDP grew at an average rate of 4.8 percent, more than doubling the average growth rate of 1.8 percent of the previous decade (1992- 2002) (Figure 2).

The increase in economic growth is explained by a greater dynamism of the services sector, industry and construction, providing evidence for a larger diversification of the economy. This trend to the diversification of the productive matrix, as well as the opening of new markets, has continued to make progress in the most recent period. During the past two years the dynamism of non-traditional sectors –whose demand sustains economic growth when commodity prices decrease– proves how changes in production and employment patterns may help mitigate the social effects of changes in the economic cycle, even though there is still a long way to go.

10 See Cantero J. (2013).

Figure 2
Economic Growth in Paraguay
Annual GDP growth – constant prices



Source: Central Bank of Paraguay.

Furthermore, improvements in other economic indicators were also observed, such as reduction in the debt-GDP ratio from 30.6 percent in 2004 to 10.7 percent in 2011. From that year debt has remained relatively low and only recently increased with the issue of sovereign bonds (to 17.6 percent) with the main objective of financing infrastructure projects. The country's debt level is one of the lowest in the region and there is still significant margin to address the country's infrastructure deficits without compromising macroeconomic balances.[11]

During the same period Net International Reserves (NIR) boosted, allowing the country to move from a foreign debtor position to a net creditor position (Figure 4). In 2002, NIRs were USD 641.3 million, while foreign debt was about USD 2,283 million. This situation had been reversed as of 2007 and by 2014 the NIRs had exceeded USD 6,800 million, while external debt was about USD 3,680 million.

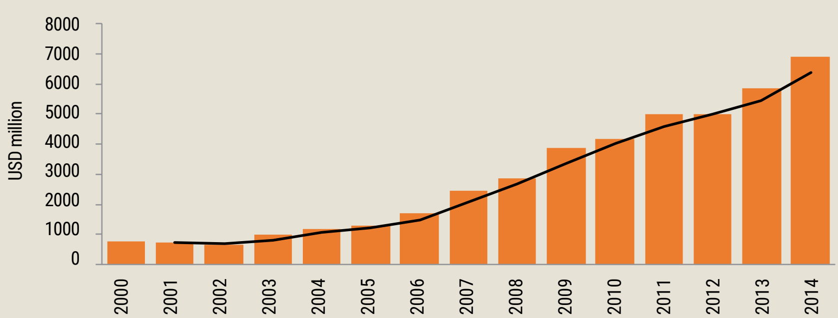
The adequate level of the country's public debt and the available NIR level give the economic policy sufficient room to maneuver so as to avoid unwanted volatility and its negative effects on the economy.

11 In this case, the main challenge is to improve public administration in relation to the cycle of the project and the execution of works.

Figure 3
Evolution of the Public Debt
Balances at the end of each year

Source: Ministry of Finance.

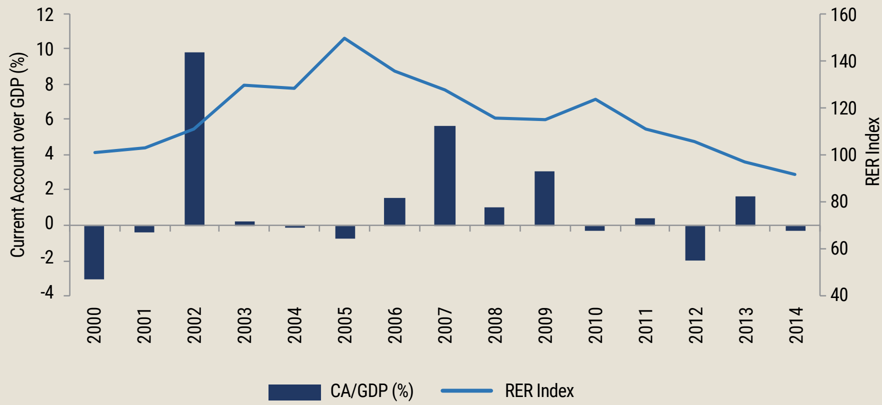
Figure 4
Evolution of NIRs
Balances at the end of each year



Source: Central Bank of Paraguay.

Regarding the external sector, results have also been satisfactory in the recent period. During 2003-2014, the current account recorded an average surplus of 1.0 percent over GDP, in a scenario of appreciation of the real exchange rate. The performance was in line with the evolution of the fundamentals since no internal or external imbalances were observed in this period, meaning that it remained within the long-run equilibrium path. The behavior is also consistent with the period's average economic growth, which was close to potential growth.

Figure 5
Current account and real exchange rate



Source: Central Bank of Paraguay.

Since the last financial crisis in 2002, indicators of the financial system started to evolve positively. In 2003, the non-performing loans (NPL) ratio of the banking system stood at around 22 percent and declined about 20 percentage points in the following 10 years. Meanwhile the profitability indicator increased from 14 percent in 2003 to 27 percent in 2014.[12]

Regarding inflation, although it was not an issue at the time, its volatility was a cause of concern to monetary authorities. The ability to influence this variability depended on the proper functioning of monetary aggregates regime, which in turn depended on the stability of money demand. Thus, monetary policy used its instruments to steer money growth to the desired level –considered compatible with the inflation target– which was usually defined in general terms as the "achievement of low inflation", although not explicitly.

In 2003 many countries abandoned the aggregates regime as monetary policy scheme, mostly because it was difficult to establish a stable relationship between inflation and a monetary aggregate in the short term due to financial innovations and money demand instability –which also destabilized this relationship. These same difficulties also affected monetary policy management in Paraguay.

12 Supervision of the financial system underwent a series of reforms that operated positively on its stability, reducing the vulnerability of the banking system. In this regard, the regulatory and supervisory capacity of the system has been strengthened and a Financial Stability Department has been incorporated, which performs continuous stress tests to the system, among other advances.

In this context, in 2004 the BCP initiated the strategy to migrate from the aggregate-based monetary scheme to the IT regime, in order to consolidate the objective of low, stable and predictable inflation. As a result, an explicit inflation target of 5 percent was established, with ± 2.5 percent tolerance band.

Empirical evidence showed that countries with an IT regime performed better, both in terms of the level and volatility of inflation.[13] In addition, countries in the region that adopted this regime had also achieved satisfactory results, a fact that further motivated the Central Bank to move in that direction. Thus, after an experimental phase, in May 2011 the BCP Board decided to formally adopt the IT regime.

Inflation, both in the experimental phase and during the formal implementation of the IT regime, has shown significant reductions in its mean, variance, persistence, as well as in the exchange rate pass-through to inflation. Inflation is now permanently within the target range, which helps improve risk perception, reduces uncertainty, improves the business climate and promotes investment.

Expectations have also been anchored close to the target. Even if inflation seems to deviate (as can often occur), agents expect that it will return to the target and, in this way, help reduce the degree of uncertainty in the long term. This is not a small achievement. Considering that *self-fulfilling prophecies* can be observed when analyzing inflation, if expectations are close to the target, economic agents will operate according to their expectations and inflation will end up within the target range, without higher costs for monetary policy. This is a result of BCP's work to build credibility of its policies and this is its main asset.

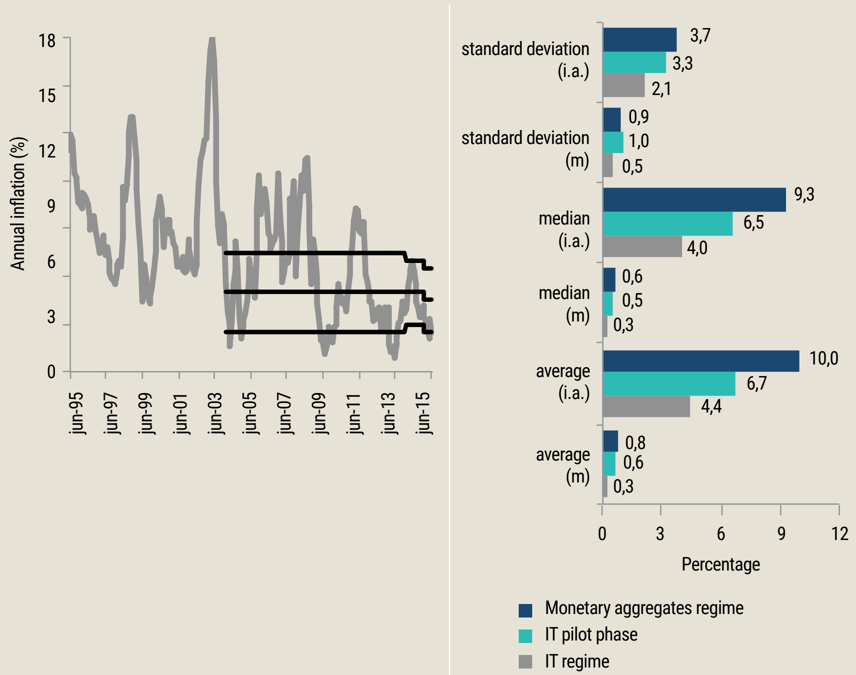
In the last decade, a prudent fiscal policy management has also contributed to the consolidation of the IT regime. Eight consecutive years of fiscal surpluses were recorded (Figure 7) which, in addition to reducing debt, allowed a margin of discretion for fiscal policy to apply countercyclical measures and/or allocate more resources for investment in infrastructure.

One of the IT regime fundamentals is a responsible and predictable fiscal policy that ensures the sustainability of fiscal accounts by removing any possibility of subordinating monetary policy to fiscal policy and increasing the credibility and effectiveness of macroeconomic policies.

The LRF came into force in 2015 and aims at ensuring the sustainability of public finances in the medium term. The goal is to attain fiscal results that do not cause negative effects on macroeconomic stability and preserve the balance between public revenues and spending, in order to introduce a strong signal of political economy seeking to separate the fiscal role from the political cycle.

13 See Scott, R. (2010) y FMI (2005).

Figure 6
Trajectory and volatility of inflation and standard deviation



Source: Central Bank of Paraguay.

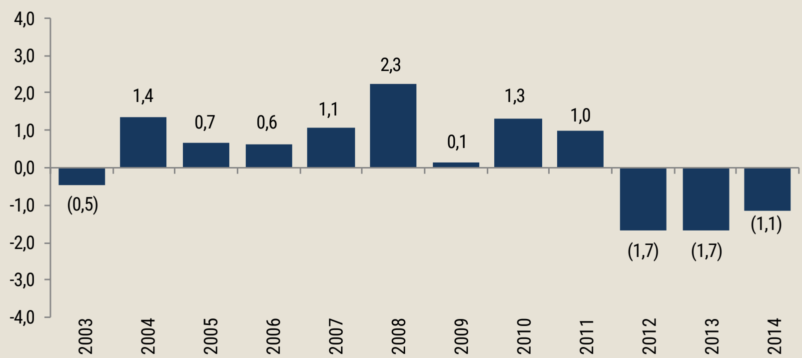
The LRF contemplates macro-fiscal rules for the development and approval of the Government Budget. The rules are the following: an annual fiscal deficit of the Central Government –including transfers– that cannot exceed 1.5 percent of GDP,[14] an annual increase in the primary current expenditure of the public sector[15] that cannot exceed the annual inflation rate plus 4 percent. Public wage increases cannot be considered unless the minimum wage increases, and when this occurs salaries can be raised –at the most– in the same proportion and will be included in the next year's fiscal budget.

This fiscal instrument acts as an anchor, allowing the economy to rely on predictable fiscal policy, allowing a larger impact of the monetary policy and, in consequence, consolidating the credibility of macroeconomic policies in Paraguay.

14 The fiscal result of the Central Government may not exceed an average deficit of 1 percent of GDP in the medium term.

15 Primary current expenditure is defined as total current expenditure excluding interest payments.

Figure 7
Fiscal Result
Percent of the GDP



Source: Central Bank of Paraguay.

The above mentioned measures have contributed to the positive image of Paraguay in terms of macroeconomic stability, a reputation that is growing stronger both nationally and internationally. In this regard, Frankel et al (2013)[16] and Vuletin & Vegh (2012)[17] analyzed the performance in recent decades of monetary policy and fiscal policy, respectively, in a large sample of 94 developed and developing countries and concluded that developed countries - generally those with greater macroeconomic stability - have been known for not applying pro-cyclical policies, in the sense that they amplify the effects of the economic cycle affecting macro stability.

The authors show that developing countries were known for the implementation of pro-cyclical policies in general up to the nineties, but since the 2000s a group of countries is appearing to *graduate* in anti-cyclical policies, i.e. they learn from their history of political instability, make the necessary institutional, technical and political adjustments and start working toward greater stability.

16 The authors used a sample of more than ninety developed and developing countries in the 1960-2009 period, dividing the analysis per period.

17 According to the authors, one of the difficulties in adopting a policy with countercyclical bias is the so-called fear of free falling (FFF), which means that, in a slowdown, a decline in the rate of interest as anti-cyclical measure can generate an outflow of capital or sudden-stop that may lead to a sharp depreciation of the currency. In Paraguay, the merit of macroeconomic policy is generating the conditions for FFF not to be a major concern, even considering that Paraguay is a relatively dollarized economy. These margins have contributed to a pass-through that is not very high.

They place Paraguay in a small group of developing countries that before the year 2000 had been implementing an anti-cyclical monetary policy, much in the same way as developed countries. However, at the same time, they show that in fiscal matters, Paraguay, like most developing countries, used to imprint a pro-cyclical nature to its fiscal policy up to the year 2000, and as of the year 2000 became part of the group of *graduated* countries in the sense that it learned to contribute to macroeconomic stability also through fiscal policy.

The analysis mentioned covers a large sample of countries over an extended period of time and provides empirical evidence to the progress made in Paraguay regarding macro stability. It also provides evidence that the sustainability of price stability –with the corresponding impact on the stability of the other macroeconomic variables– requires monetary policy effectiveness, as necessary condition. Still, it is not sufficient since for its sustainability it requires coordinated fiscal policy with aligned objectives, avoiding *dynamic inconsistencies* and relying on an institutional design that creates the basis for credibility of policies as a whole.

Paraguay's economy has been growing close to its potential growth rate and macroeconomic variables account for a balanced public sector, single-digit inflation within the target range, relatively low unemployment and a balanced current account of the balance of payments, which would show domestic spending aligned to national income, pointing to an economy that exhibits a stable macroeconomic framework. Indeed, it could be argued that in recent years the *macroeconomic front* has been stable and sound.

Nevertheless, major challenges for economic policy remain. Through sound macro policy and the consolidation of economic stability, which is a necessary but not sufficient condition, under control, and with a real economy that is still dynamic, it is possible to focus on the more structural and strategic challenges that require commitment of different actors at the national level and time to visualize the results.

One of the major challenges is to transform the phase of expansive growth of recent years into a more dynamic growth trend and less conditioned to favorable international circumstances than in the past. This challenge entails work to overcome constraints operating on the supply side –above and beyond the positive shocks of demand that the economy might face– especially in regards to the objective of the accumulation of production factors and their productivity.

In this regard, it is necessary to work in order to remove restrictions on potential output and the quality of economic growth. Efforts are gaining momentum to include more people in the formal and dynamic economy,[18] diversify production,

18 Paraguay still has significant levels of poverty and exclusion, and these are not mitigated with economic growth and stability alone, but with development-based policies with a much broader and multidimensional approach. The challenges are considerable but significant progress is being made in that direction.

and insert the economy in global value chains configuring a pattern of productive specialization and international integration, in order to foster innovation and socio-economic development.

It is also necessary to consider institutional issues and the political economy in terms of the need to sustain the agreement on the importance of macroeconomic stability as a prerequisite for quality sustained growth and, more broadly, to generate national consensus on the role of the public sector migrating from the discussion of *how much* State to *which* State is required. In this context, progress must be made in the design of the economic policy and a social inclusion policy that goes beyond the view of economic spillovers to that of people´s empowerment.

In the financial sector, the BCP has done much to strengthen regulation and supervision, to provide specialized training to its human capital and create monitoring bodies. There has also been significant progress as regards macro-prudential policies, in line with international best practices.

However, the development of the financial sector, which is critical for economic growth as a channel from savings to investment, constantly calls for clear and timely rules, preventive supervision and institutional strength. The discussion on the adjustment of the Banking and the BCP Charter Law is heading on this direction in order to meet international standards on supervision, and this is happening at the right time, when the economy is sound and stable.

Moreover, based on a stable financial system, financial inclusion should be promoted with the dual purpose of contributing to the reduction of social inequalities and strengthening one of the main channels of monetary policy transmission, contributing to its effectiveness.

In this context of relative synchronization between fiscal and monetary policy, the future challenges for greater effectiveness of monetary policy transmission are moving towards greater development of the financial system and private debt market, development of the stock market, stronger financial education, building an efficient money market (improved liquidity management by banks) [19], among others.[20]

Lastly, efforts must continue in order to ease doing business by eliminating red tape, qualifying the workforce and developing entrepreneurship, access to

19 The Central Bank is working on the design of market incentives (negotiability of LRM, primary dealers, Repo operations by the BCP, and lower margin of the Standing Liquidity Facilities and Deposits regarding the MPR) for the short-term (overnight) average market rates (interbank call) as an operational instrument to converge with the monetary policy rate (MPR), which is the rate on which the operational goals of monetary policy are announced. Short-term liquidity operations using bank reserves are also allowed, provided the monthly average is maintained.

20 It is important to note the progress in macroprudential mechanisms and the enactment of the Law on Financial Inclusion, which tend to improve the mechanisms of monetary policy transmission.

information and financing for companies, promotion of innovation, infrastructure, productive diversification and inclusion, systemic competitiveness, institutional framework in its broadest sense, among others that allow us to increase our sustained growth over the long term, with social inclusion and equity, in short, promote greater welfare of our population.

Conclusion

A monetary policy aimed at controlling inflation requires responsible fiscal policy consistent with the objective of low and stable inflation, along with a sustainable external account. A Central Bank conditioned by poor fiscal and foreign policy hinders the proper achievement of the inflation target. Therefore, coordination of economic policies is necessary to ensure macroeconomic stability to support a sustained economic growth.

In the last decade, the BCP has conducted a monetary policy with a clear and credible objective of inflation control accompanied by an efficient and sound fiscal policy implemented by the Ministry of Finance based on strict criteria of discipline and fiscal responsibility, giving greater certainty to economic agents. As a result, the Paraguayan economy is undergoing a prolonged phase of stability with healthy public finances that fostered economic growth.

Monetary policy achieved its objective of price stability and this success eventually helped the BCP gain the reputation of an institution committed to the inflation target. In fact, some authors argue that monetary policy credibility can only occur when it proves, with facts, that it is effectively meeting the target.

The current IT regime, supported by prudent fiscal policy, has led to a significant reduction in inflation levels, its volatility and persistence, allowing economic agents to anchor their expectations close to the target.

A controlled inflation led Paraguay to differentiate from other economies, and enabled the country to face and mitigate the negative impact of external (such as the international financial crisis) and domestic shocks (such as decline in economic activity in times of drought). This was particularly important if we consider that there is no empirical evidence of countries recording sustained growth over long periods of time in the absence of policies with strong macroeconomic fundamentals.

The understandable demand of society for tangible and immediate results can lead to short-term interests, putting economic stability at risk. It is important to remain committed to the coordination of macro policies and the connection of economic and social policies in order to move towards true economic development.

Controlling inflation and securing the health of the financial system are the greatest contributions that the Central Bank can make to society, in the pursuit of sustained growth with greater social equity.

From the standpoint of fiscal policy, together with economic expansion, an added value of *good behavior* of the fiscal authority was to reduce the public debt-GDP ratio of Paraguay, placing it among the economies with lowest debt levels of the region.

A significant step towards the consolidation of fiscal discipline was the enactment of the LRF, acting as anchor for decision makers, ensuring predictable and sustainable fiscal policy over time which, in turn, contributes to greater monetary policy credibility and effectiveness. This is an extremely valuable instrument to generate the conditions for a truly anti-cyclical economic policy.

In this context, it also seems relevant to underscore the high degree of coordination between monetary and fiscal policy observed in our country. The Central Bank of Paraguay and the Ministry of Finance articulate their work: this might seem trivial but it is not common in other countries. Preserving this reduces the costs of macroeconomic policies in terms of real variables and also provides accurate signals that local and international agents can clearly decode and take into account in their decisions, particularly for investment.

The macroeconomic results achieved in the recent period have contributed to consolidate the confidence in the economy, allowing Paraguay to gradually improve its international credit rating, which is currently a step away from the investment grade.

Finally, given the current deteriorating external economic environment, it is important to reiterate the relevance of preserving consistency and equilibrium in macroeconomic fundamentals. A stable macroeconomic environment is a necessary condition for sustained economic growth. Nonetheless, and because macroeconomic stability is necessary but not sufficient, it is also essential to advance in the implementation of structural reforms to boost the productivity and competitiveness of the economy.

Bibliography

Baig, T., Kumar, M., Vasishtha, G. y Zoli, E. (2006). *Fiscal and monetary nexus in emerging market economies: How does debt matter?* IMF Working Paper No. 06/184.

Blanchard, O., (2004). *Fiscal dominance and inflation targeting: Lessons from Brazil.* NBER Working Paper No. 10389.doi: 10.3386/w10389.

Bernanke, B. y Mishkin, F. (1997). *Inflation Targeting: A New Framework for Monetary Policy?* NBER Working Paper No. 5893.

Cantero, J. (2013). "Moneda y Banca en el Paraguay", en R. Lara, M. Pankow(Eds.), *El Guaraní 70 años de estabilidad. Una conquista de la sociedad* (pp. 69-107). Asunción: Banco Central del Paraguay.

Clavijo, S. (2000). *Banca Central y coordinación macroeconómica: El caso de Colombia. Available in October in Internet.*

Combes, J., Xavier D., Alexandru M. y Tapsoba R. (2014). *Inflation targeting and fiscal rules: Do interactions and sequencing matter?*. IMF Working Paper, WP/14/89.

Dollar, D. y Kraay, A. (2000). *Growth is Good for the Poor*. World Bank, Development Research Group, March.

Frankel, J., Vegh, C. and Vuletin, C. (2013), "On graduation from fiscal procyclicality". *Journal of Development Economics*, Vol. 100 (January), 32-47.

Fondo Monetario Internacional (2005). *Perspectivas de la economía mundial: El desarrollo de las instituciones.* Washington, D.C.

Morgan Guaranty Trust Company. (2000). *Guide to Central Bank Watching.* Economic Research, New York, March.

Sargent, T., (1981). *Stopping moderate inflations: The methods of Poincaré and Thatcher*. Federal Reserve Bank of Minneapolis Working Paper W.

Sargent, T. y Wallace, N. (1981). Some unpleasant monetarist arithmetic. Federal Reserve Bank of Minneapolis, Quarterly Review, *5*(3), 1-17.

Scott, R. (2010). *Veinte años de metas de inflación*. Fondo Monetario Internacional: Finanzas y Desarrollo, *47*(1), 46-49.

Valdivia, D. y Pérez, D. (2013). *Dinámica Económica y coordinación de políticas Fiscal - Monetaria en América Latina: Evaluación a través de un DSGE (Dynamic Economic and Coordination of Fiscal – Monetary Policies in Latin America: Evaluation Through a DSGE Model).* Disponible en *SSRN:http://ssrn.com/abstract=2324307.*

Vegh, C. y Vuletin, G. (2012). *Overcoming the Fear of Free Falling: Monetary Policy Graduation in Emerging Markets*. NBER Working Paper 18175, June.

Woodford, M. (1995). *Price level determinacy without control of a monetary aggregate*. NBER Working Paper No.5204.doi: 10.3386/w5204.

Zoli, E. (2005). *How does fiscal policy affect monetary policy in emerging market countries?* Bank of International Settlements Working Paper No. 174.

PART 2
CHALLENGES

Quid Pro Quo: Productivity and Economic Growth (I)

Carlos Fernández Valdovinos

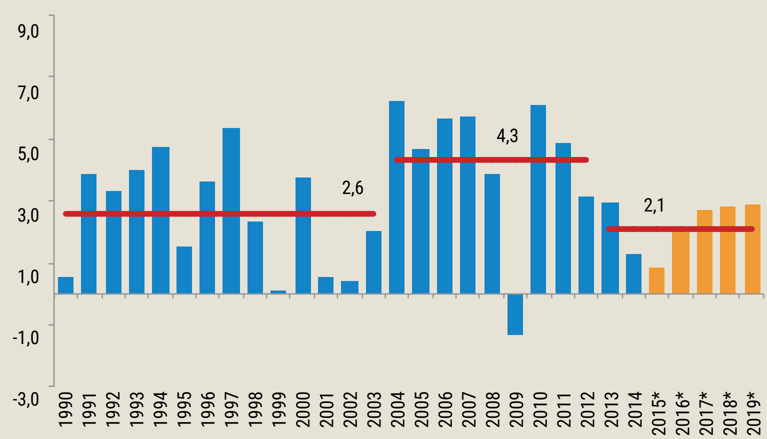
The author would like to thank Marco Navarro, Mario Colonel, Darío Ruiz Díaz and Felipe González Soley for their contribution to this chapter.

Introduction

Once you start thinking about growth,
it's hard to think about anything else.
Robert Lucas Jr.

Since 2003, Latin America has gone through a remarkable boom characterized by strong growth, low inflation, and social improvements in most countries (Figure 1). These results are attributable to prudent policies and major structural reforms. However, aside from the period following the 2008 global financial crisis, exceptionally benign external conditions have also played a very important role. Financing in international markets has been cheap and plentiful while increases in commodity export prices from the region have been strong and permanent.

Figure 1
Economic growth in Latin America and the Caribbean, percent change



Source: IMF World Economic Outlook (WEO)
(*) Projections of the July 2015 WEO.

Similarly, the Paraguayan economy was boosted by external tailwinds. During the period 2004-2012 soybean prices (Paraguay's main export) recorded an average annual increase of 10%. In turn, exceptional international financial conditions (i.e. both interest rates and risk aversion at historically low levels) led to the successful issuance of 1.8 billion USD (about 6% of GDP) in government bonds.[1] In addition, Paraguay had been positively influenced by regional developments. This backdrop,

1 Likewise private companies tapped into international financial markets.

in which Latin America grew at 4.1% per year in the period 2003-2012 (and with Brazil registering an average GDP increase of 3.8% over the same period), has been crucial to the excellent performance of the Paraguayan economy in recent years.[2]

However, some analysts emphasize that *even gold loses its luster*. Good times ushered in more complicated periods and less buoyant external conditions clouded the outlook for the region and Paraguay. The weakness of global commodity markets has shadowed growth prospects for commodity-exporting countries. For example, until August 2015, soybean prices saw a 44% reduction compared to their historical peak in 2012. Moreover, the USA's gradual monetary policy normalization has resulted in higher external financing costs (with a rise in interest rates and risk premiums demanded by investors), coupled by a gradually strengthening of the U.S. dollar.

What should our countries do under this new scenario? Many economies that grew rapidly during booming years have recently lost momentum, showing disappointing investment and export performance. In the new context, it is not advisable to over-stimulate production with macroeconomic (fiscal or monetary) policies. Policies should be focused on tackling structural weaknesses to increase productivity levels (including improvements in infrastructure, education, governance and the business climate), to restore robust growth prospects, bearing in mind the importance of further diversifying the economy. This chapter explores current conditions and recent developments in some of these aspects of the Paraguayan economy.

Economic growth and productivity

In the last ten years, Paraguay's GDP grew much faster than in the previous decade. Between 2003 and 2014, the economy grew at an average annual rate of 4.8%, well above the 1.8% of the 1992-2002 decade (Table 1). However, annual growth rate still showed an unusually high volatility, with a record pace of 14.2% in 2013 and recessions of -3.2% and -1.2% in 2009 and 2012, respectively.[3] Excluding sectors highly linked to exogenous factors, such as agriculture and hydroelectric energy (about 30% of GDP), economic growth stabilized while its dynamics were broadly in line with overall GDP performance (4.8% on average for the period 2003-2014).

2 A recent BCP study shows that external factors account for approximately 2.3% of annual GDP growth over the period 2004-14. This is a significant contribution given that during that period, GDP registered an average annual growth of 4.8%.

3 According to a World Bank study (2014a), real GDP growth in Paraguay has been one of the most volatile of the region in recent years. Between 2000 and 2011, real GDP growth fluctuated by 5.5 percentage points, exceeding the volatility of most Latin American peer countries. This study also argued that Paraguay's production model (based on agriculture) is one of the causes of the volatility in its economic growth.

During that time, non-traditional sectors gained prominence in GDP generation. Services doubled their average contribution to annual production (from 28.4% in the period 1992-2002 to 46.7% in the period 2003-2014), becoming the leading contributing sector to GDP. Within this sector, it is worth mentioning developments in communications, transport, and financial intermediation; the latter reflecting increased bank penetration and expansion of the economy as a whole.

Although the secondary sector reduced its growth contribution in the reference periods, this was mainly due to a lower share accounted for by the binational hydroelectric companies. Nonetheless, construction, which in the first period had a negative impact on annual economic activity (-9%), became a new domestic growth engine with a 4.5% contribution.

In line with these sectors' more dynamic performances, agricultural activities continued to play an important role in Paraguay's growth. The average annual growth in agriculture has practically doubled in the last ten years, rising from 4.5% to 9.0%. Likewise, livestock production increased on average by 5.6% annually in the last decade (much higher than the previous 3.6%). However, the primary sector´s share declined from 37.4% to 29.4%.

Table 1
Average growth per economic sector and contribution to GDP, as a percentage

	Average Growth		Contribution	
Economic sector	*1992-2002*	*2003-2014*	*1992-2002*	*2003-2014*
Primary	**3.7**	**7.0**	**37.4**	**29.4**
Agriculture	4.5	9.0	28.6	23.1
Livestock	3.6	5.6	8.5	5.8
Other primary	0.1	1.4	0.3	0.5
Secondary	**1.3**	**3.0**	**22.4**	**17.7**
Industry (*)	1.1	3.2	9.6	8.6
Construction	-3.9	6.5	-9.0	4.5
Binational companies	4.0	1.8	21.9	4.7
Tertiary	**1.2**	**5.4**	**28.4**	**46.7**
Transport	2.0	5.8	3.2	4.0
Communications	10.6	8.0	10.1	5.8
Finance	-1.0	8.2	-1.2	3.8
Other services	0.8	4.9	16.3	33.0
Taxes on products	**3.4**	**4.5**	**11.8**	**6.2**
GDP	**1.8**	**4.8**	100.0	100.0
GDP without agriculture and without binational companies	**1.2**	**4.9**		

(*): Includes electricity and water.
Source: Central Bank of Paraguay.

This greater production diversification was also reflected in the country's export basket. At present, exports of manufactures of agricultural origin (meat, soybean oil, leather, etc.) have gained importance due to exponential growth. In 1995, external sales of these products accounted for only 3.5% of GDP, while in 2014 they accounted for 11.5%, exceeding commodity sales, which until then had driven export expansion. Although commodity exports remain significant (representing 10.2% of GDP in 2014), their share has declined in recent years giving way to manufactures of agricultural origin fostered by higher industrialization.

In a similar fashion, exports of manufactures of industrial origin doubled, rising from 1.1% in 1995 to 2.5% of GDP in 2014. Accordingly, maquila industries have thrived in recent years to the point where in 2014 they accounted for 24% of total exports of manufactures of industrial origin.[4]

To complement this analysis, a traditional growth accounting exercise (production function approach) is presented to clarify the factors underpinning Paraguayan economic growth.

Growth Accounting: Paraguay

There is extensive literature devoted to identifying factors that drive long-term growth. In a renowned paper, Solow (1956) concludes that a country's output level is determined by savings rates, labor growth, and technology. In addition, the author argues that higher and sustainable growth rates are mostly associated with technological progress.

Later in 1957, Solow introduced a methodology (known as growth accounting) to determine a country's sources of economic growth. Based on output growth rates and production factors (physical capital and labor), a residual is estimated, i.e. the remaining growth unexplained by the other two factors. This residual is known as total factor productivity (TFP). Applying his theory, Solow found that, in the first half of the twentieth century, an important share of growth in the United States could be attributed to technological progress. With these findings, economists have focused on perfecting this model, for example, adjusting measurements of the labor force to reflect improvements in labor quality.

Following this method, a growth accounting exercise was carried out for the Paraguayan economy from 1963 to 2014. At first, only working population data

4 In early 2000, *maquila* exports amounted to only 1 million USD, while in 2014 they totaled approximately 188 million USD. The *maquila* saw a significant increase in labor demand, which has doubled in the past two years, currently employing approximately 8,500 people. Knowledge transfer inherent to the process is no less valuable, especially in sectors such as auto parts and pharmaceutical products.

was used, as shown in Table 2. Subsequently, labor was adjusted to reflect quality, as shown in Table 3 using workers' average schooling years and Espínola's (2001) estimates.[5]

Table 2
Average GDP growth and contribution of production factors, in percentage points

Period	GDP	Capital	Labor	TFP
1963-2014	4.9	2.4	1.7	0.8
1993-2014	3.5	1.4	1.5	0.6
1993-2002	1.8	1.5	1.0	-0.7
2003-2014	4.8	1.4	1.8	1.6

Source: Author's estimates based on data from the BCP and the Department of Statistics, Surveys and Censuses (DGEEC).

Table 3.
Average GDP growth and contribution of production factors with quality-adjusted labor, in percentage points

Period	GDP	Capital	Work (QA)*	PTF (QA)
1963-2014	4.9	2.4	2.2	0.3
1993-2014	3.5	1.4	2.2	-0.1
1993-2002	1.8	1.5	1.6	-1.3
2003-2014	4.8	1.4	2.7	0.8

Source: Author's estimates based on data from BCP and DGEEC.

The main findings are:

- *Factor accumulation rather than productivity (TFP) improvements have been the main growth driver for Paraguay in the full sample;*
- *Acceleration in the rate of growth observed in the last decade was mainly due to higher productivity (TFP).*

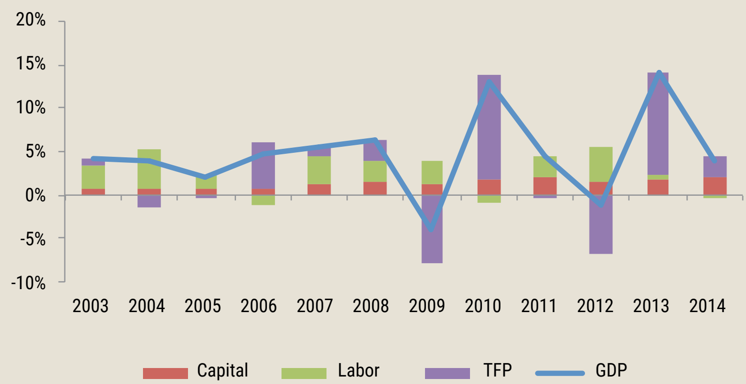
Over the reference period, approximately 80% of Paraguayan economic growth was brought about by capital and labor accumulation. This percentage climbs to 90% when the labor force is adjusted to reflect quality or years of schooling. These results are in line with other researchers' findings on factors affecting economic growth in Paraguay and other Latin American countries.[6]

5 This study found that for every year of education, worker's wages increased 12% on average.

6 For Paraguay, see Fernández & Monge (2003) or Garay, Castilleja & Lovera (2014). See Sosa, Tsounta & Kim (2013) or Ferreira, Pessoa & Veloso (2012) on Latin American countries.

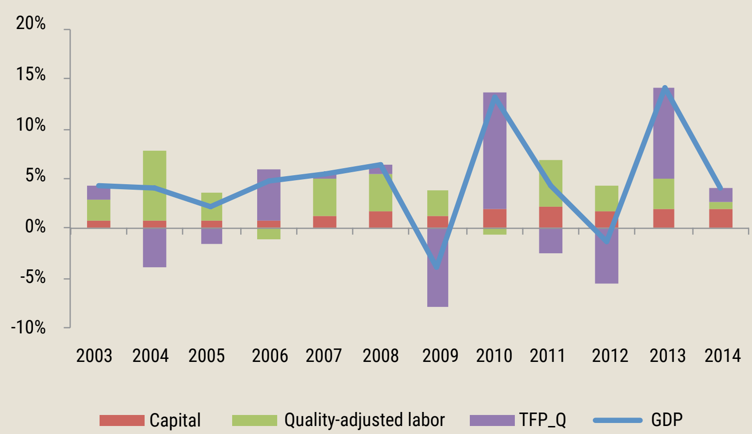
Since 2003, the contribution to GDP of productivity gains to economic growth has changed substantially, even with quality-adjusted labor, and represents a reversal in the dynamics of the poor economic performance of the 1993-2002 period. The growth spread between the last two decades has been 3%, and most of this acceleration was due to productivity improvements: TFP accounts for about 2% of the spread as of 2003.

Figure 2
GDP growth and contribution of production factors



Source: Author's estimates based on data from BCP and DGEEC.

Figure 3
GDP growth and contribution of production factors with quality-adjusted labor

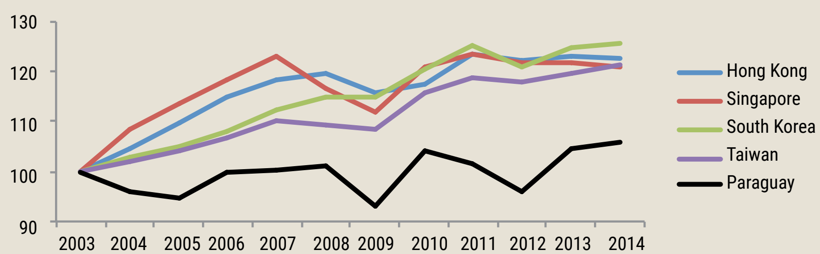


Source: Author's estimates based on data from BCP and DGEEC.

Amidst a significant increase of TFP in the last decade, its contribution to annual GDP growth remains low (around 16% on average when improvements in the quality of labor are taken into account). In addition, improved productivity continues to lag behind the productivity of other countries in the region or Asian emerging markets.

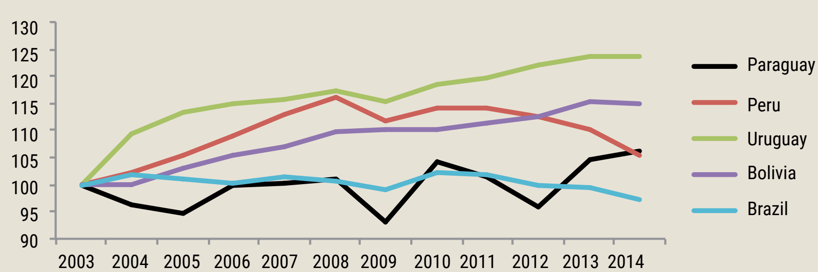
In the past 25 years, except for Uruguay, Latin American countries' TFP grew at a rate well below to those observed in Asian countries and even decreased in some cases (Figures 4 and 5). As for the Paraguayan economy, productivity, measured by TFP (QA), increased approximately 6% over the last decade, well below the 22.5% average in selected Asian countries and the 10% average of peer countries in the region.

Figure 4
Trends in TFP in Paraguay and selected Asian countries, index, 2003=100



Source: Conference Board and BCP.

Figure 5
Trends in TFP in Paraguay and selected countries in the region, index, 2003=100



Source: Conference Board and BCP.

As the literature points out, the challenge posed by the new global scenario is that long-term growth cannot be based on the accumulation of production factors. In fact, studies have found that the contribution of TFP to growth is higher in economies with higher average annual GDP growth. Given the restraint anticipated in capital accumulation and the natural constraints on labor, it is unlikely that Paraguay will be able to sustain the high growth rates of the last decade unless productivity improves significantly.[7]

The causes of low TFP growth in the region and in Paraguay are many and varied, and designing a policy agenda to foster productivity is a difficult task. According to international organizations, these are some of the policies to be considered: the improvement of the business climate and promotion of competition; reinforcement of regulations for the entry and exit of companies to facilitate the reallocation of resources to new and highly productive sectors; upgrading infrastructure; strengthening institutions to ensure property rights; and the eradication of corruption.[8]

The analysis below will focus on infrastructure as one of the components aimed towards attaining the country's desired increase in productivity. The second part of the chapter will emphasize the role of institutions and the diversification of the economic structure.

7 Physical capital expansion is expected to moderate sharply due to the normalization of external financing conditions and commodity price reduction, two key factors related to the recent investment boom. The labor contribution will be restricted by some natural constraints, such as population aging, although there is still space to increase labor participation rates (mainly female).

8 See Sosa (2013).

Fostering productivity: Infrastructure

"That the erection and maintenance of the public works which facilitate the commerce of any country, such as good roads, bridges, navigable canals, harbours, &c. must require very different degrees of expense in the different periods of society is evident without any proof. The expense of making and maintaining the public roads of any country must evidently increase with the annual produce of the land and labour of that country."

Adam Smith

An efficient provision of infrastructure is a key factor in development, particularly within countries that are highly dependent on external demand. The lack of modern infrastructure and, therefore, inadequate provision of its services, are obstacles to the effective implementation of development policies and attainment of economic growth rates above international averages.

An adequate and integrated infrastructure network for transport, communications, and energy allows an economy to improve its internal operations, reach a high degree of specialization, and become internationally competitive. These considerations apply especially to small, open economies like Paraguay's. The infrastructure must also be of good quality so that the usefulness derived from its flow of services can be sustained over time (Rozas & Sánchez, 2004).

Investment in infrastructure has a positive impact on the productivity of the other production factors.[9] An increase of investment in infrastructure always increases the productivity of the other factors but, as a result of declining returns to scale, the magnitude of this effect depends on the initial capital stock available in the economy. Thus, in low-income countries, the impact of public investment is much higher, considering that low levels of infrastructure are hallmarks of these economies. Increasing the productivity of private capital, as a result of improved infrastructure, encourages firms to increase their investment levels and thereby contribute to higher economic growth in the long term.[10]

Numerous studies have analyzed the correlation between investment in infrastructure and economic growth. For example, Aschauer (1989) found that the government's role in providing infrastructure is crucial in improving productivity and fostering countries' economic growth. The study found that growth elasticity

9 For example, using data from Guatemala, Honduras and Nicaragua, Escríbano & Guasch (2006) found that infrastructure has a significant impact on the productivity of firms.

10 Similarly, as Torvik (2001) points out, the effect of public investment on the labor market would be equally positive, to the extent that there is a high degree of complementarity between capital and skilled labor.

in relation to public infrastructure spending, excluding military expenditures, is 0.24%. It also concluded that one of the possible causes for the drop in productivity in the United States during the period of 1971-1985 was the reduction in public spending on infrastructure.

Although the robustness of these results was questioned, more recent studies confirmed the contribution of infrastructure to economic growth. Easterly & Rebelo (1993) evaluated the role of fiscal policy as a determinant of economic growth. Using panel data from 24 countries, they found a positive correlation between public spending on transport and communications and economic growth.

Calderón & Servén (2004) studied the effect of infrastructural development on economic growth and income distribution using panel data from 121 countries. Their results highlight that the level of infrastructure has significant impact on economic growth in the long term, with results that are robust to changes in the measurements for infrastructure and the estimation techniques used. They argue that both the quality and quantity of infrastructure contribute to lower levels of income inequality.

Paraguay's infrastructure stock

Indicators from different sectors show that Paraguay's infrastructure falls far short of the economy's requirements. Regarding roads, the percentage of paved roads, i.e. asphalt roads with asphalt concrete and surface treatment, reached 16% in 2011, below the 21.8% regional average reported by Barbero (2011). More recently, changes have not been significant inasmuch as this percentage increased slightly to 17.34% in early 2015. In 2014, Paraguay's road network was 32,353.87 km long, of which about 5,605.50 km are paved roads, 24,209.69 km are dirt and gravel roads, and the remaining 2,538.57 km are cobblestoned and sett paved, among others.

Port infrastructure began to develop as of the enactment of a law in 1994 allowing port operation by the private sector, which was aided by a sizable increase in grain and oilseed exports. Consequently, about 42 private ports were built between 1999 and 2011, most of them exclusively for the export of grains.[11]

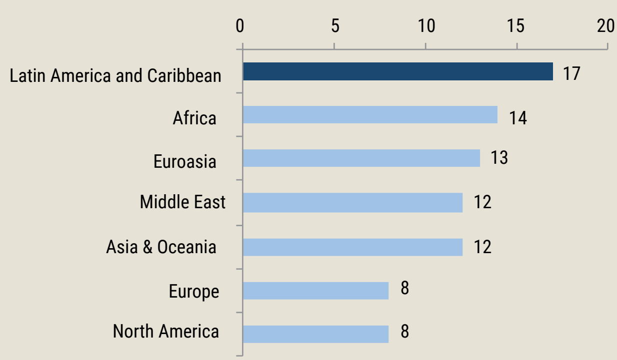
The rising number of ports partially reflects a similar rise in exports by river transport, which grew from one to nine million tons between the years 2000 and 2014. There is, however, room for improvement in the sectors' infrastructuree, including river dredging and signage, the lack of which restricts the cargo capacity of vessels and impedes nocturnal navigation.

11 See IDB (2013).

Regarding electrical infrastructure, in 2012, 98% of Paraguayan households had access to electricity, higher than the 92% average for Latin America.[12] Per capita consumption experienced a sizable increase, going from 760 kWh per capita in 2003 to 1,330 kWh in 2013, according to statistics from the National Electricity Administration (ANDE). Nonetheless, this consumption is still below the regional average of 1,600 kWh reached in 2012. In terms of energy supply, Paraguay leads the regional per capita generation of power, with approximately 9,000 kWh per capita per year. This level has remained relatively constant over the last decade and falls well above the regional average of 2,200 kWh per capita in 2012.

The biggest weaknesses of the electricity infrastructure are associated with energy losses[13] during energy transmission and distribution. During the period of 2007-2011, Latin America recorded an average 17% loss of electricity. This was higher than other regions such as Africa (14%) and the Middle East (12%) and almost thrice the 6% verified in high-income countries, which is used as a reference threshold (Figure 6). In South America, Paraguay led the ranking of electricity losses during this period, reaching 32%, doubling values recorded for ble that of Brazil and Argentina (Figure 7). These losses occurred mainly during the distribution process (approximately 75% of the total). Losses during transmission reached 8%, while other countries in the region recorded levels ranging from 1.6% to 3.6% (Figure 8).

Figure 6
Losses by region, 2007-2011 average, percent of electricity production



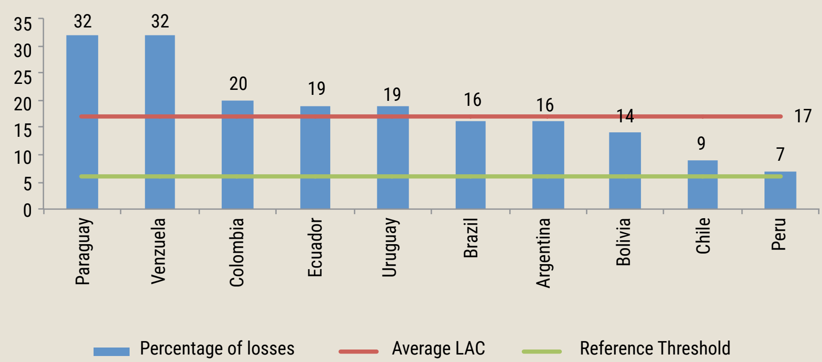
Source: IDB.

12 See WB (2013).

13 Losses in transmission and distribution of electricity include losses occurring in the transmission between sources of supply and distribution points, and in the distribution to consumers, including theft (World Bank, 2013).

In recent years, the situation has improved marginally. The percentage of energy losses in terms of the amount effectively delivered to the domestic market rose from 16% in 1993 to a peak of 33.5% in 2006, followed by a gradual decline to 25% in 2014, a value significantly larger than those recorded in the region.

Figure 7
Losses in South America, 2007-2011 average, percent of electricity production

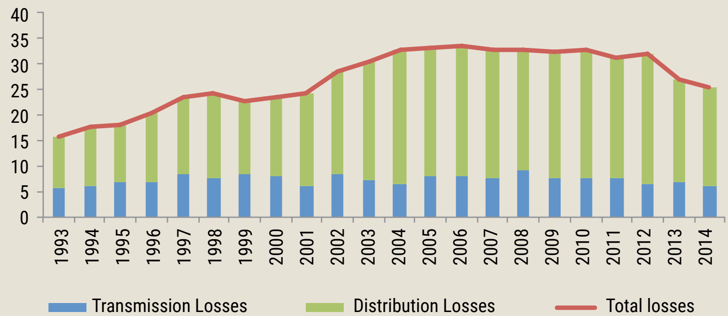


Source: IDB and ANDE.

In terms of telecommunications, World Bank data indicates that 43 out of every 100 Paraguayans had Internet access in 2014, well above the 20 out of every 100 recorded in 2010. This level of access placed Paraguay within the Latin American average, with Chile leading this indicator with 73 Internet users per 100 inhabitants. However, these services are still relatively expensive in Paraguay. In 2014, the average cost for 1 MB fixed broadband in the region accounted for 3.8% of GDP per capita according to an ECLAC study (2015). In Paraguay, the cost was equal to 4.8% of GDP per capita. Furthermore, teledensity indicators show that mobile phone services have grown significantly from 30.2 to 105.6 service subscribers for every 100 inhabitants between 2004 and 2014.[14] Nevertheless, this figure lags behind the regional average of 111.1.

14 Database of the International Telecommunication Union (2015).

Figure 8
Transmission and distribution losses in Paraguay, percent of electricity production



Source: ANDE. Total losses / Energy delivered to the domestic market.

Lastly, in 2003, the coverage of sanitation services reached 64.8% of the Paraguayan population, while running water reached 79%.[15] These percentages were below the regional averages, where access to these services reached 76.9% and 90.9%, respectively. Recently the coverage of both services increased, climbing to 79.7% of the population in 2012 for sanitation services (slightly below the regional average of 81.7%), while running water services reached 93.8% of the population (also slightly below the regional average of 94.03%).

Public investment in infrastructure

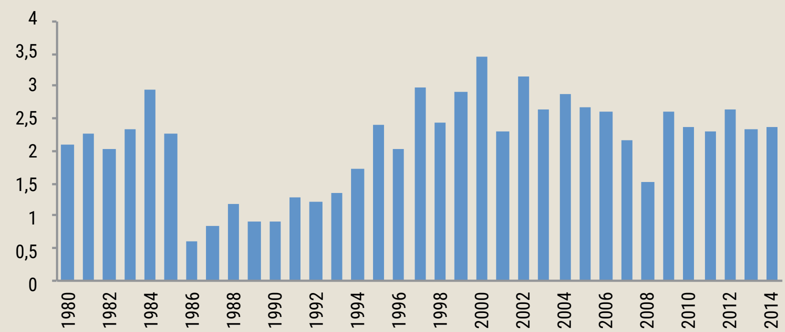
The role of government has been and will be essential to fix the current infrastructure deficits in Paraguay, has exhibited limitations in the provision of some services. However, public investment made in recent years has been far below the levels recommended for fostering rapid and competitive growth.

Perroti & Sánchez (2003) concluded that Latin American countries need to invest an average of 5.2% of GDP per year in infrastructure between 2006 and 2020 to meet the needs of the business sector and end-consumers. To close the infrastructure gap with East Asia, an even larger amount needs to be invested: 7.9% of GDP. A recent calculation by Perroti & Sánchez (2012) estimated that the countries of the region would need to invest a yearly average of 6.2% of GDP over the period 2012-2020 to bridge the gap between infrastructure supply and

15 See WB (2012).

demand. However, in 2014, investment in infrastructure undertaken by the Central Government, including state-owned enterprises, totaled only 800 million USD, i.e. 3.3% of GDP.

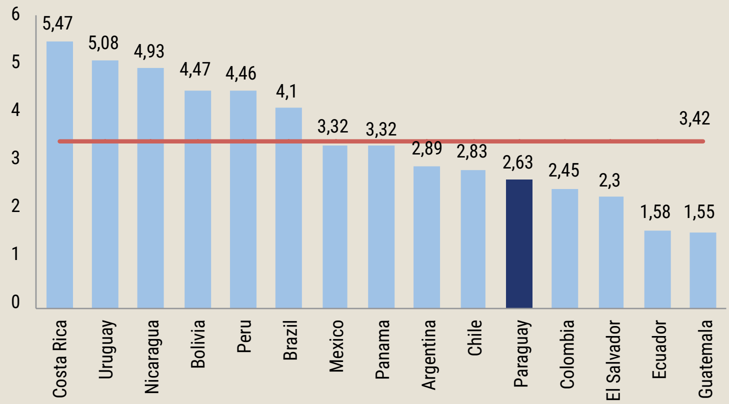
Figure 9
Evolution of public investment by the Central Government in Paraguay 1980-2014, percent of GDP



Source: Financial situation of the Central Government, Ministry of Finance.

If the *snapshot* of public investment in infrastructure in 2014 is bad enough, the *movie* is even worse. FIGURE 9 summarizes the trend in public investment in infrastructure from 1980 to 2014. The highest investment was recorded in 2000 reaching 3.45% of GDP, while 1986 was the year with the lowest point, 0.6% of GDP and the average for this period was only 2.1% of GDP. These low levels of investment over the past 25 years indicate that Paraguay has not been doing enough and that the infrastructure gap (or divergence between supply and demand) has widened significantly over time.

Figure 10
Physical investment in Latin America in 2012, percent of GDP



Source: ECLAC and BCP.

The lack of resources needed to finance a better infrastructure is a challenge for the entire region. The 2012 regional average for infrastructure spending was 3.42% of GDP (Figure 10). For all countries in the region, public investment is below the 6.2% of GDP recommended by Perotti & Sánchez, with Costa Rica and Uruguay as the countries with the highest investment. As for Paraguay, the country earmarked only 2.63% of GDP to improve its infrastructure, below the regional average (which is low enough), and less than half of the investment made by Costa Rica.

Unquestionably, public investment in infrastructure is far below the levels needed to meet the country's needs. Considering Perotti & Sánchez's most recent calculations, this would mean that in 2014 Paraguay should have invested 1.182 billion USD more than what it ultimately allocated to public investment. This sum reaches 2.43 billion USD when trying to bridge the gap with East Asia. While we need to be careful with these estimates (mainly because of their possible fiscal implications), they highlight the need to roll out a comprehensive strategy to deal with bottlenecks in the infrastructure sector. Given the large amounts of resources needed, this comprehensive strategy necessarily requires the active participation of the private sector.

International indicators on infrastructure in Paraguay

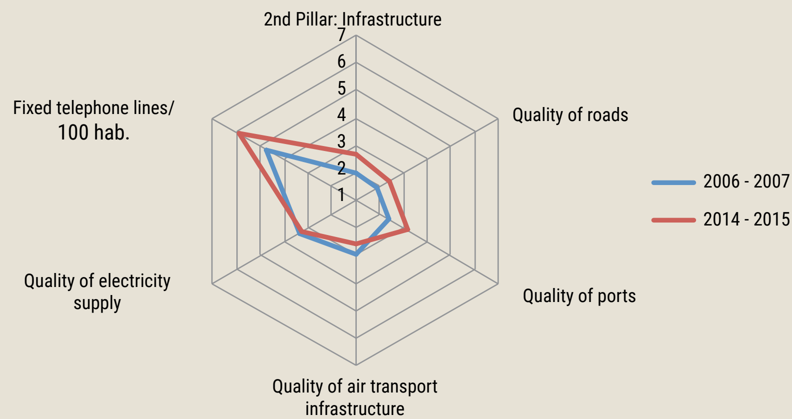
Deficient infrastructure, low public investment, and little or no participation by the private sector are reflected in the metrics produced by various international organizations on the state of our infrastructure. One of the most widely used indicator is the Global Competitiveness Index (GCI), which seeks to measure the performance of different countries in tackling the task of promoting sustainable economic progress. This evaluation is carried out by means of several indicators grouped into twelve pillars, one of which explicitly regards the quality of infrastructure in the country. In turn, this pillar comprises nine indicators based on official data encompassing government agencies or surveys, and corresponding to different infrastructure types.

Data for the period of 2014-2015 places Paraguay in position 117 of 144 countries evaluated, only above Venezuela and Haiti in Latin America. In terms of per capita income, Paraguay was placed 95th for the same period, whereas the quality of the country's infrastructure was much lower than might be expected given our level of development. Out of the seven possible points, Paraguay received a score of 2.70 (Figure 11). According to the GCI report, one of the main weaknesses of the country's competitiveness remains concentrated in the lack of physical infrastructure.

In addition, the different infraestructure sectors, and their performance over time, do not exhibit an uniform development. When analyzing these individually, low levels of road quality and airport infrastructure quality exert a negative pressure on Paraguay's ranking, at 133 and 136 respectively. The mobile telephone lines indicator is the only one to position the country in the top one hundred places (88).

When comparing the latest scores to those obtained in the same pillar for the period 2006-2007, a slight improvement can be noted, given the advances in the indicators related to port and communications infrastructure. It is no coincidence that the private sector has a greater involvement in these two sectors. On the other hand, state run sectors, such as airport and electrical infrastructure, have shown negative development trends.

Figure 11
Global Competitiveness Index, Pillar: Infrastructure (*)



(*) The indicator uses values from one to seven, with seven as the best score.
Source: World Economic Forum, Global Competitiveness Report.

As a second reference, the Doing Business report, published by the World Bank (2014b), records the time lapsed between the departure of goods from the production site until their arrival at the exit seaport. In this way, the indicator seeks to –albeit indirectly– quantify the quality and efficiency of transportation networks and infrastructure, as wells as the efficiency of the country's customs procedures.

The 2015 measurements indicate that the time required to export a standard shipment of goods from Paraguay is 29 days, while the corresponding average time for South America is of 21 days. Although the lag can be partially explained by Paraguay's landlocked position, the country's unfavorable performance is also due to weaknesses in local inland transport infrastructure. When compared with the other landlocked country of the region, the time to export from Bolivia is much lower: only 22 days.

On a longer timescale, however, the country has improved its export time by 7 days since 2006. This reduction has been mostly brought about the simplification of the customs process and the improvement of inspection systems (now focused on risk assessment).

Another indicator providing information on the state of an economy's infrastructure is the World Bank's Logistics Performance Index, which evaluates experts' perceptions of logistics conditions within the country. This index is based on surveys conducted by the World Bank, in partnership with academic and international institutions, private companies, and individuals involved in international logistics.

According to this indicator, Paraguay scored 2.78 points out of 5 in 2014, higher than the 2.57 recorded in 2007. Major progress was made in the categories related to international shipments, efficiency in customs clearance, and ease of arranging competitively priced shipments. However, in comparison to the region's average scoring, the evaluation is rather unfavorable (Table 4).

Table 4
Logistics Performance Index

	Paraguay		South America
	2007	2014	2014
Logistics Performance Index	**2.57**	**2.78**	**2.85**
Efficiency of the clearance process	2.20	2.49	2.56
Quality of trade and transport related infrastructure	2.47	2.46	2.68
Ease of arranging competitively priced shipments	2.29	2.83	2.86
Competence and quality of logistics services	2.63	2.76	2.81
Ability to track and trace consignments	2.67	2.89	2.91
Domestic logistics costs	3.13	n / a	n / a
Timeliness of shipments in reaching destination within the scheduled or expected delivery time	3.23	3.22	3.25

Source: World Bank.

Costs stemming from the infrastructure deficit

Several studies seek to quantify the economic impact caused by a poor infrastructure. Among them, Calderón & Servén (2004) evaluated the impact of infrastructure development on economic growth and income inequality. The results indicated that growth is positively affected by the infrastructure stock and that income inequality declines as the quantity and quality of infrastructure rises. The authors also found that if Latin American countries reached the level of infrastructure stock and quality of the leading country in the region (Costa Rica), the annual growth of their GDP per capita would increase between 1.1% and 4.8 %.

A USAID study (2006) sought to quantify costs related to the transportation sector in Paraguay. The country's nine main import and export corridors were analyzed in order to determine the costs involved in each stage of the transport and logistics process.[16]

The study of these corridors showed that costs that could be eliminated or minimized in Paraguay's total foreign trade amounted to slightly above 326 million USD, about 4.26% of GDP in 2005. The major costs were due to lack of river dredging and signage, poor quality of road infrastructure, and delays in access to ports. Although it was estimated that approximately 47% of identified cost overruns were related to the country's landlocked location, 51% of them were associated with domestic factors. That is, they were Paraguay's sole responsibility.

Ruiz Díaz & Ludeña (2008) used a general equilibrium model from the Global Trade Analysis Project (GTAP) to estimate the impact of an investment policy in infrastructure to reduce transportation costs. These authors found that in Paraguay these costs were 1.7 times higher than the Mercosur 2001 average and that, on average, each country of this block recorded transport costs that were 54% lower than Paraguay's.[17] The results of the study indicated that a 54% reduction in transport costs would contribute to a 0.24% rise in GDP, an increase of exports and imports (1.38% and 6.35% respectively) and a 3.88% improvement in the terms of trade.

16 The paper analyzes the sequence of transactions, from pre-shipment until the arrival of the product at the port of destination and in the case of imports, from shipment to arrival at the warehouse of the consignee. In the analysis, existing cost overruns in the export and import process were identified and quantified for products and corridors.

17 Ruiz Diaz & Ludeña point out that in 2001 Paraguay had the highest transport cost in relation to the import price, and the second highest cost per ton, even higher than that of Bolivia, the other landlocked country of the region.

Bibliography

Acemoglu, D., Johnson, S., Robinson, J. (2001). The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review*, *91*, 1369–1401.

Agencia de los Estados Unidos para el Desarrollo Internacional [USAID] (2006). *Impacto del transporte y la logística en el comercio internacional del Paraguay*. Document prepared by CARANA Corporation, in partnership with the National Chamber of Commerce and Services in Paraguay [Cámara Nacional de Comercio y Servicios de Paraguay (CNCSP)].

Aschauer, D. (1989). Is public expenditure productive? *Journal of Monetary Economics*, 23, 177-200.

Inter-American Development Bank (2013). *Plan Nacional de Logística - Paraguay 2013*. Asunción, Paraguay.

Inter-American Development Bank (2015) *Construyendo gobiernos efectivos - Logros y retos de la gestión pública para resultados en América Latina y el Caribe.* [English title: *Building Effective Governments: Achievements and Challenges for Results-Based Public Administration in Latin America and the Caribbean*.]

World Bank (2014a). *Volatilidad del crecimiento económico en Paraguay: Fuentes, Efectos y Opciones.* Asunción, Paraguay: Banco Mundial Latinoamérica.

World Bank (2014b). *Doing business 2015: Going beyond efficiency*. Washington, DC: World Bank Group.

Barbero, J. (2011). *Infraestructura para el desarrollo integral de América Latina*. Banco de Desarrollo de América Latina [Development Bank of Latin America].

Barro, R. (1996). *Determinants of economic growth: A cross-country empirical study.* NBER Working Paper, 5698, National Bureau of Economic Research.

Calderón, C., Servén, L. (2004). *The Effects of Infrastructure Development on Growth and Income Distribution*. Policy Research Working Paper N.º 3401.

Easterly, W., Rebelo, S. (1993). Fiscal Policy and Economic Growth: An Empirical Investigation. *Journal of Monetary Economics*, 32, 417-58.

Espinola, Z. (2001). *Educación y ahorro. Variables claves para el despegue del Paraguay.* Direccion General de Estadísticas, Encuestas y Censos [General Directorate of Statistics, Surveys, and Census]. Paraguay.

Hall, R., Jones, C. (1999). *Why do some countries produce so much more output per worker than others?* NBER Working Paper, 6564, National Bureau of Economic Research.

Jiménez, R., Serebrisky, T., Mercado, J. (2014). *Power Lost: Sizing Electricity Losses in Transmission and Distribution Systems in Latin America and the Caribbean.* Inter-American Development Bank. Washington.

Lardé, J., Sánchez, R. (2014). *The economic infrastructure gap and investment in Latin America.* ECLAC. [Publication information for Spanish edition: *Edición N.°* 332, Número 4.]

Ludeña, C., Ruiz Díaz, F. (2008). *Sobrecostos de transporte: ¿maldición geográfica o falla de política de infraestructura? Una estimación para Paraguay desde un modelo de equilibrio general.* Departamento de Economía, Facultad de Ciencias Empresariales, Universidad Católica del Uruguay. [Department of Economics, Faculty of Business Sciences, Catholic University of Uruguay.]

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2014). *Worldwide governance indicators: Country data report for Paraguay, 1996-2013.* Washington, DC: World Bank Group.

Ministerio de Hacienda (2014). Informe Financiero - Tomo I. Paraguay. [Ministry of Finance (2014). Financial Report—Volulme I. Paragay].

Perroti, D. y Sanchéz, R., (2011). *La brecha de infraestructura en América Latina y el Caribe*. Santiago de Chile. Serie 153.

Rodrik, D. (2002). *Institutions, integration, and geography: In search of the deep determinants of economic growth*. Princeton, NJ: Princeton University Press.

Rozas, P. y Sánchez R. (2004), *Desarrollo de infraestructura y crecimiento económico: revisión conceptual*. Serie DRNI N.°75, CEPAL [ECLAC]. Santiago, Chile.

Solow, R. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70, 65-94.

Solow, R. (1957). Technical Change and the Aggregate Production Function. *The Review of Economics and Statistics*, 39, 312-320.

Sosa, S. et al (2013). *Is the Growth Momentum in Latin America Sustainable?*. IMF Working Paper. N.° 13/109. Washington: International Monetary Fund.

Torvik, R. (2001). Learning by doing and the Dutch disease. *European Economic Review*, 45, 285-306.

World Bank (2013), *World Development Indicators,* Web 2015

Quid Pro Quo: Productivity and Economic Growth (II)

Carlos Fernández Valdovinos

The author would like to thank Viviana Garay Estepa, Fernando Rivarola, Guillermo Ortiz, José Herrera and Rosa Ortellado for their contribution to this chapter.

Fostering productivity: Institutions

"Nothing is possible without man,
but nothing lasts without institutions."
Jean Monnet

In the previous section of the chapter, the quality of infrastructure in Paraguay and its role in economic growth were evaluated, bearing in mind that the physical capital stock available is not the only factor that determines economic growth. There are are, however, other barriers that hinder business development and discourage the accumulation of production factors. Beyond a lack of funding or capital, these limitations deal with other considerations such as tax and labor regulations, public bureaucracy, and administrative irregularities which, among others, reflect the poor quality of a country's institutions.

Moreover, to overcome these barriers and increase productivity, generate quality jobs, and reduce informal-sector behavior, it is essential to foster a change in the composition of the country's export basket. Studies have highlighted the role of structural transformation in economic growth, which argue that growth and development are a result of diversification and sophistication of all goods exported by a country.[1] Therefore, a smart strategy is to deepen the integration of our economy into global markets. However, as emphasized by the Development Bank of Latin America (CAF-2005), "productive transformation, defined as an increase in the diversification of the export supply with productivity gains, is required to harness the benefits of greater international integration." According to CAF, this kind of transformation of productivity will ultimately bring about higher real incomes for workers and greater economic and social development.

This section analyzes the role of institutions in growth, their current state in Paraguay, and the potential benefits that could be obtained by improving their quality. This section will also focus on the diversification of Paraguayan exports and evaluate the cost of low diversification, in addition to addressing the concept of economic complexity and its benefits.

Institutions can be conceived as systems of rules, customs, beliefs, and organizations. These systems shape and regulate human interactions either in the political, economic, or social fields. Institutions, accordingly, serve to determine the rules that govern the economy, politics, and social life much in the same manner that sports are regulated by a body of rules. Considering that economic growth results from increases in productivity (i.e. innovation), why have some countries

1 See Haussmann (2007) and Rodrik (2006).

been more successful in terms of innovation and adaptation to technological changes? According to many economists, the study of institutions can shed light on the dynamics of countries' development process.

An increasing number of authors argue that institutions are among the most important determinants of economic growth. Some go further to state that they are even more relevant than physical or human capital accumulation. Much of the contemporary literature on institutions and economic growth is based on Douglas North's work on the economic history of the United States.[2] Acemoglu, Johnson & Robinson are among the strongest supporters of the primacy of institutions as the causal factor of economic growth.[3] In their econometric analyses they found that, although geographical and cultural factors may be important in explaining a country's economic performance, disparities in economic institutions are the main source of differences between countries in terms of economic growth and prosperity.

In short, the literature argues that the role of production factors (capital and labor), as determinants of economic growth, depends largely on the characteristics of the existing institutional environment, i.e. property rights. We are referring to policies providing the right incentives for greater accumulation of these factors, which can be used most efficiently to facilitate the increase of a country's income in the medium term.

Macro and microeconomic institutions

The role of institutions should be to maintain macroeconomic stability. To attain this outcome, a prerequisite is to build institutions which ensure that economic policy decisions contribute to maintaining growth that is both sustainable and close to its potential level. In this regard, theoretical models and empirical studies show that higher inflation is associated with lower rates of economic growth.[4] This point is proven by developments in Latin American countries regarding the high economic and social costs of a public finance crisis.

Paraguay has made significant progress in these sense, mainly through changes in the institutional framework of its economy. Both the Constitution and the Charter Law 489/95 provide an adequate legal framework in order to preserve the operational independence of the Central Bank. Furthermore, and even though hyperinflation has not been a problem in the country, monetary policy has been

2 See North (1961).

3 See Acemoglu, Johnson & Robinson (2001) or Acemoglu, Johnson & Robinson (2005).

4 See Barro (2013), Gylfason & Herbertsson (2001) or De Gregorio (1996).

recently modernized through the adoption of an inflation-targeting regime.[5] The country has also exhibited significant progress in fiscal matters over the last decade. Fiscal consolidation, for instance was one of the pillars of the stabilization program that has contributed to economic recovery since 2003. The recent Fiscal Responsibility Law became a cornerstone in ensuring fiscal sustainability over the medium term.

Macroeconomic stability is not enough, however, to achieve stable growth and stimulate increases in productivity. An adequate institutional framework is also required to protect the rights of individuals and businesses, thus achieving a balance between the need to establish competitive markets coupled with an incentives structure conducive to innovation. Lastly, this framework should establish clear and simple rules to maintain an attractive business climate. As highlighted by Rodrik (2002), these microeconomic institutions are the foundation of long-term economic growth.

The process of strengthening such institutions in Paraguay has not been entirely successful or balanced. Valuable progress has been made in some sectors, but there is ample room for improvement in others, including the fight against corruption, protection of property rights, bankruptcy procedures, etc. As a result, upon analysis of the Institutional Quality Index, it is possible to see that "... in the period 2007-14 (Paraguay) barely improved by 3 points, which is not much. In comparison with the countries of this hemisphere, Paraguay's position is not bad and it is not good either. It is consistently middling, i.e. cause neither for euphoria nor for pessimism. Some countries are much better off and others are much worse."[6]

International indicators on institutions in Paraguay

The availability of numerous indicators, such as indices of economic freedom, governance, or institutional quality, has led to the development of comparative analyses of the relationship between a country's institutional strength and its economic performance.

The Institutional Quality Index (IQI), published by the Progress & Freedom Foundation, uses eight indices prepared by international organizations (four are political and four economic) to assess the quality of public institutions in

5 In this context, the approval of the reforms to the Organic Law of the Central Bank and the General Law on Banks, Financial Institutions and other Credit Institutions will be prerequisites for further strengthening the legal and institutional framework governing Paraguay's monetary and financial policy.

6 Rodríguez Silvero (2015). Ultima Hora, May 16, 2015.

relative terms among countries. On the political side, the IQI considers indicators that assess the protection of individual rights and the administration of justice, the functioning of democracy and accountability of governments to citizens, freedom of expression, and the existence of varying degrees of corruption. On the economic front, it evaluates obstacles to the proper functioning of markets and the development of entrepreneurial activities, competitiveness, and economic freedom (including freedom of contract, prices, wages, currency stability, trade openness, level of public spending and taxes, and regulations).

The IQI allows an analysis of the situations of 193 countries evaluated in terms of their institutions. Table 5 summarizes the historical positions for Latin America. The table shows that, after falling to number 140 in 2010, Paraguay jumped up 16 positions and, in 2015, ranked 124th. The indicator for that year (measured between zero and one) reached a value of 0.35, below the average for Latin America (0.46), and only above Argentina, Bolivia, Ecuador, and Venezuela. Table 5 illustrates that, within the region, major improvements in this period occurred in Uruguay, Peru, and Colombia.

Table 5
Institutional Quality Ranking 2015, South America

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Chile	22	21	24	22	21	21	22	22	22
Uruguay	50	53	60	52	46	44	41	43	43
Peru	80	81	83	79	68	65	64	60	63
Colombia	100	99	97	92	89	86	83	80	82
Brazil	90	93	98	95	94	89	89	94	96
Paraguay	128	137	136	140	134	131	126	125	124
Argentina	93	112	114	120	125	122	127	134	137
Bolivia	118	125	133	145	143	140	136	136	139
Ecuador	133	143	143	148	148	145	151	143	151
Venezuela	161	172	174	180	185	181	183	184	184

Source: Progress & Freedom Foundation.

When we analyze countries' performance by disaggregating the IQI into its two components of political institutions and market institutions components, we find that Paraguay is relatively better positioned in the latter. In terms of political institutions, the country ranked 143th in 2015, while in the market institutions it reached position 109th. For IQI components measuring economic or market aspects, the country's position is comparatively above that of the aggregate indicator: including the Index of Economic Freedom of the Wall Street Journal, the Heritage Foundation, and the World Bank's Doing Business Index. In contrast, Transparency International's Corruption Perception Index and the World Bank's Rule of Law Index show greater relative weakness of the country's political institutions.

Another report used as a global benchmark to measure the quality of a country's institutions is the Global Competitiveness Report (GCR), from the World Economic Forum. As indicated in the previous chapter, the report seeks to measure different countries' performance in ensuring the conditions for sustainable economic progress. This evaluation is carried out through several indicators grouped into twelve pillars, one of which refers to the quality of market institutions and the other to the country's macroeconomic environment.

The 2014-2015 report recognizes Paraguay's macroeconomic stability and places the country in 5th place at the regional level and 54th place worldwide. This ranking places the economy higher than Uruguay and Brazil, countries currently possessing an investment grade rating. Furthermore, according to the latest report, Paraguay stands in first place in the list of countries with the best control over inflation worldwide, a position shared with countries like New Zealand, Denmark, and Germany. The report also highlights the country's low levels of public debt, placing Paraguay in 13th position in the global ranking and 2nd in South America.

In terms of market institutions, the country is placed in position 134th out of a total of 144, only above Argentina and Venezuela in the region. Giambagi & Castelar (2012) classify the 21 indicators of the institutions pillar of the GCR into three groups: i) the first group comprises institutions related to corporate governance of companies; ii) an intermediate group including institutions referred to relations between private actors or where the public sector plays a passive role; and lastly iii) a group that includes institutions where the public plays an important role. Unfortunately, in all three categories (Table 6), Paraguay stands out for the low quality of its institutions. Only in one indicator (burden of government regulations) ranks the country among the top 50.

A general overview of all indicators points towards a deteriorating trend. Between 2006 and 2014 institutions experienced setbacks related to the protection of intellectual property, ethical corporate behavior, confidence in political sectors, independence of the judiciary, allocation of public expenditure, and the reliability of police services. The only improvements during this period occurred were reflected by indicators related to the government regulatory burden (improvement from position 78 to position 40) and transparency in the policy-making process (up from 116 to 73).

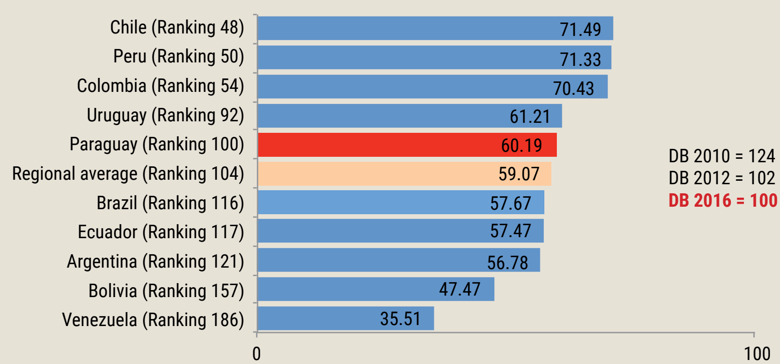
Table 6
Global Competitiveness Ranking: Pillar institutions

	Paraguay				LAC average
	2006-2007		2014-2015		2014-2015
Indicator	**Value***	**Ranking**	**Value**	**Ranking**	**Value**
Global Competitiveness Index	**3.4**	**107**	**3.6**	**120**	**4.0**
Institutions	**2.5**	**121**	**2.9**	**133**	**3.5**
Property rights	2.6	122	3.2	124	3.6
Intellectual property protection	2.1	115	2.5	132	3.1
Diversion of public funds	1.9	119	1.8	141	3.0
Public trust in politicians	1.3	122	1.4	142	2.5
Irregular payments and bribes	n / a	n / a	2.7	131	3.7
Judicial independence	1.6	120	1.6	142	3.3
Favoritism in decisions of government officials	1.8	120	2.0	139	2.8
Wastefulness in government spending	1.7	121	1.9	140	2.4
Burden of government regulation	2.8	78	3.8	40	2.8
Efficiency of legal framework in settling disputes	n / a	n / a	2.4	136	3.1
Efficiency of legal framework in challenging regulations	n / a	n / a	3.2	85	2.9
Transparency in government policymaking	2.8	116	3.9	73	3.5
Business costs of terrorism	4.8	79	4.9	93	4.7
Business costs of crime and violence	2.6	112	3.6	110	3.0
Organized crime	3.4	106	4.4	91	3.7
Reliability of police services	2.6	113	2.3	141	3.3
Ethical behavior of firms	2.9	121	2.9	142	3.4
Strength of auditing and reporting standards	3.1	119	4.1	105	4.2
Efficacy of corporate boards	3.6	120	4.0	118	4.2
Protection of minority shareholders' interests	3.3	109	3.5	107	3.6
Strength of investor protection	5.7	30	5.7	57	4.3

Source: World Economic Forum.
* The indicators use values from zero to seven, seven being the best, except for the indicator strength of investor protection that uses values between zero and ten, ten being the best.

Another important indicator is the World Bank's *Doing Business* Index, which seeks to capture how easy (or complex) it is for a local entrepreneur to start and run a small or medium business in compliance with existing regulations. The indicator looks at 11 areas of the business life cycle: starting a business, construction permits, getting electricity, registering property, taking out loans, protection of minority investors, paying taxes, trade across borders, compliance with contracts, resolution of insolvency, and labor market regulation.

Figure 12
Doing Business 2016: Performance of Paraguay in the region, distance to frontier (*)

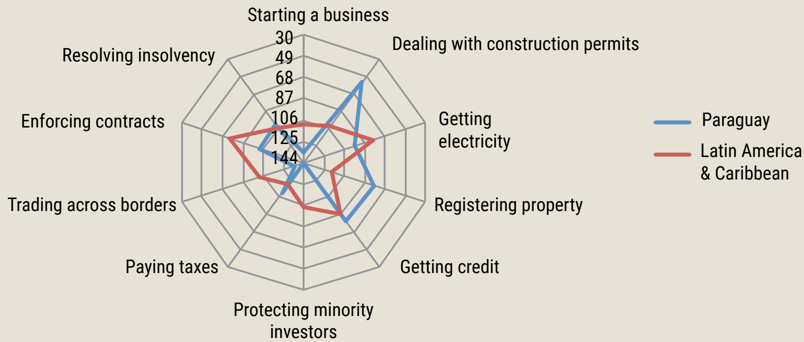


Source: Doing Business Database, World Bank.
(*): The distance of an economy to frontier score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the border or best performance.

In the 2016 edition, the overall classification places Paraguay in position 100 among 189 economies, with a score of 60.19 (out of 100) slightly above the regional average of 59.07 (Figure 12).[7] Additionally, the index shows that Paraguay's rating is above the regional average for five of the ten indicators. The highest scores correspond to dealing with construction permits, registering property, and getting credit. In contrast, the lowest scores refer to starting a business, protecting minority investors, trading across borders, performance of contracts, and resolution of insolvency (during the relatively long bankruptcy proceedings). In all these indicators the country ranks below the top 100 (Figure 13).

7 This means that, on average, Paraguay achieved 62.5% of what the world leader (Singapore) achieved.

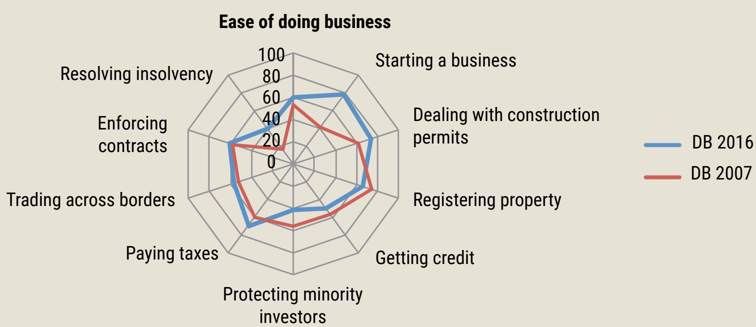
Figure 13
Doing Business 2016, Ranking Paraguay and Latin America (*)



Source: Doing Business Database, World Bank.
(*): Scale: 1: outer border, best performance; and 189: center, worst performance.

Figure 14 shows trends for the ranking's indicators between 2007 and 2016 in relation to that year's lead country. A significant improvement can be noticed in the procedures required to start a business and get construction permits. Also, there has been a slight improvement in resolving insolvency, trading across borders, and paying taxes. However, in the most recent report reveals significant setbacks in terms of protecting minority investors and in terms of ease of access to credit.

Figure 14
Paraguay Doing Business 2007 and 2016: Distance to frontier*



Source: Doing Business Database, World Bank.
* For comparability purposes, 9 of 11 components are shown because the indicator of labor market regulation is not available for the 2015 report, while the indicator for getting electricity was not available for the 2007 report.

Some of the most favorable results are due to reforms executed in Paraguay as of 2007 resulting in an increased ease in conducting business. With regard to measures for improving trading across borders, there is a noticeable reduction in the time required to cross the border upon implementation of an electronic one-stop shop for exports and a risk-based inspection system. Furthermore, with the creation of a new administrative structure and improved license tracking system in the Municipality of Asunción, procedures were streamlined for building permits. With regard to getting credit, the country improved the credit information system by establishing an online platform for financial institutions to exchange information on the public credit registry. With respect to paying taxes, the process was made easier for businesses through the implementation of electronic payment and filing, which was made mandatory for Personal Income Tax and Value Added Tax.

Other studies analyze how an economy's business environment is determined by factors such as market size, macroeconomic conditions, and business regulations. In this regard, institutions can either facilitate business management and foster efficiency or become an obstacle that interferes with investment decisions. Opinion polls nominated Enterprise Surveys of the World Bank and the Executive Opinion Survey of the World Economic Forum as the basis to identify the main obstacles faced by businesses.

In Paraguay, practices related to the informal sector were considered the main obstacle as reported by the 2006 and 2010 Enterprise Surveys, with a ratio almost twice the regional average encompassing businesses regardless of their size. Corruption is the most problematic subject for respondents of the World Economic Forum and the third highest of the two years (2006 & 2010) of the Enterprise Survey. Other common obstacles reported were labor supply with low educational quality, and government bureaucracy and inefficiency.

On the other hand, respondents were less concerned about tax rates and management, especially in comparison with other enterprises in the region. In turn, the outlook for the enterprises' access to finance and the perception of political instability improved significantly as of 2006.

What is the cost of poor institutions in terms of economic growth? Using a cross-sectional model with data from 80 countries, Corbo, Hernández & Parro (2005) studied the differences in economic and social performance of Latin American countries in relation to the Chilean economy in the 90s. These authors argue that better institutions and policies explain why Chile was able to address the adverse shocks better during that decade, leading to higher economic growth of the Chilean economy, as compared to peer countries in the region, as well as the lower volatility of its economy.

Based on the results of this study, it is possible to calculate the potential effects of institutions of similar quality to Chile's or Finland's for Paraguay (measured by the World Bank governance indices). If Paraguay had had an institutional framework similar to Chile's, per capita GDP growth would have been higher by 2.3% and its volatility would have declined by 2.5% (Table 7). If the country had benefited from institutions of quality similar to Finnish institutions, the increase in the GDP per capita in Paraguay would have risen by 3% and its volatility would have declined by 3.2%. These effects are very significant, bearing in mind that average growth of per capita GDP in Paraguay was only 2.1% in the period analyzed (1960-2000).

Table 7
Impact of different levels of institutional quality on the growth and volatility of GDP per capita in Paraguay, in percentage

	Chilean Institutions			Finnish Institutions		
	Min.	Mean	Max.	Min.	Mean	Max.
Growth of GDP per capita	1.3	2.3	3.3	1.7	3.0	4.3
Volatility of GDP per capita	-1.6	-2.5	-3.3	-2.1	-3.2	-4.3

Source: Corbo, Hernández & Parro.

Fostering productivity: Diversification and complexity of production

"A taste for the finer and more improved manufactures was in this manner introduced by foreign commerce into countries where no such works were carried on. But when this taste became so general as to occasion a considerable demand, the merchants, in order to save the expense of carriage, naturally endeavoured to establish some manufactures of the same kind in their own country."

Adam Smith

The sectorial concentration of exports has been a recurrent concern for many policymakers as it thwarts the development of countries. The lack of diversification of the exportable supply and, in particular, its concentration in a limited number of natural resources can hinder the steady progress of an economy. Large fluctuations in export earnings, which tend to be associated with this kind of clustering, generate high costs in terms of the attendant impact on social cohesion, efficient allocation of resources, and economic growth.

Extensive empirical evidence suggests that a high concentration of exports is associated with lower economic growth. The following are some mechanisms that help to explain this inverse relationship:

i. Low diversification of total exports entails high susceptibility to specific sectoral shocks, leading to a high volatility of export earnings and growth. Severe fluctuations in revenues in foreign currency reduce the import capacity and lead to sub-investment by risk-averse investors. In general, countries with more volatile cyclical fluctuations show lower growth rates.

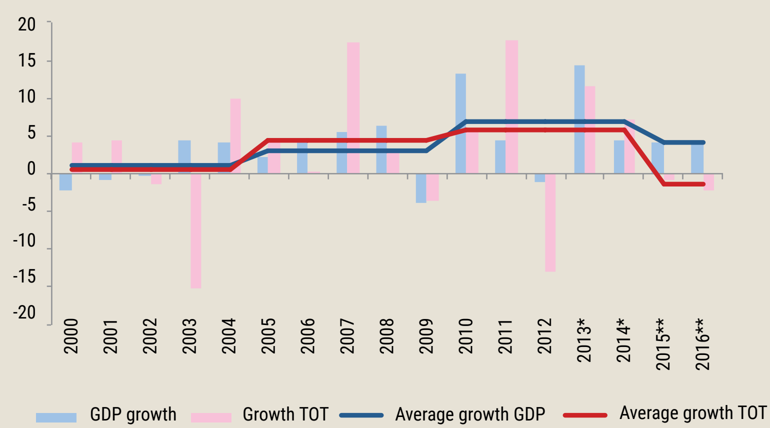
ii. Assuming the prevalence of preference for variety, less diversification results in lower levels of exports.

iii. Lastly, low diversification limits productivity growth, as it fosters neither an increase in the efficient use of inputs nor effective acquisition of know-how through export activities.

Also, a recent paper by Ricardo Hausmann & César Hidalgo presents the concept of economic complexity as a key determinant of economic growth and long-term development.[8] The idea is that economic complexity captures the productive knowledge of a country, and this in turn is reflected in the amplitude and sophistication of the goods exported by the country. More complex economies tend to export a wider range of goods and such goods also tend to be more sophisticated. Given heavy reliance on the export of commodities in Latin America (and Paraguay), it stands to reason that the lack of diversification and complexity of production is a major obstacle to strong and sustained growth.

Paraguay, like other economies in the region, benefited from an extraordinary growth in the last decade, with only brief setbacks during the 2008-09 financial crisis. Paraguay's performance, with an export basket with a high share of agricultural goods, was strongly influenced by the boom in commodity prices, which reached record highs during this period (Figure 15). However, the recent international prices experienced a significant drop, resulting in a drastic decline of the country's terms of trade and growth prospects.

Figure 15
Economic growth and terms of trade: Paraguay, percent change



**: GDP projection based on the International Monetary Fund (IMF).
TOT projection based on author's calculations with IMF price projections.

8 See Hausmann & Hidalgo (2015).

In conclusion, the literature clearly establishes the importance of diversification and sophistication of production for countries with the same economic structure situation as Paraguay. The purpose of this approach is to achieve sustained growth over time, as well as building a strong resilience to external shocks (such as significant drops in the terms of trade).[9] Upon analysis of the various indicators that capture trends in the country's export basket, there is evidence that efforts have been made to diversify and increase the complexity of the goods exported, although it is clear that there is still ample room for improvement.

Indicators of production diversification in Paraguay

Currently, Paraguayan exports exhibit stark differences in levels and composition to those registered in past decades. In the early 90s, cotton and soybeans accounted for about 60% of total exports. As of 1997, cotton lost prominence and soybeans became the main product, accounting for 40% of total exports in the late nineties.

Since then, Paraguayan exports have registered several changes. First, the average annual growth rate of export revenues (expressed in US$) increased from 4% in the period of 1995-2003 to 14% in the period of 2004-2014, coinciding with the boom in commodity prices. This dynamic has allowed exports to represent more than 30% of GDP (or 9.65 billion USD) at the end of 2014, well above the GDP of 22% (or 1.8 billion USD) in 1995. In addition, Paraguay has positioned its products in world markets thanks to its comparative advantage. Currently, it is the fourth largest exporter of soybean oil and seed and is the sixth largest exporter of corn, wheat, and beef.

Second, there are significant changes in the share of major export items. Thus, the list of the top 10 products has changed significantly (Table 8). In 2014 higher value-added goods were included, such as tanned leather, cable sets and sugar, replacing certain commodities that lost prominence, such as cotton. The share of electricity, representing a 49% of total exports in 2003, declined to 23% in 2014.

9 Castillo & Salas (2010), Mendoza (1995) and Easterly et al. (2001) show that shocks in the terms of trade have a significant relationship with economic cycles, especially in small, open developing economies.

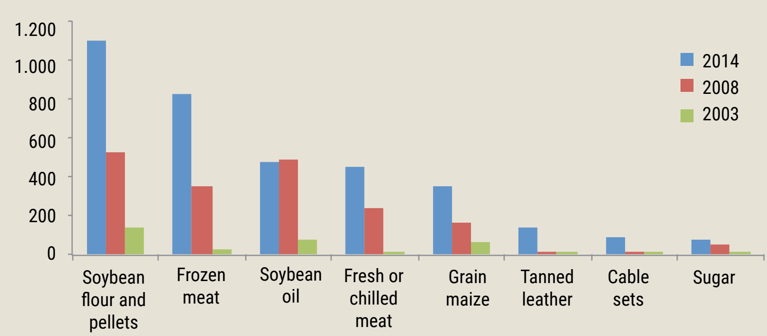
Table 8
Ranking of main goods exported by value

Main goods	2014	2003
Soybean seeds	1	2
Electricity	2	1
Flour and soybean pellets	3	3
Frozen meat	4	9
Soybean oil	5	4
Fresh or chilled meat	6	10
Grain maize	7	5
Tanned leather	8	--
Cable sets for spark plugs	9	--
Sugar	10	--

Source: BCP.

FIGURE 16 exhibits trends in the main exports in the period of 2003-2014, excluding soybean and electricity. It can be noticed that the importance of processed soybean and meat products for Paraguay's foreign trade increased considerably in the last decade. Thus, soybean byproducts (such as oil, flour, and pellets) stand out for their relative importance in total exports. These accounted for 16% of the export revenues of 2014, up from 9% in 2003. Foreign sales of frozen and chilled meat rose from less than 2% of the total in 2003 to nearly 14% in late 2014.

Figure 16
Export revenues, selected products, in millions of US$



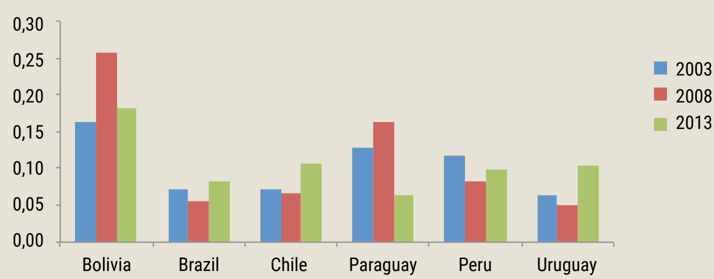
Source: BCP.

The data show that in recent years there has been a higher export movement and transformation of these exports in terms of their degree of processing. Indeed, sales of manufactures of agricultural origin (meat, oil, leather, etc.) exceeded commodity exports in 2014. Manufactures of industrial origin exports (albeit holding a minor share of foreign sales) doubled their share as percentage of GDP, increasing from 1.1% in 1995 to 2.5% in 2014.[10]

A more accurate measurement in the assessment of export diversification can be obtained using the Herfindahl-Hirschman Index.[11] This index can be used to measure the degree of concentration of foreign sales in terms of destination markets and the number of goods in the export basket.

In terms of market diversification, the results have been favorable for Paraguay. The index rose from 0.13 (moderate concentration) in 2003 to 0.06 (diversified) in 2013. This is still one of the lowest values at a regional level (FIGURE 17). Behind this change we underscore the small share held by Brazil, Paraguay's main trading partner, which in 2003 represented 57% of total exports but whose share declined to about 30% in 2014. In line with increased meat exports, markets such as Russia and Chile gained prominence as final destinations for Paraguayan goods.

Figure 17
Export markets concentration of in the region



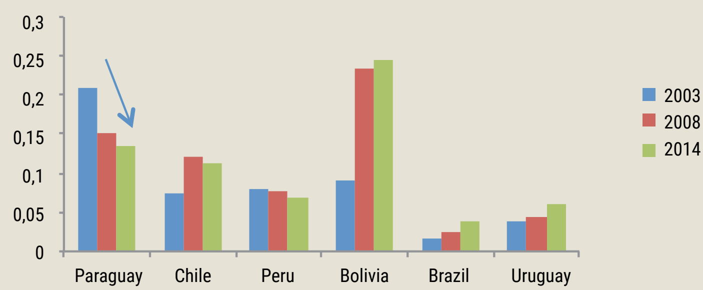
Source: World Integrated Trade Solution.

10 Within the latter sector, the *maquila* system has been flourishing in recent years. In early 2000, *maquila* exports were only 1 million, USD while at the close of 2014 they totaled approximately 188 million USD. No less important is the transfer of knowledge inherent to this process, especially in sectors such as auto parts and pharmaceutical products that are intensive in science and engineering. The *maquila* system has also been a very efficient mechanism to harness productive complementarities with other countries in the region, mainly with Brazil.

11 Following the approach of Lima & Alvarez (2008), if the index reaches exceeds the value of 0.18 it is considered *concentrated*; from 0.10 to 0.18 it is *moderately concentrated*, between 0 and 0.9 it is considered *diversified* .

Regarding product concentration, the index shows a reduction from 0.21 to 0.14 in Paraguay, indicating greater levels of diversification over the period (Figure 18).[12] Paraguay also stands out as the most successful in the region for the dramatic reduction of its concentration levels (the index declined 0.06 in 11 years), while other economies have even seen increases in their indices. Nonetheless, despite this progress, the country's export basket is still highly concentrated, only surpassed by Bolivia's.

Figure 18
Export goods concentration in the region



Source: Author's calculations based on data from UN Comtrade.

Alternatively, the degree of diversification among manufactured products exported by the country may be calculated using the UNCTAD methodology. The Manufacturing Diversification Index (MDI) shows the dependency of the export of manufactures of a given country on the structure of world trade, i.e. it compares the manufacturing export structure of each country with the world, penalizing those countries with an export focus on manufactured goods that have little demand in world trade. Unlike the previous methodology, this index uses values between 0 (highest concentration) and 1 (greatest diversification).

Among South American countries (Table 9), Paraguay has climbed positions over the years, although there is still ample room for improvement in terms of manufacturing diversification. The index shows a slight increase, rising from 0.13 points in 2003 to 0.16 points in 2014. However, the country stands in the lowest positions in terms of product diversification, only above Bolivia and Venezuela.

12 The index was developed using data from four-digit product exports (sub-chapter or subsector) according to the Harmonized Commodity Description and Coding System.

Table 9
Manufacturing Diversification Index, Ranking South America

2003		2008		2014	
Ranking	Score	Ranking	Score	Ranking	Score
Brazil	0,50	Brazil	0,50	Brazil	0,46
Argentina	0.39	Argentina	0.44	Colombia	0.40
Colombia	0.35	Colombia	0.40	Argentina	0.38
Venezuela	0.28	Uruguay	0.26	Ecuador	0.24
Ecuador	0.27	Ecuador	0.26	Peru	0.24
Chile	0.25	Chile	0.23	Uruguay	0.23
Uruguay	0.22	Peru	0.21	Chile	0.22
Bolivia	0.18	Venezuela	0.16	**Paraguay**	**0.16**
Peru	0.17	Bolivia	0.14	Venezuela	0.11
Paraguay	**0.13**	**Paraguay**	**0.12**	Bolivia	0.10

Source: BCP, based on the UNCTAD methodology.

Table 10 shows the number of export products classified according to their production process. It may be noted that Paraguay has recently incorporated –in net terms– about 30 new products to its export basket, the majority of which are classified as medium and high technology. Among these could be found yarns, cables, oils obtained from bituminous minerals, barges, blankets, gold, semi-wiring, animal fat, ethyl alcohol, starch, synthetic fiber yarn, and fabric. Such products also experienced an increase their share of the total export earnings from 5.0% in 2003 to 8.4% in 2014. However, because these products are exported to a much lesser extent than traditional goods, they improve the diversification index of export revenues only marginally.

Table 10
Number of goods exported according to production process

	2003	2008	2014
Commodities	73	66	59
Manufactures based on natural resources	116	125	120
Low-technology manufactures	184	202	186
High and medium technology manufactures	163	181	200
TOTAL	536	574	565

Source: BCP based on the United Nations classification of trade by value-added level.

In short, it is clear that Paraguay is deeply entrenched in a diversification process of its economy, ushered in by the addition of a greater value to goods in which Paraguay already had comparative advantages (vertical diversification). At the same time new products appeared in its export basket (horizontal diversification), taking advantage of new opportunities for production. This scenario drastically different to the situation encountered by Haussman & Klinger (2007), given that, until 2000 (the last year analyzed by the authors) the country had done little to reduce the concentration of its export basket and take advantage of the opportunities derived from the country's integration into neighboring countries' production chain. Even so, much remains to be done.

Migrating toward greater complexity and sophistication of goods

New insight on understanding how to achieve greater economic development has been proposed by Ricardo Hausmann & César Hidalgo, both Harvard University professors. Their recommendation is based on producing an economic complexity indicator for 128 economies.[13] The indicator measures the diversity of goods exported by each country and the complexity of their production. According to these authors, the index's main significance is derived from its correlation with the future growth of a country over the next 5-10 years. Thus, for each economy, this index seeks to measure the productive and knowledge capacity leading to the production of more advanced goods. This, in turn, reflects the potential for growth and development in a globalized and competitive markets.

According to its creators, the Economic Complexity Index (ECI) captures more information when compared to other variables traditionally used to explain the variance of growth across countries (such as the indices of institutional quality or workers' years of schooling). The index is based on two key dimensions: diversity and ubiquity.[14] The general idea is that countries exporting a wide range of goods (diversified), which in turn are exported by relatively few countries (low ubiquity), are more complex.

How complex is the Paraguayan economy? Haussman & Klinger (2007) made an assessment of the complexity of our exported goods and the potential to transform production. Research conducted for the period of 1975-2000 did not show favorable results for the country, as the authors did not find many signs

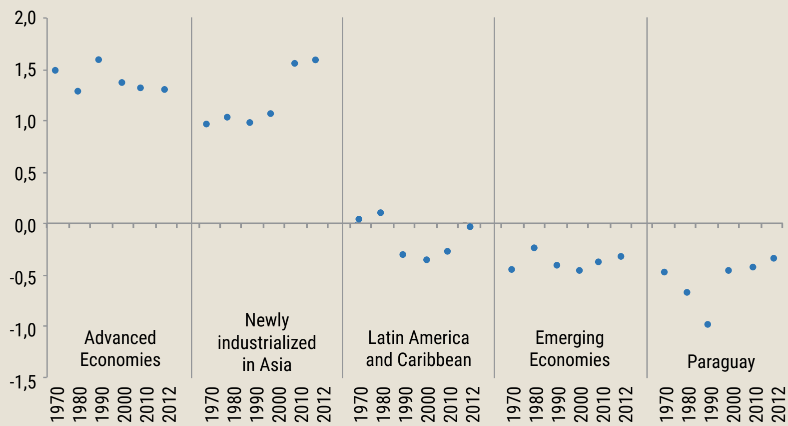
13 The results are presented in the study "The Atlas of Economic Complexity: Mapping paths to prosperity".

14 Diversity measures the variety of products exported by a country, the higher it is the higher the degree of complexity. Meanwhile, ubiquity is measured based on the number of economies capable of producing them. In this case, a product produced by a small number of countries is considered more complex and therefore, the economy of the countries that produce it is more complex.

of modernization in Paraguayan exports, especially in capital-intensive sectors. Only a slight increase was found in the added value of agricultural and forest goods. The research also highlighted the great potential of sectors that were not exported in large quantities such as meat, dairy, fruits, and vegetables. Moreover, the authors considered that Paraguay had done little to take advantage of the scope for expanding its export basket.

Figure 19 shows that the degree of complexity of Paraguayan exports continues to be significantly lower than the level encountered in advanced economies or newly industrialized Asian economies (which can be used as benchmarks for effective economic convergence). Paraguay is also below the degree of complexity of other emerging and developing economies. However, there has been recent progress, as the country's current export structure exhibits marked differences from Hausmann & Klinger's initial conclusions.

Figure 19
Economic Complexity Index by region and Paraguay



Source: Hausmann et al.

The first positive development in recent dynamics relates to the index's behavior, which indicates that Paraguay has been gradually incorporating more complexity into its exports. Indeed, over the period from 2003-2013 Paraguay exhibited such a dramatic improvement that it became the region's top winner and climbed 15 places as a result of its export diversification into more complex products (Table 11). This serves as proof that the country has taken advantage of this favorable period to strengthen its fundamentals, looking ahead to a period of lower international commodity prices. In spite of this, Paraguay still ranks

84th, behind Brazil, Argentina, Colombia, Uruguay, and Chile (Table 12). This indicates that there are still great opportunities for improvement.

Table 11
Top winners in economic complexity: 2003-2013

2003-13 Change in global position	Country	2013 World Ranking	ECI 2013
15 ▲	Paraguay	84	-0.65
13 ▲	El Salvador	54	-0.01
10 ▲	Costa Rica	53	0.01
10 ▲	Jamaica	68	-0.24
10 ▲	Cuba	70	-0.34
6 ▲	Dominican Republic	71	-0.35
4 ▲	Colombia	50	0.04

Source: Center for International Development, Harvard University.

Table 12
Major losers in economic complexity: 2003-2013

2003-13 Change in global position	Country	2013 World Ranking	ECI 2013
-33 ▼	Venezuela	92	-0.83
-30 ▼	Bolivia	111	-1.22
-14 ▼	Argentina	65	-0.18
-12 ▼	Brazil	48	0.10
-7 ▼	Peru	89	-0.78
-5 ▼	Ecuador	98	-0.95
-5 ▼	Chile	67	-0.21

Source: Center for International Development, Harvard University.

A second encouraging development relates to Paraguay's economic growth outlook. As noted at the beginning, one advantage of an Economic Complexity Index (ECI) has to do with its ability to estimate a country's future growth. In the projections presented in Table 13, concerning the average annual growth until 2023, the only engine for long-term growth relates to the earnings stemming from diversification and economic complexity.[15] Accordingly, Paraguay is among the most dynamic economies of the region for the period until 2023. It ranks second in Latin America only after Brazil, and ranks 47th worldwide with an average expected growth of 3.52%.

Table 13
Projection of average GDP growth to 2023: South America, percent change

Ranking ECI 2013	Country	Economic Growth 2014-2023
51	Brazil	3,62
86	**Paraguay**	**3,52**
53	Colombia	3,33
67	Argentina	3,02
112	Bolivia	2,97
91	Peru	2,77
52	Uruguay	2,41
100	Ecuador	2,12
69	Chile	2,03
94	Venezuela	1,93

Source: Center for International Development, Harvard University.

In short, some Latin American countries (including Paraguay) have recently diversified their exports toward more complex goods. According to historical data, these gains in complexity have resulted in higher levels of income and have provided economies with more favorable growth prospects for the medium and long term. Developing countries, therefore, need to continue taking steps towards greater diversification of their exports and increasing the complexity of their productive structures. Only then can higher and sustainable economic growth be maintained, against a far less favorable backdrop for commodity producers and exporters.

15 See methodology Center for International Development, Harvard University (2015).

Costs of low diversification and complexity in production

Numerous empirical studies have analyzed the relationship between diversification and economic growth.[16] Agosin (2008), for instance, uses a sample of selected Latin American and Asian countries for the 1980-2003 period, finding evidence that the variable diversification of exports, calculated with the Herfindahl-Hirschman Index, explains much of the difference in growth rates between countries in these two regions. A similar conclusion may be drawn using export growth combined with this diversification index as an explanatory variable. These results are verified by controlling for other factors usually associated with growth (such as the rule of law and investment). Furthermore, in a study of 91 countries for the period of 1961-1988, Al-Marhubi (2000) shows that economies with a greater number of export goods experienced faster growth per capita. Lederman & Maloney (2003) also found that export concentration is a significant variable in accounting for countries' economic performance.

There is also evidence that diversification is relatively more important for developing countries, i.e. the impact of diversification on a country's growth depends on its income levels. This effect was detected by Rondeau & Roudaut (2014), who concluded that foreign trade diversification has a positive impact on growth, and that this effect tends to decline with the level of per capita GDP. That is, low-income countries benefit the most from this process of reducing export concentration.[17] Along the same lines, the IMF (2014) found evidence of a robust relationship between economic growth and export diversification in low-income countries.

As for complexity in production, in a recent study with a sample of 103 countries for the period of 1970-2010, the IMF (2015) confirms that the initial levels of diversification and complexity are robust when predicting average long-term growth of the real GDP per capita. In the case of Latin American and Caribbean countries, the degree of sophistication of goods could explain differences of up to one percentage point between the annual growth rates of GDP per capita. Econometric results also highlight the importance of other predetermined variables. In particular, the study points out that the benefits of diversification and complexity of exported goods could be undermined if there is no macroeconomic stability.[18]

16 Mejía (2011) provides a detailed review of the existing literature.

17 In addition, the authors found that the effect of diversification of goods is almost double compared to the effect of diversification of export markets.

18 This is particularly relevant for Paraguay, which has accumulated several years of macroeconomic stability and has the capacity to derive maximum benefit from these factors.

Based on the econometric results, the contribution to Paraguayan growth projections, attributable to diversification and complexity, can be quantified. According to the IMF model (2015), using Paraguayan data, an interesting exercise can be conducted by comparing the country's projected growth rate given its current score in diversification and/or complexity- with a hypothetical growth rate based on the average value of these variables in Latin America. According to the exercise, Paraguay could register growth about 0.2 percentage points faster if its complexity score coincided with the regional average. According to estimates of Agosin (2008), if the country had an export diversification indicator similar to the regional average, it would grow 0.5% more.[19]

Challenges for economic policy and conclusions

Over the past decade, the Paraguayan economy's growth has been driven mostly by the accumulation of factors of production (capital and labor), in a successfully established macroeconomic stability environment. Productivity expanded equally, but at a pace that cannot be considered sufficient and below that observed among successful emerging economies. During this period, the favorable external environment helped Paraguay achieve economic growth well above the levels observed in the 1990s. Moreover, the recent dynamic has helped the country position itself in the global market as a keen and efficient producer of quality commodities.

The economic literature underscores that countries grow because they either accumulate factors of production (capital and labor) or experience improvements in their productivity. Furthermore, the experience of Asian countries teaches that any above-average economic growth tends to be derived from the latter. The shifting external scenario (with declining commodity prices and tighter financial conditions) indicates that it is time to shift focus from wishing for favorable external conditions to relying on a proved mechanism for steady growth: productivity. In this sense, Paraguay has several opportunities for improvement, and public policy should focus on tackling the many persisting structural weaknesses in an effort to increase our country's productivity.

With this objective in mind, a first impact on productivity could be ensured through major investment in **infrastructure,** taking into account the cumulative disinvestment experienced over many years. Adequate infrastructure provision

19 The results are even more significant if the country could achieve the levels of diversification observed in Asian manufactures-exporting countries. In this case, the acceleration of the economic growth rate would be 1.2%

(in quantity and quality) will be crucial to sustaining high growth rates in the new global scenario. Although some priority projects are already underway, they only partially offset the long years of low public and private investment.

The fundamental point is that, given the magnitude of investment required in this area, it is crucial to identify the optimal combination of funding. For this purpose, it is important to determine the fiscal space available to increase public investment, i.e. establish levels of debt that do not compromise long-term fiscal sustainability. In this regard, the recent enactment of the Public-Private Partnership Law is an important step toward ensuring greater prominence for the private sector in infrastructure delivery, while complementing the public sector's efforts in this regard.

One of the main deficiencies identified in infrastructure has been river dredging and signage, greatly impairing the country's ability to ship exports. This issue causes an important loss of competitiveness by shifting cost overruns to producers and end-consumers. USAID's (2006) recommendation has been to incorporate a public-private mechanism to ensure efficient and sustainable dredging and signage in an effort to promote permanent and ongoing river navigability.

To redress the significant deficiency of water and sanitation infrastructure, the Inter-American Development Bank (IDB)[20] recommends concentrating efforts in Asuncion and its metropolitan area. Among others, the sewerage, water treatment and drainage, and waste collection and disposal systems require expansion and improvement. The IDB suggests closing the significant gap in the water coverage and sewage services between urban and rural areas. It also points out the importance of institutional reforms in the sector, strengthening the regulatory and institutional framework so as to improve the quality and efficiency of this service.

With regards to road and transportation infrastructure, Paraguay should make the most of its geographical situation by aiming towards becoming a hub for regional connectivity, offering direct transport routes between neighboring countries and becoming the shortest east-west transit route. Becoming an economic corridor for trade and the production chain for this part of Latin America would have significant spillovers, in which the country could benefit from enhanced connectivity and transformation in production, serving as an opportunity to heighten and showcase Paraguay's regional geopolitical role.

In addition, an IDB assessment of Paraguayan roads recommends the construction, maintenance and improvement of the main departmental highways, as well as local and rural roads, in order to complete the transport system connectivity. It also highlights the need to incorporate road safety measures to reduce accidents and as well as action to decentralize road management.

20 See IDB (2014).

A second impact on productivity could take the form of improvements in the quality of our **institutions**. The economic literature considers the institutional framework of a country not simply as one growth factor among many, but as a key factor. Its significance is such that the potential for further growth of GDP per capita in Paraguay, in a hypothetical scenario in which the country possess institutions similar to those found in Chile, would be between 1 and 3 percentage points, as mentioned above. Various indices and indicators of institutional quality continue to show that Paraguay is lagging behind regional standards. This demonstrates the magnitude of the challenges involved. These same indices, however, are the best yardstick for conducting assessments and for carrying out the work required to streamline certain processes, eliminate constraints and attain institutional improvements.

Initial steps forward in this field correspond to the evaluation and modification of legal frameworks governing the various public agencies in Paraguay, which need to adopt sound and modern international practices. The modernization of the laws governing the Central Bank, Banks and Financial Institutions, and the Financial Administration of the State are recent signs of efforts to achieve this goal. These reforms seek to provide stability to the policies and internal organization of these bodies, taking into account the fact that their planning horizon goes far beyond the constitutional terms of government.

At the same time, improvement in public spending quality is a prerequisite for giving fiscal institutions greater credibility, inasmuch as transparency is indispensable to the effectiveness of State programs. The recent enactment of the Law on Citizen Access to Public Information and Government Transparency was a significant step forward in this area. Furthermore, a useful mechanism could be derived to ensure the full implementation of a results-based budget, which could serve as an indicator for the allocation of fiscal resources. Another pending task is the redesign of civil service careers by incorporating incentives to attract the most suitable candidates through merit-based selection and promotion.

The World Bank (WB) has made specific recommendations for reforms to improve Paraguay's performance in business climate indicators.[21] These recommendations include numerous short and medium term measures. For example, when starting a business, the organization suggests an assessment in order to speed up approvals by the Unified System for Starting Enterprises (SUAE). They also suggest eliminating the requirement to obtain an official stamp of approval for companies' accounting books. To improve the information system for access to credit, a proposal has been made to bring the registration of collateral into line with international practices. Suggestions also include online access to the application process in order to optimize the paperwork needed for

21 See WB (2015).

a construction permit, and establishing a standard of transparency related to the required documentation.

Optimizing tax administration and reducing the administrative burden on taxation collection requires the expansion of the online platform for tax submissions and payments, including social security contributions. To improve efficiency and facilitate foreign trade, the WB suggests strengthening the implementation of the electronic one-stop shop and reducing the number of documents required for cross-border trade. Lastly, streamlining insolvency proceedings requires an expedited insolvency mechanism for small and medium-sized entities; investment in the capacity of institutions managing insolvency cases; and design and implementation of guidelines to facilitate court proceedings.

Lastly, it is crucial to remember that no country in the world has achieved economic development, or succeeded in shifting its population from middle to high income, without addressing the **diversification** of its economy and sophistication of its productive structure. Ample theoretical and empirical evidence shows the positive impact of diversification (of domestic production and exports) on productivity and, therefore, on the economic growth of countries. Additionally, these studies indicate that diversification is associated with lower output volatility and greater macroeconomic stability.

In recent years the country was able to take advantage of the favorable external environment, consolidating its national brand in the global commodities market. However, the recent decline of prices could have a sizable impact on economic dynamics. In spite of this, responsible economic management has allowed us to continue with reasonable growth rates. Paraguay will most likely lead regional growth in the upcoming years. But it faces the challenge and the opportunity to deepen the transformation of production to reduce vulnerabilities and bring out other productive potentialities. In the new scenario, without neglecting the primary sector, it is necessary to add more engines to national growth.

Paraguay still needs to gain a leading position in the manufactures production chain at a regional level and offer an export basket with more complex, sophisticated, higher value-added products. Some steps have been taken in this direction through the establishment of the *maquila* system and the addition of more value to its agricultural products. Once excellence has been achieved in labor-intensive manufacturing, the next target should be in science and technology-intensive goods. Paraguay should take advantage of the fragmentation of international trade by maximizing the benefits of increased openness to trade and foreign investment.

Diversification entails not only significant changes in the type of goods produced and/or exported, but also in their quality. Producing higher quality varieties can be an efficient way to exploit the economy's comparative advantages. In addition, it can increase export revenues through the use of production techniques that are capital (physical and human) intensive. A country's economic development is driven by the emergence of new products and new business partners, as well as by improvements in the quality of the goods produced. Many countries may find it difficult to expand their export basket with new products due to the small size of their economy and their limited potential to take advantage of economies of scale. Therefore, a more viable option for these economies, if they wish to diversify their exports, is to improve the quality of their output.

Recent research shows that there is a set of core variables and economic policies that are associated with several dimensions of diversification. For example, improvements in infrastructure, education, and market openness are crucial to induce higher levels of diversification in a country's exports and production. Considering Paraguay's structural deficiencies, sustained progress in these areas should be a priority. However, as demonstrated by case studies of different countries, there is no one-size-fits-all path to diversification and, therefore, the application of a single approach to diversification and transformation should be avoided. As recommended in Hausmann et al. (2007), authorities should seek specific context-driven solutions, using the country's existing production capacity to promote diversity and complexity.

Despite the fact that the measures used to enhance the productivity and growth rate of an economy take time to manifest quantifiable effects the country should nonetheless pursue such measures instead of falling into the trap of seeking to replace them with expansionary macroeconomic policies. So-called shortcuts to economic and social success can easily push Paraguay into the abyss, an experience shared by many Latin American countries.

Let us not forget that it is not the largest nor the most advanced economies that grow the most, but rather, the most productive economies. Paraguay has shown its capacity to make macroeconomic stability a reality, now it must prove its potential to achieve an economic takeoff based on increased productivity.

Bibliography

Agosin, M. (2008). *Export diversification and growth in emerging economies.* Comisión Económica para América Latina y el Caribe [ECLAC].

Agencia de los Estados Unidos para el Desarrollo Internacional [USAID] (2006): *Impacto del transporte y la logística en el comercio internacional del Paraguay*. Document prepared by CARANA Corporation, in partnership with the National Chamber of Commerce and Services of Paraguay (CNCSP). 2006.

Al-Marhubi, F. (2000). Export diversification and growth: an empirical investigation. *Applied Economics Letters, 7, 559-562.*

Development Bank of Latin America [CAF] (2005). *Transformación productiva: diversificación y agregación de valor*. Asunción, Paraguay.

Inter-American Development Bank [IDB] (2014). *Paraguay: IDB Country Strategy*. Washington, Estados Unidos.

World Bank (2015). *Improving the Investment Climate in Paraguay*. Unpublished MS.

Castillo, P., Salas, J. (2012). *Los términos de intercambio como impulsores de fluctuaciones económicas en economías en desarrollo: estudio empírico*. Center for Latin American Monetary Studies (CEMLA). Mexico City, DF, Mexico.

Easterly, W. et al (2001). *Shaken and stirred: Explaining growth volatility.* World Bank. Washington DC, USA.

Fabien, R., Nolwen, R., (2014). *What Diversification of Trade Matters for Economic Growth of Developing Countries?* Economics Working Paper Center for Research in Economics and Management (CREM), University of Rennes 1.

International Monetary fund (2014). *Sustaining long-run growth and macroeconomic stability in low-income countries – The role of structural transformation and diversification.* IMF Policy Paper. Washington DC, USA.

IMF (2015). *Regional Economic Outlook.* Washington DC, USA.

Hausmann, R. Klinger, B. (2007). *Growth Diagnostic: Paraguay.* IADB.

Hausmann, R. *et al.*, (2015). *The Atlas of Economic Prosperity – Mapping paths to prosperity*. Center for International Development, Harvard University. USA.

Krause, M. (2015). Índice de calidad institucional 2015. Fundación Libertad y Progreso. México, DF: Red Liberal de América Latina.

Krause, M. (2013). Índice de calidad institucional 2013. Fundación Libertad y Progreso. México, DF: Red Liberal de América Latina.

Lederman, D., Maloney, W. (2003). *Trade Structure and Growth.* World Bank Policy Research Working Paper No. 3025.

Lima, J., Alvarez, M. (2008). *Indicadores de comercio exterior y política comercial: mediciones de posición y dinamismo comercial*. Documento de trabajo. Comisión Económica para América Latina y el Caribe [ECLAC working paper].

Mejía, J. (2011). *Export Diversification and Economic Growth. An Analysis of Colombia's Competitiveness in the European Union's Market*. Berlín, Springer Verlag.

Mendoza, E. (1995). *The terms of trade, the real exchange rate and economic fluctuations*. International Economic Review, 36, 101-137.

Rodríguez Silvero, R. (2015, Mayo 16). Paraguay: Índice de Calidad Institucional. *Última Hora.*

Financial Inclusion

Santiago Peña Palacios

The author acknowledges the contribution of Carmen María Marín and Pedro Hernán Peña to this chapter.

Introduction

Thirty years ago, having access to financial services in many developing countries was only possible for a small portion of the population, mainly composed of large companies and high-income households. Somehow, being on the radar of financial activity had a stamp of distinction.

Both economic growth and the increase in per capita income recorded in the last decades have driven the financial industry to develop new tools to reach more segments of the population.

In recent years, the concept of financial inclusion has gained strength, which is why, in many countries, programs are being promoted to work toward these efforts. Some speak of percentage of bank penetration, number of clients, number of ATMs, consumer credits, etc., as parameters to measure the degree of financial inclusion.

In 2008, the Alliance for Financial Inclusion (AFI) was founded as the first global network for knowledge sharing, exclusively designed for those responsible for financial inclusion in developing countries.

Since 2009 Paraguay has been actively participating in various international forums where public policies that promote financial inclusion are discussed. As a sign of commitment to financial inclusion, Paraguay signed the Maya Declaration at the AFI's third Global Forum on Financial Inclusion Policies held in Riviera Maya, Mexico, in September 2011.

Why is financial inclusion important?

According to Barth et al. (2006), banks have a positive effect on income distribution and poverty reduction, because by accelerating economic development, they improve people's living standards. Therefore, a properly supervised financial system generates significant social benefits that can reach everyone. Maintaining a stable and continually growing financial system should be a priority objective of authorities.

There is solid empirical evidence that the increase and development of the financial sector generate greater economic growth, even controlling potential simultaneity bias (R. Levine, 2005; T. Beck, R. Levine, N. Loayza, 2000)[1]. Channeling

1 Finance and growth: theory and evidence, R Levine - Handbook of economic growth, 2005.
Finance and the Sources of Growth, T Beck, R Levine, N Loayza - Journal of financial economics, 2000

savings through a wide range of financial products toward productive sectors, results in more efficient investments, which in turn, generate higher growth.

The potential benefits of financial market development could be extended to innovative, more efficient and more affordable products. There is a clear understanding that an increase of these services expands financial deepening, but unfailingly they need to be accompanied by greater access to the financial sector to enhance the quality of domestic market development, which is the foundation of the process of inclusive development.

In fact, it is not only about the size of the market, but rather a key tool to promote equitable development.

Allen et al. (2012), using data from 123 countries and more than 124,000 people, found that the increase in the opening and usage of accounts is associated with an environment that fosters access to financial services, such as lower account costs and greater proximity to financial intermediaries. Empirical evidence confirms the potential of the financial sector to reduce household vulnerabilities. Thus, policies that promote financial inclusion with emphasis on the usage of bank accounts, on the one hand, could formalize savings of sectors that currently do not have access to the financial system; and on the other, provide comprehensive support to financial education and consumer protection. Also responsible indebtedness would have positive consequences.

In addition, these financial products (savings, credit, etc.) are crucial for a country like ours where the agricultural sector is one of the main contributors to the Gross Domestic Product. Therefore, it is vital that income cycles are smoothed against possible falls in prices and unstable weather conditions, since they can greatly affect small producers. Given these circumstantial shocks that might arise and adversely impact regularity in the flow of household income, an inter-temporal allocation of resources could be allowed in order to improve wellbeing through access to the mentioned services.

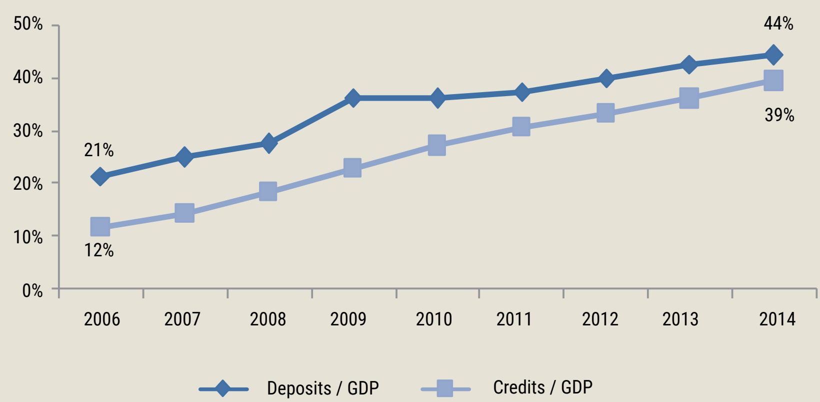
A first approach to the issue of financial inclusion requires that both supply and demand of financial services are explored. In terms of access to and use of services, the system exposes gaps to be closed versus advances, mainly at the base of the pyramid.

A supply-driven approach

The first challenge is to make progress in terms of financial services, deepening the market leads to financial development. Today it is entirely feasible to assert that the domestic public and private financial system is expanding rapidly. However, there is ample space to undertake actions to support this development through public policies and the design of innovative products, primarily for vulnerable sectors.

According to data, financial deepening in Paraguay has grown steadily in recent years. In relation to the Gross Domestic Product, credits and deposits in the banking system have risen by 39% and 44% respectively.

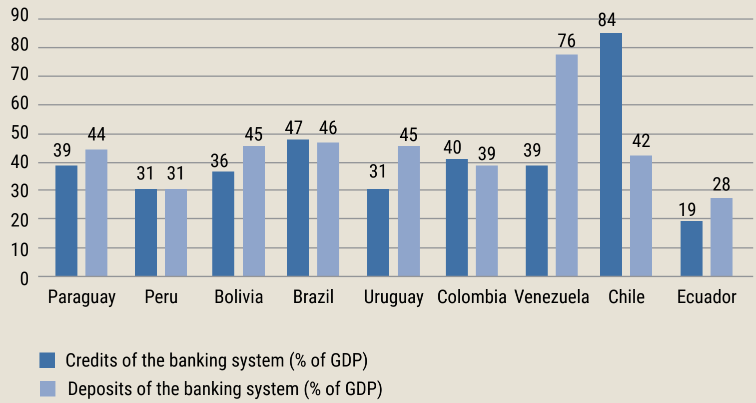
Figure 1
Credits and deposits of the banking system



Source: Central Bank of Paraguay (data on cooperatives have not been included so as to compare at the international level).

According to data from the International Monetary Fund recorded up to December 2013, on average, our country is at the same level of other countries in the region. This positive result would indicate that the steady growth of these indicators helped close the gap with other countries, but a significant gap has yet to be closed in respect of the main objective, which is financial inclusion.

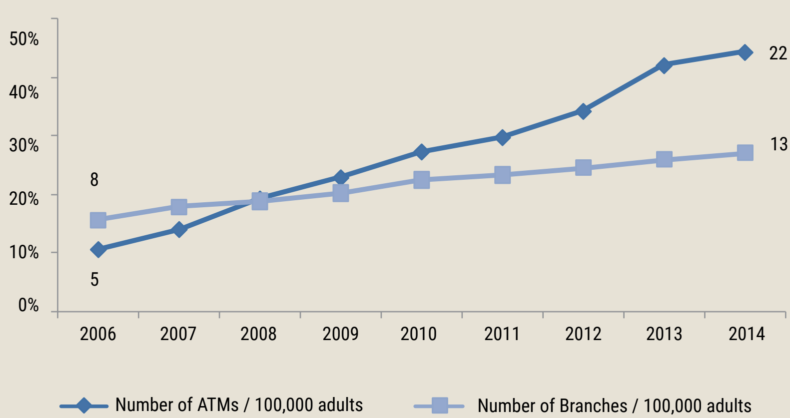
Figure 2
Credits and deposits of the regional banking system



Source: Central Bank of Paraguay and IMF (Paraguay data to December 2014, data of other countries to December 2013).

Regarding bankerization measured by the number of ATMs (22) and branches (13) for every 100,000 adults, significant growth has been recorded in the last eight years.

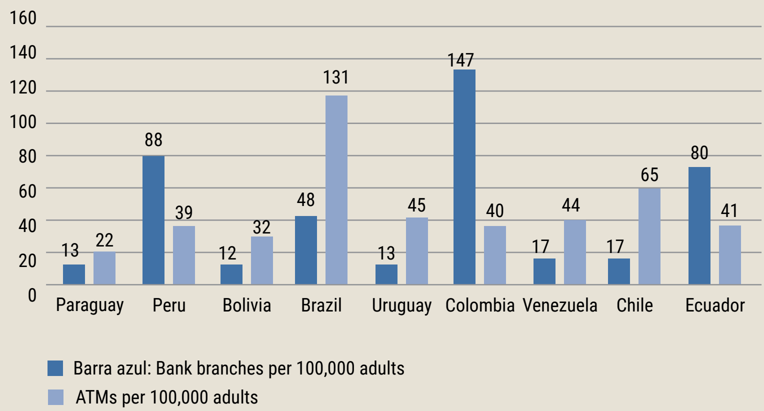
Figure 3
Branches and ATMs of the banking system



Source: Central Bank of Paraguay

Regarding bankerization indicators, we find that Paraguay is at a disadvantage, if we compare it with other countries in the region. The regional average is around 51 ATMs and 48 branches per 100,000 adults.

Figure 4
Branches and ATMs of the regional banking system



Source: International Monetary Fund and Central Bank of Paraguay.

The stability of the financial system and solid indicators of financial and patrimonial solvency demonstrate the strength of the system to advance towards financial inclusion, particularly in the rural sector where, in fact, the presence of financial institutions has increased auspiciously.

Paraguayan banks are among the most profitable at the global level. The banking system continues to reap satisfactory results, and sustainable performance is expected in the medium term.

The sample of countries in the following table shows that the Paraguayan banking system has the highest return on equity (ROE), reaching 28.3% in December 2014.

Regarding the return on assets (ROA), Paraguay is among the three countries with the best performance, as the ratio stands at an average of 2.4%.

Table 1
Profitability indicators (2014)

Country	ROE	ROA	Country	ROE	ROA
Bolivia	15.7	1.2	Mexico	16.5	1.7
Brazil	13.6	1.3	Panama	14.9	1.5
Chile	21.8	1.8	**Paraguay**	**28.3**	**2.4**
Colombia	20.2	3	Peru	18.5	1.9
Costa Rica	8	1.1	United States	12.4	1.5
Dominican Republic	18.3	2.1	Japan	8.4	0.4
El Salvador	9.6	1.3	Spain	5.7	0.4
Guatemala	20.2	1.8	China*	19.2	1.3
Honduras	23.7	2.6	Sweden	16.7	0.7

Source: Financial Stability Institute (FSI), Financial Inclusion Model (FIM).
* Data for 2013.

A demand-driven approach

In an effort to collect data from a demand-side point of view and measure the financial behavior of adults in Paraguay, the Financial Inclusion Survey of Paraguay (EIF in Spanish) was carried out during 2013.

The EIF was conducted in November 2013 to update and expand the 2011 Global Findex data on Paraguay. The EIF questionnaire covers six main themes: accounts, savings, credit, mobile money and transfers, insurance, and financial capacity and security.

According to the EIF, 29% of Paraguayans adults have at least one account in a public financial institution,[2] below the 39% average reported by other Latin American and Caribbean countries.

These data illustrate that the country needs to move forward with inclusive policies. This is where the National Financial Inclusion Strategy (ENIF in Spanish), promoted by the Government and launched in 2014, should arbitrate the mechanisms required to encourage the private and public financial system to deepen the usage and access to financial services.

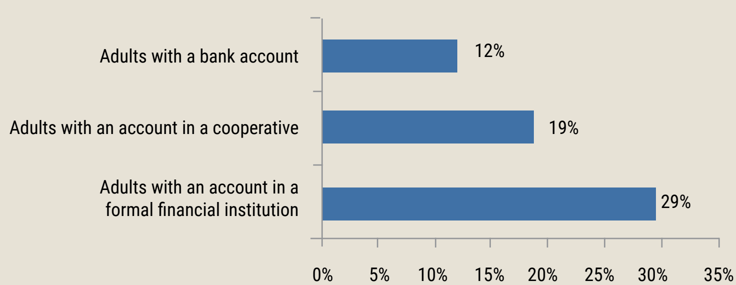
2 This includes current, savings, deposit and fixed term accounts in banks, cooperatives and financial institutions.

Paraguay's ENIF is the result of a detailed diagnosis process of the situation concerning access to financial services, based on a demand survey conducted in late 2013, a supply diagnosis, the regulatory framework of the financial system, and the status of consumer protection, developed in the first half of 2014. Its design, initiated in 2013, received the support of a technical team of key actors from the public sector: the Central Bank of Paraguay, the Finance Ministry, the National Institute of Cooperatives (INCOOP in Spanish) and the Planning Secretary.

The ENIF defines *financial inclusion* as: "The access to and use of quality, timely, convenient and informed financial services at affordable prices. These services are under appropriate regulation that guarantee consumer protection and promote financial education to improve financial capabilities and rational decision-making by all segments of the population."[3]

It is expected that private or public initiatives within the framework of the objectives of the ENIF, will greatly assist to formalize the usage and access to financial services.

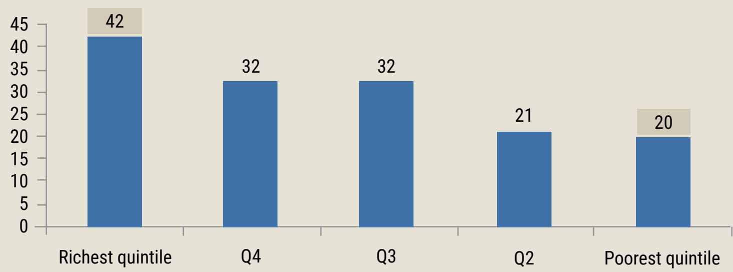
Figure 5
Bank account ownership in Paraguay



Source: Financial Inclusion Survey (World Bank).

3 From the document: Design and implementation of a National Financial Inclusion Strategy (ENIF) to improve access to financial services for the entire population of Paraguay, published by the BCP.

Figure 6
Adults with an account at a formal financial institution by income quintiles



Source: National Financial Inclusion Survey Paraguay 2013, World Bank.

According to the EIF, 39% of adults saved money formally or informally in the last 12 months, and in the same period 14% saved in a formal financial institution, higher than the 10% recorded for LAC.

Table 2
Adults with access to savings and credit

	Proportion of adults
Savings	
Adults saving money in the last 12 months	39%
Adults saving money in a formal financial institution in	the last 12 months
Credit	
Adults taking loans in the last 12 months	34%
Adults taking loans from a formal financial institution in the last 12 months	22%

Source: National Financial Inclusion Survey in Paraguay 2013, World Bank.

With regard to credits, the data indicates that 34% of adults borrowed money in the last 12 months from a variety of sources, whether formal or informal. In,the same period, 22% of adults received a loan from a formal financial institution.

Empirical evidence for Paraguay

According to the Global Microscope 2014, Paraguay has a favorable environment for financial inclusion. The Global Microscope is an indicator conducted globally by The Economist Intelligence Unit that assesses national environments for financial inclusion using the following criteria: the number of financial products and services offered, the diversity of institutions offering them, the set of new methods to provide them, and institutional support for secure provision of services and products to the low-income population.

At a regional level, Paraguay is well placed in terms of financial inclusion. However, further financial deepening is required. The score assigned shows that Paraguay is in a good position in comparison with the other countries of Latin America and the Caribbean: Paraguay is in the 7th place, above Uruguay and Argentina.

The Government has made progress in financial education and its regulatory structure. The first step was the creation of the Financial Inclusion Department at the Central Bank of Paraguay, with the mandate to push for measures that enable access to financial services in a responsible manner,, and foster greater efficiency amongst the providers of these services.

Table 3
Global Microscope 2014. Latin America and the Caribbean

Classif.	Country	Score
1	Peru	87
2	Colombia	85
3	Chile	66
4	Mexico	61
5	Bolivia	58
6	Brazil	53
7	**Paraguay**	**53**
8	Uruguay	53
9	Nicaragua	51
10	Dominican Republic	48
11	Ecuador	48
12	El Salvador	48
13	Panama	44
14	Jamaica	43
15	Guatemala	39
16	Costa Rica	37
17	Argentina	36
18	Honduras	35
19	Trinidad & Tobago	33
20	Venezuela	28
21	Haiti	16

Source: The Economist Intelligence Unit

In view of the importance of bankerization and financial deepening for growth, as well as the lack of financial stability as a result of the impact of the global crisis of recent years, the BCP has seen the need to undertake a deeper process to reach the objective of stability. This process, called *financial inclusion*[4], complements existing regulatory methods, focusing on financial clients as targets of financial inclusion.

With the purpose of strengthening the financial inclusion process, the BCP Board took the important step to create the Financial Inclusion Department (IIF in Spanish), answering to the Superintendence of Banks, according to Resolution 11, Act 23 dated April 5, 2013. The aim of this Department is to lead and coordinate the *extra situ* supervisory work on Financial Inclusion, focusing on three specific areas: bankerization, financial education and financial consumer protection.

Based on international experience, certain conditions are required to increase bankerization. In this regard, three important conditions are mentioned:[5] a) macroeconomic stability, i.e. maintaining fiscal discipline, external balance, and low and stable inflation; b) appropriate institutional framework, a clear legal system reflecting the development status of the system; and c) effective supervision,[6] which refers to the assessment of all aspects of the behavior of regulated firms.

According to the Organization for Economic Co-operation and Development, financial education is the process by which both consumers and financial investors improves their understanding of the different financial products, their risks and benefits, and through information or instruction, develop skills to make better decisions, resulting in greater economic wellbeing (OECD, 2005).

Lastly, the purpose of financial consumer protection is to "contribute to more effective monitoring mechanism that ensure compliance with existing regulations and the creation of more equitable conditions between financial institutions and users of financial products and services, meet the demands of financial users and channel inquiries and complaints to the expert areas, where appropriate".[7]

4 Financial Inclusion Report 1, BCP, June 2014.

5 Bank penetration in Peru, Matías Poggi Parodi, September 2014.

6 Banco de la República de Colombia, Borradores de Economía No. 490/2008.

7 Financial Inclusion Report 1, BCP, June 2014.

Bankerization

In the framework of bankerization and with strong support to Financial Inclusion, the Central Bank issued several regulations as described below:[8]

Non-Banking Correspondents

The Central Bank of Paraguay issued a regulation that enables financial transactions through third parties. A third party is understood to be an individual or legal entity duly authorized by financial institutions to provide financial services, and are called non-*banking correspondents* or NBCs.

The services provided by NBCs increase the number of different financial transactions, especially in areas or regions that, due to their geographical characteristics, make it very difficult to bring the services of each of the banks or financial institution through their own branches. Therefore, NBCs play an important role as intermediaries between the population of a given area or region and financial institutions, performing operations like withdrawals, deposits, payment of basic services, and personal signature line of credit, among others.

Basic savings accounts

This regulation facilitates access to bank deposits as they do not require minimum amounts or minimum average balances in order to open the account.

One important feature of these basic accounts (BA) is, for example, that they can be opened through electronic means such as mobile phones, without the physical presence of the interested person.

It should be noted that the basic account could become a tool to facilitate the access of low-income individuals, youth and others who, for personal reasons, have not been able to access a bank savings account, to the formal financial sector.

Electronic means of payment

This regulation enables non-bank entities to offer electronic means of payment.

In order to minimize risks, the maximum limit allowed for balances of electronic money is 40 minimum daily wages. Likewise, electronic payment entities can only provide this service in local currency and within the national territory. Existing balances in electronic money accounts with no movement for a maximum period of 90 days must be transferred to bank accounts.

8 Financial Inclusion Report 1, BCP, June 2014.

Regulations applied to increase Financial Inclusion in Paraguay (bank penetration)

- Non-bank correspondents: Resolution 1, Act 70 dated November 22, 2011
- Basic accounts: Resolution 25, Act 51 dated August 18, 2013
- Electronic payment: Resolution 6, Act 18 dated March 13, 2014
- Public information on credit cards: Resolution 3, Act 7 dated January 28, 2014

Source: Financial Inclusion Report 1, BCP, June 2014.

Financial Education

Regarding Financial Education, the Financial Inclusion Department signed an agreement with the Ministry of Education and Culture, in order to reach predetermined goals.

Among the goals established in the BCP's current Strategic Plan, the 4th pillar is: "To contribute to understanding the economic, financial and regulatory phenomena and issues. For this goal, the BCP Board decided to "set up a working group in charge of developing and implementing the Economic and Financial Education Program of the Central Bank of Paraguay"[9], by Resolution 12, Act 69 of 24 November 2009.

On July 26, 2010 the Central Bank signed the Interagency Cooperation Framework Agreement with the Ministry of Education and Culture (MEC). Of prime significance, this agreement seeks the development of jointly endorsed programs and projects through the management of the design, planning and implementation of various activities. Further, this incorporates management of technical assistance, advice and sharing of educational, scientific, technological, administrative information and community services.

The main results of this framework agreement are the creation of the MEC-BCP Agreement Office with their representatives within the MEC, the approval of the Economic and Financial Education Program and the authorization by the MEC of its implementation as optional curriculum for the last year of high school, in all its modalities, with 105 hour long classes. This program was launched on July 18, 2012.

Later, by Resolution 861 of 29 January 2014, and in order to advance in the universality of the program, the MEC ordered the update of the high school-Science stream Baccalaureate curriculum, and the application of the changes established in the Resolution at official, private and subsidized private high school

9 Financial Inclusion Report 1, BCP, June 2014.

establishments across the country from 2014. For this purpose, the Economic & Financial Education Program for the last year of high school was approved, with two hours weekly in the regular curriculum within 'Social Sciences and their Technologies', with the specific focus on applying the lessons learned in economic education to financial decision-making for personal, community and national benefit.[10]

In this process of financial inclusion, where financial education is one of the main topics, the Central Bank works very closely with top international institutions, such as the World Bank, the International Monetary Fund, the Inter-American Development Bank, the Alliance for Financial Inclusion (AFI), the Child and Youth Finance International (CYFI) and the CEMLA, among others.

Consumer protection

In recent years, the BCP introduced a series of regulations for banks and financial institutions, in order to ensure that the principles of information transparency between credit institutions and their clients, are applied.

The Central Bank issued Resolution 1, Act 70 of 2011, on the use of agents, and Resolution 6, Act 18 of 2014, on electronic payment, both containing provisions on consumer protection, including business practices, transparency, vendor civil liability and claims handling.

Given the need to ensure good practices in supervised institutions, the Supervisory Division of Financial Consumer Protection (SPCF in Spanish) was created in April 2013, to contribute to effective and efficient supervision to minimize the risks of non-compliance with existing regulations, and to encourage the creation of favorable and more equitable conditions between financial institutions and their users.

As part of the transparency of information of credit institutions, in 2012 the BCP published the guide of rules summarized below:

10 Financial Inclusion Report 1, BCP, June 2014.

Guide of rules for the protection of financial consumers

This guide is based on Art. 107 of Law 861/96, that mentions: “the Central Bank of Paraguay, with the opinion of the Superintendence of Banks, will ensure the transparency of the information of credit institutions in their relations with clients through the following criteria:

a. Requiring prior information be given to the public on existing effective interest rates, conditions and other charges for operations or services to be rendered, with explicit prohibition of carrying out different applications to those declared;

b. Indicating detailed obligations concerning the provision and content of contractual documents of operations and communications on interest payments to clients;

c. Issuing general rules on advertising in which financial institutions refer to active and passive operations for the public, of operations, financial services or products; and,

d. Taking any other measure deemed appropriate to protect the legitimate interests of clients of financial institutions.”

1. Resolution SB SG No. 723 dated 31.10.95 establishing the model of the Financial Statements and their Explanatory Notes to be published annually by the Financial Institutions.
2. Circular SB.SG.No. 259 dated 25.10.01. on concepts, detailed procedures and examples for calculating interest rates.
3. Resolution No. 2, Act No. 123 dated 15.11.01. Rules on the transparency of information on calculation and publication of interest rates.
4. Circular SB SG dated No. 003 dated 03.01.02. On the publication of the list of shareholders of financial institutions.
5. Circular SB SG No. 69 dated 26.02.03. On the publication of amended and/or adjusted annual balance sheets.
6. Circular SB SG No. 56 dated 21.02.05. Specifying the amount of deposits subject to the protection of the Guarantee Fund of the Central Bank of Paraguay.
7. Resolution No. 2 Act No. 73 dated 07.11.07. On fees and charges for services that are not components of interest rate.
8. Circular SB SG No. 26 dated 22.01.08. Regarding the display of foreign exchange rates at the Entities.
9. Resolution No. 1, Act No. 62 dated 30.07.08. By which the credit bureau is authorized to provide information requested by debtors, co-debtors and guarantors.
10. Circular SB SG No. 575/09 dated 30.10.09. Establishing the guidelines for the format of presentation of credit card contracts, single banking services contracts and any document involving rights and obligations for clients and financial intermediaries.
11. Financial System Indicators - Quarterly Publication pursuant to Art. 25, Law 3899/2009 prepared with data extracted from the financial statements submitted by financial intermediaries.

The National Financial Inclusion Strategy

To address the need to reduce poverty in our country and mediate suitable mechanisms for the National Government to achieve such purpose, it is essential to foster plans and policies that seek to improve the quality of life and wellbeing of the population. With that purpose, by the Decree 291/13, the National Government declared poverty reduction as the national priority, and financial inclusion is considered a viable way to help achieve such goal.

Financial inclusion will benefit the country with a stronger and more extended financial system, protecting the population with suitable laws and products that improve the quality of life. With financial inclusion, there is improvement in the access to and usage of a full range of quality financial services in a timely, convenient, informed and affordable manner, with appropriate regulation to ensure consumer protection and promote financial education. It helps improve financial skills and rational decision-making of all segments of the population, in order to increase economic opportunities for individuals and businesses, boosting economic growth and the wellbeing of the population, reducing poverty levels.[11]

For this purpose, the Decree 1971/14 was issued, approving the formulation and development of the National Financial Inclusion Strategy, which will seek to unite and organize the actions and efforts of institutions that directly and indirectly contribute to improve financial inclusion in the country, in order to achieve greater impact and scope of the work to improve people's wellbeing. The Decree also creates the National Financial Inclusion Committee composed by the Finance Ministry, the Central Bank of Paraguay, the Planning Secretary and the INCOOP, whose main function will be to formulate and implement the strategy. This National Committee will be represented by an Executive Secretary to ensure proper coordination and implementation mechanisms.

The official launching of the ENIF took place in December 2014. At present its work focuses on the implementation process, which requires the creation of various working groups (WGs) for the seven priority themes (savings, insurance, credit, payments, consumer protection, financial education and vulnerable populations), plus a crosscutting team linked to the environment for financial inclusion facilitation at the national level. Representatives of approximately 50 public and private organizations participate in the WGs.

11 Considering Decree No. 1971/14 dated July 22, 2014.

Main aspects of the ENIF proposal

ENIF's mandate is to provide quality and affordable financial services to all those people in Paraguay who need them, through a diverse and competitive market.

This strategy seeks the following objectives:[12]

a. To minimize the financial vulnerability of families at the base of the pyramid;

b. To promote greater coverage of financial services in a competitive and secure market;

c. To offer support for development and economic growth through the access of MSMEs and big enterprises to financial products;

d. To promote financial inclusion while maintaining a balance with the stability of the financial sector, and consumer integrity, education and protection.

The goals identified are fairly broad in their scope, as they even refer to the promotion of access to financial services by large companies. Such broad goals reflect the extremely low access to financial services in Paraguay, as described in the assessment of the supply side.

The seven pillars of the ENIF are defined more in terms of barriers and financial products than in terms of the affected populations, possibly as a result of multiple factors of supply, demand and regulatory negatively affecting financial inclusion in Paraguay. However, taking the overall objectives of the strategy as tools to reduce poverty, despite being one of the pillars, activities targeting the vulnerable population will be implemented as part of the other six pillars. We need to point out that it is precisely the vulnerable population, together with the low-income population, which typically have more problems to access financial services.

The ENIF is classified into the following pillars, with specific objectives based on the results of the assessments:

1. Savings: Promote access and develop low-cost channels.
2. Credit: Improvements in credit bureaus, promotion of greater access to credit to microenterprises and rural activities, and transparency.
3. Insurance: Market development through prepaid medicine, the mandatory insurance for traffic accidents (SOAT, by its Spanish acronym) and micro-insurance.

12 National Financial Inclusion Strategy 2014-2018, December 2014.

4. Payments: Low-cost channels, mobile wallets, payment platforms and government payments.
5. Financial education: Definition of a strategy and content.
6. Consumer protection: Strengthening of consumer protection regulations.
7. Vulnerable population: Access to savings, lack of business model.

Each of these pillars has ambitious targets to be achieved by 2018:

Pillar	Targets
1. Savings	Increase ownership of savings accounts from 29% to 50%. Increase the population that saves from 14% to 30%
2. Credits	Increase credit to MSMEs from 30% to 40% and the % of debt in formal financial institutions from 23% to 28%.
3. Insurances	Increase insurance coverage from 26% to 36% of adults.
4. Payments	Reduce the use of cash to pay salaries from 76% to 20%.
5. Financial education	Increase the percentage of adults (15+) with financial education for personal finance from 10% to 20%.
6. Consumer protection	All financial institutions have customer service mechanisms for complaints and enquiries, including for financially vulnerable segments.
7. Vulnerable population	Extend coverage to the 69 excluded districts, with emphasis on 17 priority vulnerable districts.

Proposal consistent with national reality

The ENIF proposal is in line with the challenges identified in the technical notes of demand, supply and regulatory framework of the national financial sector. As of April 2013, the process has led a first diagnostic that established the Financial Inclusion Baseline in Paraguay.

Pillars and indicators

Seven pillars have been established (savings, credit, insurance, payments, financial education, consumer protection and vulnerable population) with clear goals for 2018. For each of these pillars, a working group with specific roles and responsibilities will be formed, composed of public and private actors. Specifically, each pillar will have an associated performance indicator, and each indicator will have a visible and high-impact activity (quick win) that people will be able to perceive directly. Each quick win is a political action of a set of measures supporting the performance indicators. The ENIF proposes that regulatory changes which promote access to financial services, will lay de groundwork for greater use of these services and improve their quality.

The ENIF proposal does not require public resources. None of the lines of action involve activities requiring public funds, except those related to the provision of technical services by professionals of each institution and the resources required to carry out activities with the private sector, such as workshops, seminars and other logistics costs.

Leadership of public banks in the implementation of the ENIF

In recent years, the global economy has undergone changes in the financial system that requires the inclusion of public policy. The growing development and deepening of the global financial system have occurred without significantly affecting the availability of long-term financing under suitable terms, and without including the traditionally excluded segments of the population.

In this regard, Besley (1994) notes that state participation has been justified in financial markets with market failures and scarce development of institutions to complement the financial systems, such as insurance markets and mechanisms to facilitate the collection and disclosure of information, both to lenders and credit applicants. It also alludes to the state's participation as being important because problems such as low functional and financial literacy of the population, inappropriate infrastructure, and a lack of mechanisms to enforce contracts, can be observed.

In this regard, the Organic Law of the Finance Ministry has experienced a change that gives it new functions at the public financial level. In particular, the Article 1 of the Law 4394/11 modifies the Article 1 of the Law 109/91, establishing as one of its functions: "the coordination of policy, strategy and monitoring of public financial institutions[13] pertaining to the Ministry of Finance".

For issues relating to public banking, a process of dialogue and incipient coordination of actions and decisions has been undertaken with the Coordination Committee of Public Financial Institutions, as an initiative and under the responsibility of the Ministry of Finance.

Paraguay's public financial system continues operating with short-term credit policies, thus limiting the possibility of long-term productive investments that could boost development. Further, it has not been able to develop innovative products and services to help close the gaps in development financing and financial inclusion.

13 Agencia Financiera de Desarrollo (AFD), Banco Nacional de Fomento (BNF), Crédito Agrícola de Habilitación (CAH), Fondo Ganadero (FG) and Secretaría Nacional de la Vivienda y Hábitat (SENAVITAT).

Now is the appropriate time to evaluate the actions and strategies undertaken at the economic policy level of public financial institutions, and to consider alternatives to improve the legal and structural framework of the first-tier public banking system.

Consequently, government policies and actions must focus on securing the wellbeing of the population. Financial inclusion will benefit the country with a sound and stable financial system, a more protected population, appropriate laws and products to improve the quality of life of the population.

Above all, the public sector could focus on strengthening three areas: new technologies to increase financial inclusion, the design of new products, and financial education.

Technological innovation

New technologies such as mobile payments, mobile banking, *home banking* and biometric identification technologies can reduce the cost and lack of access to financial services.

These innovations generate competition among financial service providers leading to lower costs.

To take advantage of the potential of these technologies, regulators should allow the competition of financial service providers, always respecting the credit granting to qualified individuals.

Design of new products

In order to redress market deficiencies and meet the needs of financial consumers, the design of innovative products should be encouraged.

Financial and business education

The World Bank notes that financial education is not the same as financial capacity, and research indicates that standard financial education, targeting the general population, does not have much impact on financial inclusion. It takes more than courses and memorizing definitions to develop sufficient capacity to benefit from financial services.

Financial education does not ensure that a person will have financial capacity and be able to make economically rational decisions.

To conclude, it is important to underscore the measures taken by the Superintendence of Banks & Insurance of Peru, a country ranked in first place in terms of financial inclusion, compared with other Latin American and Caribbean countries. The Peruvian SBS, globally recognized as one of the best regulators, has driven initiatives and efforts to promote microfinance, bank penetration and further financial inclusion for several years. As of 2012, the SBS adopted the 9 G20 principles: leadership, diversity, innovation, protection, empowerment, cooperation, knowledge, proportionality and regulatory framework.[14]

Conclusions

Sufficient empirical evidence indicates that increasing and developing the financial sector generates greater economic growth, since the channeling of savings through a wide range of financial products toward productive sectors, involves more efficient investments which, in turn, lead to more growth and improve the standard of living of the population.

In recent years, the concept of financial inclusion has gained strength, so much so, that many countries are fostering programs accordingly..

In order to accompany the global process, the National Government together with other countries, was signatory of the Maya Declaration (September 2011), a commitment to financial inclusion by members of the AFI network.

Among the policies adopted to achieve the targets, an Executive Decree approved the National Financial Inclusion Strategy and created the committee responsible for its implementation.

For these reasons, it is considered that the Ministry of Finance, within what has been set out by its recently enacted charter, should be responsible for leading the efforts to establish policies and plans for follow-up in relation to the objectives outlined in the ENIF, in coordination with other institutions that make up this committee.

14 Oportunidades y obstáculos a la Inclusión Financiera en Perú. Centro para la Inclusión Financiera. No. 21, Sept. 2013.

Matrix of the National Financial Inclusion Strategy

Vision: Quality and affordable financial services for all those in Paraguay who need them, through a diverse and competitive market.

Objectives:

1. To minimize the financial vulnerability of families at the base of the pyramid.
2. To promote greater coverage of financial services in a competitive and secure market.
3. To offer support for development and economic growth through the access of MSMEs and large enterprises to financial products.
4. To foster financial inclusion while maintaining a balance with the stability of the financial sector, consumer integrity, education and protection.

Pillars	Savings	Credit	Insurance	Payments	Financial education	Consumer Protection	Vulnerable populations
Key indicator to be reached in 2018 (percentages are for people, unless otherwise stated).	Increase ownership of savings accounts from 29% to 50% of the adult population and the use of 14% of the population saving in a formal institution to 30%.	Increase responsible credit to MSMEs from 30% to 40% and increase the percentage of responsible debt in formal financial institutions from 23% to 28% of adults	Increase insurance coverage from 26% to 36% of adults.	Reduce the use of cash and checks for payment of salaries from 76% to 20%.	Increase the percentage of adults (15+) who report having received some training, advice or support to manage their personal finances and money management from 10% to 20%.	Institutions providing regulated and unregulated financial services publish their customer service and these take into account the realities of the different income groups, including financially vulnerable segments.	Extend financial services via cost-effective channels to the 69 most populated districts and financially excluded districts of the country, with emphasis on the 17 priority vulnerable districts that are part of the government plan to eliminate extreme poverty.
Support activities for quick win	Issue clear instructions on what is needed to open a regular savings account (FI, R) *	Ensure that credit bureaus of BCP and INCOOP communicate with each other (FI, R)	Explore the possibilities of implementing an agricultural insurance for small and medium-scale farmers (FI)	Convert 80% of central government payments to electronic means and ensure that 100% of new payments are made electronically through authorized entities (FI, R)	Develop tools, guidelines and content on financial education for educational institutions, social service agencies and financial institutions, with emphasis on vulnerable populations and their characteristics (FE, VP)	Improve the regulation on transparency of interest rates and charges through the dissemination of "Total Financial Cost" initially for credits and for all lenders (CP, R)	Harnessing the widespread use of mobile phones and coverage of the mobile operators network to promote the expansion of savings in the vulnerable population (FI, VP)

* Indicates the topics of supporting policy actions: Financial Innovation (FI), Regulation (R) Financial Education (FE), Consumer Protection (CP), Vulnerable Populations (VP).

Bibliography

Central Bank of Paraguay (2014). *Informe de Inclusión Financiera - June 2014*. Asunción Paraguay.

World Bank (2014). *Encuesta de Inclusión Financiera de Paraguay 2013*. Washington, D.C.

World Bank (2014). *Estrategia Nacional de Inclusión Financiera 2014-2018*. Asunción.

Beck, T. et al (2000). "Finance and the Sources of Growth". *Journal of Financial Economics*. 58. 261-300.

Cisneros, D. (2013). Oportunidades y obstáculos a la Inclusión Financiera en Perú. Centro para la Inclusión Financiera. Nro. 21.

Decree N° 1971/14. Asunción, Paraguay. 22 July 2014.

Estrada, D., Gutiérrez, J. (2008). Supervisión y regulación del sistema financiero: Modelos, implicaciones y alcances. Banco de la República de Colombia, Borradores de Economía, Nro. 490.

Levine, R. (2004). *Finance and growth: theory and evidence* NBER Working Paper, 10766, National Bureau of Economic Research.

Poggi, M. (2014). *Limitaciones para la bancarización en el Perú*. Huancayo, Perú.

Main implications of the legislative amendments proposed by the Central Bank of Paraguay (BCP)

Ernesto Velázquez Argaña

This publication, opinion and comments are the sole responsibility of the author and do not necessarily represent the opinion of the Central Bank of Paraguay. Special thanks go to Juan Manuel Gustale, Jorge Jiménez, Christian Tondo and last, but not least, Ana Laura Vera.

Every modern and efficient piece of legislation should interpret and provide clear answers to fundamental aspects of a given reality and, hence, should reflect the prevalent idiosyncrasy and practice in a society at a given time.

In most cases, and depending on the matter regulated by law, this *reality* is almost never static, but determined by constant changes and adjustments arising mainly from the interactions of regulated entities. Accordingly, the dynamic of a specific legal matter requires the rules regulating it to contain tools, principles, standards, and provisions establishing the necessary adjustments to accommodate them to different circumstances.

For this purpose, a modern norm, besides providing the necessary parameters for improving the regulation of a specific matter, must contemplate standards and principles, the application of which will allow the regulated matter to advance, while safeguarding the protected legal asset, granting greater legal security and fostering the country's global integration.

As the legal body responsible for preserving the stability of the system, the Central Bank of Paraguay is familiar with this reasoning, and that is the reason why it has adopted a proactive approach and has proposed the amendment of the rules currently governing the financial market.

The Central Bank of Paraguay is convinced that by possessing modern legal instruments at its disposal, the institution will be capable of supervising the financial sector more efficiently and effectively, ensuring compliance with obligations established in its Charter Law. All of this must be accompanied by an appropriate monetary policy prone to preserving the value of the currency and underpinning the normal development of the national economy, which is growing in a robust manner despite adverse regional conditions.

Laws No. 489/95 and 861/96

At the time of their respective enactments, Law No. 489/95 ("Charter of the Central Bank of Paraguay") and Law No. 861/96 ("General Law of Banks and Other Financial Institutions") were capable of accurately interpreting the prevailing scenario in our country during the nineties. Indeed, the fact that these laws came into force constituted one of the pivotal factors that made it possible to reorganize the post-crisis banking and financial sectors, primarily because these laws incorporated the best financial practices of those times which ruled the Paraguayan financial market in a positive manner for the following twenty years.

Nonetheless, it is noteworthy that these laws were sanctioned and enacted during an unprecedented financial crisis in Paraguay, with the mandate of restoring the capability and credibility of a virtually obliterated national financial system.

Financial crisis and regulation

The aftermath of the banking crisis of the nineties lingered until 2003. During that time-span, countless financial intermediaries were liquidated, many of which were systemically important, that in turn led to interventions of other entities with less impact on the market.

At the time of the crisis, an old-fashioned and even obsolete banking system was in place. It was incapable of addressing the crisis that was emerging at that time, as a result of several decades of Paraguayan history characterized by an authoritarian government that fostered a financial liberalization that did not provide the necessary conditions nor the legal structure to deal with the proliferation of entities hastily entering the financial sector.

A country of the proportions of Paraguay at that time could hardly accommodate a number of a hundred banks and financial institutions that suddenly sought to conquer a financial market in which the prevailing game rules were disproportionate in relation to the above mentioned liberalization.

The damaging consequences did not take long to materialize and led to a significant number of interventions by the Superintendent of Banks. Approximately fifty-five[1] institutions, including the largest banks, were liquidated without - as mentioned above - a suitable legal framework to bring order and counteract the ominous financial effects that the crisis left behind.

This chain of interventions and, above all, the huge fiscal, political, and social cost that it generated, forced the authorities to reformulate – in a hurried and reactive manner - the banking law that is still enforced today.

The new regulatory system has been designed due to and during the crisis to counteract its effects and prevent similar situations that had caused so much damage to the national economy.

1 **- Under Law N° 417/73:** Bancopar S.A., General S.A., Bancosur S.A. de Inversión y Finanzas, Mercantil S.A., Financiera Urundey S.A., Financiera Sauce S.A., Vanguardia Financiera S.A., Sur S.A. de Finanzas, Financiera Industrial S.A., Financiera Estrella S.A., La Mercantil S.A. de Finanzas, Financiera Corpus S.A.
- Under Law N° 861/96: Banco Unión S.A.E.C.A., B.I.P.S.A., Itabank IFSA, Banco Oriental S.A., Finamerica S.A., Banco Desarrollo S.A.E.C.A., SSB Banco S.A., Banco Plus S.A., Banco Alemán Paraguayo S.A., B.N.T., Multibanco, Financiera Integral S.A., Financiera Alfa S.A., Financiera Empresarial S.A., Upafisa S.A., Financiera Plata S.A., Financiera Paraguaya S.A., Corporación Financiera S.A., Financiera Ortumar S.A., Fianban S.A. de Finanzas, Finanzas & Inversiones, Financiera Agrocenter S.A. **Voluntary settlements under Law N° 861/96:** Banco Corporación, Banco Real del Paraguay, Banespa, Banco República o del Uruguay, ING Bank, Banco Asunción, Banco Paraná, Financiera el Productor S.A., Financiera Roble S.A., Financiera Sudamérica S.A., Financiera Ejecutiva, Financiera Activa S.A., Financiera Paratodo S.A.E.C.A., Financiera Divipar S.A., Financiera Everest S.A., Financiera Prudencia S.A., Financiera Técnica S.A., Financiera La Paraguaya, Financiera Prime S.A., Financiera Parapití S.A.E.C.A., Financiera Vencedora S.A..

Amendments to Laws No. 489/95 and 861/96.

Unequivocally, it could be said that the Paraguayan economy began to take off as of the signing of the Stand-By Arrangement (SBA) with the International Monetary Fund in 2003, through which international financial resources were obtained to boost the country´s economy, while adopting best economic practices as a conditionality for the loan.

The Stand-By Arrangement of 2003 –Item II, Letter D, Numerals 18 and 19- had already stated the need to strengthen the banking supervision and resolution processes, endowing the necessary legal resources to the Superintendency of Banks in order to effectively perform its functions. Moreover, it was highlighted that legal reforms should focus on the implementation of a definite solution to the National Development Bank's situation, the strengthening of the legal framework of the banking resolution system and the improvement of banking supervision. Indeed, the enacting of a new banking system law was already in the set of measures that should have been implemented within the SBA- program framework.[2]

The International Monetary Fund and the International Bank for Reconstruction and Development (World Bank) conducted the first joint evaluation of the national financial system in 2005, known as the Financial Sector Assessment Program (FSAP). The results of the 2005 FSAP report were extremely unfavorable for the country, concluding that the level of compliance exhibited by Paraguay in relation to the Basel Core Principles of Effective Banking Supervision was as low as 16%.

Paraguay was able to revert the results of the first FSAP report a few years later (in late 2010) when the second FSAP report concluded that compliance with the Basil Core Principles had reached 63%. This achievement –reflected in the second FSAP report– was made possible by the regulatory work carried out by the Central Bank of Paraguay from 2006 to 2010. Indeed, in parallel to the first and second FSAPs, the Central Bank of Paraguay issued a myriad of prudential regulations up to a point where it had used all its legally established capacity.

In this context, the Board of the Central Bank of Paraguay has been issuing a series of regulations on risk management, classification of credit risks and accounting provisions, requirements prior to bestowing authorization for operating in the financial system, adoption of *fit and proper* criteria, establishment of shareholders in countries that are not considered tax havens, and operational risk management. These are only a few notable examples of the regulations implemented. Among other provisions, the regulation on corporate governance

2 IMF (2004). *Staff report for the request for Stand-By Arrangement*, p. 11-12. March 2004, International Monetary Fund. Website: http://www.imf.org/external/pubs/ft/scr/2004/cr0466.pdf

deserves mentioning. Although such a regulation is not supported by Law No. 861/96, from the supervisor´s point of view it is one of the pivotal tools in achieving the stability of the financial system. Likewise, a norm has been issued in an effort to disaggregate the capital composition of financial institutions into two levels, requiring the *purest* portions for the first (the principal), i.e. those that provide greater security at the time of addressing adverse situations. Furthermore, special emphasis has been given to promoting financial inclusion, by regulating the formation of non-banking correspondents, basic saving accounts, and electronic payment entities (EMPE's) which – through the implementation of digital finance - are helping to foster the inclusion of excluded people to the formal, specially those located in remote areas the ability to have access to a wide range of financial services.

In 2012, once again, the Central Bank of Paraguay resumed its efforts to prompt the amendment of Laws No. 489/95 and 861/96. During 2013 and 2014, draft bills were disseminated and analyzed by professional associations – the Association of Banks of Paraguay (ASOBAN), the Association of Financial Institutions of Paraguay (ADEFI), and numerous international experts. On November 25, 2014, the Board of the Central Bank of Paraguay issued Resolutions No. 14 and 15 - Act 83 - approving the draft bills and then submitting them to the President of the Republic of Paraguay on November 28, 2015. In turn, on March 12, 2015, the Executive Branch submitted the draft bills to the National Congress where these documents are currently being examined.

The current enabling scenario

Today, the reality looks radically different than the landscape prevailing when Laws No. 489/95 and 861/96 entered into force. However, these laws still govern the domestic financial market.

It is therefore imperative that the letter -and in the spirit- of new legal provisions reflect the current financial scenario, in order to improve the financial system. These are the main grounds leading to the initiative of amendingthese laws as proposed by the Central Bank of Paraguay. The proposal is to modernize and adapt the financial laws to the current favourable reality and not to derogate them.

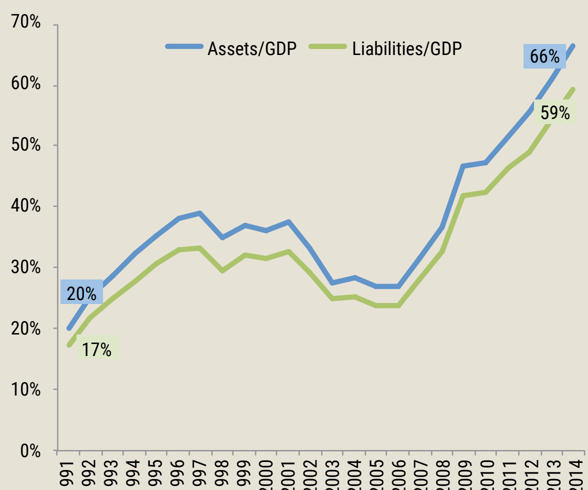
Indeed, the time for implementing regulatory changes could not be more auspicious: the financial system is robust, financial institutions have been consolidating themselves, public savings are on the rise –and so are the investments – and public accounts are organized. All of this leads to an increased consideration of Paraguay as a more serious country in the global context, to the point of getting close to reaching the desired *investment grade.*

Adapting laws to financial markets

As it was mentioned, Laws 489/95 and 861/96 still govern the Paraguayan financial system. However, the national economic reality and the financial reality in particular, as well as the international context, have evolved substantially.

After the dire difficulties experienced by the financial system in 2002 and 2003, and thanks to the joint effort of the private financial sector and the State, the scenario evolved positively over the years, with an unprecedented economic and social recovery that commenced back then and has remained intact (see Figure 1). Banking and financial institutions of Paraguay are among the soundest and most stable in the region.

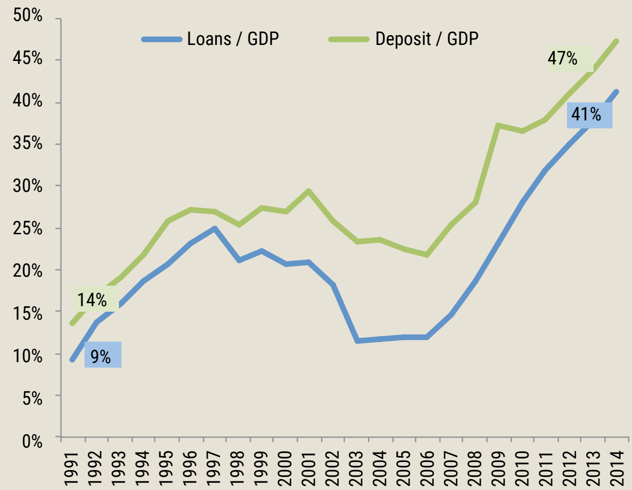
Figure 1
Evolution of assets and liabilities, percent of GDP



Source: BCP.

Numbers speak for themselves: the size of the banking sector grew 4.5 times; credit levels that accounted for barely 9% of GDP in 1991, rose to approximately 41% of GDP in late 2014 (see Figure 2).

Figure 2
Evolution of loans and deposits, percent of GDP



Source: BCP.

Currently, domestic financial institutions are robust, well capitalized, and ranked among the most profitable of the economy, with low default rates.

Over the recent years, regulations by the Central Bank of Paraguay have been of pivotal importance, focused in adopting latest international standards and best practices, underpinning the development of the financial sector.

We can unequivocally assert that the work of the Central Bank of Paraguay has prioritized the adoption of technical regulations based on policies and criteria welcomed by the sector, even by the political class. In doing so, the Central Bank has strengthened and supported the constant growth of the domestic economy and the dynamic development of the Paraguayan financial system.

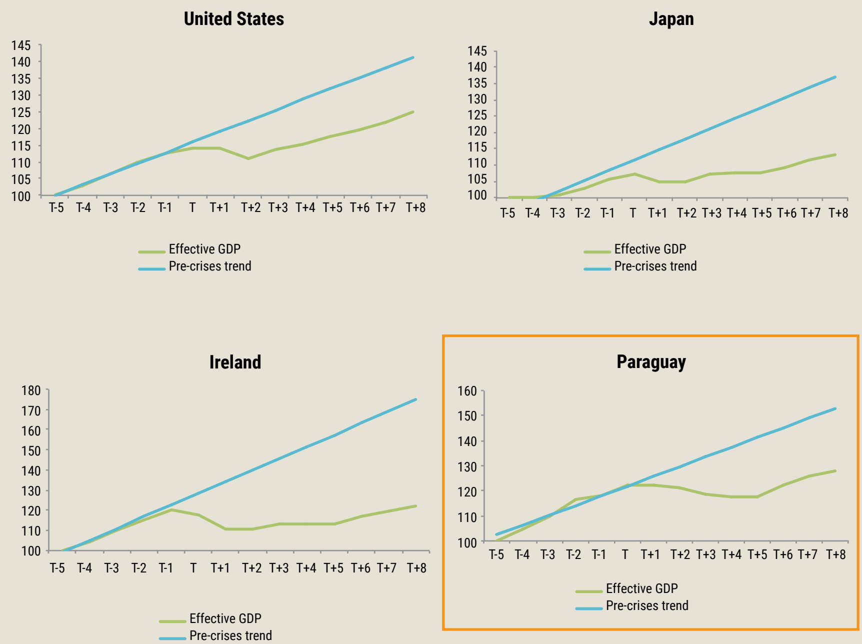
This set of regulations greatly contributed to consolidate the good reputation of the Paraguayan financial system, providing it with a clear mandate for its normal functioning and ensuring higher levels of transparency, to the benefit of Paraguayan citizens who trust the system and increasingly rely on services (credit, deposits, etc.) offered by financial intermediaries, as depicted in Figure 2, thus favoring the greater dissemination and formalization of the economy.

Nonetheless, the said economic development needed to be supported by amendments to the banking laws by means of further regulatory and supervisory powers to continue acting –closely and constantly– as an ancillary to the notable evolution of the financial sector.

Appropriate tools to prevent possible crises

Banking crises are extremely costly, both economically and socially. This is clearly depicted in the following figures:

Figure 3
GDP evolution before and after the financial crisis, Index

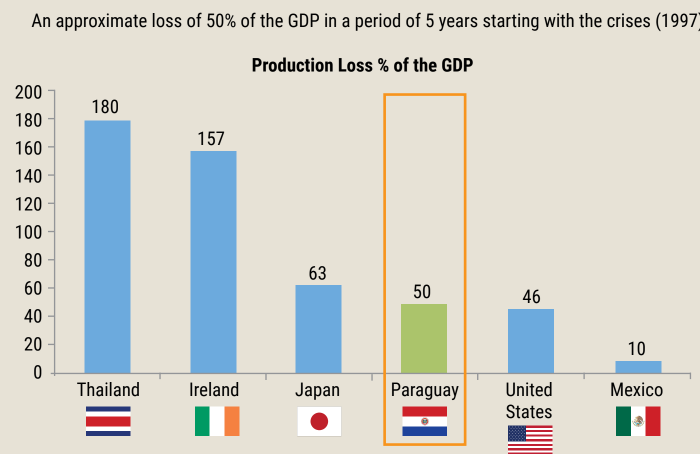


Source: International Monetary Fund and BCP.

Thus, interventions led by the Central Bank during the nineties in Paraguay - which lasted until 2003 - had a very significant social cost (see Figure 3). Very few Paraguayans are able to state that they were not affected, even if indirectly, by the financial crisis of said period.

The banking crisis amounted to the equivalent of 50% of the Paraguayan GDP in five years (see Figure 4).

Figure 4
Costs of financial crises in selected countries, percent of GDP



Source: International Monetary Fund and BCP.

Best international practices of banking supervision

To a considerable extent, the abundance of prudential regulations emanating from the Board of the Central Bank of Paraguay contributed to support the developments of the financial sector, but the time has come when only by adjusting the legislation will it be feasible to continue with the regulatory development. Therefore, the amendment of the legal framework governing the system is critical.

The current banking legislation in place in Paraguay restricts, or significantly hinders, the progress of policies adopted by the Central Bank of Paraguay that seek to improve and update the rules of the game in the financial sector. This task will only be accomplished through the continuous incorporation of norms that replicate the provisions of international standards adopted by the most advanced legal systems. These changes will enable our financial system to advance towards the future, applying the best practices applied on a daily basis by global financial markets.

Paraguayan financial system and supervision

The Paraguayan financial system operates with a traditional scheme based on financial intermediation regimes comprised of entities focusing mostly on taking deposits from the public and placing them with third parties (typical commercial banking). This denotes a market still lacking of a high degree of sophistication.

Indeed, there is still no a noticeable development of investment banking or other forms of banking business differing from the typical banking operations.

The credit disbursed by entities forming part of the financial system is still the major source of financing in Paraguay, while the development of capital markets is still very incipient.

Most recent studies on the quality of the domestic financial system are consistent in signaling that its entities are adequately solvent and sufficiently able to address potential *shocks*.

It should be remarked that the taking off process of the domestic financial system is strengthening, hence the time is ripe to move forward towards a modern legislation enabling the country the consolidation of its economic growth.

Prudential regulation and risk-based banking supervision

Without overlooking the strong image being currenlty exhibited by our financial system, we must bear in mind that unpredictability is one of the main features of financial crises, which can be triggered abruptly, without distinguishing between developed, emerging, or developing countries.

Government authorities in general, and regulatory bodies in particular, should be well aware of this reality and consequently encourage the system to update to modern, efficient, and appropriate institutional, legal, and regulatory frameworks to address the potential arousal of adverse financial scenarios. It is therefore imperative to review and, if necessary, to adapt or amend banking and financial legislations, adopting prudential criteria as dictated by the best practices and standards on the matter.

In this endeavor, since the second half of the last decade, the Central Bank of Paraguay has been making continuous and systematic efforts to consolidate prudential regulations and the quality of banking supervision. This process began to consolidate mainly through the adoption of risk-based supervision regulations. Thus, both regulations and supervision achieved substantial improvements, as it is reflected in the sustainable and orderly growth of the financial system.

As of the fiscal year 2007, with the firm conviction that conventional, traditional compliance-based supervision would not contribute to risk mitigation and, consequently, to the stability of the financial system, preventing banking crises and protecting public savings, authorities decided to strongly promote the implementation of the risk-based approach. Towards the end of that year, work began on the design of the first red flags based on parameters that included Asset Quality, Default, Provisions, Deposits, Profitability, and Equity.

It should be highlighted that the *Supervisory Process* was formalized and became the officially approved scheme adopted by the supervisory body to guide all those employees involved in such processes. This, in turn, sent out a clear message ont the determination of the Central Bank of not going backward on this path.

Supervision also focused on two fundamental aspects: first, the usage of technological tools to monitor credit behavior; and, second, the preparation of the *Inspection Guide* providing instructions to enhance the efficiency of the supervisor body that can now rely on a standard scheme.

This package of measures led to progress in the implementation of the philosophy of risk-based supervision, aimed at evaluating the *risk management* implemented by financial institutions while developing their business, taking into account the volume and complexity of their operations.

A particularly important development has been the enactment of Law No. 3899/2009 on Risk Rating Agencies.[3] It took place in a highly complex time, in the midst of the global financial crisis- even when everybody voiced against Risk Rating Agencies because of their participation and responsibility in the origin of that crisis, the Superintendent of Banks took the lead and promoted the amendment of Article 106 of Law No. 861/96.

The decision to migrate to a risk-based approach was a huge step towards the consolidation of a different style of management and supervision.

Basic Standards of Effective Banking Supervision (Basel Core Principles)

The regulatory provisions contained in current laws are markedly rigid and prescriptive, leaving little space for the Central Bank of Paraguay to maneuver in key regulatory aspects. For example, the various prudential limits specifically listed, as well as risk weights and other criteria which, although vary constantly, are constrained by the *corset* of the letter of the law.

It has to be emphasized that, regardless of the scarce flexibility of the existing legal scheme, the Central Bank of Paraguay has implemented a series of prudential regulations that have become sufficiently rooted in the supervised sector. Nonetheless, at present these regulations face important limitations because the new banking supervision standards and regulations responding to the global reality are not contemplated in the laws. The incorporation of these standards, based on comprehensive risk-based supervision, will allow greater and more efficient integration into international financial markets, which will foster investments and, consequently, the economic development of the country.

Best banking supervision practices are international parameters to evaluate the quality of a country's supervisory practices. They serve as a benchmark to determining the quality of supervision and to identifying the measures required to reach optimal quality levels.

3 This legal section forced the institution to publish a ranking of financial institutions, in open conflict of interest with its functions and contrary to everything applied in the rest of the world.

These core principles are called *Basic Standards of Effective Banking Supervision* and are issued by the Basel Committee on Banking Supervision, based in the city of that name. The Committee was created in 1975 by the G10 countries to standardize global parameters for "Effective Banking Supervision" and present a list of recommendations for the consideration of regulatory authorities, in order to strengthen oversight and contribute to financial stability.

The principles are minimum *de facto* standards for proper prudential regulation and supervision of banks and banking systems. As of their publication in 1997 by the Basel Committee on Banking Supervision, the Core Principles have served as benchmarks for countries to evaluate the quality of their supervisory systems and identify the measures required to reach comparable levels of quality in their supervisory practices. They are also used by the International Monetary Fund (IMF) and the World Bank in their Financial Sector Assessment Program (FSAP) to test the effectiveness of banking supervision systems and practices of different countries.[4]

These principles have gained wide acceptance and relevance in the international financial markets. The largest economic blocks have accepted them as benchmarks.

A higher degree of compliance with international standards often means that a country needs to review its laws and regulations. Indeed, a jurisdiction that is reluctant to adopt international standards, and persists with existing regulations that are distant to reality, could generate huge reputational costs, which could result in peer countries considering a given country as a less modern jurisdiction, thus discouraging and undermining investment possibilities.

It is important to remark that the efforts of the Central Bank of Paraguay and the regulatory body have been highlighted in the FSAP carried out jointly by the International Monetary Fund (IMF) and the World Bank (WB) in Paraguay in 2010.

For illustrative purposes only, we need to reiterate that the FSAP report is a standard report issued by multilateral agencies and constitutes a globally recognized reference benchmark. In short, the conclusions contemplated in this report provide a valuable statistical trail that is taken into account at the time of analyzing the financial situation of the assessed country,

It should be noted that the second FSAP report gave Paraguay a very auspicious score in 2010, recognizing a significant qualitative improvement in terms of supervision; this evaluation was carried out considering the Principles, which set the guidelines which global financial markets could follow until 2011.

4 Bank for International Settlements - BIS (2011). Core Principles for Effective Banking Supervision, p. 1. December 2011. BIS website: www.bis.org/publ/bcbs213_es.pdf

Subsequently, new stricter criteria and conditions[5] have been added forcing every supervisor to have the broadest of powers in order to fully comply with international standards; not only to increase the degree of adjustment to these standards, but also to effectively mitigate the risks taken by financial institutions, strengthening the stability of the system.

After the review and update carried out by the Core Principles Group -charged by the Committee in 2011- the number of Core Principles rose from 25 to 29, and 36 new assessment criteria were introduced, 31 of which are essential and 5 are additional. In addition, 33 of the criteria that until then had been additional were upgraded to essential, thus becoming minimum requirements for all countries.[6]

Among these principles we can mention those related to licensing criteria (Principle 5), transfer of significant shareholding (Principle 6), supervisory techniques and tools (Principle 9), corrective and sanctioning powers of the supervisor (Principle 11), consolidated supervision (Principle 12), and corporate governance (Principle 14).

Special emphasis is given to Principle 15 on the risk management process, by which the supervisor verifies that banks have a comprehensive risk management process (including effective Board and senior management oversight) to identify, measure, evaluate, monitor, report, and control or mitigate all significant risks on a timely basis and to assess the adequacy of their capital and liquidity in relation to their risk profile and market and macroeconomic conditions. This extends to the development and revision of robust and credible recovery plans, which take into account the specific circumstances of the bank. The risk management process should be commensurate with the risk profile and systemic importance of the bank.

Principle 16 on capital adequacy is also relevant. It establishes that the supervisor should set prudential and appropriate capital adequacy requirements for banks that reflect the risks undertaken by, and presented by, a bank in the context of the markets and macroeconomic conditions in which it operates. Under this principle, the supervisor must define the components of capital, bearing in mind their ability to absorb losses.

5 "Substantial improvements have been made to the Core Principles on an individual basis, particularly in areas where oversight and risk management need strengthening. Consequently, some criteria hitherto additional have become essential and in other cases new evaluation criteria have been added. Great effort has been made to solve many of the significant deficiencies in risk management and other vulnerabilities uncovered by the crisis. Likewise, various key trends and developments, recorded over the last years, altering the markets have been taken into account: the need to strengthen and increase resources for systemically important banks; the importance of adding a macro-systemic approach to micro-prudential supervision of banks to help identify, analyze and prevent systemic risk; and greater attention to effective crisis management, recovery and resolution measures to reduce both the likelihood and the impact of a bank failure. The Committee has also sought to emphasize these aspects inserting them, to the extent possible, into the Core Principles and including specific references in each of them". BIS (2011). Core Principles for Effective Banking Supervision. Op. Cit. p. 1 and 2.

6 BIS (2011). Core Principles for Effective Banking Supervision. Op. Cit. p. 3.

Principle 17 on credit risk states: "The supervisor determines that banks have an adequate credit risk management process that takes into account their risk appetite, risk profile, and market and macroeconomic conditions. This includes prudent policies and processes to identify, measure, evaluate, monitor, report, and control or mitigate credit risk (including counterparty credit risk) on a timely basis. The full credit lifecycle should be covered including credit underwriting, credit evaluation, and the ongoing management of the bank's loan and investment portfolios".

Principle 19 refers to the concentration of risk and large risk exposure limits and states: "The supervisor determines that banks have adequate policies and processes to identify, measure, evaluate, monitor, report, and control or mitigate concentrations of risk on a timely basis. Supervisors set prudential limits to restrict bank exposures to single counterparties or groups of connected counterparties".

Principle 20 on transactions with related parties is particularly important. It states: "In order to prevent abuses arising in transactions with related parties and to address the risk of conflict of interest, the supervisor requires banks to enter into any transactions with related parties on an arm's length basis; to monitor these transactions; to take appropriate steps to control or mitigate the risks; and to write off exposures to related parties in accordance with standard policies and processes".

Principle 22 on market risks states: "The supervisor determines that banks have an adequate market risk management process that takes into account their risk appetite, risk profile, and market and macroeconomic conditions, and the risk of a significant deterioration in market liquidity. This includes prudent policies and processes to identify, measure, evaluate, monitor, report, and control or mitigate market risks on a timely basis".

Lastly, principle 24 on liquidity risk states: "The supervisor sets prudential and appropriate liquidity requirements (which can include either quantitative or qualitative requirements or both) for banks that reflect the liquidity needs of the bank. The supervisor determines that banks have a strategy that enables prudent management of liquidity risk and compliance with liquidity requirements. The strategy takes into account the bank's risk profile as well as market and macroeconomic conditions and includes prudent policies and processes, consistent with the bank's risk appetite, to identify, measure, evaluate, monitor, report, and control or mitigate liquidity risk over an appropriate set of time horizons".

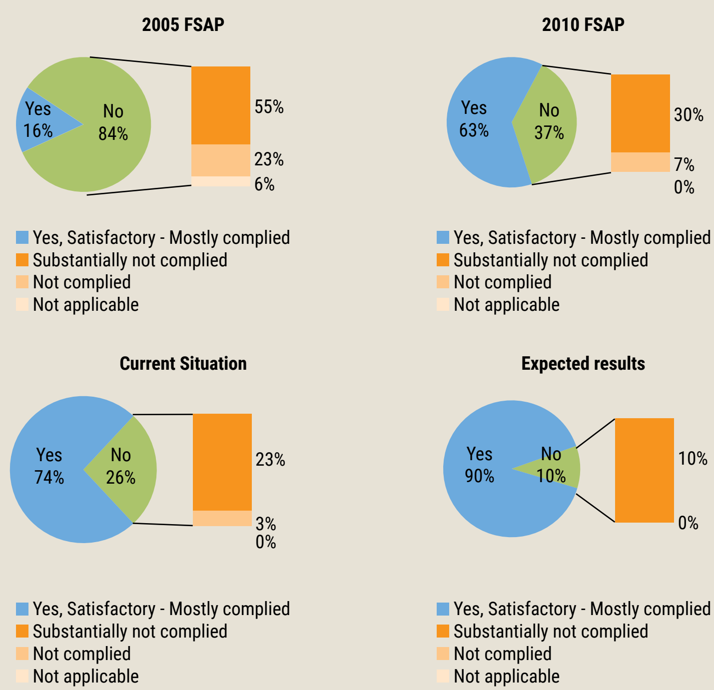
While it is not easy to determine exactly where we stand today in terms of compliance with the Basel Core Principles, a self-assessment performed by the Central Bank of Paraguay lately indicates that our progress in regulations from 2010 to date would position us at approximately 74% of compliance in relation to international standards of banking supervision, which is very promising.

A question arises: Are we willing to accept the challenge to further raise the degree of compliance and complete the consolidation of the favorable image we have been projecting at the regional level?

The answer to such a question leads us to refer, in some detail, to the goals to consolidate the take-off of the Paraguayan financial system.

To achieve such consolidation, regulatory changes through reformulation and amendment of existing banking laws are needed to make supervision more flexible and allow greater participation of the Central Bank of Paraguay in the adoption of policies conducive to the fulfillment of its legal duties. Estimates by the Central Bank of Paraguay experts indicate that, once these changes are made, Paraguay could even escalate to 90% compliance with the Core Principles of Banking Supervision (see Figure 5), which would project a clear signal to international financial markets that Paraguay is a serious country, where investment is possible thanks to the soundness of its financial system, based on international best practices.

Figure 5
2005 and 2010 FSAP Results and Self Assessment



Source: International Monetary Fund and BCP.

The legislative amendments will be decisive to materialize the risk-based approach in supervision, consolidating provisions on corporate governance, on solvency requirements commensurate with risk levels and on the increased degree of transparency, but never neglecting the rights of financial users.

Taking advantage of the good times: Macroeconomic scenario

The current economic scenario is favorable for materializing the planned legislative amendments. Common sense dictates that any change should be made during the least traumatic of times. These are those times, a time when the conditions of the Paraguayan economy are auspicious and predictable, with significant economic growth, as few countries of the region, with controlled low inflation rates, international reserves on the rise (and minimum GDP/debt ratio) and, above all, a financial system that has developed by leaps and bounds in recent years, leading Paraguay to become an increasingly competitive and developed market.

Basically, what is needed is to migrate towards a system that allows the establishment of general principles and requirements in the law, allowing the Central Bank of Paraguay to set specific parameters and coefficients based on the dynamic evolution of the financial institutions segment. In this way, the institution will be able to accompany the constant innovation of financial products and services that markets are continuously developing, and establish the best criteria for effective supervision aimed at constantly strengthening the financial industry.

Throughout its history, the Central Bank of Paraguay has positioned itself as one of the most credible and respected institutions in the Republic of Paraguay. This is undoubtedly due to the professional work of people who have consistently honored the institution with outstanding technical and professional work, while preserving their institutional autonomy.

All the aforementioned has resulted in the adoption of public policies that have proven effective both in controlling inflation, one of the lowest, most stable and predictable economies in the region, as well as in the sustained increase of international reserves.

Consequently, the current conditions present a unique opportunity to amend Laws No. 489/95 and 861/96 and can be summarized as: controlled inflation, predictable exchange rate, fiscal discipline, and international reserves on the rise, maintaining the surplus in the trade balance.

Pillars for consolidating the financial system

Financial institutions routinely operate as intermediaries, which involves deposit taking from the public, their subsequent placement and restitution of the amounts taken, for the purpose of lending to third parties. Financial intermediation plays the vital social role of channeling money resources to the sectors demanding it.

Financial intermediation is closely related to one of the main functions constitutionally conferred to the Central Bank of Paraguay: preserving the stability of the financial system[7] and protecting citizens[8] which gives the financial industry a clear character of *public interest*. In turn, the nature of these activities and the public interest at stake call for regulation of the products and services rendered by financial institutions, for which clear and protective rules have been established on the rights of bank users, in line with legal provisions relating to consumer and user protection.

It is also essential to raise the levels of information transparency in order to arrange schemes whereby common clients could be informed on the details inherent to the product they intend to use. For example, information should clearly specify the amounts relating to interest, fees, and charges to be paid to the financial institution; all this so that users have the best tools to make the financial decisions that are most suited to their interests.

Although regulating the financial system is fundamental in any regulatory system, the regulator's role would be meaningless if it is not accompanied by efficient and effective supervision[9] because, in that case, the objectives of the regulations would not be fulfilled, causing serious consequences that could impact the financial market.

Indeed, the strengthening and consolidation of a wide-ranging, stable and solvent financial system will be achieved through the effective and preventive supervision by the management office of financial institutions, based on the risk of each one, exercising greater control on sound administration (corporate governance), and reducing the risks at the comprehensive level.

The implementation and definitive consolidation of the above mentioned approach is vital for any supervisor by allowing a more effective management of

7 Pillars for consolidation - Financial Stability: ensure stability as a public asset, preserve adequate solvency, and take preventive and gradual measures. Central Bank of Paraguay (2015), *Hacia una nueva legislación financiera en Paraguay*, Slide 11. March - 2015, Presentation by the President of the Central Bank of Paraguay to the Senate on occasion of Public Hearing dated April 24, 2015.

8 Pillars for consolidation - Protection of citizens: safeguard the savings of Paraguayans, ensure information transparency, and provide information to entities exempt from bank secrecy. Central Bank of Paraguay (2015). *Hacia una nueva legislación financiera en Paraguay.* Op. Cit.

9 Pillars for consolidation - Supervision: preventively and effectively oversee the management of institutions, exert greater control on good administration, and reduce risks. Central Bank of Paraguay (2015). *Hacia una nueva legislación financiera en Paraguay*. Op. Cit.

the resources available, focusing on the oversight of issues and entities representing the highest risk to the financial system as a whole.

Risk-based supervision is a more flexible regime that seeks to prevent potential risks in a timely manner. Vulnerabilities are detected early and the financial institution internalizes the actual risk exposure, allowing the supervisor to redirect efforts and utilize human resources more efficiently.[10]

Benefits and strengths of the legal amendments proposed

The goal is to provide flexibility to certain aspects of the current banking legislation. Today, the system hinders the actions of the regulator –and supervisor– in pursuit of more prudential regulation. This restricts timely risk-based decision-making. Clearly and consequentially, the legislative amendments proposed are in the best interest of the domestic financial system.

To accomplish greater flexibility, greater powers are needed to set minimum capital requirements and other prudential requirements to help consolidate the risk-based supervision model.

In addition, the proposed legislative amendments incorporate much needed concepts, but so far absent in the legislation, such as the so-called consolidated supervision, referring to the possibility of domestic financial institutions migrating to other marketplaces (cross-border banking). This, far from being a probability in the short or medium term, is a reality today.

Another significant innovation is the incorporation of the criteria defining systemically important entities, which, in turn, will bring a series of requirements and a special analysis of their nature and impact on the domestic financial market.

From the point of view of the fundamental objectives of the Central Bank, another particularly important proposal is to include the promotion of *Integrity*[11]

---

10 The Superintendent of Banks initiated this process through the adoption of early warning indicators and stress tests for system entities, implementing a quadrant system with elements to rank institutions according to their level of risk.

11 Opinion of the IMF Managing Director: "…So we also need to turn our attention to the culture of financial institutions, and to the individual behavior that lies beneath. Incentives must be aligned with expected behavior and be made transparent. Why is this so important? Because the behavior of the financial sector has not changed fundamentally in a number of dimensions since the crisis. While some changes in behavior are taking place, these are not deep or broad enough. The industry still prizes short-term profit over long-term prudence, today's bonus over tomorrow's relationship. Some prominent firms have even been mired in scandals that violate the most basic ethical norms—LIBOR and foreign exchange rigging, money laundering, illegal foreclosure. To restore trust, we need a shift toward greater integrity and accountability. We need a stronger and systematic ethical dimension. From this perspective, we can identify the true purpose of finance. Its goal is to put resources to productive use, to transform

of the financial system, not only of its stability. This will allow the Central Bank of Paraguay to ensure greater transparency and healthy market behaviors to protect financial consumers.

By Including the concept of *Integrity* as a goal of the new legislation the Central Bank will visibly expand its powers for the good of the system and the public. It will help establish guidelines to minimize the risk of using the financial sector as a vehicle to launder money or to finance terrorism, thus contributing to the preservation of public order, national security, the economy, and Paraguayan society.

Similarly, the proposed amendments will provide a more proportionate penalizing power to the legal framework, more in line with the seriousness of eventual violations of laws and regulations. This, undoubtedly, will generate the right incentives to effectively suppress the proliferation of incompliances by the supervised entities. In turn, it will provide guarantees for the defense of administrated entities, with clear and transparent rules for all participants.

A key topic to be reformulated with the legal amendments refers to the powers of the Central Bank of Paraguay at the time of deciding to grant licenses to entities applying to operate in the domestic financial system. In this regard, the new draft legislation incorporates a highly stringent regime to consider applications, thus ensuring that the sector is made up of enterprises that are maintaining prudent and transparent management at all times.

These stricter conditions will not focus solely on the adequacy of the financial project itself, they will also comprise other vital issues such as due diligence on the source of the funds to be paid-in by shareholders, managers and administrators, as well as scrutiny of the capacity to capitalize the entity in the future, if necessary.

Another innovative element of importance is the incorporation of a rule allowing the Central Bank to recommend the dismissal of managers and administrators deviating from healthy corporate governance and financial management practices, without prejudice to their right to defend. This will achieve better protection of the interests of depositors.

---

maturity, thereby contributing to the good of economic stability and full employment—and ultimately, to the wellbeing of people. In other words—to enrich society … Ultimately, we need to ingrain a greater social consciousness—one that will seep into the financial world and forever change the way it does business… I also believe the link is clear—ethical behavior is **a major dimension of financial stability**…" Christine Lagarde. (2014). *Economic Inclusion and Financial Integrity.* May 2014, International Monetary Fund. Website: https://www.imf.org/external/np/speeches/2014/052714.htm.

The most important legal amendments can be summarized in the following table:

Law No. 489/95 of the Central Bank of Paraguay	
Duty of Secrecy: New exceptions	• The following are exempted from the duty of secrecy (information of third parties held by BCP): the Attorney General and prosecutors of the Public Prosecutor's Office, with the inevitable requirement that the information be requested in the context of a specific investigation. • The Houses of Congress are also exempted, under resolution based on public interest, as well as the Inquiry Commissions as established in Articles 192 and 195 of the National Constitution.
Board of Directors: Additional powers	• Regulate and determine prudential parameters, such as wide-ranging risk management, oversight, management and other aspects of corporate governance. • Grant and revoke licenses; regulate, monitor and penalize remittance entities, electronic payment operators, and other entities acting with their own financial resources and not engaged in financial intermediation, depending on the importance or volume of their operations or their impact on monetary, credit or foreign exchange policy.
New functions of the supervisor	• Ensure not only stability, but the integrity of the system as well. • Authorize, through the Superintendent of Banks, transfers of shares, according to criteria and limits to be established by regulation. • Exercise consolidated control over supervised entities, taking into account their operations in the country and abroad, which addresses the issue of cross-border banking and the possible incursion of Paraguayan entities in foreign banks.
Corrective measures to supervised entities The Superintendent of Banks will have the power to:	• Instruct supervised entities to establish provisions on any of their assets, when considered necessary and within the deadline they determine. • The BCP may instruct temporary suspension of certain operations or one or more persons holding positions of management, administration and oversight of a supervised entity, when there are indications or situations that might warrant administrative proceedings for serious misconduct to the person or entity. However, this provisional measure will expire if the administrative proceedings are not filed within 20 business days.
Others	• It is compulsory to provide information to the Central Bank of Paraguay, for statistical purposes: • It is compulsory for public institutions, banks, financial institutions, cooperatives, mutual funds, pension funds and other entities of the financial sector, as well as other individuals and legal entities of the public and private sector to provide the data and information requested to the Central Bank of Paraguay to fulfill the function established in this article, and the BCP shall maintain the confidentiality of these data. • Certain parameters are established to manage international monetary reserves. • Monetary reserves shall be invested as per criteria of security, liquidity and profitability.

Law No. 861/96 on Banks, Financial Institutions and Other Credit Entities	
Barriers to enter the financial system: Granting of licenses to entities	• Provide powers to the BCP to reject applications with clear reasons and based on certain parameters, especially evaluating the economic capacity of shareholders, the source of their funds, any related companies or the economic group to which they belong.
Regulatory power to set limits Equity and prudential limits	• The current law specifically details the composition of regulatory capital, as well as the prudential limits. • The amendment seeks to establish general principles and empower the BCP to make regulatory decisions.
Setting asset weights Weighting assets through regulations	• Seeks to provide a less regulatory character in terms of asset weighting, with the Board of BCP maintaining the power to establish these definitions, according to the changing practices of the financial market.
Determinants of regulatory capital: Capital according to the risk profile	• The BCP shall determine how to calculate regulatory capital and may impose additional capital requirements. • It may adjust the regulatory capital as per the risk profile of each entity. • Everything will be carried out according a "Wide-Ranging Risk Matrix" to be drawn up by the Superintendent of Banks and discussed and agreed with financial institutions.
Definition of Systemic Banks Entities of systemic importance	• A definition of Systemic Banks is included so that measures may be taken in the future to strengthen this kind of institution.

In short, the legal amendments, by which the best oversight practices will be adopted, entail the following benefits: banking supervision according to international standards, strengthening financial system stability, improving the country-risk rating, and creating a more attractive market for foreign and local investment. These amendments lay the grounds for sustained and equitable economic growth.

Conclusion

The policies comprising prudential risk regulation, developed through regulations by the Central Bank of Paraguay in previous years, are now being restrained by the current banking legislation, which does not allow its proper enforcement. This is because regulations in force no longer respond to the current reality. Greater flexibility of the rules through the law amendments is imperative.

Despite the regional economic setbacks, the success experienced today by the Paraguayan economic sector in general, and financial sector in particular, are largely due to the adoption of sound and consistent policies, inflation control, and the stability of the financial system supervised by the Superintendent of Banks.

As a way to promoting this regulatory development and joining the international global financial system, we need more modern regulations responding to international best practices. The remarkable growth experienced in recent years by the financial sector, undeniably, has had a positive impact on the development of the Paraguayan economy. The success of financial institutions has definitely contributed to the consolidation of Paraguay as a financial center, attracting investments and showing itself as a secure, predictable and, above all, profitable pole of attraction. But we need to go further and the law amendments seek to adjust banking legislation to the new reality.

These planned legislative amendments will strengthen the Paraguayan financial system, with the consequent benefits; thus they should be supported by all stakeholders who will benefit from the changes.

Upon completion of this legislative initiative, the Central Bank of Paraguay and the institutions forming part of the financial market will have more and better tools at their disposal to protect the financial system, as well as clear rules of the game. All of this will help consolidate the soundness and that the domestic financial sector has acquired. And it will be a clear example that Paraguay is on par with the most serious economies of the region and is aware that a more sustainable and inclusive economy will redound for the common good.

References

International Monetary Fund (2004). *Staff report for the request for Stand-By Arrangement*. Washington: International Monetary Fund.

Lagarde, C. (2014). *Economic Inclusion and Financial Integrity,* Washington: International Monetary Fund.

Bank for International Settlements. (2011). *Core principles for effective banking supervision*.

Fernández, C. (2015). *Towards a new banking legislation in Paraguay*. Asuncion, Paraguay.

Where Is the Paraguayan Financial System Headed?

José Insfrán Pelozo

Introduction

Banks play a fundamental role in the Paraguayan financial system; since they are the principal providers of intermediation services. They are also the natural source of external loans for private businesses and for a large part of the general population. Therefore, the changes in the banking sector determine changes in the financial system as a whole.

The Paraguayan financial system during the 90's experienced a large banking crisis, with grave repercussions for the economy and the society. Most economists agree that a strong and disorganized process of liberalization and the opening of the Paraguayan economy after the fall in February 1989 of the authoritarian regime of Alfredo Stroessner, caused the banking crisis.

Additionally, the technological advancements in communications facilitated the process of inflow of capital into the country. All of these factors generated a strong growth in deposits, bank loans, and intermediary entities; but made monetary management and foreign exchange more complicated and, above all, made the system more vulnerable to significant crisis.

The banking crisis extended from 1995 to 2003 (a period during which many banking and financial institutions were liquidated or intervened), and it had long-lasting negative repercussions. The costs of the crisis were extremely high: according to professional and international organization estimates, such costs were within the range of 7% to 12% of the GDP.

This situation generated changes in the behavior of the financial agents, the regulators, the legislation that controls them, and in the public in general. As it turned out, it reduced the number of financial intermediaries and contracted the financial sector. Regulations were modified to strengthen the financial system and the monetary and financial policies framework.

On the other hand, among the non-banking intermediaries, the results were mixed. The capital market did not develop but the savings and credit cooperatives grew a great deal. They were pushed, in a certain way, by the regulatory arbitrage that affected the banks, and due to the credibility that the cooperatives were able to transmit to the public through their favorable results, obtained despite the grave financial crisis affecting the rest of the economy.

In the last decade, having overcome different crises and regional problems, the Paraguayan economy has had a very high performance regarding growth; growing in the last 10 years with an average of 5% per year. This growth occurred in a context of macroeconomic stability with low inflation and steady improvement in fiscal conditions.

In the same way, the Paraguayan financial system has had an unprecedented evolution, as well as a modernization of its administrative processes, improvement in the levels of solvency, profitability, and of financial risk management beyond the credit risk. Equally, the levels of delay in payment have consistently fallen, and the terms of loans and deposits have gradually grown.

The growth of assets and liabilities in the banking sector was accompanied by an amplified geographic coverage, with an increase in capillarity, growing from 264 agencies and branches of banks and financial institutions in 2002, to 408 in 2009, to 651 in August 2015. Nevertheless, there is room for growth, as currently, 30% (69 of 224) of the districts in the country with more than 2000 inhabitants do not have any bank presence, be it through a bank branch, banking agents, or an ATM[1].

Another remarkable characteristic, after the crisis, was the continued growth in internet access[2] and mobile telephone use that allowed the development of online banking and banking via cellular telephones[3]. Paraguayan banks have entered the era of telebanking, internet banking, electronic payment systems, and banking via the mobile phone, and the perspectives are that these devices for the provision of financial services will be increasingly used.

One important element was the adoption of the Payments System of Paraguay (SIPAP), which allows electronic transfers in real-time between economic agents. Bank usage has spread to all parts of the country. Without a doubt, there is still a lot of work to be done, but we are moving in the right direction.

While the improvements to the system concerning solvency, risk management, technological innovation, and financial inclusion are noticeable, the current system can still be improved. For example, there is a need to modify the legislation to update the legal definitions and standards of capital adequacy according to international standards. The security network established by the Central Bank could also be improved. The capillarity and presence of the banks should reach all districts and municipalities of the country. The process of bank usage in the most impoverished strata should be made a priority, and corporate governance should be strengthened. The area of Financial Services User Protection must also be improved.

Nevertheless, and despite its imperfections, the current Paraguayan banking system (along with the economy, which has achieved a macroeconomic stability) is now in a better condition to deal with stress situations and the challenges of the modern world. All of this was demonstrated during the recent international financial crisis of 2008, which had minimal impact on the national banks in terms of credits and deposits, which continued to grow, albeit at a lower pace.

1 National Strategy for Financial Inclusion 2014-2018.

2 According to http://www.exitoexportador.com/stats2.htm, in 2010, 16% of the population had access to the internet, in June of 2015, 43%, which shows a large growth and its potential use for banks.

3 Cellphone penetration is at 108,6%, according to estimations of BuddeComm for 2015.

The role of Financial Systems and Commercial Banks

The role of financial systems in the economy is to facilitate the transfer of resources from savers to investors. When resource allocation is done effectively, growth is maximized. This role can be described by the function of financial intermediation, transferring the savings of the agents with a surplus to public and private investors; and by the monetary function, providing a stable unit of account, a store of value, and means of payment. Additionally, insurance is provided for depositors and lenders adverse to risk. From an open-economy perspective, the financial system helps domestic lenders and borrowers to compete effectively in international capital markets (Gertler and Rose, 1996).

In other words, the following points summarize the role of the financial markets in the economy: capital assembly, project selection, giving contracts life and strength, and transforming and transferring risks. These markets deal with geographic and intertemporal transfers of resources and with information and risk management (Insfran, 1998).

It is important to consider that the financial markets are different from the apple, sugar, and fish markets, etc. What makes them special is that they deal with future delivery, and the future is always uncertain. In addition, large disturbances and interferences with financial markets can create negative externalities for the rest of the economy.

In the center of the financial systems are the commercial banks, which carry out most of the financial system's functions. Thus, the central purpose of the commercial banks` activity – that is to say, retail banking, small and medium-sized enterprises banking and other corporate banking– is to make payments, receive deposits, and guarantee the flow of credit throughout the economy, together with providing solid and prudent advice to their clients. They receive money in the form of deposits with diverse maturities and transform them into prudent loans that are adapted to the needs of their clients.

The Paraguayan financial system in the 90s

The process of liberalization allowed greater competition and participation of the private sector in the production component, a free foreign exchange market, less state intervention, liberalization of controlled prices (foreign exchange and interest rates) and the opening of the economy to short-term external capital inflow, which was reflected in the strong growth of the banking sector, especially from 1990 to 2000, as displayed in the following table.

Table 1
Characteristics of the Paraguayan Banking System
Millions of U$D

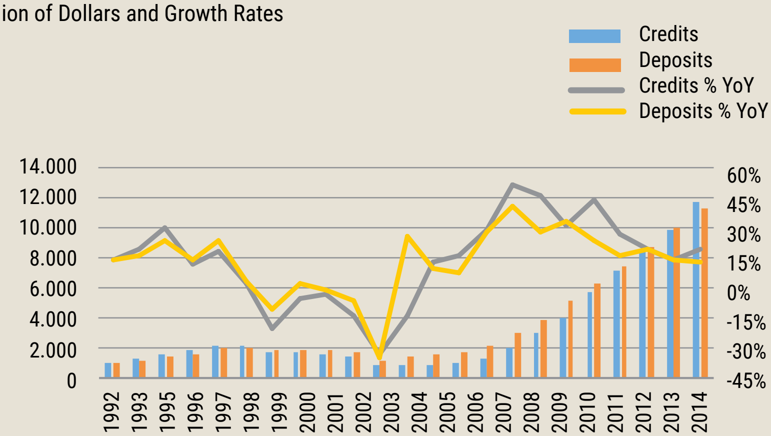
	1990	1995	2000	2005	2009	2015
I. Deposits and loans						
Deposits	659	2.545	2.391	2.310	5.296	13.405
Loans to the Private Sector	630	2.044	2.102	1.574	4.219	12.752
II. Assets and Liabilities						
Asset	899	3.531	3.273	2.854	6.741	19.256
Liabilities	782	2.780	2.574	2.087	6.668	17.265
Capital	221	428	386	259	595	1.990
III. Number of Banks and employees						
N.° of institutions	26	32	22	13	15	17
Total employees	3.681	4.127	3.433	2.839	5.480	10.776
Total branches	177	225	180	137	277	533
IV. Solvency, efficiency, and size						
Capital/Assets	25%	12%	12%	9%	9%	10%
Assets/Employees	0	1	1	1,01	1,23	1,79
Assets/N.° of banks	35	110	149	220	449	1.133
Deposits/Banks	25	80	109	178	353	789
Deposits/Branch	4	11	13	16,9	19,1	25,1
Deposits/Employees	0,2	0,6	0,7	0,8	1,0	1,2
Population/N.° of Banks	163	150	243	454	423	412
Expired loans/Total loans	s/d	6,8%	16,2%	6,5%	1,6%	2,7%
Administrative costs/Total assets	0	0	5,6%	5%	3,7%	2,2%
V. Macroeconomic						
GDP (Millions of U$D)	4.961	8.063	7.086	7.473	14.625	30.038
Exchange rate (Gs./1 USD). Aug 2015	1.220	1.964	3.491	6.178	4.967	5.246
Annual inflation 2014	37,3%	13%	8,4%	9,7%	1,9%	4,2%
Population (thousands) 2014	4.228	4.799	5.346	5.899	6.341	7.003

Sources: Central Bank of Paraguay and Department of Statistics, Surveys and Censuses.

The first important effect of the financial crisis was the shrinkage of the financial sector in the period of 1995-2005. It was as much due to the reduction in the number of entities caused by the interventions as well as to large deposit withdrawals by the general public in light of the existing mistrust with respect to the soundness of the bank.

More specifically, we can see that in credit and deposits important rates of growth up until 1997, and their fall until 2003. The financial sector began the process of growth starting in 2004, and by 2007 pre-crisis levels were reached.

Figure 1
Deposits and credits
Million of Dollars and Growth Rates



Source: Central Bank of Paraguay

Likewise, the number of financial entities that operated in the country grew quickly, to then disappear as a result of the financial crisis. According to data from the Bank Superintendency, in January 1988, there were 54 banks and financial institutions and in January 1995, there were 97. Up to August 2015, there are 29 banks and financial institutions.

During the financial crisis that began in 1995, more than 50% of the supervised entities were intervened by the Central Bank of Paraguay. This crisis generated instabilities, entity interventions, liquidation of nearly all those that were intervened, the fall of intermediation, *credit crunch*, mergers, acquisitions, etc. As an example, in December 2004, when the financial system conditions and those of the Paraguayan economy, began to return to normal, the number of intermediary entities remained at 27 banks and financial institutions (a reduction of 72%).

Nevertheless, this did not imply that the sector had neglected areas or sectors of the country, as the capillarity of the system has had an unprecedented leap. The number of branches and agencies in the country, which in 1995 was 225, is 533 today. Likewise, many non-banking correspondents were incorporated.

Another important consideration for measuring the magnitude of the disturbance of the mid-1990's is related to the estimations made by economists and international organizations on the cost of the crisis, which is in the range of 7 to 12% of the GDP.

Some of the characteristics that surfaced in this situation were bad banking practices, a concentration of loans to economically linked undertakings without appropriate credit analysis, inadequate information systems, published balances that did not appropriately reflect the entities' financial situation (double or triple accounting), and inefficient supervision and monitoring systems. (Insfrán, 2000)

Despite the effects of the long financial crisis that affected the sector, the financial system that flourished after it is more solid and has a wider scope. The preceding table is illustrative of the strong growth of the banking system and of the economy in general. We see that the Paraguayan economy has increased six-fold in the last quarter of a century, in terms of current dollars. Also, the average size of the institutions has strongly grown, and this is of special importance due to , in general, the financial system is a business of volume, and consequently size contributes to the solidity of the entities.

Regulatory Framework: Law 861/96 and Law 2334/03

One of the by-products of the financial crisis was the approval of a new banking law, which was under consideration in parliament since 1994. The Law 861/96, General Law of Banks, Financial Institutions, and other Credit Entities, was enacted in May of 1996. It allowed the Superintendence of Banks to demand from banks audited balances conducted by external auditors, and recommend the intervention of those banks with equity gap or those that were not complying with prudential regulations. Furthermore, it incorporated the recommendations of the Basel Committee in matters of credit risks and equity. In addition, it created the Data Clearinghouse in which financial entities provide information about loans they approve and can find information about the total indebtedness that a customer has in the financial system. Also, another important element is that the law limited the amount to be provided as insurance for deposits by the Central Bank of Paraguay (BCP).

In 2003, Law 2334/03 of Deposit Insurance and Resolution of Financial Intermediary Entities that are subject to the General Law of Banks, Financial Institutions, and other Credit Entities was approved. This Law had the objective to protect partially the public savings in the national financial system and in the private entities authorized to operate by the Central Bank of Paraguay. The amount of the insurance cannot exceed, in each financial entity, the equivalent of seventy-five (75) monthly minimum wages (approximately equivalent to 25,000 USD) for each natural or juristic person. This amount is increased to one hundred percent (100%) of the deposit when it is used to guarantee a foreign trade transaction or in the case of a deposit made by bodies of the judiciary, with the goal of guarding bonds required by the civil or criminal process legislation.

This deposit insurance system was adopted because it strengthens the stability of the financial sector by mitigating uncertainty surrounding the condition of the banks, and reducing the incentive for bank runs and limiting their spread across institutions.

All of these regulatory changes and the lessons learned by the national banks on overcoming such an important financial meltdown allowed a constant improvement to the indicators of solvency, profitability, default, and efficiency. Therefore, in the recent international crisis, the regulators and the Paraguayan banks were able to activate the warning schemes but continue with their normal operations. This can be observed in Figure 1, in which the credits and deposits continued to grow still in 2007 and up to the present.

A significant fact in the supervision field is the continuous increase in the level of compliance with the 25 Basic Principles for Effective Banking Supervision, as indicated by the Financial Sector Assessment Program (FSAP) reports done by the Joint Mission of the World Bank and the International Monetary Fund; in 2005 it complied with 16%, and in 2010 it complied with 63%. Currently, according to data from the Central Bank of Paraguay, the level of compliance is at 73%, and with regulatory measures that are about to be implemented in the short term, it is expected to fulfill these international principles and standards in its entirety.

The number of the Paraguayan Banking System

In the last decade, the Paraguayan banking system has been modernized and achieved a significant growth. There have been large investments into technology that allowed practically all the banks to offer their clients remote access through telephone banking, web banking, and to do transactions via their telephones, Internet or cell phones.

A National Payment System has been initiated, which is a scheme that allows Real Time Gross Settlement (RTGS), an Automated Clearing House (ACH) and a Central Securities Depository. This set of achievements aims to satisfy all the financial business needs in a fully integrated manner.

There are important evolutionary elements that have occurred in recent years; in January 2008, assets, net loans, and deposits of the National Financial System as a share of GDP was 26.87%; 13.47%; and 21.61%, respectively, indicating a limited size and high liquidity. In December 2011, the same variables were 48.70%; 35.74%; and 30.46%, respectively. By 2011, two important elements emerge: strong growth of the system, and a relative reduction of liquidity. By August 2015, the growth continues and liquidity is minimal.

Table 2
Paraguay Banking System
General Balance 31/08/2015. In Millions USD

Banks and Investments	1.539	8,0%		Deposits	13.405	69,6%
CENTRAL Bank	2.660	13,8%		Checking Account	3.562	18,5%
Reserves	1.996	10,4%		Savings Account	4.303	22,3%
Others	664	3,4%		Fixed term	91	0,5%
INVESTMENTS	1.624	8,4%		Certificate of Deposit	5.326	27,7%
Public securities	1.558	8,1%		Accrued Interests	0	0,0%
Private securities	3	0,0%		OTHER SECURITIES ISSUED	800	4,2%
Other	64	0,3%		LIQUIDATION OPERATIONS	638	3,3%
NET LOANS	12.413	64,5%		OTHER ENTITIES	1.681	8,7%
Current loans	12.422	64,5%		OTHER LIABILITIES	742	3,9%
Overdue loans and Debtors w/	330	1,7%		TOTAL PASIVO	17.265	89,7%
Settlement and Default	330	1,7%		TOTAL LIABILITIES	17.265	3,5%
Forecasted Total	-339	-1,8%		SHARE CAPITAL	682	3,5%
PROPERTIES, AND ADJU. PAY	38	0,2%		RESERVES	682	0,5%
GOODS	148	0,8%		ACCUMULATED RESULTS	99	1,5%
LIQUIDATION OPERATIONS	635	3,3%		NET INCOME	293	10,3%
OTHER NET ASSETS	199	1,0%		SHAREHOLDERS EQUITY	1.990	100,0%
TOTAL ASSETS	19.256	100,0%		LIABILITIES + SHAREHOLDERS EQUITY	19.256	

Source: Superintendent of Banks.

It may be noted that the Banking System remains shortsighted; the principal source of their funds is made up of the deposits from the public. The Certificates of Deposit are the installment savings scheme par excellence. It would be important to generate some other long-term saving instrument. Foreign loans, the issuance of subordinated bonds, and other funding do not yet represent significant figures.

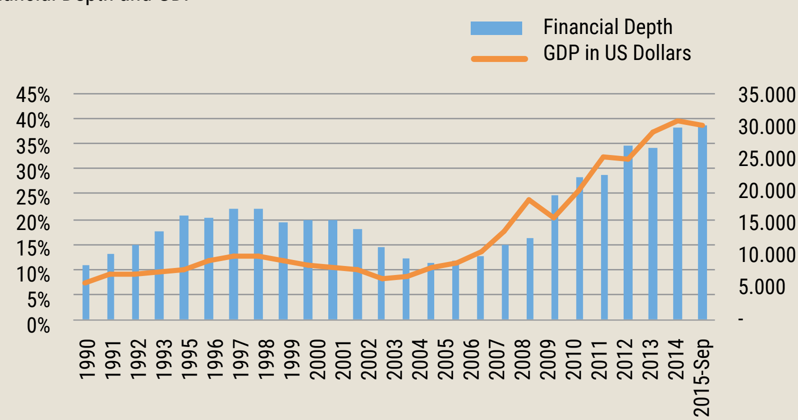
Similarly, on the asset side, loans represent 64.5% of assets, while the reserve requirement is 10.4% of assets, and investments in government securities account for 8.4% of assets.

An important feature of the banking system at the moment is that all deposits are used to fund loans. In fact, adding together loans and required reserves, they are almost equivalent to the amount in deposits. This fact indicates a significant level of efficiency of the financial system to be virtually free of idle deposits.

A variable that should be analyzed individually is financial depth and its relation to GDP. This variable had a positively cyclical behavior with GDP: there is probably a feedback between both variables. Indeed, the strong growth of the last decade was facilitated by the abundance of credit.

The bank credit market has undergone considerable deepening in recent years. Following the sharp contraction during the banking crisis, from 1995 to 2003, it began to recover. And since 2004, it has presented an average growth in real terms of 11 percent, well above the regional average in the same period. At the end of 2014, credit reached 38 percent of GDP, in line with the average for the region.

Figure 2
Financial Depth and GDP



Source: BCP. Statistical bulletins and Annex of Monthly Economic Reports

Referring to the sources of income for banks operating in the domestic financial system, the Profit and Loss Table of the consolidated system can be seen below. (Table 3).

Table 3
Profit and Loss Statement in the Paraguayan Banking System
12/31/2014

	USD Millions	% Operation
FINANCIAL INCOME	**1.571**	
Earnings outstanding loans p Financial intermediation S.F.	150	
Cred profits. vig. p Financial intermediation S.N.F.	1.332	
Cred profits. vig. p Financial intermediation	20	
Revenue and quotation differences public and private securities	70	
FINANCIAL EXPENSE	**618**	
Obligatory losses Inter. Finan. S.F.	113	
Obligatory losses Inter. Finan. S.N.F.	504	
Exchange price of public and private securities	1	
FINANCIAL MARGIN	**953**	**74,7%**
SERVICE REVENUES	**222**	**17,4%**
INCOME FROM OPERATIONS CAM. And ARB.	**69**	**5,4%**
INCOME FOR VALUATION	**(2)**	**-0,1%**
Other operating income	**33**	**2,6%**
TOTAL OPERATING INCOME	**9.715**	
TOTAL OPERATING EXPENSES	**8.440**	
OPERATING MARGIN	**1.275**	**100,0%**
ADMINISTRATIVE EXPENSES	**673**	
Personal	305	
Property	43	
Others	325	
PROFIT BEFORE PROVISION	**602**	
NET EXTRAORDINARY INCOME	**21**	
FORECAST FOR THE YEAR	**(155)**	
PROFIT BEFORE TAX INCOME BEFORE TAXES	**468**	
TAXES INCOME TAX EXPENSE	**44**	
PROFIT TO BE DISTRIBUTED /NET EARNINGS (INCOME)	**424**	

Source: Superintendent of Banks. Statistical Bulletin. December 2014.

First, it highlights the fact that 74.75% of the operating margin comes from lending operations and these mainly to the non-financial sector. Net service fee revenues account for only 17.41% of the operating margin. This indicates that the Paraguayan banking system remains a traditional system and its revenue comes mainly from lending operations. The activities of banks through branches are still important and *online* operations are not yet significant.

The latter indicates that there is ample room for continued growth in services, great potential to take advantage of modern communication technologies and mobile banking. In principle, partnerships with cell phone companies and massive consumer sales agencies with extensive distribution networks can be excellent alliances for banks to extend financial services and increase other services.

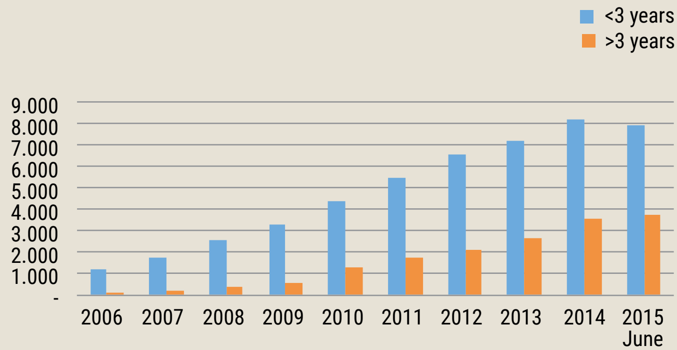
Payment services, invoice collection, *factoring*, and other operations are elements which may provide new revenue streams for banks and thus increase the scope of its services and operations.

Short Term Credits and Deposits

One of the features that could be considered endemic is the short term to maturity of deposits and loans: the vast majority of which are less than one year. In October 2015, deposits in current accounts and short-term savings accounts are 57.24% of total deposits in the financial system, which makes granting funding in the medium and long term difficult for the financial system as a whole. The same measure in January 2008 was 74.18%, indicating that in recent years the public has begun to place their savings for longer-term periods, and confidence in financial institutions has been increased.

This aspect of maturity, which was exacerbated by the financial crisis of the nineties and, to some extent, mitigated by the emergence of the Financial Development Agency (AFD) in 2006. This is a second-tier state bank created to provide term matching to financial intermediaries so that they provide financing in the medium and long term. Maturity for business loans range for up to 10 years and loans to individuals, for housing, up to 20 years. But this type of lending was virtually unthinkable before the creation of the AFD, as consistently a portion of more than 60% of deposits in the financial system are on demand or with maturity of one year or less. Since the creation of the AFD and the start of its operations in 2006, and with the maintenance of macroeconomic stability, the financial system began to increase the term of the loans granted gradually, reaching 32% of them.

Figure 3
Loans by Maturity



Source: Financial Agency of Development

We consider it a pending duty and a challenge of the Paraguayan financial system to create attractive savings instruments over a longer period, in order to have the proper conditions to provide medium and long-term financing for investment and infrastructure.

Regulatory Aspects

The diagram below illustrates various bank regulatory instruments that have been largely used by the Central Bank in the past two decades, specifically to preserve the solvency of the financial system, protect financial products consumers, and maximize the contribution of the national banking system to the economic growth.

Important regulatory changes were implemented to proceed in a more precautionary way, according to the risks assumed by banks and considering the best international practices of the sector. This approach has recently shown signs of success, when, in the latest international financial turmoil, Paraguayan banks demonstrated healthy resilience.

The greater interdependence among countries and their financial systems makes it necessary to be attentive to events happening in different parts of the world, especially those that take place in the main trading partners. The Superintendency of Banks established the Financial Stability Department with the aim of keeping track of exogenous factors affecting the financial system and analyzes their relationships and derivations. As a result of these studies and information, a biannual Financial Stability Report is published, in which in addition to the indicators, a summary of the stress tests to entities regulated by the Central Bank is presented, which is intended to generate an ex-ante risk mapping under alternative stress scenarios.

Banking Regulation Instruments

Market Structure and Competition	Security and Solidity	Consumer Protection	Credit Allocation	Monetary Control
• Restriction on the entry and banking laws • Restriction on opening branches • Separation of banking and commerce	• Deposit Insurance • Caps on interest rates • Control/ prudential regulation • Capital requirements (minimum and composition) • Forecasts • Accounting: market value • Limits: credit to individual borrowers	• Caps on usurious interest rates on consumer loans • Laws that protect against loans to companies related to the bank • Equity loan • Regulation on electronic transfers of funds	• Caps on interest rates on deposits • Establishment of Minimum Portfolios for economic sectors	• Legal Reserves • Discount rate • Position of Over-purchase • Open Market Operations

Source: Author's own elaboration.

Specific actions in regulatory matters

The Central Bank and the Superintendency of Banks have taken specific actions in regulatory matters to strengthen entities operating in the domestic financial system, reducing to a minimum the risks of events that cause systemic hazards and the risks to individual depositors.

In this regard, progress has been made in different aspects of regulation. Specifically, in its systemic aspects, to provide safety and soundness of the institutions and prevent systemic runs and panics. For example, capital requirements have been adapted to international standards and best practices. There also has been progress in aspects of prudential regulation and consumer protection, as in the case of deposit insurance and the obligation of the financial institutions to publish their balance sheets biannually.

In an illustrative way, the regulation regarding bank capital was modified. The minimum capital for opening a bank and of capital adequacy of banks in relation to risk-weighted assets and contingencies have been increased, discriminating between principal and supplementary capital, in accordance with the Basel requirements. Such measures ensure the quality of capital and induce better-capitalized and solvent institutions.

Moreover, for the sole purpose of the establishment of reserves, but not of risk classification, a relevant amendment was made so that a debtor is considered in arrears from the first day of delay in their financial obligations and simultaneously a range to constitute generic forecasts ranging from 0.5% to 2% of net portfolio forecasts was created. Likewise, regulations that require and establish guidelines for proper management of credit risk and other market risks have been issued.

Progress has been made on measures that facilitate liquidity management of financial institutions and expand the participation of the Central Bank of Paraguay (BCP) only in the role of lender of last resort. Thus, the Central Bank of Paraguay (BCP) intervenes in the market to provide or withdraw liquidity narrowing the gap between needs and stock. This efficient money market is a basic condition for the proper implementation of the inflation target regime. One such measure is the provision of liquidity to the market through repo transactions of sovereign securities.

There have been significant improvements in most indicators of profitability and solvency in recent years. For example, the return on equity (ROE) observed in 2005 averaged 18.40%; it rose to 22.40% in 2011 and in December 2014 was 28.25%.

The NPL ratio of 11.60% in 2005 decreased to 2.70% in 2011, and in December 2014 was 1.84%. Another interesting ratio is the coverage with provisions on non-performing loans, which was, 38.1% verified in 2005, and which reached 91.5% of overdue loans in 2011 and 134.97% in December 2014.

Summarily, looking at the different indicators of capitalization, solvency, and profitability, we can conclude that the Paraguayan financial system has been strengthened in the last decade and would lack only a few regulatory elements to abide almost entirely to the international best practices.

Considering the stable macroeconomic conditions in the country, despite a deteriorated international environment, and above all, the strength of banks making up the domestic financial system, it may be appropriate to adapt the existing regulatory framework to international standards. This can be important to provide the national banks with access to international capital markets, facilitate foreign investment and, above all, provide the greatest possible security for depositors in banks operating in the country.

The current conditions of low inflation, with an inflation target regime, with international reserves of more than 20% of GDP and higher than the Government's levels of indebtedness, with fiscal discipline, and with a sound and growing financial system provide an interesting opportunity for gradual regulatory changes and with lower levels of stress for the financial system.

The task must be to consolidate preventive supervision and to provide tools for the regulators to detect the risks assumed by banks in the early stages and require corrective measures. This approach, in the end will allow greater solvency, systemic stability, and security for all members of the financial system.

Financial inclusion: the great task

Financial inclusion, which refers to the possibility of providing appropriate financial services to lower income sectors, remains as an unfinished task; although steps have been taken in the right direction. Despite rapid credit growth, large sectors of the economy, especially the lower-income households and small and medium businesses, still lack access to loans or other financial services. According to the survey on Financial Inclusion Paraguay 2013, only 29% of adults have a bank account, and only 13% had a loan at a financial institution. In addition, the use of bank accounts was very small: only 10% of adults had saved at a financial institution in the previous year. Moreover, the penetration of financial services remained uneven across the population: 20% of adults in the poorest quintile possessed a formal account, compared to 42% for the richest quintile. The same happened at the company level: 54% of small businesses have access to credit, compared to 73% of the largest.

Regulations that facilitate financial inclusion were recently approved. Some examples are: the regulation of non-banking correspondents (2011), –agents that offer basic financial services–; the regulation that allows the creation of basic savings accounts (2013) with lower fees and fewer requirements; and the regulation on electronic payment methods (2014), which establishes the requirements to be met by non-bank entities that offer non-banking transfers and electronic money through telecommunication services. Other initiatives were also approved to expand access to credit for SMEs and to promote the exchange of credit information.

In late 2014, the National Strategy for Financial Inclusion 2014-2018 was implemented. The aim of this initiative is to "reduce poverty and promote better living standards, consolidate a strong and stable financial system and reduce the gap between supply and demand for financial products."

In addition, several local banks have a focus on small loans, such as the *Banco Familiar*, which was recognized by the Inter-American Development Bank in 2014, through the initiative *Beyond Banking*. The winning product was

Credimóvil, which allows self-employed and small businesses to apply for credit using a mobile phone and receives the approval response within seconds. After obtaining the approval, the money can be withdrawn at any of over 500 authorized sites just by presenting ID cards. *Credimóvil* is the application on mobile devices of the *Credicédula* project. *Credicédula* is a banking project for assessing credit using only the personal identity card that has allowed the financial system to approach the segment at the base of the pyramid in Paraguay.

Another example is *Financiera El Comercio*, which has developed the Credit Technology for Communal Banking that is called *Jajapo* Community Banking (Let's do community banking) and consists of forming a support group composed of 10 to 30 members, united in a small communal bank. Members are usually people excluded from the formal financial system. The loan is given to this community bank to boost self-employment, encourage saving, and support the strengthening of the members and their community through training. It offers the possibility of obtaining, through solidarity groups, loans for the production and generation of microenterprises, in both, rural and urban areas. It seeks to benefit 35,000 low-income micro entrepreneurs in the next three years, spreading the community banks technology, offering financial and nonfinancial services across the country and aims to reach 50,000 people in a 5-year term, supported by the Multilateral Investment Fund, a member of the Inter-American Development Bank.

Recently the Central Bank of Paraguay (BCP) emitted the regulation of Basic Accounts and the regulation of Electronic Payments Methods. The basic savings account provides access to financial services for the non-banking population by decreasing costs and documentation requirements even further. Regulation of Electronic Payment Methods protects the user of these systems and allows monitoring to minimize the risks of money laundering. Companies that already offer electronic payment services must register as Electronic Payment Methods Entities (EMPE) with authorization of the Central Bank.

Financial inclusion and ICT

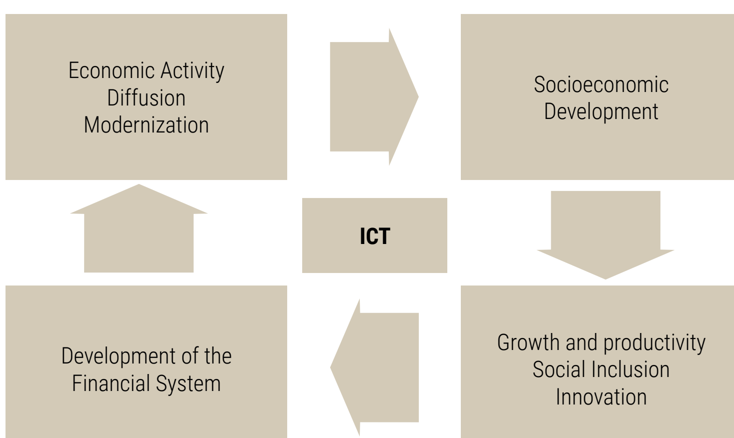
The objective of financial inclusion can to a large extent be achieved, depending critically on the proper use and implementation of technological innovations in the public and private sectors and if most of the population adapts to the daily use of these technologies.

The rapid development of information and communication technologies, known as the ICT revolution, had a profound impact on economies and finances.

Many authors have indicated the importance of the financial system for economic growth and reducing inequalities. From this, we can say that ICT has a positive impact on growth and economic development. This claim arises from the effect of ICT as factors supporting banking and hence, economic growth. In fact, these technologies, taken properly, can generate a virtuous circle beyond the economic and financial sectors, supporting the process of banking, with which further growth and economic development is achieved. The latter facilitates greater social inclusion and innovation, which allows a continuing of the process of technological innovation that generates further development of the financial system and, in turn, allows more economic activity, economic growth and development.

The virtuous circle of banking: TIC´s and wellness[4]

Ontiveros et al. (2004) state: "Over the past fifty years, there has never been such a broad consensus with empirical evidence as we have today about the overly positive contribution of TIC´s (Technology of Information and Communication), its allocation and distribution, towards economic growth and productivity in developed countries. The doubts raised by skeptics are more along the lines of the continuation of this pace of growth, than with the actual fact itself."



Source: Ontiveros et al. (2009).

4 Fernandez de Lis (2009).

Specifically, in the case of the financial sector, it has stood out by the early incorporation of information and communication technologies. These facilities have enabled it to increase its range of services, differentiating itself to cater to different segments and customers, expand their service points and at the same time, gain efficiency[5].

Changes in financial services from TIC´s are not limited to only improving the efficiency of traditional businesses and creating new opportunities, but also to a provision of more diversified and convenient financial services. Traditionally, the provision of financial services has been highly dependent on the network of bank branches, but now, with existing technology, through the Internet and ATM and POS networks, banking through cell phones and schemes involving non-banking correspondents[6], the importance of branches has declined.

An example of the provision of financial services by non-traditional channels is the supply of such services using mobile phones, which offer significant opportunities to improve efficiency by allowing them greater access and lowering transaction costs. Rapid public acceptance of these services in countries such as the Philippines, Brazil, India, and Kenya have shown that the technology is mature and can provide real benefits to people without access to financial products or services. The Consultative Group to Assist the Poor (CGAP) has recognized this development, and has made a seminal work on the impact of this technology on financial access for the poor and generated a standardized diagnostic scheme for Branchless Banking[7].

In fact, it is difficult for banks, with traditional bank structure, to serve economically disadvantaged customers, especially in rural areas. However, in Paraguay and other developing countries, virtually all residents have access to cell phones. This can form the basis for the provision of financial services such as payments, transfers, insurance, savings, and credit.

The new channels for the supply of services allowed a reduction in the cost of financial transactions. For example, *Internet banking* has strongly decreased processing costs. According to research conducted in the U.S., in many cases, transaction processing via the Internet is estimated at less than 1% of the cost of an operation at a window via traditional branches (Dandapani, 2004). Meanwhile, transactions via cellular technology have lower average costs by 19% to traditional

---

5 There is evidence of a positive correlation between the amount of investment in information and communications technology (ICT) by financial institutions and the achieved efficiency in their processes and business, becoming an important source of competitive advantage (Montalva, 2006).

6 Specially to foster efficiency in the processes that take place outside Banks.

7 Branchless banking services are the provision of financial services outside the scope of conventional bank branches using retail agents, using information and communications technology to convey the details of operations. By relying on existing retail infrastructure and technologies widely used, for example, mobile phones branchless banking can drastically reduce the cost involved in banking operations, while increasing the degree of convenience of customers.

banking and 38% lower for small transactions (McKay and Pickens 2010). In addition, the emergence of new channels providing financial services such as ATM and POS, the Internet and mobile banking, among others, has enabled networks that were previously used for non-financial activities to be converted into channels providing financial services. This created opportunities for non-financial institutions, which can now provide certain specialized types of financial services such as payments, compensations, and so on.

In addition, ICT has spurred a reorganization process at the level of large banks and, to some extent, a wave of mergers and acquisitions with the primary objective of generating megabanks[8] consolidating entities with different niches, achieving greater competitiveness through mutual complementarity. This process will probably occur in our country, where a Regional Bank and ABN merger experience took place.

Where are we going?

The Paraguayan financial system is clearly in a process of expansion and consolidation. This is occurring in a context of the strengthening of capital and of following international best practices. In light of this, there must be a smooth relationship between banks and regulators, so that there are mutually beneficial relationships and that regulation is not perceived as an excessive burden, but as an element that strengthens the business and avoids excessive risks.

From the point of view of regulators, the great challenge is creating better regulations that allow the existence of safer and more solid financial systems, but must also allow innovation and adaptation to the changing world. The legislation should not restrict or impede the creation of new and better financial instruments to improve the management of the risks of financial intermediation. Not only must it cover aspects of credit risk, but all risks that the business generates. Especially, it should reach a scheme in which the model of idiosyncratic risk of each bank is the basis of the general provisions of each entity. However, this still will require a long process.

The consolidation of democracy in the region since the early nineties has meant that the sectors traditionally excluded from the benefits of modernization are currently demanding access. This includes the provision of financial services such as checking and savings accounts, credit and debit cards, and the ATM, among others. So a major challenge is presented, especially in a sector in which a large part of the services are provided by the private sector.

8 ICT has not been the only factor that allowed these developments, also deregulation and financial innovation.

Developments in information and communication technology can be very useful elements (especially cell phones, the internet, etc.) to support the process of banking usage because they reduce the costs of providing financial services, especially those related to transactions and payments.

In recent years, banks have upgraded their computer systems using the best protection and security schemes to ensure the integrity of the financial information contained within. This was spurred, in part, by regulatory requirements of the Superintendency of Banks and also on their own initiative, to adjust to the products required by customers. They are also increasingly incorporating automated processes that generate greater confidence given the large number of transactions processed daily. Banking systems should be able to accept biometric authentication processes, such as fingerprints or facial recognition for payment processes in shops, ATMs, and so on.

We believe that the Paraguayan financial system in a few years will possess larger banks, either by the continued growth of existing ones or by consolidations among several entities seeking economies of scale and joint production.

An important factor will be the continuing process of banking usage, incorporating a greater number of natural and legal persons to the system. This will be a consequence of the search for diversification across banks and of demographic aspects. The population will remain eminently young in the next decade and the demographic bonus can be harnessed, especially by the banking system. Domestic national banks have had a decade of substantial profits and growth that will enable them to make the necessary changes to meet growing segments of young people with appropriate products and costs that can be afforded by users.

The regulatory system should be modernized in order to reach more socioeconomically disadvantaged and less formalized users to achieve the process of spreading banking usage. Credit analysis systems and information requirements must be obtained indirectly. Bank regulators should coordinate their efforts and the legal changes required by banks with the Ministry of Finance and other public sector entities, so as to make it easier to enforce formalization.

Universal banking in Paraguay will progress to cover a wider range of customers, because the banks that primarily serve corporate clients today will diversify and seek to serve the personal banking sector; especially due to the strong competition in the *premium* corporate sector.

Schemes that offer massive products are being searched for in order to reach a larger number of people at lower costs. In this sense, the new channels to be used are those of the non-banking correspondents and mobile or cellphone banking. It is also expected that banks will not only provide services of loans and savings deposits but also offer the full range of financial services, either through strategic partnerships or by creating specific departments for them.

These services will be *insurance, brokerage, leasing, factoring*, loans through telephone banking, payments of services via the web, automated transfers, and so on.

Overall, we expect that there will be fewer branches and more service stations, with banks that are relatively larger but more functional, providing more automated services through new channels.

We believe that financial services can be offered through a more economical and extended way using TIC´s developments. In Paraguay, banks and other financial intermediaries are adopting these technologies to provide better services to its customers. However, they are not yet being used to their full potential due to the low Internet accessibility in certain regions, the lack of specific regulations for this type of service and lack knowledge of users.

Major banks provide as an option to their customers the ability to perform certain types of operations via a web page. However, it appears that transactions in this way do not constitute a significant amount compared to the total turnover of the financial institutions. In addition, the regulation does not allow financial intermediaries operating solely via the Internet, as in other regions. This will probably be accepted in the short term.

Mobile banking has the greatest potential, as there is a wide coverage of the cellular network across the country. In fact, recent data has indicated a penetration rate of 108.6%, i.e., there are more cell phones than people. There are successful examples of financial services provided through mobile operators and these are expected to increase both in types of services and the number of users who use them.

Regarding microfinance, the target population includes microentrepreneurs seeking to finance their businesses and to all low-income homes/persons who use financial services to transfer resources, allow safeguard and accumulation, manage emergencies, acquire productive assets for their households, improve their homes, smooth consumption and allocate funds to fulfill its social obligations. This forces us to think not only in terms of funding but also of transactional services, savings, investments, and insurances.

The regulatory framework should be designed seeking to ensure that measures to protect consumers against loss do not end up imposing excessive costs to companies, which would prevent the entry of new players in the sector to expand the scope of microfinance. This is an area of small margin, despite its large volume.

We believe that the next big development in branchless banking will be through mobile banking, as more financial intermediaries and non-financial companies participate in the business of providing financial services. In Paraguay e-wallet services, payments, transfers, and options to obtain credit and deposit funds are available.

We expect mobile operators, either independently or associated with banks, to become big providers of financial services facilitating the process of spreading bank usage and financial inclusion. For this, there is already the appropriate technology. What is missing is the regulation to facilitate the process and encourage prudent management of the risks inherent in these transactions.

Another area that we predict will have significant progress is the financial consumer protection and the role of financial education. This is crucial so that the consumer rights are respected, and that they are able to take advantage of all the opportunities that will be opened in a financial world more focused on meeting the needs of consumers. Consumers will be more demanding because of their greater knowledge of the financial instruments at their disposal.

In Paraguay, the capital markets should have further growth as the economy develops and corporate bonds are more often used, but, likewise, in the medium term, banks will remain as the most important source of supply for financial services to the production sector. Thus, domestic banks will continue in a major role in the national economic and financial life, especially for small and medium enterprises.

However, we believe that increased competition among banks for different customers and by non-financial intermediaries, such as the houses of credit, credit and saving cooperatives, financing made for consumption of the company's own products (appliances and general consumption stores), insurance companies, mutual funds, money generated by mobile carriers, will lead to the possible emergence of internet banking without physical branches.

This competition will not only exist nationally but also internationally because TIC´s will enable more users and businesses to have access to international loans of non-bank intermediaries, under the P2P scheme. Therefore, banks must adapt to these new realities and compete with them.

Finally, we are optimistic about the future of the Paraguayan financial system, which, despite the great challenges, we believe will continue to grow, strengthening, and adapting to the changing environment in the next 10 years. These changes: economic, regulatory, and competitive will shape the characteristics of each bank. We believe that domestic banks will increasingly adapt to the international standards in terms of capitalization, risk management, and technology. Banks that succeed will be those that rise to the wave of technological change and bet on massive processes with a strong component of mobile phone banking and Internet banking.

Bibliography

Banco Central del Paraguay (2012). Resolución 1. Acta 67 del 27 de diciembre de 2012. Reglamento General de los Sistemas de Pagos del Paraguay (SIPAP).

Banco Central del Paraguay (2011). Superintendencia de Bancos. Resolución 1. Acta 70 del 22 de noviembre de 2011. Reglamento para el Uso de los Corresponsales no Bancarios.

Banco Central del Paraguay (2013). Superintendencia de Bancos. Resolución 25. Acta 51 del 18 de julio de 2013. Reglamento para la Regulación de las Cuentas Básicas de Ahorro.

Banco Central del Paraguay (2014). Resolución 6. Acta 18 del 13 de marzo de 2014. Reglamento de Medios de Pagos Electrónicos.

Dandapani, Krishnan (2004). Vol. 47, No. 5. Success and Failure in Web-based Financial Services: COMMUNICATIONS OF THE ACM.

Éxito Exportador (2014). Estadísticas del Internet en América. Usuarios del Internet y Estadísticas de Población en América Latina, Norte América y el Caribe. http://www.exitoexportador.com/stats2.htm.

Gertler, Mark y Rose, Andrew (1996). “Finance, Public Policy and Growth” en *Financial Reform. Theory and Evidence*. Cambridge University Press.

Insfrán Pelozo, José A. (1998). The Impact of Financial Integration in the Mercosur. Ph.D. Thesis. University of Illinois at Urbana-Champaign. Urbana, Illinois

Insfrán Pelozo, José A. (2001). *El Sector Financiero Paraguayo. Evaluando 10 Años de Transición*. Series Enfoques. Centro Paraguayo para la Promoción de la Libertad Económica y de la Justicia Social (CEPPRO). Nº 26 abril. Asunción.

International Monetary Fund (2011). Paraguay: Financial System Stability Assessment—Update. Country Report No. 11/198. July.

McKay, Claudia y Pickens, Mark (2010). Branchless Banking Pricing Analysis. Mayo. CGAP. Advancing Financial Access for the World´s Poor.

Ontiveros Baeza, E., Manzano Romero, D. y Rodríguez Téubal, I. (2004). Tecnologías de la información y de las comunicaciones (TIC), crecimiento económico y actividad empresarial: especial referencia a España. Círculo de Empresarios, Junio.

Ontiveros Baeza, Emilio; Enríquez, Álvaro Martín; Fernández de Lis, Santiago; Rodríguez Téubal, Ignacio y López Sabater, Verónica (2009). Telefonía móvil y desarrollo financiero en América Latina.

Paraguay (2014). Estrategia Nacional de Inclusión Financiera 2014-2018. Banco Mundial y FIRST Trust Fund Iniciative.

República del Paraguay (1996). Ley 861/1996. General de Bancos, Financieras y Otras Entidades de Crédito.

República del Paraguay (2003). Ley 2334/2003. Garantía de Depósitos y Resolución de Entidades de Intermediación Financiera sujetos de la Ley General de Bancos, Financieras y otras Entidades de Crédito.

República del Paraguay (2005). Ley 2640/2005. Crea la Agencia Financiera de Desarrollo (AFD).

World Bank (2006). Paraguay-Financial sector assessment. Financial Sector Assessment Program (FSAP). Washington, DC: World Bank.

Deepening the Securities Market

Rafael Lara Valenzuela

The author acknowledges the valuable contribution of Mr. Holger Insfrán, Mrs. Celina Gertopan, Mrs. Magaly Duarte and Mr. César Carvallo to this article.

Introduction

Paraguay´s economy has exhibited significant improvements over the past decade, given the macroeconomic fundamentals enhancing growth levels –which have doubled in the past decade–, low and stable inflation levels, balanced fiscal accounts, and a floating exchange rate regime. While these foundations seem to be consolidating, there remains much to be done in Paraguay´s quest for economic development, starting with the deepening of its stock markets.

The literature singles out development and the deepening of a financial system –comprised by the banking sector and the stock market– as one of the pillars of economic growth. The stock market can act as a complement in securing sources of funding, for alternative resources for investors under more favorable and competitive conditions.

It is therefore important to conduct an analysis of the conditions in the Paraguayan securities market in order to identify immediate challenges for its development. This chapter reviews the literature assessing the importance of stock markets in economic growth, followed by the Central Bank´s interests in its development, the characteristics of developed stock markets, a description of the Paraguayan stock market, and an overview of conclusions and challenges towards the deepening of the stock market.

Development of the stock market for economic growth

Multiple growth models were developed over time –including the so– called endogenous growth models--in aims to describe the positive relationship between financial development, technological progress, and income distribution. In his article "The Theory of Economic Development", Joseph Schumpeter discusses financial intermediaries´ active role in project evaluation, intermediation of savings, and facilitation of transactions in economic development.

Studies such as Goldsmith (1969) and McKinnon (1973) present empirical evidence on the positive correlation between financial development and economic growth.

King & Levine (1993), employing several financial development metrics for 80 countries, found evidence of a positive relationship between real per capita GDP growth, the physical capital accumulation rate, improvements in efficiency, and levels of financial development. A second, positive correlation was discovered between financial development and future economic growth rates.

Bekaert & Campbell (1997) offered profound insight into the role played by financial markets in economic growth by arguing that the development of financial markets increases market diversification ,allowing agents to mitigate risks and making investments more attractive.

A second view is based on corporate finance and microeconomics, where securities markets play an important role reducing the moral hazard and increasing efficiency in access to information. Reducing moral hazard results in more efficient markets, which leads to sharing prices reflecting a more transparent management of the company and its value. In turn, at aggregate levels, this reduction leads to increased productivity.

Using data from 44 countries over the 1986-1993 period, Demiúrgica, Kunt & Levine (1996) found empirical evidence of the positive relationship between the size of the stock market and the levels of activity of financial institutions such as banks, insurance companies, and pension funds.

Using data from 30 countries over the 1980-1991 period, Demiúrgica, Kunt & Maksimovic (1998) found empirical evidence of the complementary role of stock markets and financial institutions, emphasizing that should act as cooperative agents, rather than rival or alternative ones.

The Central Bank and Stock Market´s Development

Central banks are primarily interested in the development of the stock market, as efficient financial markets contribute to achieving two of its primary objectives: monetary and financial stability.

A developed securities market helps improve the transmission mechanisms of monetary policy, particularly through asset prices, as they tend to adjust quickly to changes in the monetary policy interest rate. While asset prices in underdeveloped securities markets are not reported daily, developed markets report them in an ongoing basis. Adjustments in the monetary policy rate, therefore, take place rapidly in all financial asset prices.

With regards to the impact on financial stability, a developed securities market allows financial assets invested by financial institutions to be easily converted without significant losses, when so required by a need for liquidity. Financial institutions can also buy and sell securities in a developed market, generating profit from such intermediation and in this way diversifying their sources of income. Both factors contribute to financial stability.

Furthermore, as public debt issuers, central banks also benefit from this situation: a developed securities market continuously generates prices for its securities, which means increased liquidity thereof, causing lower costs and a positive impact on their balance sheets.

Lastly, a developed market leads to improved liquidity management on the part of financial institutions and, therefore, improved control over the interest rate for interbank lending on the part of central banks. To achieve this goal, Central Banks have to manage the short-term liquidity by injecting or absorbing funds so that the demand and supply of reserves are equal and, causing an alignment between the interbank lending rate and the monetary policy rate.

Developed securities markets

The stock market is a public space for conducting transactions between issuers and investors which, in our country, is conformed by a regulator (National Securities Commission-CNV), intermediaries (stock exchange, brokerage firms), and other entities.

As described above, the development of the securities market is essential for economic growth. We will provide a brief explanation and analysis of the primary characteristics of the securities market in Paraguay.

The central feature of developed markets is their liquidity, which proves advantageous for all its participants; for traders because it allows them to implement their strategy at a low cost, for organized markets (Stock Exchange) because it attracts traders and regulators by reducing its volatility (Harris, 2002).

Liquidity is defined as a market´s ability to trade large amounts of securities quickly and inexpensively, and can be characterized by its amplitude and depth. Amplitude describes the costs of closing a transaction of a certain degree. Operators usually identify the magnitude of the spread of the price of demand and supply. This range tends to become smaller in more liquid and efficient markets.[1]

Depth refers to transaction size, which may be agreed at an individual cost, and the turnover ratio can be an indicator. The higher the number of orders, the greater the potential to stabilize price changes.

1 IMF (2006).

The securities market in Paraguay

To identify Paraguay´s position in the securities market we describe its functioning and inherent characteristics.

In terms of its functioning, at a national level, the securities market is regulated and supervised by the National Securities Commission and is mainly ruled by Law 1284/98 of Securities Market.

Among the most important instruments traded in the Paraguayan securities market, we can highlight shares, bonds, CDs, promissory notes, and investment instruments.

It is important to emphasize that operations in the stock market can take place in either the primary or secondary markets. The primary market is one in which the securities are placed for the first time, while the secondary market handles securities that were previously issued in the primary market.

Regarding the stock market´s operation, trading takes place on the stock exchange and the over-the-counter market. In the stock market, brokerage firms are authorized to trade securities which, during the daily trading session, trade the different listed instruments previously registered and approved by the National Securities Commission.

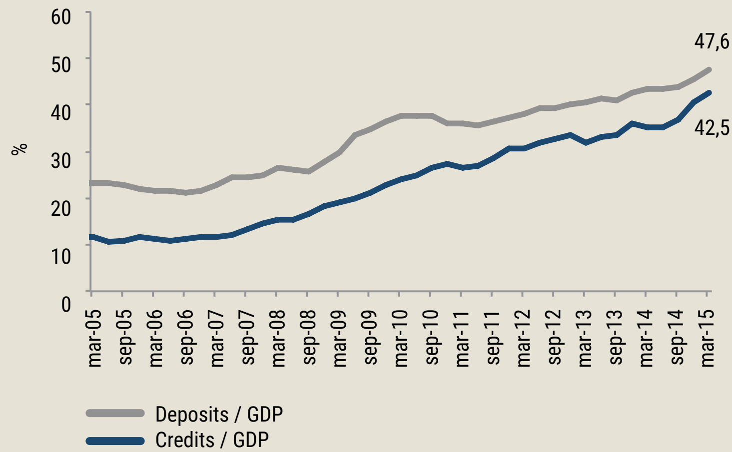
In the OTC market, trading is direct. The most significant securities in this market are issued by the Central Bank of Paraguay and the Ministry of Treasury, as well as the CDs that brokerage firms trade over the counter.

Lastly, firm operations can be closed when the transfer of securities is final, and swap or repo when a second process accepts the proposal: a cash sale with a simultaneously fixed term purchase at a given price.

Another characteristic of the securities market is that it has grown in recent years, although at a much lower rates than the banking sector. While rhe banking sector [2]has moved from a loan portfolio of 11.6% to approximately 40.5% in terms of the GDP in the last decade, (Figure 1), the securities market has followed its own development pattern. Table 1 displays the increase in the participation in the stock market from 0.02% to 0.06% of GDP and the bonds market from 3.5% to 6% of GDP. Based on this brief analysis we may conclude that the banking sector continues to be the primary source of financing for the domestic economy.

2 Banking industry includes public and private commercial banks and financial institutions.

Figure 1
Financial Deepening



Source: Central Bank of Paraguay.

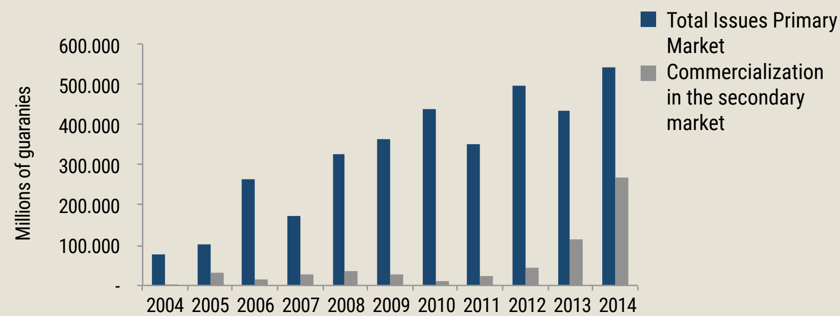
Table 1
Size of the capital market in Paraguay (% of GDP)

	2006	2014
Shares market		
Shares in millions of ₲	9,887	82,393
Current GDP in millions of ₲	52,270,098	138,259,885
Shares market as % of GDP	0.02%	0.06%
Bond market		
Bonds in millions of ₲	86,223	709,646
Bonds in USD, in millions of ₲	187,137	82,557
Domestic debt of the Ministry of Finance		
Domestic debt in millions of USD	300	1,718
Exchange rate	5,627	4,495
Domestic debt in millions of ₲	1,686,063	7,724,062
Total bond market in millions of ₲	**1,959,423**	**8,516,265**
Current GDP in millions of ₲	52,270,098	138,259,885
Bond market as % of GDP	**3.75%**	**6.16%**

Source: Central Bank of Paraguay.

As previously mentioned, stock market instruments can be traded on the primary or secondary market. FIGURE 2 shows that, although trading has increased in the last decade, trading in the secondary market has not yet reached 50% of the issues of the primary market.

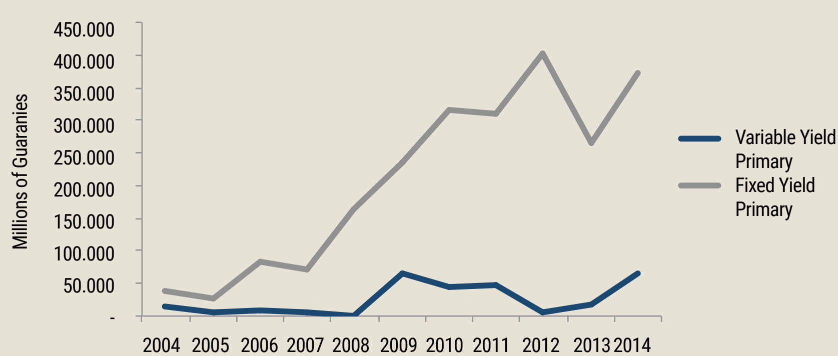
Figure 2
Issues and commercialization per market type



Source: National Securities Commission

As the primary market prevails, the figure below shows its composition according to types of instruments that conform it , which can be fixed and variable yield securities. As shown, the issuance of fixed yield securities prevails in the market, accounting for 80% on average of the total.

Figure 3
Types of primary market instruments



Source: National Securities Commission

Regarding the OTC market, at present, the Central Bank has 6.7 trillion guaraníes issued in LRM, while the debt balance released by the Ministry of Treasury reaches 2.5 trillion guaraníes, totaling 9.2 trillion guaraníes. Meanwhile, the Financial Development Agency has issued bonds worth 0.6 trillion guaraníes. The balance of securities issued by the public sector is 9.8 trillion guaraníes. At the time of evaluating the stock market and the OTC market, 80% of fixed yield securities correspond to government securities sold in the OTC market. Hence the importance of integrating both markets, implementing measures to facilitate the trading of all the instruments listed on the stock market can act as the first step in the development of the secondary market.

Table 2
Balance of government securities in custody in the BCP
(Millions of guaraníes)

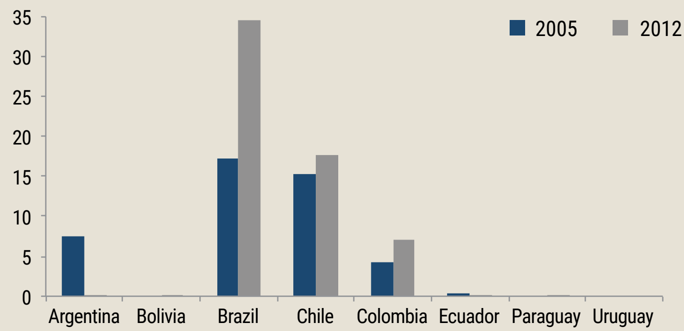
Issuer	Total
Central Bank of Paraguay.	6,716,500
Ministry of Finance	2,485,352
Financial Development Agency	600,000
Total	**9,801,852**

Source: BCP Market Management.

To determine the development of the Paraguayan securities market, we will analyze the main characteristic of a developed market. As mentioned above, the literature points towards liquidity as the primary indicator for the development of a securities market. We use the liquidity indicator developed by the World Bank.[3] Figure 4 shows the liquidity indicator of Paraguay at barely 0.2% in 2012, well below other countries whose securities markets are taken as a benchmark of the region.

3 Liquidity index: a measure of the total value of shares traded during a particular period.

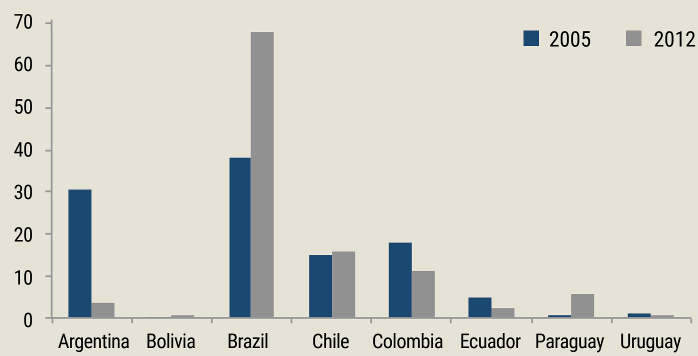
Figure 4
Market liquidity indicator
Value of traded shares as % of GDP



Source: World Development Indicators 2015, World Bank.

Another indicator often used to measure market liquidity is the turnover ratio.[4] A higher rate points to a more liquid market. Although the rate rose significantly from 0.6% to 5.5% from 2005 to 2012, it is well below the benchmark countries of the region.

Figure 5
Turnover ratio
Value of shares traded as a percentage of stock market capitalization

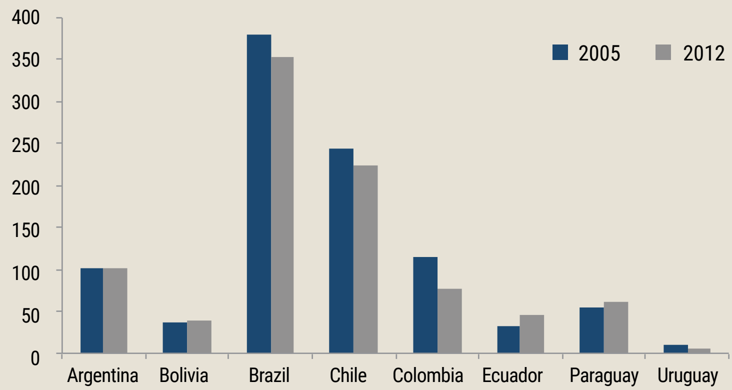


Source: World Development Indicators 2015, World Bank.

4 Turnover Ratio: measures the relationship between daily average trades and the number of securities outstanding.

The last variable analyzed to measure market liquidity deals with the number of participants making it up: more members lead to greater diversification of the market and, therefore, greater liquidity and greater deepening of the same. Figure 6 shows that although the number of companies rose, the increase is not significant in comparison to regional standards

Figure 6
Number of companies listed on the securities market



Source: World Development Indicators 2015, World Bank.

With this analysis, we may conclude that our securities market is still under development and that future measures should aim towards deepening it.

Conditions for development

The literature indicates that requirements for a developed securities market include: a healthy macroeconomic environment, an appropriate legal framework and market infrastructure, a regime of coordinated monetary operations, efficient debt administration, and the diversified universe of investors

Regarding the macroeconomic environment, the Paraguayan economy has shown an extraordinary economic performance, with a 4.8% average growth over the past ten years. According to the Competitiveness Report of the World Economic Forum, Paraguay occupies the first place within the ranking of countries with best inflation control, which falls in line with efforts made by the Central

Bank of Paraguay. The Paraguayan economy has also achieved moderate levels of public debt. The Economic Forum´s ranking positions Paraguay in 13th place worldwide, and in second place in South America. These results are in line over a decade of efforts aimed towards keeping public finances in good condition, an effort ratified with the approval of laws, such as the Law on Fiscal Responsibility and the Law on Modernization of the Financial Administration of the State.

About the legal framework Law 1,284 of Securities Market, passed in 1998, establishes the best practices of international markets. A draft law is now pending approval by Congress to amend the current regulatory framework and introduce improvements, such as updating items to strengthen the National Securities Commission both financially and institutionally. Recently, Law 5,452, regulating Equity Investment Funds was passed, which revokes Law 811/96 on the Administration of Equity Investment Funds. The primary objective of the new law is to rely on a new body of legislation to attain full use of the instruments available through the Paraguayan securities market and facilitate the functioning of investment funds administrators.

The conditions of the securities market infrastructure have improved considerably in recent years. In 2010, the Stock Exchange implemented the electronic trading system (SEN), which facilitates access to issuers, investors and traders from their terminals.

In November 2013, the Payment System of Paraguay (SIPAP) began to operate with a Real Time Gross Settlement (RTGS) system and a Government Securities Depository (DEPO). This allowed for the automation of interbank transfers and the securities registered in the DEPO that are traded to be settled under the DvP regime.[5] Complementary applications for the implementation of open market operations, intraday liquidity facility, and overnight deposit and liquidity facilities were also put in place.

The monetary operations regime is crucial for the development of the financial market. If the Central Bank has to issue securities, it is advisable that they be on shorter horizons, leaving the longer terms to the Treasury.[6] The BCP issues securities for terms of up to a year and a half, and the Ministry of Treasury issues securities for terms up to two years, allowing for a clear-cut coordination in the securities issued by the public sector.

Regarding the efficient administration of the public sector debt, its management requires a long-term strategy, and a design of operations and appropriate instruments.[7] The Ministry of Treasury counts with two points of issuance, the Central Bank and the Stock Exchange, which could potentially be conducive to

5 Delivery versus payment.

6 Árvai & Heenan (2008).

7 Árvai & Heenan (2008).

market segmentation. Market segmentation obstructs knowledge on the correct amplitude and the prices according to supply and demand of an integrated market. The problem is not the existence of these two types of the market but their lack of integration.

Integration between government securities markets of the Stock Exchange and the Central Bank of Paraguay is aided by the interconnection of the trading systems of both institutions. In this regard, the Central Bank of Paraguay, the Ministry of Treasury, the National Securities Commission, and the Stock Exchange have agreed on operating mechanisms for trading these securities, which enable securities, specifically Treasury Bonds issued by the Central Bank of Paraguay, to be offered to non-financial investors through Stock Exchange trading arrangements.

Lastly, an undiversified and limited investor base restricts market growth. In Paraguay, commercial banks are the primary investors in government securities (82%). It is also important to take into account that there is no participation from foreign investors. With little competition, banks dominate the primary market of Treasury bonds, which impacts the interest rates which the Ministry of Treasury can capture from investors.

As banks dominate the government securities market and, as they all have the same balance sheet profile, their investment horizons are similar, which limits the formation of a long-term yield curve because banks invest in the short and medium term due to their mismatching limitations. The lack of long-term points for treasury bonds in the yield curve affects the private bond market because issuers in need of long-term financing will face greater difficulty in finding investors as individual risks are not well defined due to the absence of a reference rate.

The two main pension funds, the *Instituto de Previsión Social*, and the *Caja Fiscal* have limited participation in the securities market, as well as legal limitations to purchase treasury bonds. Arguably, the absence of the primary social security savings receivers from the securities market has been an obstacle to its development. Currently, a bill which will lift these restrictions and regulate institutions is under study.

The conditions necessary to develop the Paraguayan securities market have been exhaustively analyzed and, despite significant progress in certain aspects; there are still several challenges to overcome.

Conclusions and challenges

We may conclude that the Paraguayan securities market is not yet developed and, despite significant growth, it has not exhibited the same dynamism as the banking sector. Nonetheless, it complies with certain criteria that are needed to deepen the market, such as the macroeconomic environment, the legal framework, infrastructure and coordinated monetary transactions, which have improved significantly in the last decade.

In this context, two key features representing obstacles for the establishment of a liquid market have been identified: segmentation of the government securities market and a small and undiversified base of investors.

As mentioned above, the first step towards integration of the Treasury bond market has been the interconnection between the Central Bank of Paraguay and Stock Exchange platforms. The next step could involve the credibility of monetary regulation instruments, which will culminate the integration process of government securities.

Once the public debt markets have been integrated, the challenge will deal with increasing the volume of transactions in the secondary market, which will ultimately enable the disclosure of prices of the instruments. This can be obtained via appropriate incentives. In the case of monetary regulation instruments, the Central Bank is analyzing the implementation of a market makers regime (primary dealers) to encourage listing and trading these instruments in such a way that they have permanent purchase and sale prices.

To widen the base of investors, the challenge is to increase the participation of institutional and retail investors. As regards institutional investors, both large pension funds –IPS and the *Caja Fiscal*– are not actively on the Stock Exchange, which prevents the diversification of their investments. Therefore, efforts should focus on clearing the legal and institutional obstacles.

In terms of retail investors, the focus should be on increasing the population´s understanding of issues related to the securities market. An educational campaign on the stock market is required to provide enough information about the different market participants. A clearer and timely existing information of issuers, terms and conditions of trades in the market is similarly important.

Bibliography

Árvai, Z., & Heenan, G. (2008). *A Framework for Developing Secondary Markets for Government Securities* (No. 8-174). International Monetary Fund.

Bekaert, G., & Harvey, C. R. (1997). "Emerging equity market volatility." *Journal of Financial Economics*, *43*(1), 29-77.

Demirgüc-Kunt, A. (1994). Developing Country Capital Structure and Emerging Stock Markets, Policy Research Working Paper, WPS 933, July.

Demirgüc-Kunt, A., Levin, R. (1996). "Stock Market Development and Financial Intermediaries: Stylized Facts." *The World Bank Economic Review*, 10(2): 241-265.

Demirgüç-Kunt, A., & Maksimovic, V. (1998). "Law, finance, and firm growth." *Journal of Finance*, 2107-2137.

Goldsmith, R. (1969). *Financial structure and economic development*. New Haven: Yale University Press.

Harris, L. (2002). *Trading and Exchanges: Market Microstructure for Practitioners*. Oxford: Oxford University Press.

King, R. G., & Levine, R. (1993). "Finance and growth: Schumpeter might be right." *The quarterly journal of economics*, 717-737.

Levine R., and Zervos S. (1996). "Stock Market Development and Long-Run Growth." *The World Bank Economic Review*, Vol. 10(2), pp.323-339

McKinnon, R. I. (1973). *Money and capital in economic development*. Brookings Institution Press.

Mishkin, F. S. (2007). *The economics of money, banking, and financial markets*. Pearson Education.

Pagano, M. (1993). "Financial markets and growth: an overview." *European economic review*, *37*(2), 613-622.

The World Bank, World Development Indicators(2015).

Yartey, C. A., & Adjasi, C. K. (2007). *Stock market development in Sub-Saharan Africa: Critical Issues and Challenges* (No. 7-209). International Monetary Fund.

International Reserve Administration

Roland Holst Wenninger

The author expresses his gratitude to Edgar Mendoza, Rubén Cáceres and Jorge Burgos for their contribution to this chapter.

International Reserves (IR) play an essential role to all nations that value a balanced economic development. The adequate management of those reserves consolidates monetary policy and assists in case of external *shocks* that might affect the country. Both in the literature and in public opinion, it's very common to underestimate the importance of reserves. Perhaps because reserves, normally, don't produce macro-economic *shocks,* on the contrary, reserves offer sufficient security to confront a crisis situation. Even though the literature cites a larger number of objectives, it is considered that international reserves play two major roles. The first is to support monetary policy, providing economic agents with financial support and sufficient confidence to preserve the value of the currency. Remember that in decades past the standard for every country was established in gold. But over time this has changed, and currently the international reserves constitute the equivalent of the financial standard of most countries. Economic agents can decide to demand large amounts of foreign currency at a given time, either due to a loss of confidence in the local currency or for other motives. For that reason, to have sufficient reserves provides a security and a guarantee to the citizen, by the fact that he/she can cope with the rise in demand for foreign currency.

The second objective is to provide the financial support necessary against external *shocks*. As is well known, in an open and integrated economy, exogenous economic factors are uncontrollable even in the most developed economies, due to the fact that countries are not immune to situations created in other economies. However, the important thing is to ensure that the impact is not significant and affect the wellbeing of society. Reserves should provide enough liquidity to cope with all potential liabilities.

In general, best practices establish the following as objectives of reserve management: capital security, liquidity, and profitability. It's worth clarifying that the funds that back the requirements of liquidity have a larger emphasis on the security and liquidity of capital, while the assets in *excess* of the short-term requirements usually have as an objective the profitability in the medium and long term. But what determines the correct and prudent management of the reserves is, primarily, the origin and the composition of the reserves themselves.

Composition of the Reserves: Are they freely available?

The composition of the reserves varies throughout time and from one country to the next. But, in general, the largest components are basically three: temporary savings of the state, a fraction of public savings in the financial system, and additional or surplus resources of the central bank.

As the State manages part of its finances through foreign currencies (and it does so through the Central Bank) it has resources and temporal savings that are considered international reserves. The origins can be as varied as recent debt issues in the international market, royalties received but not yet used, loaned funds that also have not been used yet, etc. As you can see, there is a common factor linking these resources and it is their temporality; for that reason, it is necessary that part of the reserves be liquid or available in the short term.

International Reserves are also formed by private sector funds, which are composed of mandatory reserves known as legal reserve, which is obtained from a percentage of each deposit according to their term; there are also voluntary reserves. Even though there are reserves deposited for a fixed term, the largest proportion of reserves correspond to deposits that are immediately available, used to honor the financial sector's commitments to savers when they withdraw their deposits, essential to preserve confidence, the greatest value of all financial activity.

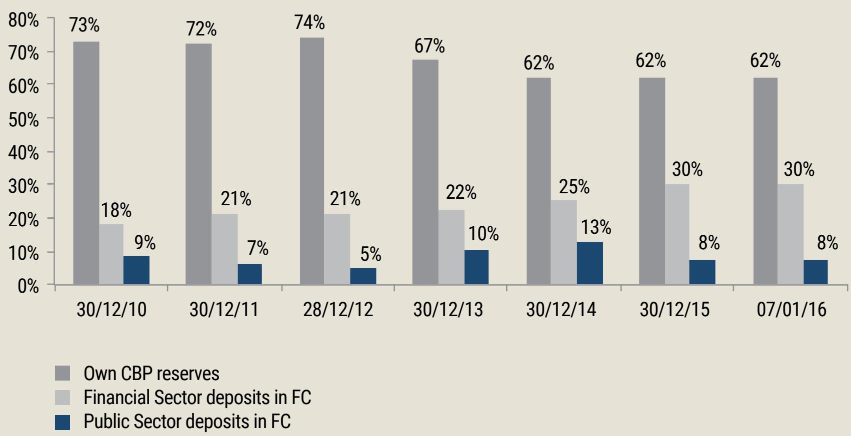
The third large component of the reserves are the State's own resources managed by the Central Bank. These also can have a variety of origins, for example profits accumulated through exchange operations, profits accumulated through management (investment) of reserves, etc. The funds in this component are not in risk of immediate demand, given that the Central Bank has a certain power of discretion, but the resources are not as freely available as they may appear.

The reason is precisely the first objective of the existence of international reserve: financial support of the currency. When the government decides to spend the temporary funds invested in foreign currencies, it uses (decreases) the international reserves. When the public withdraw their deposits in foreign currencies from financial entities and those entities must withdraw their legal reserve from the Central Bank, this uses (decreases) the international reserves. But when the public use the local currency to buy foreign currency and does so at a massive scale (for example, due to a lack of confidence in the local currency), it is the Central Bank that is the ultimate provider of the foreign currency to back up (guarantee) the convertibility of the local currency. This requires being very careful when interpreting the grade of availability or discretion that the Central Bank applies to its reserves. A low level of reserves or an investment in assets that doesn't instill confidence in the public, are factors that could provoke a loss of confidence in the local currency and create a massive cancellation of the currency on behalf of the public, eliminating those remaining reserves.

Reserve composition in Paraguay

This figure displaying the origin of reserves will provide an improved view of the composition of the IR in Paraguay.

Figure 1
Composition of the IR in Paraguay



Source: BCP.

It can be seen in Figure 1 that the greatest proportion of Paraguayan reserves correspond to the Central Banks own reserves. In 2015, representing around 62%. The financial sectors deposits consist in about 30% and deposits from the public sector make up approximately 8% of the total reserves. Of this total of Public Sector deposits, approximately a third is uptake by issuance of sovereign bonds abroad, approximately USD$ 196 million (3% of IR) in December 2015. This composition can vary, as seen in the graph, depending on different situations. In this sense, the society may perceive that these funds are not very productive; hence there is a constant temptation to use the reserves without knowing in depth that not all of them are owned by the State and might need to be available for any situation that would require their use to maintain the macroeconomic equilibrium.

Investment Tranche

According to its use and objectives, international reserves are usually divided into different tranches. Two major subdivisions, which are the liquidity and investment tranches are commonly used. The first, aims to provide liquidity to the financial system. Therefore, these investments are mainly focused on providing instruments that may fulfill that role without incurring in high transaction costs, which would add the probability of loss in the short term.

The second tranche corresponds to long-term investments that generally seeks higher returns from assets which are not projected to be used in the short term. These investment assets gives a higher priority to the third objective of the management of international reserves, which is generating profitability. Though the profitability is third in the list that does not mean it is less important: the three stated objectives constitute similar parts of a whole.

Profitability is a key factor, since reserves must generate positive returns, it cannot be considered correct seeking only to maintain the initial capital, the vision must be long term and it is the managers´ responsibility to lay strategies seeking the highest return on capital. Reserves are constituted in greater proportion by taxpayers contributions, if funds are not managed properly eventually the taxpayers as a result, will end up paying more. For that reason it is important that this capital may obtain the highest possible return, of course, without forgetting the safety and liquidity of reserves.

Appropriate Parameters

Often the importance of the reserves is not perceived properly. Nevertheless, they play a fundamental role and some parameters used for comparison will prove their level and solidity. Despite the extensive academic literature about precautionary measures that will be mentioned at the end of this paragraph, we list the traditional rules which are all intuitive, simple, transparent, and remain the most accepted.

Import Coverage

Economies that rely heavily on exports are the most vulnerable to sudden stops in capital inflows. When exporting goods and services, dollars entering the market, are used by importers through the intermediation of financial institutions to buy foreign products. A clash on exports of any kind, would decrease the amount of dollars available and therefore also for importers. As a consequence, an over-demand for dollars would cause a depreciation of the domestic currency, to which the Central Bank would have to respond by using its international reserves to provide liquidity of said currency and diminish the volatility of the exchange rate. Therefore, an adequate measure has been to maintain sufficient levels of reserves to cover at least three months of importation.

Short-term debt coverage

Another traditional metric is the short-term debt coverage. The Greenspan-Guidotti rule establishes the need to cover 100% of the short-term debt. This rule continues to be the most used standard for reserves in emerging markets. [1]

Monetary aggregates coverage

Capital outflows can cause significant depreciation in domestic currency in emerging countries. The ratio of monetary aggregate tries to capture the risk of capital flight. In countries where the demand for money is stable and confidence in the local currency is high, the internal demand for money tends to be larger and the NIR/M2 is relatively small if everything else remains constant. This metric can be seen as a measurement of the possible need of support of the banks in or after a crisis, especially in those countries with high dollarization.

Commodity shock coverage

Although this point could be associated with importation coverage it is relevant to point out that they are not the same. *Commodities shock* can be taken as something that affects the exports as much as the imports, thus it is directly related to external commerce and can produce, for example, a *shock* in the prices of products that would affect the macroeconomic balance, made worse in countries where export of commodities is a large source of wealth and a support for economic development. In those situations, the reserves are the necessary financial support and cover the lack of income of foreign currencies as a result of a shock to either exports or imports.

Although the reserves have been important to mitigate the effects of the external shocks to the economy, their accumulation can be expensive and lead to diminishing returns. Thus, other methods of sovereign risk management can be implemented to reduce the use and reliance on the reserves. These might be: maintaining sustainable levels of public debt, monetary policies that keep inflation low, floating exchange rate schemes that produce an exchange price near equilibrium, and effective supervision that limits the financial sector's contingent risk. These measures can also help to reduce the probability of a crisis and the consequential use of the reserves.

1 The Optimal Level of International Reserves for Emerging Market Countries, IMF Working Paper. WP/06/229

Portfolio Design

In the financial world, a portfolio is known as the distribution of investments in different assets with the objective of gaining the highest return on capital available. When assembling a set of financial instruments or portfolio, one must consider diverse aspects, such as the range of available assets, and the risk inherent in each of those assets.

The set of selected assets depends largely on the objective to be achieved with each portfolio. Another issue to consider is that these instruments are correlated to the risk tolerance established by senior management of each central bank.

When looking to diversify financial instruments, one should also avoid correlations that would potentially link them, that is, to achieve an optimal portfolio, one should look for financial instruments that offset each other in the face of fluctuations over time: it would not be advisable to have all available capital invested in instruments that share similar tendencies. The best thing is to look for assets that behave in an uncorrelated fashion in the long term.

An example of diversification could be gold, that continues to be a part of our investments. A question that might come up is, Why not all of it?. Throughout the years, *on average*, gold has not had very attractive returns. In the last 65 years, the average return has been low, only 0.55%. Nevertheless, during the large crises, its value improved by diverse factors. One reason is the confidence in its value, unlike the confidence in government bonds that carry a higher chance that payments won't be available in difficult times. For that reason, it is always important to maintain a portion of the assets in instruments that do not react to shocks in similar or linked ways. That is the point of diversification, to invest in a variety of instruments that respond differently to situations, be they positive or negative.

Reserves managers must seek higher return on their funds, due to their responsibility managing other people's money (OPM). It's imperative that the citizens contributions gain the highest return possible within the adequate parameters and abiding by the mandates of their highest authorities. It is even a moral responsibility to obtain profitability on the sovereign funds for the benefit of the society.

Some central banks have invested in instruments such as corporate or emerging markets bonds and assets that generate higher returns for their reserves. In these cases, the monetary authorities have been tolerant to greater volatility in their balance sheets. Usually, portfolios with higher liquidity are always composed of lower risk-return ratio, in comparison to those long-term investment portfolios which profile is adapted to a greater risk-return ratio, maximizing in each case the objective for which they were created.

Investment strategies based on timeframes vary according to the goal of each portfolio. So, the size of each tranche will depend on the amount of liquidity necessary to cover the requirements of the liabilities and potential interventions in the financial market, and the excess liquidity available to invest. Portfolio's diversification by due dates varies according to the analysis and preferences of the monetary authority. Within this scope, the duration of short-term portfolios tends to vary between 1 to 3 years, 3 to 5 years for medium term, and 5 to 30 years for long-term.

Another strategy for portfolio design and implementation is based on decision levels. The highest decision layer is the strategic asset allocation (SAA[3]). At this level, which usually corresponds to the senior management, the portfolio's profile and risk appetite are defined, definitions are established by types of assets, investment horizon is set along with benchmarks and the degree of deviation from index or risk tolerance. In this way, the SAA is most focused on a long-term vision of the portfolio.

The next level is tactical asset allocation (TAA[4]). This is an intermediate level between the portfolio managers and senior management and its objective is to gain better returns within the restrictions established by the higher level. This is achieved through the active management of the portfolio, deviating from strategic benchmark and maintaining a more accurate vision of the market, always within the limits of risk tolerance established by senior management.

The next level consists of portfolio managers, who are in charge of the implementation of the tactical benchmarks and permanent monitoring of the investments that they have made.

External Administration

External management involves portfolio management by specialized managers. Increasingly central banks, multilateral institutions and sovereign funds are using this alternative management style, due to a number of reasons given the higher level of specialization that such institutions have in portfolio management. Following is a list of the main reasons:

Information

One reason is information. While management managing reserves seems it can be easily compared between central banks, reality is different. Primarily, because the management of reserves is not shared with the general public as a security measure against speculative attacks against the value of the domestic currency. This has been changing considerably. More recently their management has been made more transparent, although there is still only limited data.

Comparison

External managers are hired to provide a point of comparison with which they can measure their performance. For example, many central banks issue a mandate to their external managers which specifies the same objectives, asset types, and risk tolerance that are used by the institution. After a certain amount of time, generally monthly, the external managers forwards statements about the performance of the portfolio, which serves the authorities as a gauge of their own successes and errors in the management of their assets and in that way serve as feedback with a view to a more efficient management of their resources.

Training

An external manager also provides an important transfer of knowledge. These contracts are often linked to specific training programs in portfolio administration, new adopted technologies, all through hosting seminars, workshops, and talks either in person or remote/on line

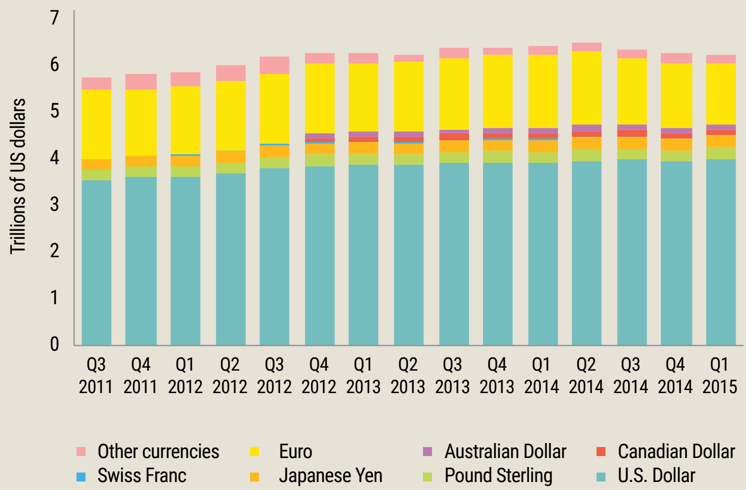
Comparative advantage

One can also say that central banks turn to these institutions for the comparative advantages that their services offer. For example, when considering entering into new types of instruments or new markets, each institution examines the costs they would incur on contracting a large number of new staff specialized in the defined field.

Portfolio Diversification

Portfolio diversification has become a fundamental part of reserve management in the majority of countries. In that sense, the diversification of currencies has become an essential process.

Figure 2
Global composition of official international reserves by currency



Sources: IMF, COFER.

Diversification has made room for new currencies that in the past weren't considered as reserve assets, like the Canadian Dollar, the Australian Dollar, and in other cases, the Norwegian Crown, the Swiss Crown, the New Zealand Dollar, and the Chinese Yuan. Those economies were not greatly affected neither during the financial crisis in the United States nor during the Euro-zone debt crisis and hence helped to provide better yield and reduce the credit risk exposure.

Even so, the strategies used by different countries vary based on the objectives they choose to seek, therefore you can expect different motives that guide one assignment or another, as well as the different approach between the degree of economic development and the preferences of each central bank.[2]

In reference to the degree of economic advance, most of the more developed countries have shown great consideration to the depth and liquidity of the underlying asset and secondly to the depth of the foreign exchange market. That decision is due to the large positions and small reserves related to the size of these economies, which makes asset liquidity a top priority. However, when analyzing countries with small incomes, is often seen that the composition of their liabilities, such as central bank; central government, and their

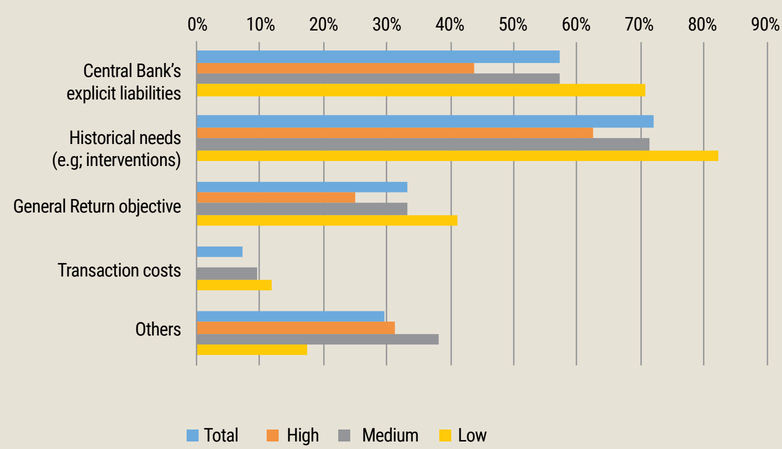
2 Survey of Reserve Managers: *Lessons from the Crisis. IMF Working Paper.* WP/13/99.

commercial structure can have a large effect on this specific category. This difference is due to the fact that these countries are more susceptible to the need of defending their currency value, against capital outflow in comparison with more developed countries.

Additionally, the diverse economies tend to adopt the strategy of investing within the basket of currencies that make up the Special Drawing Rights (SDR), which is the IMF's reserve currency. Nevertheless, the investment in currency outside of that group, such as into the emerging markets, continues to be an object for analysis in order to overcome certain disadvantages such as the operational difficulties opening bank accounts or custodians, the liquidity, and the depth of those respective markets.

In the moment of diversification of a portfolio, the accepted course has been to separate it into tranches, as it was mentioned earlier. This tranche separation is confined by certain objectives and considerations. Among them, historical needs, previous interventions and explicit liabilities of central banks, found to be common themes when defining the size of the portfolios. That last is more of a topic in developing countries when compared to their developed counterparts, as you can see in FIGURE 3.

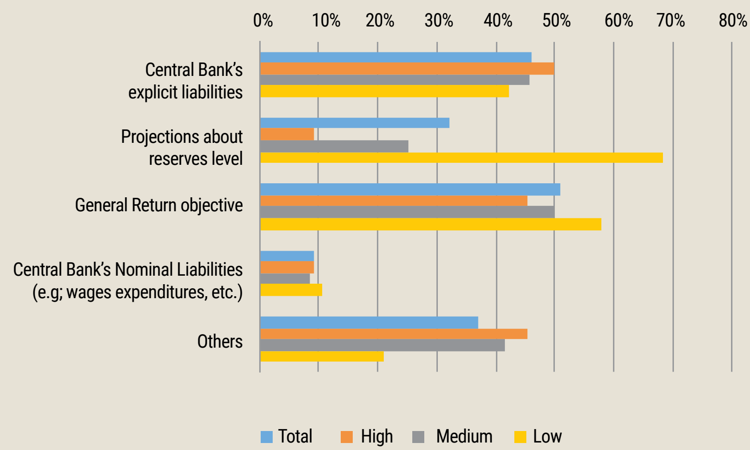
Figure 3
Considerations to determine the relative size of portfolios



Source: Data from an IMF poll

When diversifying by term. One can observe in FIGURE 4 that the return tends to be the main consideration when choosing durations, which can lead to lengthening time periods during times of low interest rates. Nevertheless, it should be stated that the return objective refers more to the search of positive yields with the goal of preserving Bank's capital and, accordingly, leads to a strategy minimizing the probabilities of getting a negative yield. Furthermore, the reserve level projection is a much more important topic for countries with low income when compared to developed nations.

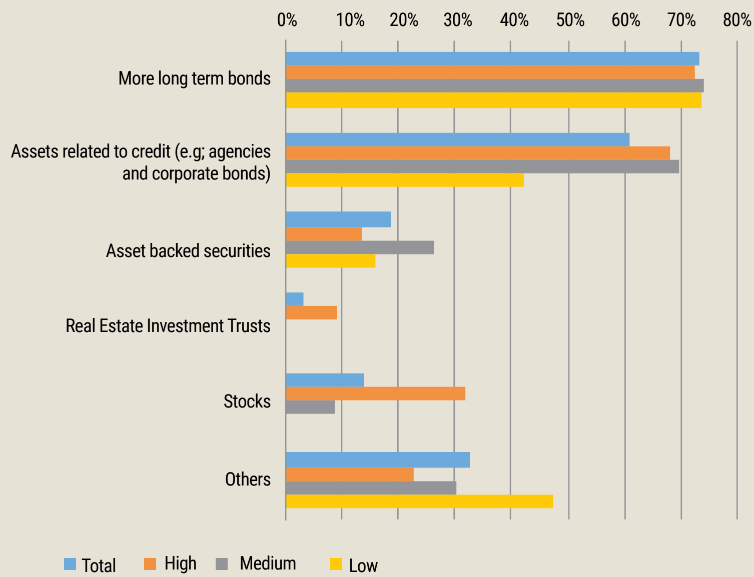
Figure 4
Considerations when determining the time duration of the portfolio



Source: Data gathered from an IMF poll.

Finally, it is also important to consider the diversification by types of assets. As you can see in Figure 5, the tendency of the past years to increase the yield of portfolios has led to investing in longer-term bonds and in agencies and corporate bonds as secondary options. Additionally, investing in stocks is a recent phenomenon and previously not considered an option by central banks. The low yield of fixed income securities during the last few years has led to a rise in popularity of variable income securities, to the point that a few countries have begun to review the types of assets considered traditional for a central bank. It is important to point out that the diversification by type of asset is controlled by the preference of each central bank and the size of its economy, thus you can observe different preferences in terms of new investments, primarily in bond agencies and corporations, stocks, and other types of assets not specified in the analysis.

Figure 5
Types of assets currently invested to increase yields



Source: Data gathered from IMF poll.

New tendencies in reserve management

Due to the considerable growth in global international reserves from USD$ 2.1 billion to USD$ 12.4[3] in an environment of low interest rates on a global level as a result of the financial crisis of the United States, the debt crisis in the Euro Zone and the cooling of China's economy, reserve management has changed considerably. During the greater part of the past decade, reserve management has been conservative, investing the largest part of the available resources into strong economy currencies such as the American dollar, the Sterling Pound, the Euro, and Japanese Yen; [4] and highly liquid and secure instruments such as sovereign, multinational, and supranational bonds, that have high risk qualifications, usually between AAA and AA+ by the Standard and Poor's and other rating agencies.

However, in recent years the possibility of exploring new options have opened, like emerging market bonds, commercial bank deposits, investment-

3 World Development Indicators, World Data Bank, World Bank.

4 Also known as those currencies making up the Special Drawing Rights of the IMF.

grade corporate bonds, shares, mortgage titles and other assets, exchange-traded funds (ETFs), structured products, and bonds indexed against inflation. The use of each of these instruments varies according to prevailing market conditions For example, indexed bonds or TIPS[5] have a low yield due to the low rate of inflation in the global market, especially in the United States and Eurozone. Additionally, exchange-traded gold funds (ETFs) have reported negative yields due to the loss of value of gold in the past few years.

Another trend is the growing use of internal reference indices or benchmarks due to the fact that external indices typically used don't offer an acceptable return for the authorities and don't appear to adapt themselves to the growing need to invest in new financial markets. Therefore, a common reaction of these managers is to use a hybrid of the available market indices, which then reflects with more precision the new composition of assets that they want to maintain in relation to their profitability goal and guidelines of approved risk.

Reserve managers follow the same guidelines in relation to excess reserves and required reserves. Nevertheless, during the last year, interest has grown in offering a different focus for the excess funds, increasing the number of tranches, as mentioned before, and thus earning better yields. On top of the growth of tranches, some polls have shown that central banks have become less conservative in various administrative aspects, like the greater tolerance of credit exposure, greater liability to less liquid instruments, and duration of portfolios and greater flexibility in the investment regulations, as well as being less conservatives in seeking new investment opportunities.

Lastly, due to the fact that many central Banks have reported reserve excesses and the consequential search for higher yields through greater asset diversity and credit exposure, adequate risk management management has been refining the capacity of identifying situations that could put their invested resources in danger. Among the employed measures to mitigate the risks, rigour is prioritized when defining the strategic assignment of the assets, stress tests are applied and quantitative analysis has improved considerably, surpassing the older controls based on the more complex and longer analyses, such as Value at Risk (VaR), tracking error, back testing and sensitivity analysis (Borio et al, 2008). These techniques have been implemented more and more since the financial crisis of 2008 in order to mitigate risk. The most typical reactions of reserve administrators (Morahan and Mulder, 2013) have been implemented, primarily, by low-income economies that find themselves technically lagging behind their more developed counterparts.

5 Treasury Inflation Protected Securities.

Analysis of Investment Portfolio Diversification

To evaluate implications of diversification, different efficiency curves have been designed that include different types of assets. The aim of the exercise was to verify that, when including assets of high volatility (risk) and high return into a given portfolio, you can still create a portfolio which is at least equally risky as the initial portfolio but at the same time, offer a larger return.

With the goal of comparison, monthly volatilities and returns have been collated from a period of January 1990 to July 2015, which is displayed below.

Table 1
Investment Frontier

<table>
<tr><th colspan="4"></th><th>Asset</th><th>Volatility</th><th>Expected Return</th></tr>
<tr><td rowspan="22">FRONTIER 4</td><td rowspan="10">FRONTIER 3</td><td rowspan="6">FRONTIER 2</td><td rowspan="5">FRONTIER 1</td><td>UST 3M</td><td>0,21%</td><td>0,27%</td></tr>
<tr><td>UST 1Yr</td><td>0,27%</td><td>0,29%</td></tr>
<tr><td>UST 5Yr</td><td>1,26%</td><td>0,47%</td></tr>
<tr><td>UST 10Yr</td><td>2,09%</td><td>0,53%</td></tr>
<tr><td>UST 30Yr</td><td>3,62%</td><td>0,67%</td></tr>
<tr><td></td><td>XAU</td><td>4,48%</td><td>0,45%</td></tr>
<tr><td rowspan="4"></td><td rowspan="4"></td><td>S & P 500</td><td>3,60%</td><td>0,59%</td></tr>
<tr><td>Wilshire index</td><td>3,77%</td><td>0,77%</td></tr>
<tr><td>BofA Merrill Lynch US High Yield Index</td><td>2,47%</td><td>0,71%</td></tr>
<tr><td>BofA Merrill Lynch US Corp AA Total Return Index</td><td>1,16%</td><td>0,54%</td></tr>
<tr><td rowspan="12" colspan="3"></td><td>EMBI</td><td>9,60%</td><td>-0,10%</td></tr>
<tr><td>Soy Oil</td><td>5,45%</td><td>0,17%</td></tr>
<tr><td>Corn</td><td>6,62%</td><td>0,17%</td></tr>
<tr><td>COTTON</td><td>6,89%</td><td>-0,01%</td></tr>
<tr><td>Live Cattle</td><td>3,67%</td><td>0,21%</td></tr>
<tr><td>Rice</td><td>6,65%</td><td>0,14%</td></tr>
<tr><td>Soy</td><td>5,70%</td><td>0,19%</td></tr>
<tr><td>Sugar</td><td>7,79%</td><td>-0,06%</td></tr>
<tr><td>Soy Flour</td><td>6,35%</td><td>0,24%</td></tr>
<tr><td>Wheat</td><td>6,83%</td><td>0,10%</td></tr>
<tr><td>AUDUSD</td><td>2,67%</td><td>-0,02%</td></tr>
<tr><td>WTI</td><td>8,41%</td><td>0,26%</td></tr>
<tr><td>BRENT</td><td>8,38%</td><td>0,34%</td></tr>
</table>

Source: Author’s calculations based on Bloomberg.

Volatility and monthly-expected returns

In the study, they determined four possible combinations: the first is a combination of fixed rent assets (bonds from United States Government); for the second they add proportions of gold; the third, Stock Indexes and Corporate bonds, and the fourth combination is of raw commodities (soy, cotton, meat, etc.).

In the first case they have chosen a combination[6] of assets free from risk: Bonds from the US Treasury. The portfolio have a combination of 63.12% of short-term investments (expiring between 3 months and 1 year) and 36.88% medium-term (expiring in 5 years). This ratio reflects the typical composition of current international reserves, with a tranche that serves the needs of the short-term. A portfolio like this would have a volatility of 2.01% annually and a return of 4.41% annually.

However, is it possible to take an asset of high volatility and annual return, and decrease the risk and raise the return? The exercise displays that by redistributing the proportions of the initial combination to make room for a small investment in gold, the portfolio will decrease its annual volatility to 2.00% and the annual return to 4.41%, with a slight less volatility than the first case. In that case, the incorporation of a commodity does not bring large benefits in terms of risk-return, but it does show that with larger changes to the portfolio, a different balance can be established.

In a third case, what would happen if we added to the second portfolio share indexes and corporate bonds? By redistributing the earlier portfolio that included those assets, a new portfolio could earn a volatility of 1.63% and a return of 4.79%, showing even more clearly a drop in volatility and an increase in return. Thus, the incorporation of more assets considered high risk decreases the volatility of the portfolio while helping to generate a higher return.

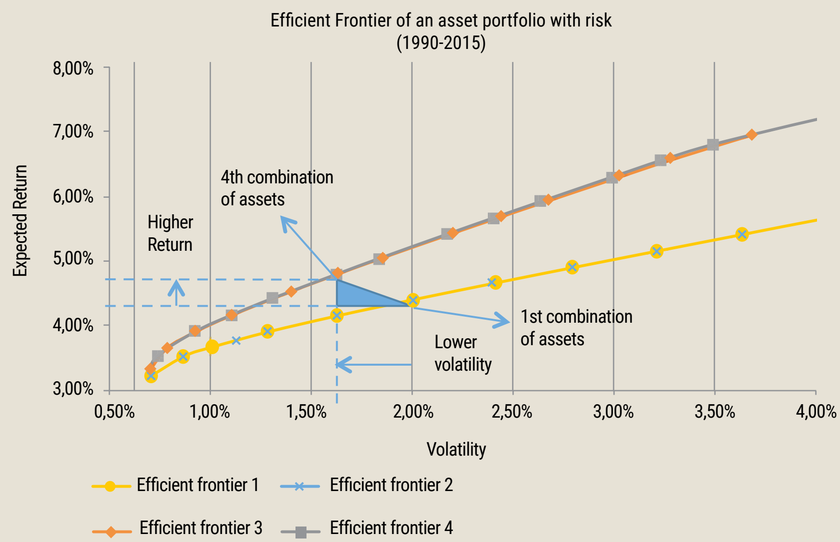
Finally, what would be the implications of adding primary commodities like soy, cotton, and petroleum, among others? By adding these types of assets, the volatility of the portfolio would maintain a consistent 1.63% annually, but with a light rise in return of 4.80%. The inclusion of these assets marginally raises the yield, but the Sharpe Ratio, that indicates the excess return per unit of risk, indicates that this final combination is much more efficient per unit of risk than all combinations above.

For that reason, this simple exercise demonstrates that diversification benefits investment portfolios. The example case had an increase in return while reducing

6 The US Treasury bonds are subject to a risk of price change. In the text we are generally referring to the risk of the counterpart.

risk when including assets that, when considered individually, are not good options, but when included in a diversified portfolio can generate large benefits for the investors.

Figure 6
Investment Diversification



Source: Author's calculations based on Bloomberg.

Asset combinations (annual values)

Despite the benefits already mentioned, there are only a few central banks that invest in assets like stock indexes, corporate bonds, and primary commodities. What is stopping investment in these types of assets from becoming more typical? Maybe it's because one of the main objectives of central banks is capital security, which makes them less prone to these type of investments.

In this exercise, we started from a combination of assets, including then more risky assets. Every combination has a component that has not yet been examined: the Value at Risk (VaR).

VaR is a metric used to measure the probability of an extreme negative event, to say, losses with high level of confidence (generally 95%). Another important metric is the CVaR, which measures what would be the average of the losses once the maximum level of the VaR is passed.

The benefits of diversification can also be seen with VaR and CVaR. For example, the chosen portfolio initially has a VaR95 of -1.85% and a CVaR95 of -2.81%. With a diversification of 23 assets the VaR95 drops to -1.08% while the CVaR drops to 2.38%. That is, if you had a portfolio with 23 assets from 1990 to 2015, you would have had a 95% probability that in a given year you would have a loss of -1.08% of the portfolio. In the case of exceeding those losses, the average value of the assets would be -2.38%.

But, how does one determine what level of losses are tolerable? Best practices of corporate governance dictates that the acceptable level of losses is an institutional decision made by the Board of each institution and depends on the amount of risk tolerance of the administration. Here also enters a determining factor in the sophistication of the reserve administration: training at each different level from the governing body down to the execution and control.

Conclusions

In this chapter we have mentioned the importance that a country's reserves can play, exposed their principal objectives, analyzed distinct investment practices, commented on diversification and its strategies, the composition of portfolios, and practiced an exercise of investment. There is much more to understand about reserves, but this chapter has been a synthesis of the most importants aspects related to international reserves.

Despite the clear importance of reserves for a country, they are still not considered in their true dimension, they are not given sufficient attention during periods of economic equilibrium, and they are not valued enough during periods of crisis. In the good times, they offer a country the necessary support to maintain their currency, and stop foreign currency variations from having a large impact on the local economy. In difficult times, they provide sufficient support to consolidate counter cyclical policies that look to reestablish a reasonable equilibrium. An analogy could be made that the reserves have the same importance to a country as the Armed Forces, that in times of peace they do not seem important, almost unnecessary, but in front of any bellicose situation, their existence is valued.

Finally, it is worth reiterating that international reserves should be managed in an efficient way, and achieve the general goals of reserve management: capital security, liquidity, and profitability. But one must remember that these variables have a similar level in the hierarchy: in the section on portfolio diversification an exercise demonstrated that is possible to combine diverse financial instruments with distinct risk grades and obtain an improved return. Obtain positive returns on the reserves is even a moral commitment of the managers and, as pointed out before, the proper management of the investments should benefit society, because it is contributing to the fundamental goal of the entire State which seeks to improve the wellbeing of its citizens.

Bibliography

Borio, C. et al (2008). FX reserve management: trend and challenges. BIS Papers, N° 40.

Jeanne, O., Rancière, R. (2006). The Optimal Level of International Reserves for Emerging Market Countries. IMF Working Paper WP/06/229. Washington: International Monetary Fund.

Morahan, A., Mulder, C. (2013). *Survey of Reserve Managers: Lessons from the crisis*. IMF Working Paper. WP/13/99. Washington: International Monetary Fund.

About the authors

Carlos Carvallo Spalding

Doctoral candidate in Economics at the *Universidad Católica Argentina*, Masters in Applied Macroeconomics by the *Pontificia Universidad Católica de Chile*, Specialist in Regional Integration by the Universidad de Murcia and the *Instituto Universitario Ortega y Gasset*, Spain, Specialist in Macroeconomic Programing by the *Universidad Católica de Chile* and, Bachelor in Economics by the UNICAMP, Brazil. He was Technical Advisor to the Secretariat of the MERCOSUR, Head of the Department for Support to Less Relative Developed Economic Countries of the ALADI General Secretariat, international consultant for the Inter-American Institute of Social Development INDES-IDB, Director of Economic Studies in the Ministry of Finance, technical secretary of the National Council of Financial & Economic Policy and economic advisor for the Ministry of Finance. In April 2015 he became member of the Board of Directors of the Central Bank of Paraguay.

Pedro Daniel Correa Ramírez

Masters in Economics and PhD (c) in Applied Economics by the University of Auburn, United States of America and Economist by the *Universidad Nacional de Asunción*. He was Chief Economist at *Investor Economía S.A.*, consultant for the Inter-American Bank for Development (2006-2007), Director of Fiscal Policy at the Ministry of Finance and member of the Economic Council for the Transition of the government elect, responsible for the design of the Fiscal-Economic Plan. He is Vice-Minister of the Undersecretariat of Economy of the Ministry of Finance since August 2013.

Jorge Raúl Corvalán Mendoza

Master of Science in Policy Economics from the University of Illinois at Urbana-Champaign and Economist by the *Universidad Nacional de Asunción*. He was Director of the Department of International Economics in the Central Bank of Paraguay, Director-General of the Technical Cabinet of the Ministry of Industry & Commerce, and consultant to the World Bank. Former Governor of the Central Bank of Paraguay from 2008 to 2013. He is Advisor to the Executive Director of the International Monetary Fund as of 2013.

Carlos Fernández Valdovinos

PhD in Economics from the University of Chicago, Masters of Science in Policy Economics by the University of Illinois at Urbana-Champaign and Bachelor in Economics by the Federal University of Parana in Brazil. He served as Chief Economist of the Central Bank of Paraguay from 2001 to 2004, Senior Economist for Argentina in the World Bank, Senior Economist in the departments of Africa, Europe and the Western Hemisphere at the International Monetary Fund, and IMF Resident Representative for Brazil and Bolivia. He was appointed Governor of the BCP in October 2013 for a 5-year period.

Roland Holst Wenninger

PhD in Public Policy by the University of Chicago, Masters in Economics by the *Universidad Católica de Asunción*, Agronomic Engineer and Economist by the *Universidad Nacional de Asunción*. He also holds a Financial Risk Manager certification. He was Director-General of the Stock Exchange of Asuncion and Head of Investments of the firm Garantía. He also served as a quantitative analyst for StarMine Corp and Head of Fixed Income Research for State Street Global Markets in Boston. He is member of the Board of the Central Bank of Paraguay as of 2012, and of the Board of the Banco Comercial Latinoamericano as of April 2014.

José Aníbal Insfrán Pelozo

PhD in Economics and Masters in Finance by the University of Illinois in Urbana-Champaign, Specialist in Applied Macroeconomics by the *Pontificia Universidad Católica de Chile* and Economist by the *Universidad Nacional de Asunción*. He served as Director of Monetary and Financial Studies at the Central Bank of Paraguay, Director of the Public Banking Reform Program, and Member of the Board of the Financial Agency for Development. Currently, he is Director of BANCOP S.A., Alternate Director of the Stock Exchange of Asunción, President of *Alcousinas Iturbe S.A.*, President of *Servicios Integrales para la Producción S.A.* and Vice President of Capital Markets *Casa de Bolsa S.A.*

Rafael Lara Valenzuela

Masters in Public Policy by the *Universidad Torcuato Di Tella, Argentina*, and Economist by the *Universidad Nacional de Asunción*. He was Director of the Open Market Operations Department of the Central Bank of Paraguay, and Director of the Deposit Guarantee Fund. He served as Financial Manager in a private bank of the private sector. In August 2012 he was appointed Board Member of the BCP.

Santiago Peña Palacios

Masters in Public Administration by Columbia University, United States and Economist by the *Universidad Católica de Asunción*. Economist at the Central Bank of Paraguay. Economist of the International Monetary Fund, member of the team in charge of monitoring African nations, and Board Member of the BCP from 2012 to 2015. He is Minister of Finance as of January 2015.

Ernesto Andrés Velázquez Argaña

He holds a Bachelor of Laws (BCL) degree by the Catholic University of Asuncion and a Master of Laws, (LLM) degree by the University of London, Queen Mary and Westfield College. He was awarded Certificates in Diplomatic Studies by Oxford University (Trinity College) and by American University of Washington, DC on the American Political System. He was member of the law firm Fiorio, Cardozo & Alvarado, legal advisor to the Minister of Foreign Affairs on Public International Law matters and an arbitrator of the Arbitration and Mediation Center of the Chamber of Goods and Services of Asuncion. He acted as Legal Affairs Manager of the Central Bank of Paraguay and, currently, is a member of the Board of the Central Bank of Paraguay.

To continue building a better future, Paraguay needs to design and implement public policies that are sustainable over time, and are not solely limited to the monetary and fiscal front. Through critical and prospective lens, some of the challenges that lie ahead are analyzed, in order to achieve growth above the regional average, all this supported by a more efficient and inclusive financial system.

Carlos Fernández Valdovinos

This book aims to show how Paraguay is shifting, in several dimensions, towards a new and improved economic institutionality. As detailed by the authors, this process has developed over a decade and covers fiscal, monetary and financial institutional frameworks. It seeks to illustrate the country's efforts in improving its economic institutionality and stability, thereby facing higher economic growth rates, as well as the possibility of higher levels of employment, wages and tax revenues, all resulting from greater economic dynamism in the near future.

Felipe Larraín

ISBN: 978-99967-735-2-5

9 789996 773525