



# Financial Stability Report

**BANCO CENTRAL DEL  
PARAGUAY**

November 2014



**Financial Stability Report  
November 2014**

**Prepared by the Intendency of Financial Stability  
Superintendency of Banks  
Central Bank of Paraguay**

## Financial stability

Financial stability is the capacity of the financial system to withstand to economic shocks and still be able to fulfill its basic functions: to ensure the availability of capital at the financial institutions and to guarantee the operation of the credit and payment system. The stability of the financial system is essential to achieve economic growth and for monetary policy to be effective.

## Aim of the report

The main objectives of the Financial Stability Report are to provide a periodic analysis that contributes to the identification of risks threatening financial stability and to identify macroprudential policies that contribute to the mitigation of these risks.

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## **Preface**

Article 3 of Law N° 489 identifies as one of the objectives of the Central Bank of Paraguay “to promote the efficacy and stability of the financial system.”

The Financial Stability Report is a product of the Intendency of Financial Stability, Superintendency of Banks, Central Bank of Paraguay. This Intendency was created in 2008 and is responsible for analyzing and monitoring the stability of the financial system.

This report includes data received until 30 June 2014.

**The Board of Directors of the Central Bank of Paraguay**

## Summary

**As of June 2014 the financial system comprises 16 banks and 13 financial companies.** Banks' assets represent 95.0 percent of the total assets of the system, and the assets of the financial companies 5.0 percent. Total assets are 86.4 trillion guaraníes. These increased 20.8 percent between June 2013 and June 2014. The net credit portfolio represents 58.0 percent of total assets. It reached 50.2 trillion guaraníes in June 2014 and increased 19.6 percent as compared with June 2013. As of June 2014, the liabilities of the banks and financial companies are 77.1 trillion guaraníes and increased 20.9 percent with respect to June 2013. The deposits in the system represent 81.2 percent of the liabilities. Deposits reach 62.6 trillion guaraníes in June 2014 and increased 19.8 percent compared with June 2013. Five banks hold 63.5 percent of these deposits. Deposits in foreign currency represent 42.6 percent of total deposits in the system.

**The nonperforming loan ratio (NPL-ratio) of the financial system is 2.5 percent.** The NPL-ratio of consumption loans is 6.3 percent. The ratio between provisions and nonperforming portfolio is 121.9 percent. The level of leverage in banks and financial companies is high. In aggregated form, the capital of the banks represents 9.7 percent of their assets. The capital of the financial companies represents 14.0 percent of their assets. Personal expenditures reach 45.4 percent of administrative expenditures at banks and 56.7 percent at financial companies. The ratio between deposits of public funds and loans is 18.3 percent in banks and 2.7 percent in financial companies. Foreign currency credits represent 44.5 percent of total credit. The interest rate of consumption loans is 26.6 percent, while the average interest rate is 14.5 percent. The coverage ratio of short-term liabilities with liquid assets is 40.6 percent. Between June 2013 and June 2014, the liquid assets of the system increased 22.0 percent and deposits increased 19.8 percent.

**The result of the stress test indicates that the solvency level of the financial system is high.** The simulations consider a depreciation of the exchange rate, a reduction of the interest rate, and increases in NPL-ratios. The shock with the highest effect on capital adequacy ratios was the increase in NPL-ratios.

**The liquidity level in the money market increased during the first semester of 2014.** The inflation rate between June 2013 and June 2014 was 6.4 percent. The monetary policy rate remains unchanged since February 2014 at 6.75 percent. The amount of Monetary Regulation Instruments (*Instrumentos de Regulación Monetaria*, IRM) in the market is 5.1 trillion guaraníes. The average return of these instruments is 6.3 percent. Of the total amount of IRM, 90.2 percent is placed at less than one year term. As of June 2014 the international net reserves reached USD 6.4 billion. They increased 8.6 percent in the first semester of 2014. Net international assets increased 3.8 percent in the same period.

**Foreign currency income from agriculture and energy exports was high in the first semester of 2014.** Soybean exports and related products through June 2014 represented USD 2.9 billion. The export of energy represented USD 1.1 billion. The Argentinean Peso in the informal market depreciated 21.5 percent between December 2013 and June 2014. This stimulates the illegal trade of goods from Argentina, negatively affecting local production and trade. The growth pace of the Brazilian economy slowed down. Gross domestic product (GDP) growth of the first semester of 2014 was 0.2 percent. This, combined with the limitations implemented by the Brazilian Internal Revenue Service (*Receita Federal*) for commercial tourism negatively affected the Paraguayan exports. Until June 2014, the guaraní appreciated 4.6 percent relative to the USD. At the same time, the real exchange rate index relative to Paraguay's most important commercial partners appreciated 0.8 percent.

## 1. Risks derived from the external sector

**Paraguay is a small open economy, dedicated to the production and export of agricultural products and electricity.** Due to its condition, the flow of capital to the Paraguayan economy is affected by the performance of its main trading partners, principally Argentina, Brazil, the United States and countries of the Eurozone. The performance of the Chinese economy affects the price of raw materials that Paraguay exports. Furthermore, changes in the monetary policy of the United States influence the flow of capital received by emerging economies, including Paraguay.

**Trade with Argentina is affected by the economic and political problems faced by this country.** Domestic trade in Paraguay is negatively influenced by Argentine products that are illegally traded into the country. Imports have fallen 11.8 percent in the first half of 2014; however, exports to Argentina increased 45.5 percent. Argentina's GDP has fallen for the second consecutive quarter showing signs of weakness in the economy. GDP declined by 0.5 percent in the last quarter of 2013, and decreased 0.8 percent in the first quarter of 2014. The main causes of reduced growth have been the contraction in the manufacturing sector on the supply side and the fall in exports and private consumption on the demand side. The International Monetary Fund expects economic growth for 2014 to stand at 0.5 percent, down from 4.3 percent in 2013.<sup>1</sup> Furthermore, differences continue in Argentina's inflation measurements. According to the National Institute of Statistics and Census, the monthly inflation rate in June 2014 was 1.3 percent and the cumulative rate was 15.0 percent. However, inflation measured by private consulting groups used by Congress as a reference showed that monthly inflation was at 2.2 percent and the cumulative was 21.1 percent.<sup>2</sup> International reserves fell 43.1 percent in three years. In April 2011, reserves had reached USD 51 billion and by June 2014 reserves had fallen to USD 29 billion. Furthermore, in June 2014, Standard & Poor's downgraded Argentina's long-term foreign currency debt rating to CCC.<sup>3</sup> The various domestic economic struggles mentioned have taken their toll on the Argentine peso, but has left Paraguay facing little contagion risk. As of June 30, the gap between the official exchange rate and the dollar blue was four pesos per USD. The official nominal exchange rate was 8.2 pesos

<sup>1</sup> International Monetary Fund. "World Economic Outlook-Recovery Strengthens, Remains Uneven." Washington, April 2014.

<sup>2</sup> The inflation taken into consideration by Congress is the average of the inflation calculations made by private entities. These numbers are presented by the opposing political group. <http://www.tasadeinflacion.com.ar/ipc-congreso-julio-2014/>

<sup>3</sup> The downgrade of Argentina's credit rating reflects the heightened risk of default on its foreign currency debt following a recent decision by the United States Supreme Court not to hear the Argentine government's appeal against a previous decision by the United States Second Circuit Court of Appeals in favor of plaintiffs against the sovereign. Standard & Poor's stated that the Supreme Court decision increases interruption of payment risk of debts in foreign currency. There could be further downgrades ahead if there are payment interruptions or a distressed debt exchange (Standard & Poor's Rating Services. Press Release: S&P Downgrades All Rated Argentinean Banks 17 June 2014).

per USD; while in the informal market, it stood at 12.2 pesos per USD.<sup>4</sup> In the first half of 2014, the peso depreciated 21.5 percent in the informal market. This has generated significant price differences of similar goods between Argentina and Paraguay (30.1 percent as of June 2014) encouraging smuggling in the border area.<sup>5</sup>

**Trade with Brazil has been affected by its moderate growth rate and protective measures implemented by the *Receita Federal* (Internal Revenue Service) to limit border trade.** In the first half of 2014, exports to Brazil totaled 1,519 million, while imports from Brazil totaled 1,592 million. The *Receita Federal* has begun to limit Brazilian resident purchases in Paraguay. Brazilian residents are able to take back goods up to USD 300 worth per person, without need to file and pay taxes. In the first quarter of 2014 the GDP growth was 0.2 percent.<sup>6</sup> This is mainly due to the lower level of investment, the decline in private consumption, and reduced export demand. However, in annual terms, GDP grew 1.9 percent. The International Monetary Fund estimates economic growth for 2014 to be 1.8 percent, down from 2.3 percent in 2013.<sup>7</sup> The Central Bank of Brazil raised the policy rate (SELIC<sup>8</sup>) in the first half of 2014 from 10.5 percent to 11.0 percent.<sup>9</sup> This was mainly due to greater inflationary pressure, which stems from the effects of drought on agricultural production and rising electricity rates. In June, annual inflation was 6.52 percent, exceeding the ceiling band of 6.5 percent.

**The performance of the Chinese economy affects the price of raw materials exported by Paraguay.** Average GDP growth between 2004 and 2014 was 10.2 percent, however growth has slowly begun to decrease, with growth standing at 7.7 percent in 2012 and 7.7 percent in 2013. In May 2014, the Chinese government announced a series of incentives in order to boost growth, bolstering internal consumption. These measures include the introduction of tax exemptions for micro enterprises, the construction of housing for low-income families and increasing investment in the rail system. Also, the Central Bank of China lowered the required level of reserves for banks that lend to small and medium enterprises and the rural sector.<sup>10</sup> Annual inflation in June 2014

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<sup>4</sup> <http://www.ambito.com/economia/mercados/monedas/dolar/info/?ric=ARSB>

<sup>5</sup> Price analysis prepared by the Monetary Policy Department of the Central Bank of Paraguay.

<sup>6</sup> Central Bank of Brazil. “Relatório de inflação.” June 2014.

<sup>7</sup> International Monetary Fund. “World Economic Outlook-Recovery Strengthens, Remains Uneven.” Washington, April 2014.

<sup>8</sup> The SELIC rate is the interest rate index of the Special Clearance and Escrow System of the Central Bank of Brazil.

<sup>9</sup> Central Bank of Brazil <http://www.bcb.gov.br/?COPOMJUROS>

<sup>10</sup> The Wall Street Journal. China Unveils Mini-Stimulus Measures. 2 April 2014. <http://online.wsj.com/news/articles/SB10001424052702303847804579477060004679726> (last access: 24 July 2014).

is 2.3 percent. The International Monetary Fund estimates that GDP growth in 2014 will be 7.5 percent and projects the unemployment rate to be 4.1 percent.<sup>11</sup>

**Commerce between the United States and Paraguay fell between June 2013 and June 2014.** Exports and imports fell 10.6 percent and 6.2 percent respectively. The normalization of monetary policy in the United States will have a large impact on Paraguay's economy. As the Federal Reserve ends tapering<sup>12</sup> in the third quarter of 2014 and expected future rate hikes in the second half of 2015, a decrease of capital flow to emerging countries is expected. Year on year inflation in June was 2.1 percent, while the target rate set by the Federal Reserve is 2.0 percent. The unemployment rate fell from 6.6 percent in January 2014 to 6.1 percent in June of the same year. GDP grew 4.2 percent in the second quarter after declining 2.1 percent in the first quarter of 2014. The Bureau of Economic Analysis attributes the growth of GDP mainly to the growth in exports, private inventories and consumer spending.<sup>13</sup> The International Monetary Fund (IMF) in its World Economic Outlook from April 2014 estimated economic growth to reach 2.8 percent in 2014.<sup>14</sup>

**Commerce between the Eurozone and Paraguay fell between June 2013 and June 2014.** Exports and imports fell 13.6 percent and 15.6 percent respectively. Commerce has been primarily affected by sluggish growth in the Eurozone. During the second quarter of 2014, GDP (year on year) grew 0.7 percent in the Eurozone. The International Monetary Fund estimates that growth in the Eurozone will be 1.2 percent in 2014. The European Central Bank cut its key rates in June 2014. The interest rate applicable to Eurosystem refinancing operations decreased 10 basis points to settle at 0.15 percent, while the interest rate applicable to the marginal lending facility fell 35 basis points to 0.40 percent and the interest rate for the deposit facility declined 10 basis points to -0.10 percent. The Eurostat report shows that the unemployment rate in the Eurozone fell from 12.0 percent in June 2013 to 11.5 percent in June 2014.<sup>15</sup> Countries with the highest rate of unemployment are Greece and Spain with 25.8 percent with 24.5 percent respectively. Eurostat estimates indicate that the annual rate of inflation for June 2014 stands at 0.5 percent.<sup>16</sup> Since

<sup>11</sup> International Monetary Fund. "World Economic Outlook-Recovery Strengthens, Remains Uneven." Washington, April 2014.

<sup>12</sup> In the first semester of 2014, the monthly decline was USD 10 billion until May. Purchases went from 85 billion a month in January to USD 35 billion a month in June.

<sup>13</sup> U.S. Department of Commerce. Bureau of Economic Analysis. 25 June 2014.

<http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm> (last access: 28 August 2014).

<sup>14</sup> International Monetary Fund. "World Economic Outlook-Recovery Strengthens, Remains Uneven." Washington, April 2014.

<sup>15</sup> Eurostat. 17 July 2014.

[http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/2-17072014-AP/EN/2-17072014-AP-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-17072014-AP/EN/2-17072014-AP-EN.PDF) (last access: 23 July 2014).

<sup>16</sup> Eurostat. 8 September 2014.

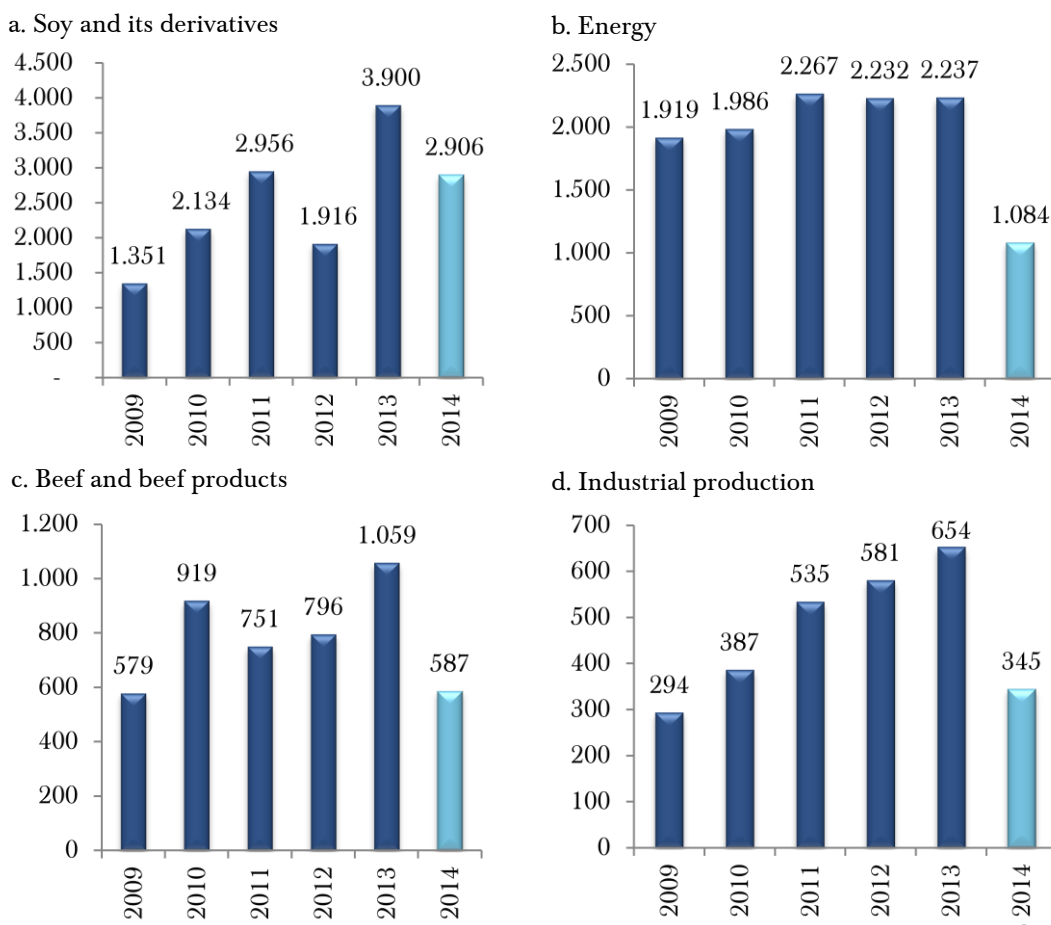
[http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/3-31072014-BP/EN/3-31072014-BP-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/3-31072014-BP/EN/3-31072014-BP-EN.PDF) (last access: 24 July 2014).

October 2013, the annual inflation rate has been less than 1.0 percent. Lower inflation is primarily due to lower prices of food and energy.<sup>17</sup> The European Central Bank commented that in the second half of the year inflation would accelerate moderately in response to a higher output gap and an increase in imported inflation.

**International prices of the main products exported by Paraguay have declined, with the exception of beef prices.** Between June 2013 and June 2014, soybean prices fell 5.3 percent, corn fell 32.1 percent and wheat fell 13.9 percent. Unlike agricultural commodities, international beef prices rose 19.9 percent in the same period.<sup>18</sup>

**Figure I.1: Accumulated foreign exchange inflow from exports**

Millions of USD



Note: Income from energy corresponds to foreign income in royalties and compensation for transfer of power.

Source: Statistical Appendix of the Economic Report. Banco Central del Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

<sup>17</sup> European Central Bank. Press Release. 5 July 2014.

<http://www.ecb.europa.eu/press/pr/date/2014/html/pr140605.es.html>  
(last access: 23 July 2014).

<sup>18</sup> Statistical Appendix of the Economic Report. Banco Central del Paraguay. July 2014.

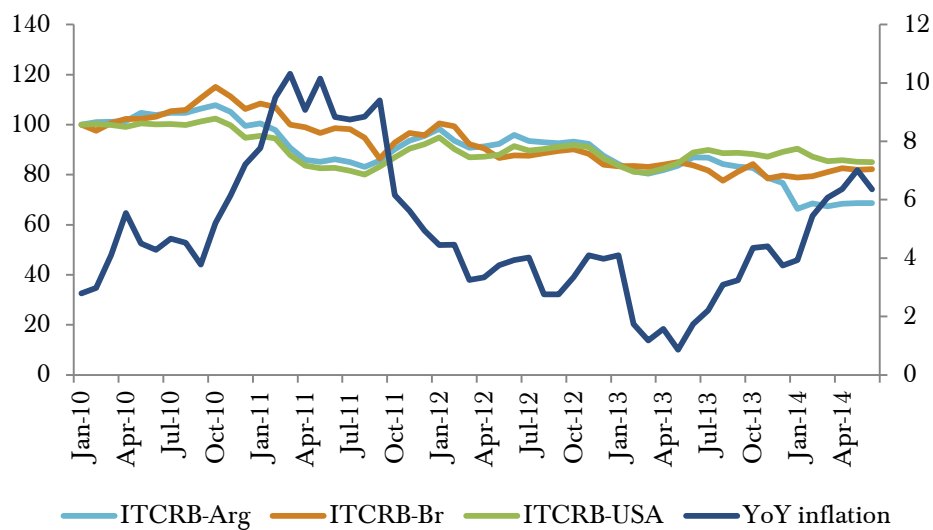
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The main source of foreign currency flows to Paraguay comes from its principal exports. As of June 2014, the income from the export of soybeans and its related products is USD 2,906 million. In 2013, income from soy and its related products reached its highest level ever of USD 3,900 million. Income from electricity exports decreased, reaching USD 1,084 million in June 2014, down 1.6 percent from its level in June 2013. Foreign currency flows from meat exports totaled USD 587 million in June 2014, which represents an increase of 22.7 percent compared to June 2013 figures (Figure 1.1).

Since January 2012, low inflation and a stable nominal exchange rate in Paraguay led to an appreciation of the real exchange rate. The real exchange rate in the first half of 2014 experienced an increase of 0.8 percent. Official exports as of June 2014 were 3.4 percent lower than those recorded in the same period last year, while imports increased 7.1 percent. A wide price difference with Argentina has contributed to the increase of smuggling during the first half of 2014.

Figure 1.2: Real effective exchange rate

Index base January 2010= 100; percentage, year on year



Note: Real bilateral exchange rate index (ITCRB = *Indice de tipo de cambio real bilateral*).

Source: Statistical Appendix of the Economic Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

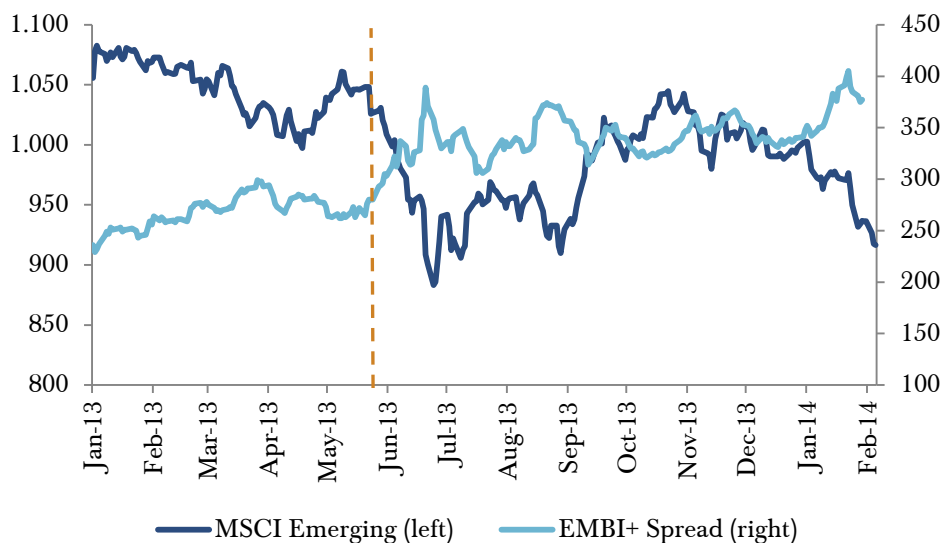
### 1.1. Normalization of the United States of America's monetary policy

The Federal Reserve started quantitative easing in 2008. In addition to reducing the monetary policy rate, unconventional monetary stimulus was implemented. The purchase of Treasury bonds and mortgage backed securities was introduced to stimulate lending and revive economic activity.

**In May 2013, statements made by the Federal Reserve chairman raised expectations that significant changes would occur in monetary policy.** Ben Bernanke announced that the monthly asset purchases of USD 85 billion would continue until the unemployment rate drops below the 6.5 percent mark. These statements were interpreted as a sign that the Federal Reserve would reduce in the short-term its asset purchases, taking into consideration the growth experienced in the labor market between October 2009 and April 2013. Uncertainty as to when the normalization would occur led to volatility in financial markets. The 10 year Treasury Bond rate rose 60 basis to 2.5 percent from 21 May 2013 to 21 June 2013.

**Financial markets in emerging economies were hit hardest by the announcement.** In the same period sovereign spreads, as measured by the EMBI+, increased 60 basis points, directly affecting the USD debt of emerging economies (Figure 1.3). With higher rates in the United States, portfolio managers started to shift their focus back to the United States, reversing the flow of capital that once sought higher returns in emerging economies. Stock markets of emerging economies fell 14 percent in this period.

**Figure 1.3: Stock indexes and Emerging Markets Bonds Index spread among emerging economies**  
Index; spread



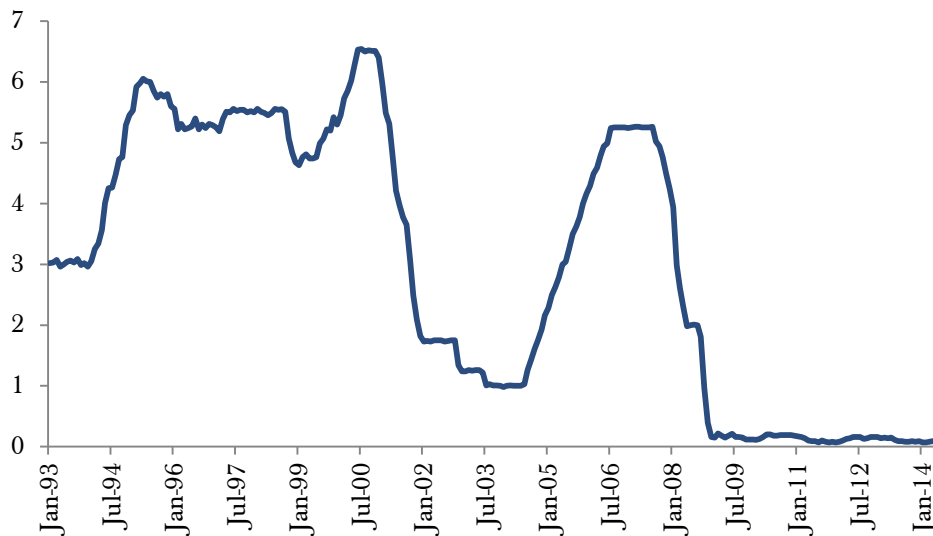
Note: The Emerging Markets Bonds Index (EMBI) + spread is the difference in interest rates between USD denominated bonds issued by emerging countries and the Treasury of the United States, which are considered to be risk-free. The Morgan Stanley Capital International Emerging (MSCI Emerging) is a stock index of emerging economies.

Source: Bloomberg and Reuters. Last access: 21 July 2014.

**In the currency market, the guaraní and other regional currencies depreciated against the USD.** The month following the announcement made by the Federal Reserve the guaraní depreciated 6.2 percent. From a commerce viewpoint, the depreciation of the

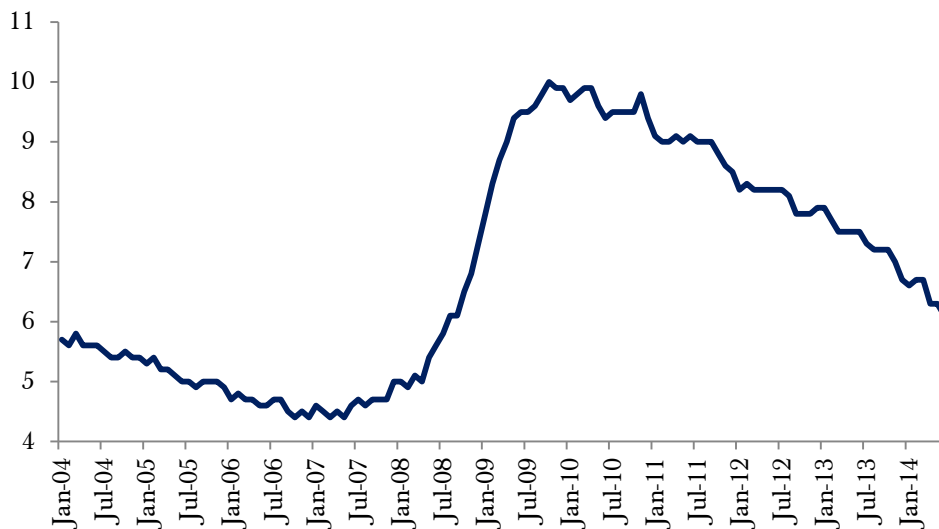
currency would increase the competitiveness of our products and consequently improve the current account. However, the depreciation of the exchange rate negatively affects the purchasing power of those whose income is in guaraní. This directly affects importers who are indebted in USD and sell their products in guaraní. Depreciation in the guaraní raises the cost of USD denominated debt, making it more difficult for borrowers to repay their loans, leading to the deterioration of the quality of loan portfolios of financial institutions.

**Figure I.4: Effective federal funds rate**  
Percentage



Source: Board of Governors of the Federal Reserve System.

**Figure I.5: United States unemployment rate**  
Percentage



Source: Bureau of Labor Statistics.

<http://data.bls.gov/timeseries/LNS14000000>

The last time the Federal Reserve raised the federal funds rate was in 2004 (Figure 1.4). Taking this reference point to analyze macroeconomic conditions in Paraguay, Table 1.1 summarizes the macroeconomic indicators in Paraguay in 2004 and the current macroeconomic conditions.

On December 2013, Ben Bernanke announced that as of January 2014 the Federal Reserve would continue the taper of asset purchases. Since January 2014 the purchase of mortgage-backed securities and government bonds decreased from USD 85 billion to USD 75 billion a month. Since then, the Federal Reserve has gradually reduced purchases by USD 10 billion in the months of February, April, May and July 2014.

Table 1.1: Macroeconomic indicators

Year/Indicator	Accumulated	External	Current	International
	inflation	public debt	account	reserves
	%	% of GDP	% of GDP	% of GDP
2003	9.3%	37.6%	0.3%	10.6%
2004	2.8%	29.7%	-0.1%	14.5%
June 2014	3.2%	8.7%	1.4%	21.4%

Note: The last time the Federal Reserve increased the federal funds rate was in 2004.

Source: Statistical Appendix of the Economic Report. Banco Central del Paraguay. June 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

Paraguay today has stronger macroeconomic fundamentals than it had in 2004. Inflation is low and stable, thanks to the implementation of the inflation targeting regime in 2011. External public debt is less than 10 percent of GDP. Paraguay is the country with the lowest level of debt, compared to countries with the same credit rating.<sup>19</sup> The current account is at a surplus showing signs of strength in the balance of payments. The level of international reserves increased due to surpluses in the current account and the capital account.<sup>20</sup> The dollarization of the banking system decreased since 2004 with a lower proportion of USD deposits and loans.

Table 1.2: Loans and deposits in foreign currency

Participation	December 2003	December 2004	June 2014
Deposits in foreign currency	57.5%	51.6%	42.6%
Loans in foreign currency	50.3%	46.4%	44.7%

Note: The data corresponds to banks and other financial institutions.

Source: Financial and Statistical Bulletin. Superintendency of Banks. December 2003, December 2004 and June 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

<sup>19</sup> Countries with BB credit rating by Standard and Poors, Ba2 by Moody's and BB- by Fitch.

<sup>20</sup> Banco Central del Paraguay. Preliminary Economic Report. December 2013.

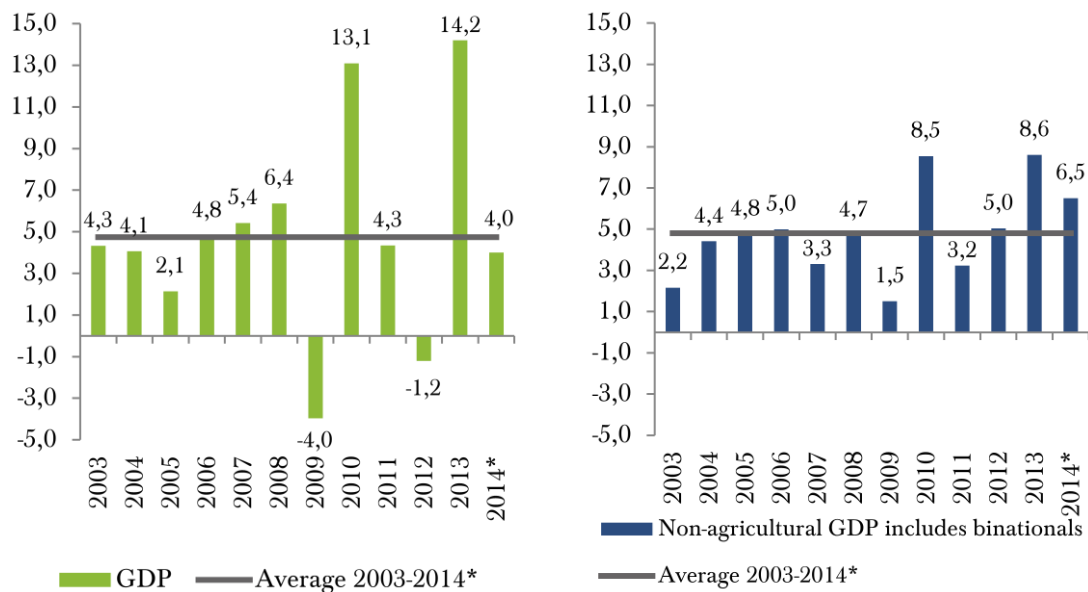
## 2. Macroeconomic environment and monetary policy

### 2.1 Macroeconomic environment

**Average GDP growth in the period 2003-2013 was 4.8 percent.** In 2013 GDP growth reached 14.2 percent, mostly due to good weather conditions that permitted recovery from the contraction observed in 2012, as the drought affected the agricultural sector and related activities.

**Growth volatility is concentrated in specific sectors.** It has its origin largely in variations in the product of the agricultural sector and the contributions of the binational entities to the GDP. The evolution of the product of these two sectors reflects in part the influence of exogenous factors, for example weather and international prices. This can be observed in Figure 2.1 that presents the evolution of total GDP versus the evolution of GDP without the contribution of the agricultural sector and the binational entities.

Figure 2.1: GDP growth, 2003 - 2014  
Percentage



Note: \*Estimates.

Source: Statistical Appendix of the Economic Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

**The fiscal deficit during the period of 2003 to 2013 averaged 0.3 percent of GDP.** This is due to the fact that between 2004 and 2011 there were eight continuous years of fiscal surpluses. In 2012 the central government ended with a fiscal deficit of 1.7 percent of GDP. In 2013, the deficit increased to 1.9 percent of GDP. In October 2013, the Executive Branch endorsed the Fiscal Responsibility Act, which limits the fiscal deficit to 1.5 percent of GDP. The external public debt declined from 37.6

percent to 9.0 percent of GDP in the period 2003-2013.<sup>21</sup> In January 2013, the government issued ten-year sovereign bonds for a total of USD 500 million, at a rate of 4.625 percent.

**Inflation for 2013 ended at 3.7 percent, and year on year inflation for June 2014 stood at 6.4 percent.** The Central Bank of Paraguay adopted an inflation targeting regime in May 2011. The current target is set at 5 percent, as measured by the annual change in the Consumer Price Index. The tolerance range is +/- 2 percent and the policy horizon is 18 to 24 months.

**The deposits in the financial system denominated in local currency represent 57.4 percent of total deposits in June 2014.** Due to the country's structure of production 42.6 percent of deposits are denominated in foreign currency. However, since 2006 more than half of deposits are denominated in local currency.

## 2.2 Monetary policy

The monetary policy rate (*tasa de política monetaria*, TPM) is the target rate used by the Central Bank of Paraguay to implement monetary policy. The Central Bank of Paraguay uses a rate corridor to reach its target, with the TPM being the center of the set corridor (Figure 2.2). The floor of the corridor is set by the standing deposit facility rate (*facilidad permanente de depósitos*, FPD) and the ceiling of the corridor is set by the standing lending facility rate (*facilidad permanente de liquidez*, FPL)<sup>22</sup> Currently the interbank rate has settled close to the floor of the corridor. The interbank rate is calculated by taking the weighted average of interbank call rates in guaraní, interbank repo rates, and the interbank tripartite repo rates (where the Central Bank of Paraguay acts as an intermediary between banks to mitigate counterparty risk). The average interbank rate for June 2014 was 5.7 percent.

**The TPM from February - June 2014 has been maintained at 6.75 percent, while the FPL rate stood at 7.75 percent and the FPD rate at 5.75 percent.** The TPM has increased three times in the last seven months, the first from 5.5 percent to 6.0 percent in December 2013, the second from 6.0 percent to 6.5 percent in January 2014, and the third from 6.5 percent to 6.75 percent in February 2014. Considering June inflation, the real interest rate is 0.4 percent. The objective of the gradual increase in the TPM was to contain inflationary pressures throughout the monetary policy horizon. The main variable causing inflationary pressure at the end of 2013 and beginning of 2014 was the price of goods and services, which was expected to increase as public transportation charges increased.

<sup>21</sup> Statistical Appendix of the Economic Report. Banco Central del Paraguay. July 2014.

<sup>22</sup> The FPL is set by the repo rate between the financial institution and the Central Bank of Paraguay.

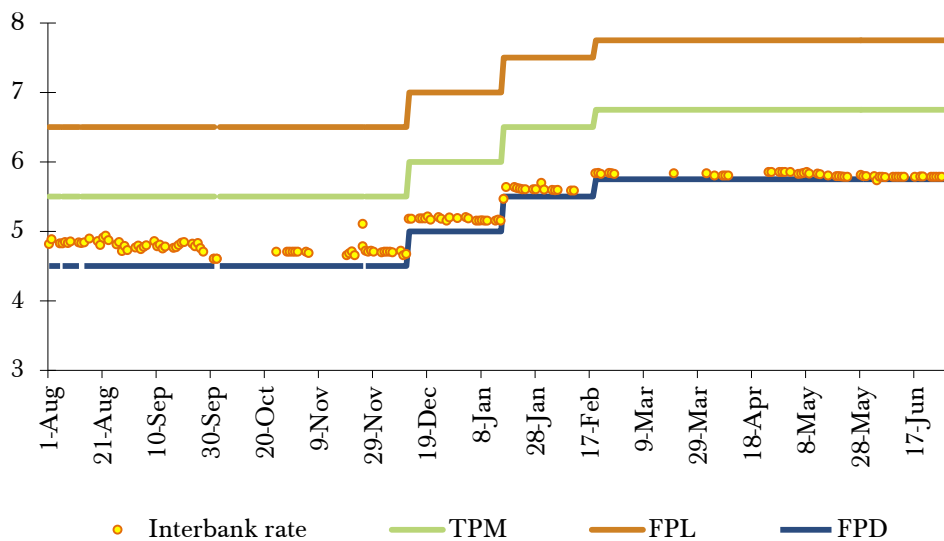
**The liquidity level of financial institutions held at the Central Bank of Paraguay increased.** Liquid assets amounted to 11.4 trillion guaraníes in June 2014, representing a 14.7 percent increase compared to June 2013. Much of these liquid assets, 73.9 percent, are invested in IRMs, Treasury Bonds, and Development Finance Agency Bonds. The remaining 26.1 percent are primarily left in the FPD (Figure 2.3).

**The Central Bank of Paraguay controls liquidity in the system using the IRMs.** In June 2014, the IRMs balance amounted to 5.1 trillion guaraníes, representing a 16.2 percent decrease from the June 2013 balance. The weighted average yield of IRMs was 6.3 percent in June 2014, up from 5.6 percent in June 2013 (Figure 2.4).

**A total of 90.2 percent of IRMs are allocated with maturities less than one year.** The structure balance of maturities is as follows: 17.8 percent (7-45 days), 35.6 percent (60-90 days), 19.6 percent (120-180 days), 17.2 percent (245-365 days) and finally 9.8 percent with maturities over 350 days.

**Figure 2.2: Money market**

Percentage



Note: The interbank rate results from the addition of the interbank call rates in guaraníes and the rate of the interbank liquidity window of the Central Bank of Paraguay.

TPM: monetary policy rate.

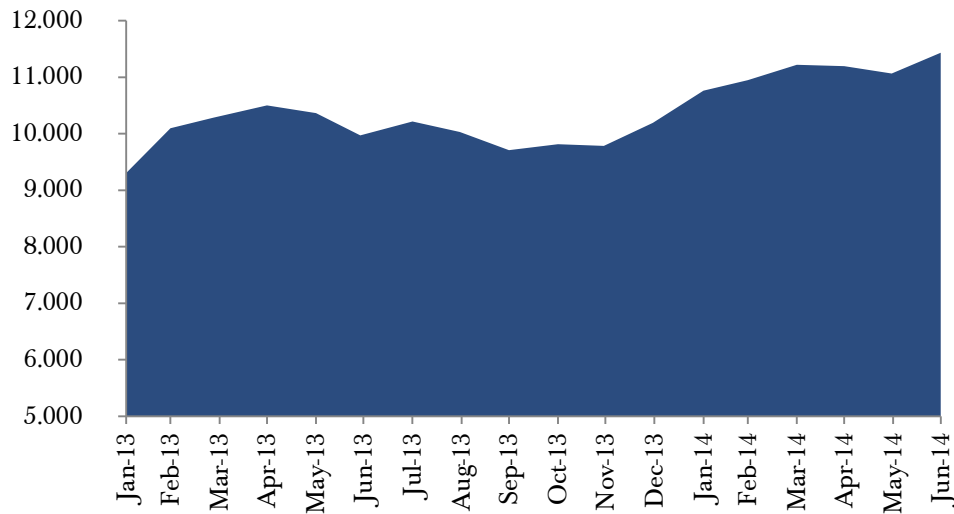
FPL: Standing lending facility rate (facilidad permanente de liquidez).

FPD: Standing deposit facility rate (facilidad permanente de depósitos).

Source: Statistical Appendix of the Economic Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

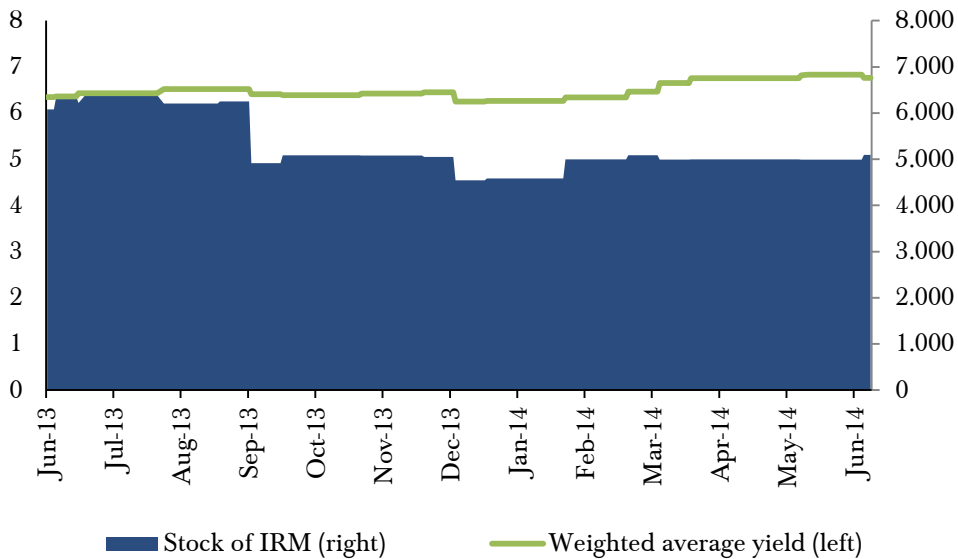
**Figure 2.3: Available liquidity at the Central Bank of Paraguay and government securities**  
Billion guaraníes



Note: Liquidity is the result of the addition of the current account of the financial institutions at the Banco Central, the standing deposit facility (FPD), and their positions in monetary regulation instruments (IRMs), Treasury Bonds, and securities of the Financial Development Agency.

Source: Prepared with data from the Department of Open Market Operations. Central Bank of Paraguay.

**Figure 2.4: Monetary Regulation Instruments, balance and returns**  
Percentage; billion guaraníes



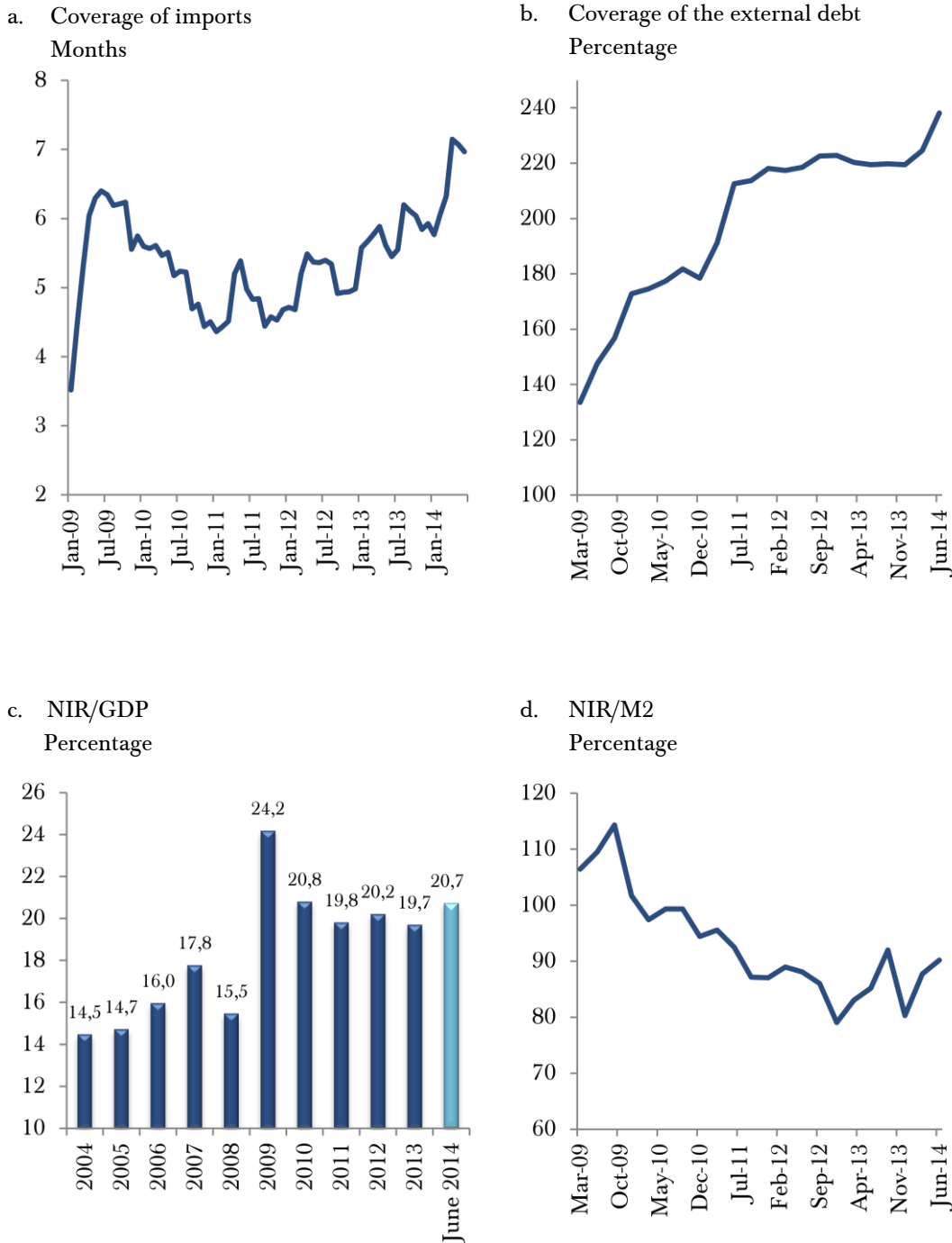
Note: The stock of IRMs as June 2014 is 5.1 trillion guaraníes. This equals approx. USD 1,2 billion.

Source: Statistical Appendix of the Economic Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

**In June 2014, net international reserves (NIR) amounted to USD 6.38 billion.** Solid reserve adequacy can be seen through the following indicators: Import coverage (6.9 months), NIR/External Debt ratio (240 percent), NIR/M2 ratio (90.2 percent), NIR/GDP ratio (20.7 percent) (Figure 2.5).

**Figure 2.5: Net international reserves**



Note: The ratio NIR/GDP uses the GDP estimation expressed in current USD for 2014 of the Central Bank.

Source: Statistical Appendix of the Economic Report. Banco Central del Paraguay. July 2014.

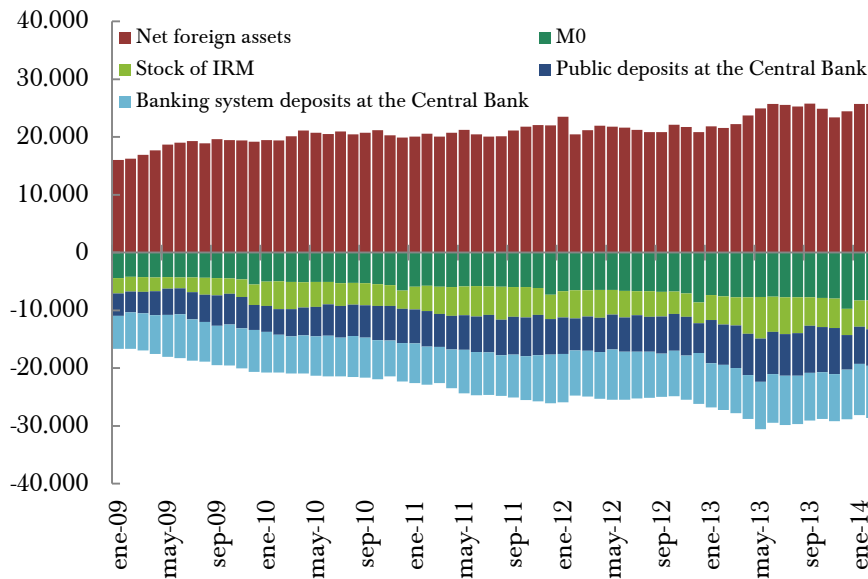
<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

## 2.3 Currency market

**Net foreign assets of the Central Bank of Paraguay increased 78.5 percent from 2009 to June 2014.** This is mainly due to an increase of foreign currency inflow, driven primarily by the increase in agricultural exports, remittances from abroad and income from bi-national institutions (Figure 2.6).

**Figure 2.6: Monetary balance**

Billion guaraníes



Note: Monetary regulation instruments (IRMs).

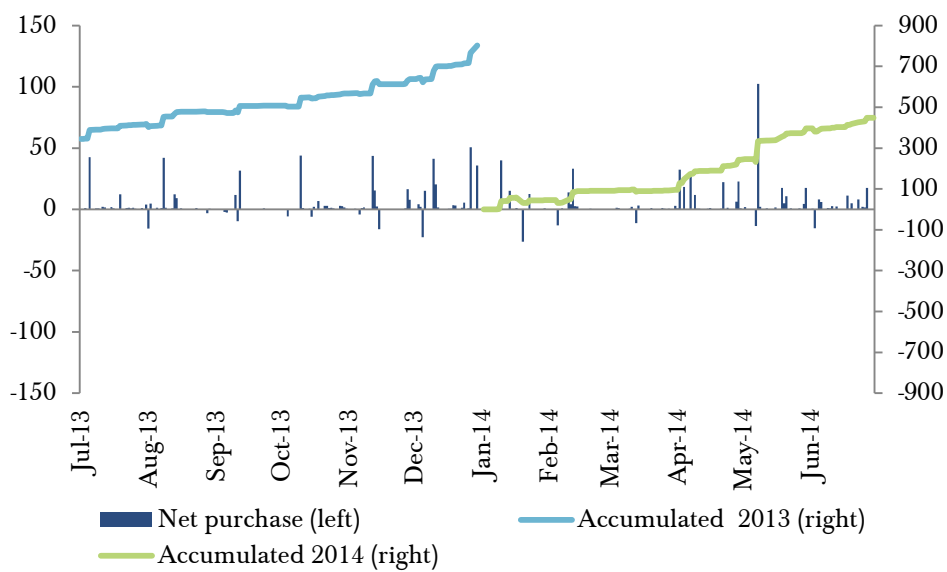
Source: Statistical Appendix of the Economic Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

**The increase in foreign assets led to a surge of liquid assets of financial institutions held at the Central Bank of Paraguay.** These effects were partially offset by the scheduled sale of foreign currency by the Central Bank of Paraguay to financial institutions. The Central Bank of Paraguay establishes scheduled sales of foreign currency to financial institutions to offset its purchases of foreign currency from the Ministry of Finance. Net foreign currency purchases from the Ministry of Finance as of June 2014 totaled USD 448.6 million (Figure 2.7). The financial system is previously notified by the Central Bank of Paraguay through a press release, detailing the period of the scheduled foreign currency sale and the daily amounts. The Central Bank of Paraguay emitted a press release detailing that from 3 June 2014 to 30 June 2014; there would be a scheduled foreign currency sale of two million USD a day.

From December 2013 to June 2014 the guaraní appreciated 4.6 percent versus the USD. The nominal exchange rate during this period went from 4,598 to 4,387 PYG/USD.<sup>23</sup> The surge in forward transactions reflects the growing interest of institutions to minimize exchange rate risk. Foreign exchange forward contracts have been available in the market since 2009. In June 2014, foreign exchange forward volume totaled \$22 million on the buy-side and \$58 million on the sell-side. In the same period last year, foreign exchange forward volume totaled \$11 million on the buy-side and \$22 million on the sell-side, which implies a year on year increase in the foreign exchange forward market of 100.0 percent and 163.6 percent respectively.

**Figure 2.7: Public sector foreign exchange net purchase**  
Million USD; million USD



Source: Prepared with data from the Department of Open Market Operations, Central Bank of Paraguay.

<sup>23</sup> The foreign exchange data corresponds to the daily data provided by the Open Market Operations Department of the Central Bank of Paraguay.

### 3. Structure of the financial system

**The Superintendency of Banks of the Central Bank of Paraguay regulates and supervises part of the financial system.** The supervised institutions are 16 banks and 13 financial companies. The assets of the banks represent 95.0 percent of the assets in the supervised system, and the assets of the financial companies represent 5.0 percent. Unlike the banks, the financial companies have lower regulatory capital; they do not offer current accounts, and do not perform international commerce operations.<sup>24</sup>

**Banks and financial companies are classified after the characteristics of their shareholders:**

- Three banks are branch offices of foreign banks
- Four banks are majority owned by foreign banks
- Eight banks are majority owned by locals
- One bank is owned by the State

The rest of the financial sector that is not being supervised by the Superintendency of Banks comprises cooperatives, institutional investors and other institutions (Table 3.3).

#### 3.1. Assets and awarded credits

**As of June 2014 the assets of banks and financial companies reached 86.4 trillion guaraníes.**<sup>25</sup> These increased 20.8 percent between June 2013 and June 2014. In the same period, bank assets raised 20.4 percent and financial companies' assets 28.5 percent (Table 3.1).

**The net portfolio represents 58.0 percent of total assets in the financial system.** The same reached 50.2 trillion guaraníes in June 2014. This increased 19.2 percent between June 2013 and June 2014. The total portfolio reached 51.7 trillion guaraníes in June 2014. This increased 19.5 percent between June 2013 and June 2014 (Figure 3.1).

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<sup>24</sup> Law N° 861/96 is the general law governing financial institution.

<sup>25</sup> To obtain the amounts of this section expressed in foreign currency, the following exchange rates should be applied: in June 2014 the exchange rate of the guaraní relative to the USD is 4,405 and relative to the euro is 6,034 (Statistical Annex of the Financial Indicators Report of Central Bank of Paraguay).

**Table 3.1: Main accounts in the financial system**Millions of guaraníes  
June 2014

	Assets	Availability + investment	Net portfolio <sup>1</sup> balance	Deposits	Equity	Earnings
Banks	82,142,704	29,073,099	46,951,566	59,439,207	8,697,744	967,820
Financial companies	4,293,614	747,401	3,212,168	3,178,185	616,502	39,502
<b>Total financial system</b>	<b>86,436,318</b>	<b>29,820,500</b>	<b>50,163,734</b>	<b>62,617,392</b>	<b>9,314,246</b>	<b>1,007,322</b>
			Year variation <sup>2</sup>			
Banks	20.4%	22.0%	19.2%	19.2%	21.1%	105,249
Financial companies	28.5%	25.6%	25.2%	31.1%	12.9%	10,644
<b>Total financial system</b>	<b>20.8%</b>	<b>22.0%</b>	<b>19.6%</b>	<b>19.8%</b>	<b>20.5%</b>	<b>115,893</b>

Notes:

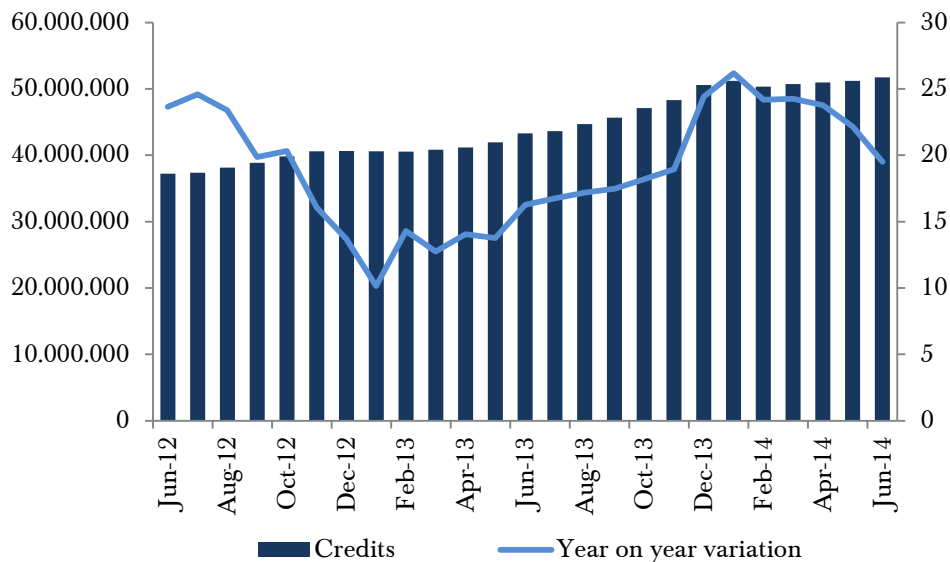
1/ Net portfolio: Call + discounted documents + financial sector existing credits + borrowers by documentary deferred credits + portfolio due for payment.

2/ Corresponds to the variation between June 2013 and June 2014, except Earnings, that is in millions of guaraníes.

Source: Statistical and Financial Bulletin. Superintendency of Banks.

**Figure 3.1: Total credit in the financial system**

Millions of guaraníes; year on year variation, percentage



Source: Statistical Annex of the Financial Indicators Report. Central Bank of Paraguay. July 2014.

Table 3.2: Banks and financial companies in Paraguay, June 2014

Banks	Web
Branch offices of foreign banks	
Banco de la Nación Argentina	<a href="http://www.bna.com.py/">http://www.bna.com.py/</a>
Citibank N.A.	<a href="http://www.latam.citibank.com/paraguay/">http://www.latam.citibank.com/paraguay/</a>
Banco do Brasil S.A.	<a href="http://www.bb.com.br/portalbb/home2,7689,7689,0,0,1,0.bb">http://www.bb.com.br/portalbb/home2,7689,7689,0,0,1,0.bb</a>
With majority owned by foreign banks	
Banco Bilbao Viscaya Argentaria S.A.	<a href="https://www.bbva.com.py/public/">https://www.bbva.com.py/public/</a>
Banco GNB Paraguay S.A.	<a href="http://www.bancognb.com.py/">http://www.bancognb.com.py/</a>
Banco Itaú Paraguay S.A.	<a href="http://www.itau.com.py/">http://www.itau.com.py/</a>
Sudameris Bank S.A.E.C.A.	<a href="http://www.sudamerisbank.com.py/">http://www.sudamerisbank.com.py/</a>
With majority owned by local banks	
Banco Amambay S.A.	<a href="http://www.bancoamambay.com.py/">http://www.bancoamambay.com.py/</a>
Banco Atlas S.A.	<a href="http://www.bancoatlas.com.py/">http://www.bancoatlas.com.py/</a>
Banco Continental S.A.E.C.A.	<a href="http://www.bancontinental.com.py/">http://www.bancontinental.com.py/</a>
Banco Familiar S.A.E.C.A.	<a href="https://www.familiar.com.py/">https://www.familiar.com.py/</a>
Banco Itapúa S.A.E.C.A.	<a href="http://www.bancoitapua.com.py/">http://www.bancoitapua.com.py/</a>
Banco Regional S.A.E.C.A.	<a href="https://www.regional.com.py/">https://www.regional.com.py/</a>
Bancop S.A.	<a href="http://www.bancop.com.py/">http://www.bancop.com.py/</a>
Visión Banco S.A.E.C.A.	<a href="http://www.visionbanco.com/">http://www.visionbanco.com/</a>
Owned by the state	
Banco Nacional de Fomento	<a href="http://www.bnf.gov.py/">http://www.bnf.gov.py/</a>
Financial companies	
Ara S.A. de Finanzas	<a href="https://www.ara.com.py/">https://www.ara.com.py/</a>
Crisol y Encarnación Financiera S.A. (CEFISA)	<a href="http://www.cefisa.com.py/">http://www.cefisa.com.py/</a>
El Comercio Financiera S.A.E.C.A.	<a href="http://www.elcomercio.com.py/">http://www.elcomercio.com.py/</a>
Fic S.A. de Finanzas	<a href="https://webserver.fic.com.py/">https://webserver.fic.com.py/</a>
Financiera Exportadora Paraguaya S.A. (FINEXPAR)	<a href="http://www.finexpar.com.py/">http://www.finexpar.com.py/</a>
Financiera Internacional Santa Ana S.A.	<a href="http://www.santana.com.py/">http://www.santana.com.py/</a>
Financiera Paraguay - Japonesa S.A.E.C.A.	<a href="http://www.japonesa.com.py/">http://www.japonesa.com.py/</a>
Financiera Río S.A.	<a href="http://www.río.com.py/">http://www.río.com.py/</a>
Finlatina S.A. de Finanzas	<a href="http://www.finlatina.com.py/">http://www.finlatina.com.py/</a>
Grupo Internacional de Finanzas S.A.E.C.A. (INTERFISA)	<a href="https://www.interfisa.com.py/">https://www.interfisa.com.py/</a>
Solar S.A. de Ahorro y Préstamo para la Vivienda	<a href="http://www.solar.com.py/">http://www.solar.com.py/</a>
Tú Financiera S.A.	<a href="http://www.tu.com.py/">http://www.tu.com.py/</a>
Owned by the state	
Fondo Ganadero	<a href="http://www.fondogan.gov.py/">http://www.fondogan.gov.py/</a>

Note: Fic SA de Finanzas started reporting to the Superintendency of Banks in July 2014.

Table 3.3: Assets in the financial system

Millions of guaraníes

December 2013

	Dec-11				Dec-12				Dec-13			
	Number of institutions	Assets in millions of guaraníes	Assets as % of total assets in the system	Assets as % of GDP	Number of institutions	Assets in millions of guaraníes	Assets as % of total assets in the system	Assets as % of GDP	Number of institutions	Assets in millions of guaraníes	Assets as % of total assets in the system	Assets as % of GDP
<b>Banks</b>	<b>15</b>	<b>54,377,028</b>	<b>64.5%</b>	<b>51.7%</b>	<b>16</b>	<b>60,423,147</b>	<b>64.4%</b>	<b>55.5%</b>	<b>16</b>	<b>76,082,240</b>	<b>72.6%</b>	<b>59.0%</b>
Branch offices of foreign banks	3	3,678,023	4.4%	3.5%	3	3,228,152	3.4%	3.0%	3	3,568,381	3.4%	2.8%
With majority owned by foreign banks	4	22,283,449	26.4%	21.2%	4	23,295,327	24.8%	21.4%	4	29,755,358	28.4%	23.1%
With majority owned by local banks	7	25,562,527	30.3%	24.3%	8	30,486,349	32.5%	28.0%	8	38,522,247	36.8%	29.9%
Owned by the state	1	2,853,029	3.4%	2.7%	1	3,413,319	3.6%	3.1%	1	4,236,254	4.0%	3.3%
<b>Financial companies</b>	<b>12</b>	<b>2,688,228</b>	<b>3.2%</b>	<b>2.6%</b>	<b>12</b>	<b>3,056,093</b>	<b>3.3%</b>	<b>2.8%</b>	<b>12</b>	<b>3,922,378</b>	<b>3.7%</b>	<b>3.0%</b>
<b>Cooperatives</b>	<b>489</b>	<b>15,095,389</b>	<b>17.9%</b>	<b>14.3%</b>	<b>443</b>	<b>16,347,132</b>	<b>17.4%</b>	<b>15.0%</b>	<b>255</b>	<b>18,307,433</b>	<b>17.5%</b>	<b>14.2%</b>
Credit and savings (Type A)	27	6,429,270	7.6%	6.1%	27	7,307,345	7.8%	6.7%	27	8,675,322	8.3%	6.7%
Production (Type A)	20	6,807,924	8.1%	6.5%	20	7,348,786	7.8%	6.8%	20	7,871,621	7.5%	6.1%
Other cooperatives	51	275,890	0.3%	0.3%	44	195,533	0.2%	0.2%	19	89,423	0.1%	0.1%
Credit and savings (Type B - C)	300	1,288,805	1.5%	1.2%	268	1,145,098	1.2%	1.1%	159	1,391,979	1.3%	1.1%
Production (Type B - C)	91	293,500	0.3%	0.3%	84	350,370	0.4%	0.3%	30	279,089	0.3%	0.2%
<b>Institutional investors</b>	<b>39</b>	<b>11,647,051</b>	<b>13.8%</b>	<b>11.1%</b>	<b>40</b>	<b>4,810,978</b>	<b>14.4%</b>	<b>12.4%</b>	<b>40</b>	<b>5,834,940</b>	<b>5.6%</b>	<b>0.0%</b>
Insurance companies	34	1,634,863	1.9%	1.6%	35	1,944,590	2.1%	1.8%	35	2,266,305	2.2%	1.8%
<i>Instituto de Previsión Social (IPS)</i>	1	7,425,163	8.8%	7.1%	1	8,669,419	9.2%	8.0%	1		0.0%	0.0%
Pension funds <sup>1</sup>	4	2,587,025	3.1%	2.5%	4	2,866,388	3.1%	2.6%	4	3,568,635	3.4%	2.8%
<b>Other institutions</b>	<b>35</b>	<b>479,939</b>	<b>0.6%</b>	<b>0.5%</b>	<b>36</b>	<b>497,221</b>	<b>0.5%</b>	<b>0.5%</b>	<b>35</b>	<b>581,469</b>	<b>0.6%</b>	<b>0.5%</b>
Exchange office	31	343,700	0.4%	0.3%	32	339,781	0.4%	0.3%	31	385,533	0.4%	0.3%
<i>Almacenes generales de depósitos</i>	4	136,240	0.2%	0.1%	4	157,441	0.2%	0.1%	4	195,936	0.2%	0.2%
<b>Total financial system</b>	<b>590</b>	<b>84,287,635</b>	<b>100.0%</b>	<b>80.1%</b>	<b>547</b>	<b>85,134,571</b>	<b>100.0%</b>	<b>86.2%</b>	<b>358</b>	<b>82,852,392</b>	<b>100.0%</b>	<b>81.3%</b>

<sup>1</sup> Corresponds to *Caixa Itaibú*, *Caixa Ande*, *Caixa Bancaria*, and *Caixa Mutual de Cooperativistas del Paraguav*.

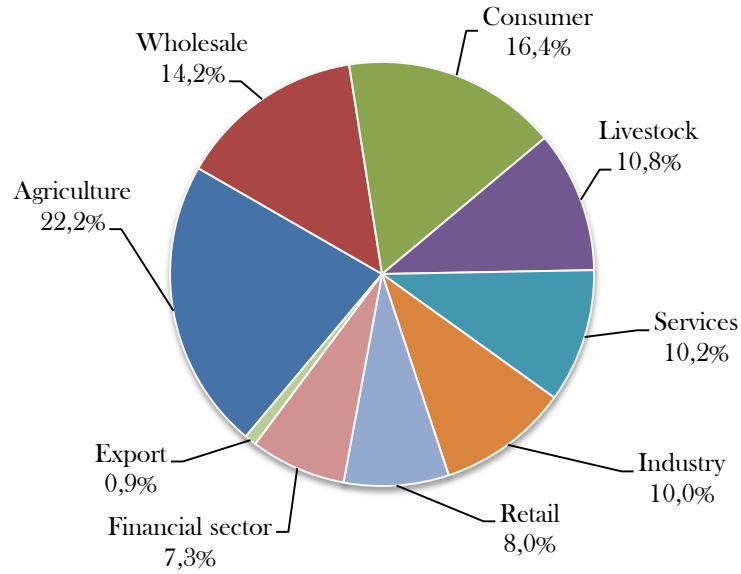
**Between June 2013 and June 2014, the sectors that gave impulse to the rise in the credit portfolio were the agricultural sector, the livestock sector, and the service sector.** The credits given to the agricultural sector increased 19.8 percent. The credits given to the livestock sector increased 12.8 percent, and the credits given to the service sector increased 55.4 percent. At the same time, the credit expansion was accompanied by an increase in NPLs in all sectors. The higher levels of credits and the provisions that accompany them permit quality indicators, such as NPL, and coverage indicators, such as previsions, to stay at a higher level than the minimum required by the Superintendency of Banks.

**The credits that were assigned to consumption represent 16.4 percent of total credit.** The balance as of June 2014 reaches 9.4 trillion guaraníes. This increased 18.4 percent since June 2013. From the portfolio of credits assigned to consumption, 26.9 percent are credit cards, 15.4 percent are for housing and the rest are dedicated to direct consumption. This last category includes the credits that banks and financial companies are giving through commercial establishments, car dealers, etc. (Figure 3.2).<sup>26</sup>

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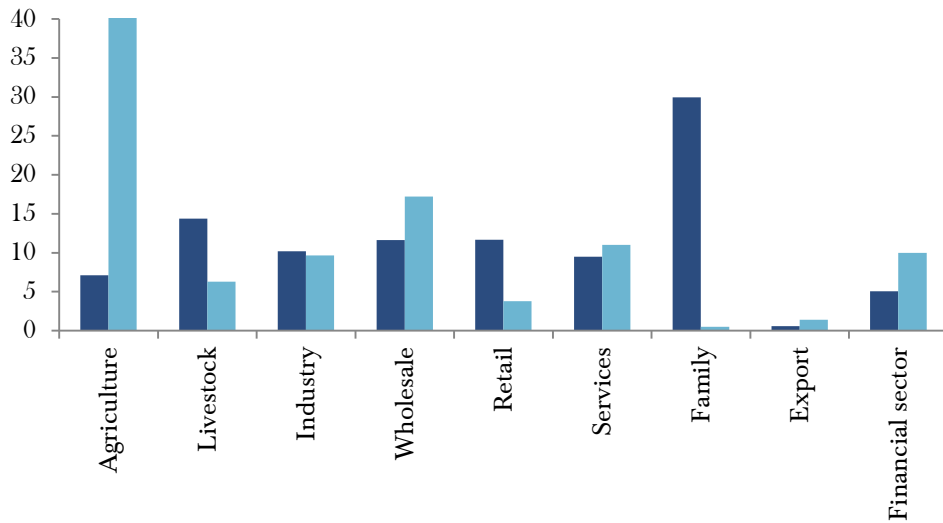
<sup>26</sup> Part of the household debt is held by institutions that are not under the supervision of the Superintendency of Banks. These institutions are usually credit and saving cooperatives, commercial establishments, car dealers, insurance companies, and some public institutions.

**Figure 3.2: Credit concentration in the financial system by economic activity**  
Percentage



Source: Statistical and Financial Bulletin. Superintendency of Banks.

**Figure 3.3: Credit concentration in the financial system by sector and currency**  
Percentage



Source: Central of Information Office. Superintendency of Banks.

**Credits dedicated to the agriculture represent 40.2 percent of the total credit given in USD.** The share of credits for the agriculture in guaraníes is 7.1 percent of the total credit given in local currency. From the total credit given in guaraníes, the ones dedicated to household consumption represent 29.9 percent. However, credit for household consumption in USD represent 0.5 percent of total credit in foreign currency (Figure 3.3).

**Figure 3.4 presents the year on year credit growth by sectors between June 2013 and June 2014.** The highest growth rates observed in the credit allocation are in the credits that are given in USD to the livestock sector and in the credits that are given in guaraníes to the retail trade sector.

**The number of borrowers in the financial system increased 6.0 percent.** Based on data obtained from the Information Central of the Superintendency of Banks the amount of borrowers increased from 921 thousands in June 2013 to 976 thousands in June 2014.

**The financial system is long in USD.** In June 2014 the assets in foreign currency of the banks and financial companies were USD 8,524.8 million (Table 3.4).

**Table 3.4: Foreign currency position of financial institutions**

Millions of USD

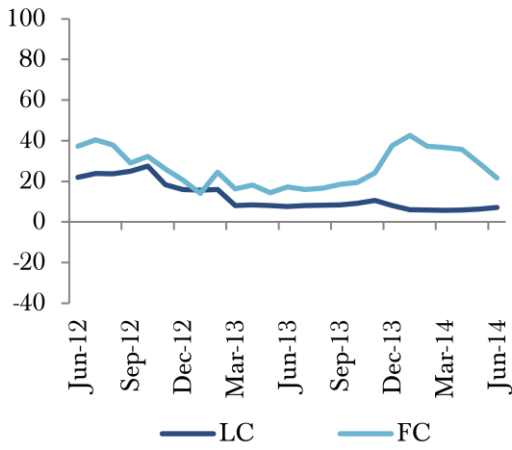
	Banks	Financial companies	Total
Assets in foreign currency	8,310.2	214.6	8,524.8
Liabilities in foreign currency	8,171.0	205.5	8,376.5
Foreign currency position	139.2	9.1	148.3

Source: Statistical and Financial Bulletin. Superintendency of Banks.

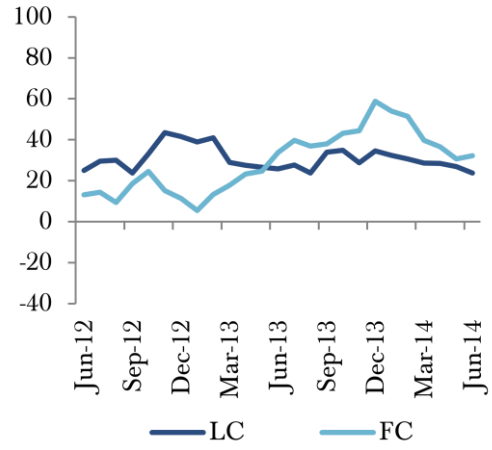
**Figure 3.4: Credit growth by sector**

Year on year variation, percentage

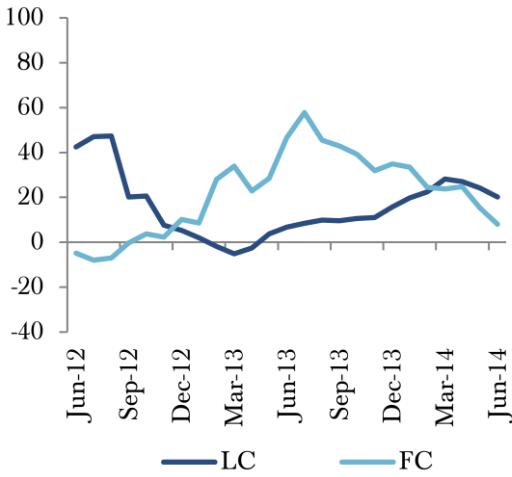
**Agriculture**



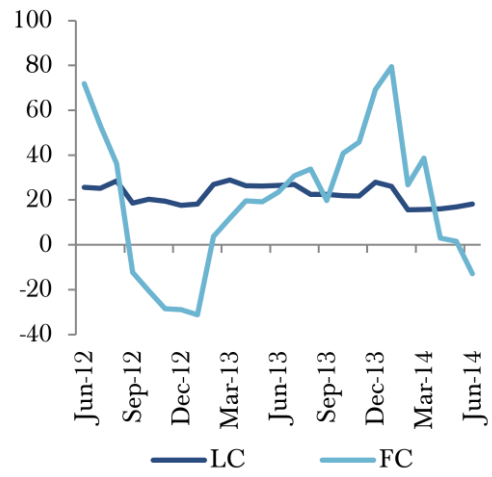
**Livestock**



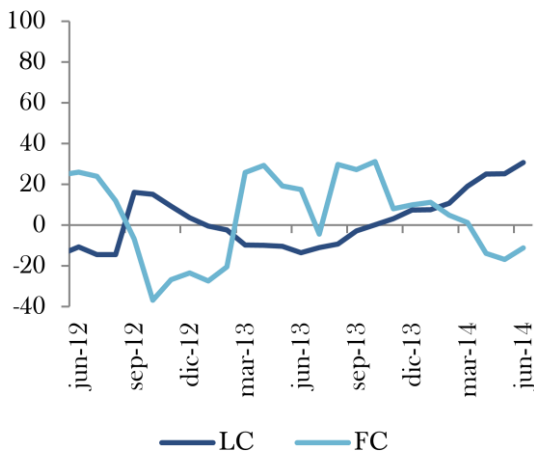
**Industry**



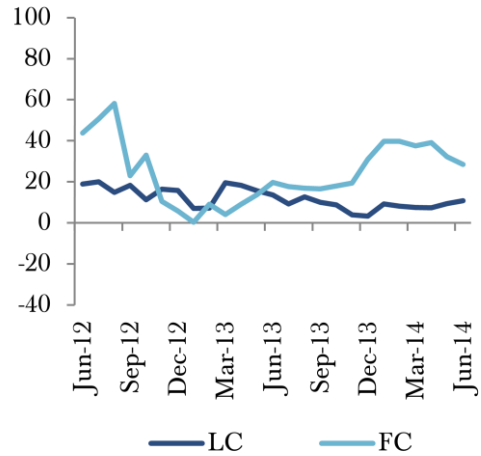
**Consumer**



**Retail**



**Wholesale**



Note: Foreign currency (FC), local currency (LC).

Source: Central of Information Office. Superintendencia de Bancos.

### 3.2. Banking concentration in Paraguay

**This index is a statistical measure of concentration and results from the summation of the squares of the market shares.** In this case we apply the methodology to the banks' assets. In the context of market concentration the extreme situations are, on the one side, monopoly (concentration in one agent) and on the other side, perfect competition.

To calculate the concentration index we use the following formula:<sup>27</sup>

$$HHI = \sum_{i=1}^n \left( \frac{A_i}{A_T} * 100 \right)^2$$

where:

HHI = Herfindahl-Hirschman index

$A_i/A_T$  = Market share of each bank considering their total assets

$i$  = bank

$n$  = total of banks in the system

**To evaluate if the result indicates the concentration or not of the banking assets, are specific concentration criteria necessary:**<sup>28</sup>

- Low concentration                       $HHI < 1500$
- Moderate concentration               $1500 < HHI < 2500$
- High concentration                      $HHI > 2500$

**Market concentration could increase for two reasons:** first, if the number of banks in the market decreases, and second, if the inequality of the size of the banks increases.

**Considering the criteria specified above, we observed that in the period 2007-2014 the concentration of banking assets is low** (Figure 3.5). Higher concentration levels could have negative effects on competition and market efficiency. For example, this is an incentive for collusion between banks and could lead to the setting of higher interest rates.<sup>29</sup>

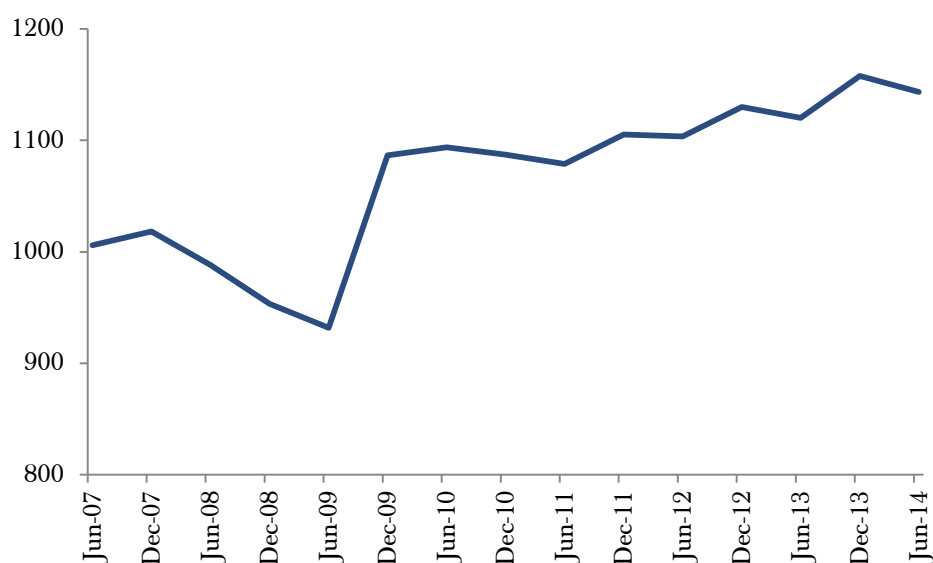
<sup>27</sup> Flores, Daniel. Calidad y concentración de mercado en la Banca Comercial. 2006: 21-30.

<sup>28</sup> These criteria are the same used by the Department of Justice of the United States to determine the concentration levels of different markets. <http://www.justice.gov/atr/public/guidelines/hhi.html>

<sup>29</sup> Martín, et al. La concentración bancaria y su impacto en los mercados de capitales de los países emergentes. *Anales de estudios económicos y empresariales*, 2011: 159-177.

Figure 3.5: Asset concentration in the banking system

HHI index



Source: The HHI was calculated with data from the Statistical and Financial Bulletin. Superintendency of Banks.

### 3.3. Deposits and liabilities

**In June 2014 the liabilities of the banks and financial companies reached 77.1 trillion guaraníes.** These increased 20.9 percent since June 2013.

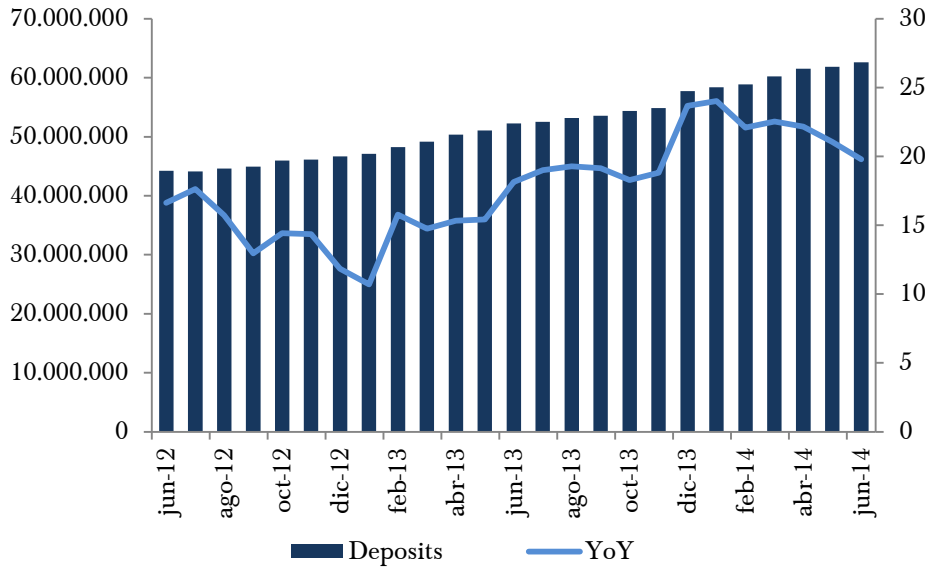
**The deposits represent 81.2 percent of liabilities of banks and financial companies.** These amounted 62.6 trillion guaraníes in June 2014 (Figure 3.6). The variation with respect to June 2013 was 19.8 percent. In the same period time deposits increased 21.5 percent. These reached 27.1 trillion guaraníes. Sight deposits increased 18.5 percent. These reached are 35.5 trillion guaraníes.

**Bank deposits represent 94.9 percent of total deposits in the supervised system.** Total deposits in the banks are 59.4 trillion guaraníes that represent an increase of 19.2 percent between June 2013 and June 2014 (Table 3.1). These are concentrated in five banks that have 63.5 percent of total deposits in the system as of June 2014. Private sector deposits represent 85.7 percent of total deposits and public sector deposits are 14.3 percent. In June 2014 local currency deposits are 57.4 percent of total deposits. Deposits in foreign currency represent 42.6 percent of total deposits (Figure 3.7).

**The term structure of deposits determines the liquidity risk that banks and financial companies confront.** If we consider all institutions in the financial system in an aggregated manner, the position in sight deposits and 30 day term is not covered (Table 3.5). However, the risk that results from the term mismatch between these assets

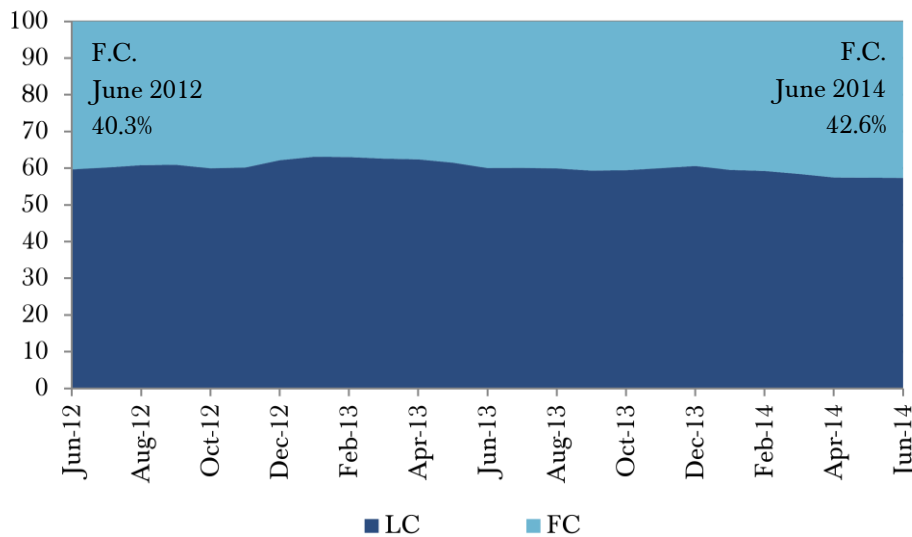
compared to the short term liabilities is compensated by the high level of liquid assets in the hands of the banks, for instance IRMs and the Treasury Bonds.

**Figure 3.6: Total deposits in the financial system**  
Millions of guaraníes; year on year variation, percentage



Source: Statistical and Financial Bulletin. Superintendency of Banks.

**Figure 3.7: Deposits by currency type**  
Percentage



Note:

1/ LC: Local currency, FC: foreign currency.

2/ Includes private and public sector deposits in the banking system.

Source: Statistical Annex of the Financial Indicators Report. Central Bank of Paraguay.

**Table 3.5: Mismatch of the aggregated balance of financial institutions**

Thousands of guaraníes

	Deposits + Loans + other op..	Availability + Credits + Loans	Excess (+) or mismatch (-)	Excess (+) or mismatch (-) accumulative
Sight deposits	38,357,112	30,317,542	(8,039,570)	(8,039,570)
30 days	2,870,854	8,015,179	5,144,325	(2,895,244)
90 days	4,162,834	9,450,275	5,287,442	2,392,197
180 days	5,159,453	9,418,865	4,259,412	6,651,609
1 year	8,536,706	11,157,716	2,621,009	9,272,618
3 years	10,463,783	9,935,516	(528,267)	8,744,351
> to 3 years	5,765,876	5,725,129	(40,747)	8,703,604

Source: Balance sheets reported by the financial institutions to the Superintendency of Banks.

### 3.4. Cooperatives

The assets of the cooperatives in Paraguay represent 17.5 percent of total assets in the financial system as of December 2013 (Table 3.3).<sup>30</sup> These are institutions that are not regulated by the Central Bank of Paraguay. Law N° 438/94 of Cooperatives establishes the National Institute of Cooperativism (INCOOP)<sup>31</sup> as the competent body. Law N° 2,157/03 regulates the work of this entity and establishes its charter. This institutes rules over the different types of cooperatives. These include credit and saving cooperatives, cooperatives of production, and multi-active cooperatives (Table 3.3).

The INCOOP also classifies the cooperatives in three types regarding their assets. Type A Cooperatives are those with more than 50 billion guaraníes. Type B Cooperatives are those with assets valued between five billion and 50 billion. Type C Cooperatives are those with assets that are less than five billion guaraníes.

There are 47 cooperatives of Type A. 27 of them are credit and saving cooperatives and 20 are cooperatives of production. The assets of type A cooperatives are 8.9 trillion guaraníes as of March 2014. They increased 18.9 percent in one year. The volume of credit equals 6.9 trillion guaraníes. This increased 15.4 percent between March 2013 and March 2014.<sup>32</sup>

<sup>30</sup> Unless indicated, the data reported by INCOOP are data from March 2014.

<sup>31</sup> Instituto Nacional de Cooperativismo (INCOOP).

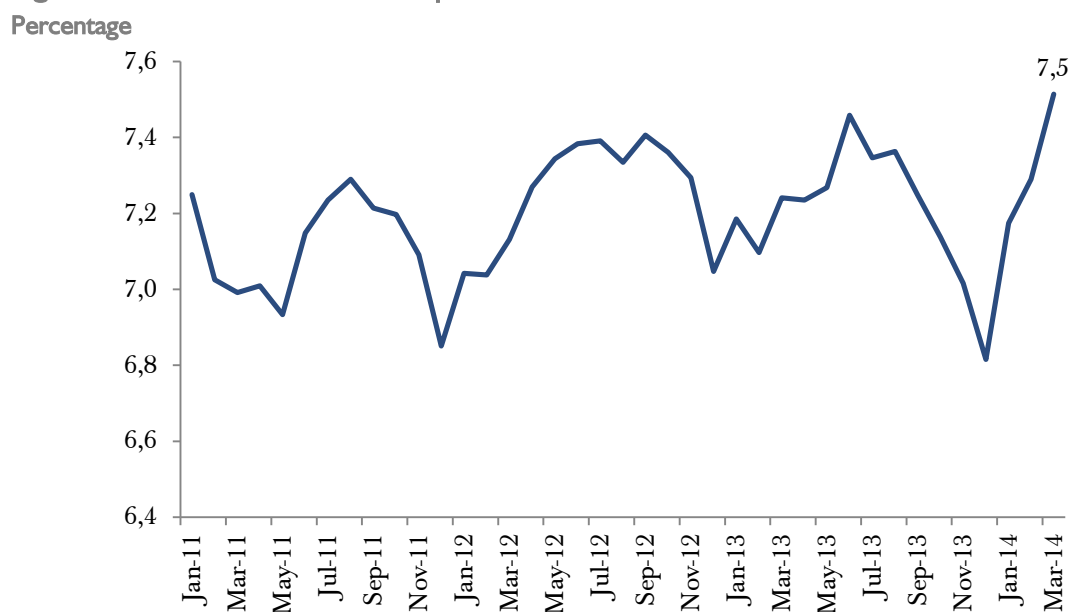
<sup>32</sup> This information corresponds to balance sheets of Type A Cooperatives from March 2014, the last data reported from INCOOP.

The NPL-ratio of Type A Cooperatives was 7.5 percent in March 2014. This is 0.3 percent higher than in March 2013 (Figure 3.8).

The liabilities consist mostly of savings of the members. As of March 2014, savings of Type A Cooperatives were 87.3 percent of total liabilities. Members' deposits increased 21.6 percent between March 2013 and March 2014. Short-term savings (up to one year) were 34.0 percent of total deposits and sight deposits were 39.2 percent of it. Long-term savings (more than one year) represented 26.8 percent of total deposits.

The assets of Type A Cooperatives increased to 1.9 trillion guaraníes as of March 2014. The variation with respect to March 2013 was 10.8 percent.

Figure 3.8: NPL-ratio of the Cooperatives



Note: NPL includes loans that are due for payment and refinanced loans.

Source: Instituto Nacional de Cooperativismo (INCOOP).

## 4. Credit risk

### 4.1. Financial soundness indicators

**These indicators aim to monitor the strengths and weaknesses of the financial system.** The methodology along with the concepts and definitions applied in this section are based on the compilation guide of the Financial Soundness Indicators (FSI) developed by the International Monetary Fund.<sup>33</sup> FSI are subdivided into core and encouraged sets. Table 4.1 shows the FSI of banks. Table 4.2 shows the FSI of financial companies.

#### a) Core set:

- **Capital adequacy:** These indicators aim to assess the extent to which financial institutions' capital is sufficient to cope with economic shocks. There are two indicators that measure the minimum requirements for capital adequacy. One is the Tier 1 regulatory capital to risk-weighted assets ratio, which should not be lower than 8 percent.<sup>34</sup> The second is the Tier 1 regulatory capital plus the supplementary Tier 2 capital to risk-weighted assets ratio, which should not be lower than 12 percent. By June 2014, banks and financial companies, taken as a whole, fulfil successfully both minimum requirements.
- **Asset quality:** This indicator allows the assessment of the credit portfolio management. In June 2014, the nonperforming loans to total loans ratio was 2.3 percent for banks and 5.1 percent for financial companies. The amount of nonperforming loans increased by 15.7 percent for banks and 26.9 percent for financial companies in the first half of 2014. Looking over a longer horizon, nonperforming loan (NPL) ratios tend to be higher in June (Figure 4.1).
- **Loans distribution:** This indicator provides information about how the credits are allocated. As for banks, credit portfolio is concentrated in the primary sector of the economy. Agriculture and livestock represent one third of the whole portfolio. Loans allocated to wholesale and retail activities account for 22.1 percent of the total loans. Consumer sector has 15.4 percent share of the total. As for financial companies, consumer loans account for 31.6 percent of their entire portfolio. Wholesale and retail sector represent 23.6 percent of the total. Loans assigned to the primary sector have 21.4 percent share of the total.

<sup>33</sup> International Monetary Fund (2006), "Financial Soundness Indicators: Compilation Guide." <http://fsi.imf.org/>

<sup>34</sup> Law N° 861/96 "General de Bancos, Financieras y Otras Entidades de Crédito" and Resolución N° 3, Acta N° 4, dated 2 February 2012.

- **Earnings and profitability:** There are at least two indicators that measure the performance of financial institutions. The return on asset (ROA) ratio indicates the efficiency in using their assets. ROA relates net income to total assets. Bank's profitability measured by ROA decreased from 2.8 percent registered in June 2013 to 2.5 percent in June 2014. As for financial companies, this FSI increased from 1.8 percent to 2.0 percent in the same period. The return on equity (ROE) indicator measures the ability of the financial institutions in using their capital. This FSI relates net income to capital. Bank's profitability measured by ROE decreased from 29.7 percent registered in June 2013 to 27.0 percent in June 2014. As for financial companies, this FSI increased from 11.9 percent to 14.6 percent in the same period.
- **Liquidity:** There are two Financial Soundness Indicators that measure the level of liquidity available to meet demands for cash. The liquid assets to total assets ratio and the liquid assets to short term liabilities ratio (demand deposits) ratio. These two FSI improved in the first half of 2014. The liquid assets to total assets ratio increased in this period from 32.0 percent to 35.4 percent. The liquid assets to short term liabilities ratio increased from 75.7 percent to 83.1 percent in the same period.
- **Sensitivity to market risk:** We observed a lower position to foreign currency in banks and an intensification of this position in financial companies. This implies lower degree of vulnerability for banks before exchange rates fluctuations and higher for financial companies. For banks, the net-open position in foreign exchange to capital ratio decreased from 10.7 percent to 7.6 percent in the first half of 2014. As for financial companies, this FSI jumped from 2.5 percent to 6.6 percent in the same period.

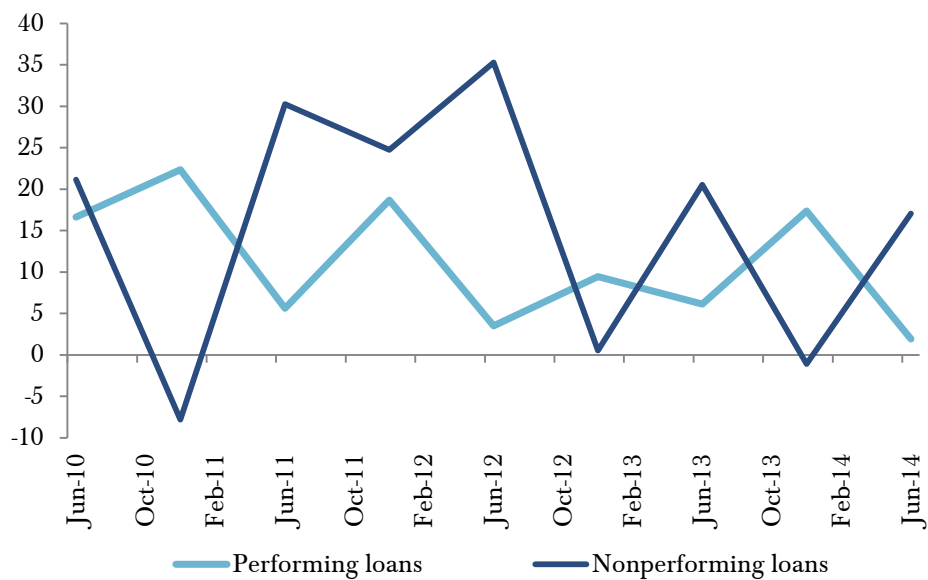
b) **Encouraged set:**

- **Capital / Assets:** This financial leverage indicator measures the solvency level of the supervised institutions of the financial system. In June 2014, banks' capital accounts for 9.7 percent of their assets. Financial companies' capital represents 14.0 percent of their assets.
- **Personnel expenses / Noninterest expenses:** This indicator measures the impact of personnel expenses on administrative expenses. By June 2014, this measure records 45.4 percent for banks and 56.7 percent for financial companies. The five-semester average recorded 44.4 percent and 56.6 percent for banks and financial companies respectively.

- **Customer deposits / Total loans:** This ratio indicates the extent to which deposits from the public is financing loans granted in the financial system. In June 2014, this ratio records 18.3 percent for banks and 2.7 percent for financial companies.
- **Foreign-currency-denominated loans / total loans:** This ratio shows the exposure to exchange rates fluctuations by measuring foreign currency loans as a proportion of the entire loan portfolio. In June 2014, this FSI indicates lower exposure for banks comparing to December of 2013. The ratio declined from 45.3 percent to 44.5 percent in this period.

Figure 4.1: Performing and nonperforming loans

Semiannual variation, percentage



Source: Statistical and Financial Bulletin. Superintendency of Banks. Central Bank of Paraguay.

<https://www.bcp.gov.py/boletines-estadisticos-i62>

Table 4.1: Financial soundness indicators – Banks

Financial soundness indicators	June 2012	December 2012	June 2013	December 2013	June 2014
a) Core set					
Capital adequacy					
Supplementary Tier 2 capital / RWA	17.0%	16.2%	16.8%	14.6%	16.6%
Regulatory Tier 1 capital / RWA	12.8%	12.0%	13.0%	11.1%	12.4%
NPLs net of provisions / Capital	5.0%	3.7%	4.3%	3.7%	4.2%
Asset quality					
NPLs / Total gross loans	2.2%	2.1%	2.4%	2.0%	2.3%
Provisions / NPLs	127.2%	131.3%	122.8%	135.7%	124.2%
Sectoral distribution of loans / Total loans					
Agriculture	22.6%	23.1%	22.9%	24.7%	22.8%
Livestock	11.9%	11.7%	11.7%	11.2%	11.0%
Industry	9.1%	10.0%	10.8%	10.9%	10.3%
Wholesale	14.2%	14.1%	13.9%	14.0%	14.2%
Retail	9.1%	9.6%	9.1%	8.2%	7.9%
Services	8.5%	8.7%	7.8%	8.5%	10.2%
Consumer	15.3%	15.4%	15.9%	15.4%	15.4%
Export	0.3%	0.3%	0.2%	0.4%	0.9%
Financial sector	9.0%	7.0%	7.8%	6.8%	7.3%
Earnings and Profitability					
ROA <sup>3</sup>	2.7%	2.6%	2.8%	2.4%	2.5%
ROE <sup>4</sup>	28.1%	28.5%	29.7%	29.4%	27.0%
Interest margin / Gross income	72.4%	71.4%	75.3%	74.7%	75.2%
Noninterest expenses / Gross income	53.4%	55.2%	53.1%	54.3%	52.9%
Liquidity					
Liquid assets / Total assets	33.7%	31.5%	35.0%	32.0%	35.4%
Liquid assets / Short term liabilities	76.8%	72.3%	80.6%	75.7%	83.1%
Sensitivity to market risk					
Net open position in FX / Capital	9.5%	8.5%	8.7%	10.7%	7.6%

Table 4.1: Financial soundness indicators – Banks (cont.)

Financial soundness indicators	June 2012	December 2012	June 2013	December 2013	June 2014
a) Encouraged set					
Capital / Assets	10.0%	9.9%	9.7%	8.9%	9.7%
Personnel expenses / Noninterest expenses	43.8%	43.4%	45.0%	44.6%	45.4%
Customer deposits / Total loans	18.6%	16.9%	16.9%	15.1%	18.3%
FC-denominated loans / Total loans	41.1%	40.5%	43.0%	45.3%	44.5%
FC-denominated liabilities / Total liabilities	46.3%	45.0%	45.8%	46.7%	48.8%

Note: RWA: Risk-weighted assets. NPLs: Nonperforming loans. ROA: Return on assets. ROE: Return on equities. FX: Foreign exchange. FC: Foreign currency.

Table 4.2: Financial soundness indicators – Financial companies

Financial soundness indicators	June 2012	December 2012	June 2013	December 2013	June 2014
a) Core set					
Capital adequacy					
Supplementary Tier 2 capital / RWA	19.9%	17.4%	17.4%	15.6%	16.9%
Regulatory Tier 1 capital / RWA	17.4%	15.1%	15.5%	13.4%	13.2%
NPLs net of provisions / Capital	10.6%	10.6%	12.8%	8.8%	11.9%
Asset quality					
NPLs / Total gross loans	5.7%	4.5%	5.3%	4.2%	5.1%
Provisions / NPLs	103.4%	102.5%	99.2%	118.1%	107.1%
Sectoral distribution of loans / Total loans					
Agriculture	14.0%	15.8%	15.0%	14.3%	13.1%
Livestock	11.6%	11.1%	10.1%	8.9%	8.3%
Industry	3.2%	4.4%	4.3%	4.8%	5.0%
Wholesale	9.2%	10.4%	11.3%	12.7%	13.3%
Retail	11.5%	12.3%	11.7%	10.4%	10.3%
Services	11.3%	10.3%	9.9%	10.8%	10.3%
Consumer	29.4%	28.4%	30.0%	29.7%	31.6%
Export	0.1%	0.2%	0.9%	1.7%	1.4%
Financial sector	9.7%	7.3%	6.8%	6.8%	6.7%
Earnings and Profitability					
ROA <sup>3</sup>	1.8%	2.0%	1.8%	2.0%	2.0%
ROE <sup>4</sup>	9.9%	12.7%	11.9%	15.0%	14.6%
Interest margin / Gross income	65.1%	64.2%	64.0%	63.9%	67.0%
Noninterest expenses / Gross income	69.4%	70.0%	67.8%	67.8%	68.1%
Liquidity					
Liquid assets / Total assets	18.6%	15.6%	17.8%	16.8%	17.4%
Liquid assets / Short term liabilities	148.2%	128.6%	143.6%	136.0%	136.8%
Sensitivity to market risk					
Net open position in FX / Capital	5.5%	4.2%	3.8%	2.5%	6.6%

Table 4.2: Financial soundness indicators – Financial companies (cont.)

Financial soundness indicators	June 2012	December 2012	June 2013	December 2013	June 2014
a) Encouraged set					
Capital / Assets	17.3%	15.5%	15.1%	13.7%	14.0%
Personnel expenses / Noninterest expenses	56.5%	56.2%	57.2%	56.4%	56.7%
Customer deposits / Total loans	4.3%	3.5%	4.3%	3.4%	2.7%
FC-denominated loans / Total loans	12.6%	15.0%	15.8%	18.3%	18.4%
FC-denominated liabilities / Total liabilities	20.1%	21.0%	21.4%	25.0%	24.5%

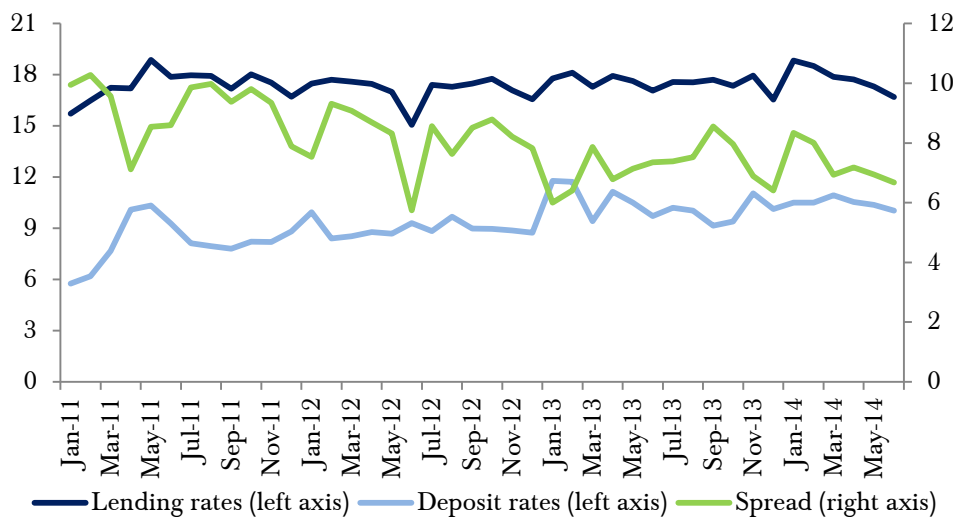
Note: RWA: Risk-weighted assets - NPLs: Nonperforming loans - ROA: Return on assets. ROE: Return on equities - FX: Foreign exchange - FC: Foreign currency.

#### 4.2. Interest rates

Active and passive interest rates decreased in the first half of this year (Figure 4.2). Interest rates on consumer loans are the highest comparing to other types of loans. In June 2014, these are 26.6 percent meanwhile interest rates on commerce is 15.8 percent, on household 12.6 percent and on development 9.9 percent (Figure 4.3).

Figure 4.2: Lending and deposit interest rates

Percentage; percentage



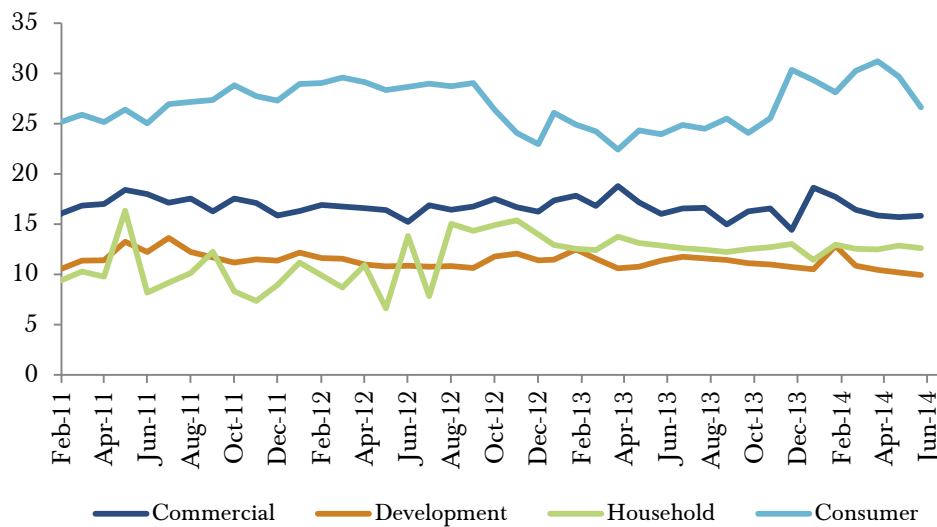
Note: Interest rates for local currency. The lending interest rates are weighted average of loans excluding overdrafts and credit cards. The deposit interest rates are weighted average of long term deposits and certificate of deposits.

Source: Statistical Annex of the Financial Indicators Report. Central Bank of Paraguay. June 2014.

<https://www.bcp.gov.py/anexo-estadistico-indicadores-financieros-i367>

Figure 4.3: Effective interest rates at banks

Percentage



Source: Statistical Annex of the Financial Indicators Report. Central Bank of Paraguay. June 2014.  
<https://www.bcp.gov.py/anexo-estadistico-indicadores-financieros-i367>

#### 4.3. Nonperforming loan ratios

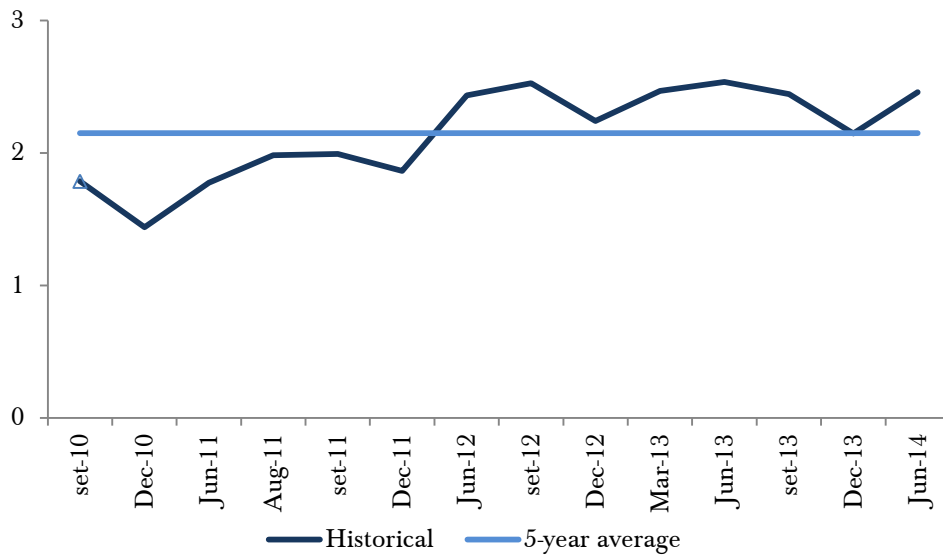
The nonperforming loan (NPL) ratio for the whole financial system reached 2.5 percent as for June 2013 and June 2014 alike. However, the five-year average NPL-ratio is 2.2 percent (Figure 4.4).

Loans allocated to the consumer sector present the highest NPL-ratio. The NPL in this particular sector declined between June 2013 and June 2014 from 6.7 percent to 6.3 percent. The five-year average NPL-ratio of this sector is 5.0 percent (Figure 4.5).

The five-year average provisions to total loans ratio is 2.8 percent. The indicator denoted by provisions to nonperforming loans reaches 121.9 percent in June 2014. This indicates that the credit portfolio of financial system is well provisioned (Figure 4.6). By adding the share of the rescheduled, refinanced and restructured loans (3 Rs) to the nonperforming loans, we see that the percentage of loans that were not paid in the due time is about 15.2 percent by June 2014 (Figure 4.7).

The financial system presents a low exposure to liquidity risk. In June 2014 the liquidity coverage ratio is 40.6 percent while in June 2013 it was 39.1 percent. In June 2013, liquid assets in the financial system increased 22 percent while deposits increased by 19.8 percent. Liquid assets stand for 34.5 percent of the total assets of the system. Monetary Regulation Instruments (Central Bank Notes) account for most of the share in the structure of the liquid assets. They are followed by cash and equivalents.

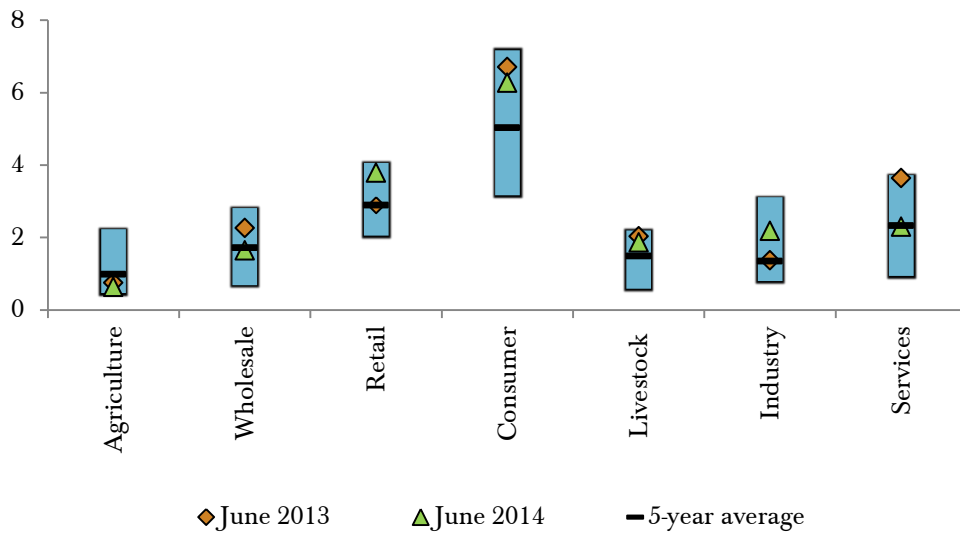
**Figure 4.4: Nonperforming loans ratio of the financial system**  
Percentage



Note: Ratio based on banks and financial corporation loans.

Source: Central of Information Office of the Superintendency of Banks. Central Bank of Paraguay.

**Figure 4.5: Nonperforming loans ratio by sector**  
Percentage



Note:

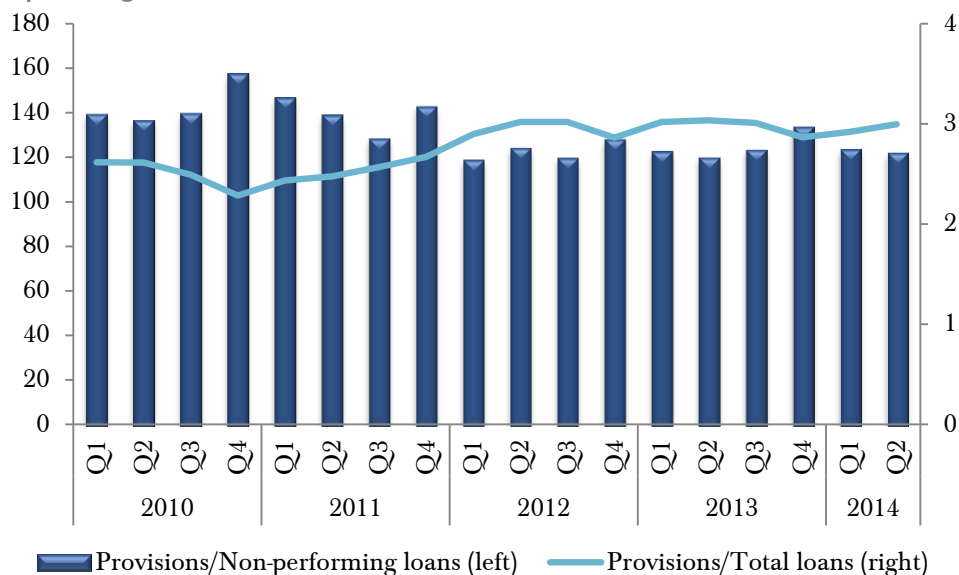
1/ Ratio based on banks' and financial companies' loans.

2/ Each bar shows the highest and lowest NPL ratio between January 2009 and June 2014.

Source: Central of Information Office of the Superintendency of Banks. Central Bank of Paraguay.

Figure 4.6: Provisions

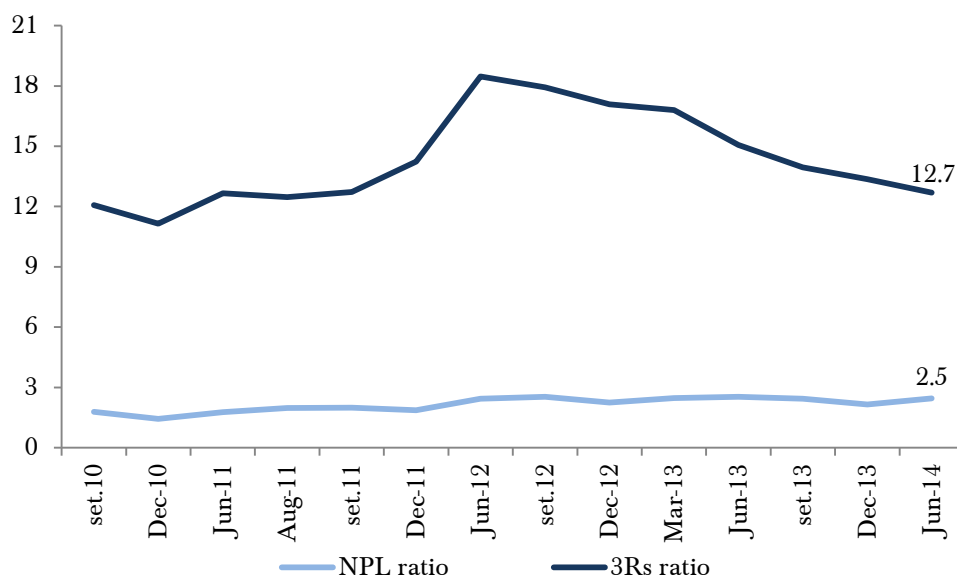
Percentage; percentage



Source: Statistical and Financial Bulletin. Superintendency of banks. Central Bank of Paraguay. <https://www.bcp.gov.py/boletines-estadisticos-i62>

Figure 4.7: Rescheduled, refinanced and restructured loans ratio (3Rs)

Percentage



Note:

1/ Ratio based on banks' and financial companies' loans.

2/ The light-blue line shows the nonperforming loans to total loans ratio (NPL ratio).

3/ The blue line shows the rescheduled, refinanced and restructured loans (3Rs) to total loans ratio.

Source: Statistical and Financial Bulletin. Superintendency of banks. Central Bank of Paraguay.

<https://www.bcp.gov.py/boletines-estadisticos-i62>

## Rescheduled, refinanced and restructured loans

**These are renegotiations loans.** The new terms of these agreements are settled between the financial institution and its debtor aiming to prevent debts from becoming bad debts.<sup>35</sup>

- a) **Rescheduled loans:** a transaction that involves an extension on the repayment schedule. This type of renegotiation can be reached in performing loans and in loans that do not exceed 60 days past due.
  - **For performing loans there are two alternatives to renegotiate.** One of them is carried out by extending the repayment schedule of the loan before the maturity date is reached. This agreement does not require any important amortisation, i.e. no less than 60 percent of the outstanding capital owed. The reschedule is achieved at the maturity date agreed in the initial contract for single payment loans. Another alternative is carried out by extending the repayment schedule provided that the loan is not amortised for more than 75 percent of the total number of instalments. Any agreement exceeding this threshold will be considered a new transaction.
  - **For loans that do not exceed 60 days past due there are also two alternatives to renegotiate.** The first one is carried out by modifying the maturity date without requiring any payment to the debtor. For the calculation of moratorium interests the original disbursement date is not modified. In this manner, the past due days count is not interrupted. As for the second alternative, the debtor pays off the accrued interests and other mandatory charges. In this case the initial agreed maturity date is interrupted. This is applied to those transactions involving amortisations of capital.
- b) **Refinanced loans:** These involve loans exceeding 60 days past due and require debtors to pay off the accrued interests plus part of the outstanding capital and other mandatory charges on their own. The borrower can improve its rating category only by paying off at least 10 percent of the outstanding capital owed plus the total accrued interests and other mandatory charges tied to that loan.
- c) **Restructured loans:** in this case, the terms of the loan are modified partially or totally due to the borrower's inability to service the credit. This modified agreement aims to provide financial relief to the borrower by modifying the repayment schedule or lowering the interest rate or the number of instalments, etc.

<sup>35</sup> Resolución N° 1, Acta N° 60, dated 28 September 2007 and its extension Resolución N° 13, Acta N° 28, dated 24 April 2014.

The portfolio comprised of the 3Rs represents 12.7 percent of total loans. Rescheduled loans have 83.0 percent share of these three transactions. Between June 2013 and June 2014 rescheduled loans and restructured loans increased by 1.7 percent and 3.2 percent respectively. In the same period refinanced loans declined by 2.8 percent.

Table 4.3: Structure of the 3 Rs

Loans	June 2012	December 2012	June 2013	December 2013	June 2014
Rescheduled	86.8%	84.9%	82.2%	81.0%	83.0%
Refinanced	6.6%	6.9%	8.2%	7.7%	7.1%
Restructured	6.6%	8.2%	9.6%	11.3%	9.9%

Source: Statistical and Financial Bulletin. Superintendency of banks. Central Bank of Paraguay.  
<https://www.bcp.gov.py/boletines-estadisticos-i62>

#### 4.4. Banks' deposits and Value-at-Risk

The Value-at-Risk (VaR) approach provides information based on the volatility of a certain variable, deposits in this case.<sup>36</sup> The VaR intends to predict the maximum likely loss of a portfolio over a certain horizon at a specified confidence level and assuming normal market conditions.

We compute monthly variations of local and foreign currency deposits. The observed period encompasses from 2008 up to the first semester of 2014. The extreme monthly losses in local currency were -5.9 percent in October 2008 and -2.4 percent in November 2010. The extreme monthly losses in foreign currency were -6.8 percent in June 2008, -5.9 percent in December 2009, -5.6 percent in June 2011, -5.0 percent in July 2011, -5.8 percent in February 2012 and -4.2 percent in December 2012.

We use the parametric VaR model. This method assumes that the portfolio under study follows a normal distribution. The VaR we performed is denoted by:

$$VaR = S * F * \sigma * \sqrt{t}$$

Where:

$S$  = value (deposits)

$F$  = factor determining the level of confidence

$\sigma$  = standard deviation

$t$  = time horizon

<sup>36</sup> This method was developed by JP Morgan, 1994. It is considered of traditional use to measure different types of risk.

The VaR decreased since 2008 (Figure 4.8). These results indicate that volatility is lower every year and that savings tend to remain longer in their bank accounts over time. The potential loss of the deposit portfolio in one month estimated for June 2014 at the 99 percent level of confidence was 2,216,084 million guaraníes. This amounts to 3.73 percent of the total deposits of that month (Table 4.4).

**Table 4.4: Value-at-Risk model for deposits**

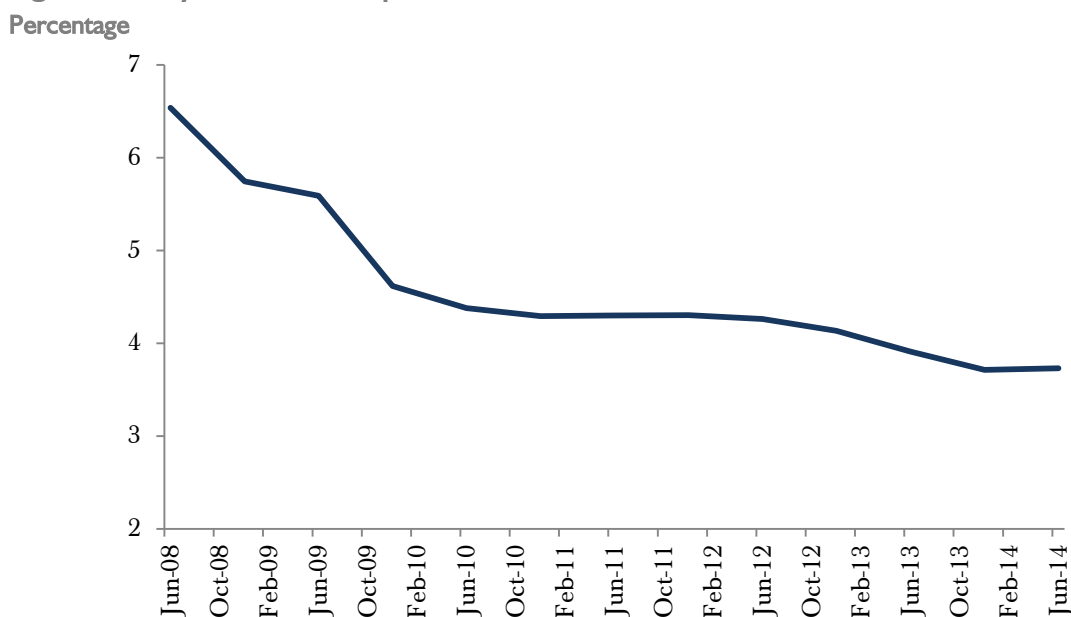
Million guaraníes

	VaR	VaR/Total deposits
<b>Total deposits</b> <b>59,439,207</b>	<b>2,216,084</b>	<b>3.73%</b>
Current account LC	796,868	1.34%
Demand deposits LC	901,366	1.52%
Long term deposits LC	48,301	0.08%
Certificates of deposit LC	839,568	1.41%
<b>Total deposits LC</b>	<b>1,637,093</b>	<b>2.75%</b>
Current account FC	972,313	1.64%
Demand deposits FC	989,276	1.66%
Long term deposits FC	70,730	0.12%
Certificates of deposit FC	1,018,672	1.71%
<b>Total deposits FC</b>	<b>2,105,027</b>	<b>3.54%</b>

Note: Local currency (LC), foreign currency (FC).

Source: VaR based on data from the Statistical and Financial Bulletin. Superintendency of Banks. Central Bank of Paraguay.

Figure 4.8: 6-year VaR for deposits



Source: VaR based on data from the Statistical and Financial Bulletin. Superintendency of Banks. Central Bank of Paraguay.

#### 4.5. Rating transition matrices

The transition matrix is used to compute the likelihood of changes between rating categories over time. Banks and financial companies assign rating categories to their loans. A credit rating of 1 is the best and a credit rating of 6 the worst (default).<sup>37</sup> We compute the probabilities of downgrade and upgrade of a bank's credit portfolio. For our calculation we observe quarterly changes in the rating categories from the second quarter of 2009 to the second quarter of 2014. The data is taken from the Central of Information Office of the Superintendency of Banks. Our sample consists of 2000 borrowers with the largest amount of outstanding debt in the whole financial system, which amounts to 61.1 percent of the total loans in June 2014. We split our sample in two periods. The first covers the second quarter of 2009 to the third quarter of 2011. The second covers the fourth quarter of 2011 to the second quarter of 2014.

Probabilities lying along the diagonal indicate no changes between rating categories. Data below the diagonal represents upgrade probabilities. Data above the diagonal represents downgrade probabilities.

<sup>37</sup> Resolución N° 1, Acta N° 60, dated 28 September 2007.

The probabilities of no migration increased in every rating category in the period 2011-2014. The likelihood to remain in rating 1 and in rating 6 is more than 95 percent in this period. The probability of remaining in rating 2 and 3 is more than 60 percent for both in the same period (Table 4.5).

Except from rating 4, the remaining rating categories present higher downgrade probabilities in the 2011-2014 period. The likelihood of changing from rating 5 to 6 is 71.4 percent (Table 4.6). The highest upgrade probability lies on that of migrating from rating 3 to 2 or 1 with 27.3 percent (Table 4.7).

Table 4.5: Quarterly transition matrices

June 2009 – September 2011

Percentage

From/to	0	1	2	3	4	5	6
0	84.8	15.1	0.1	0	0	0	0
1	1.3	98.0	0.5	0.2	0	0	0
2	1.4	34.9	58.3	3.2	1.8	0.5	0
3	1.2	27.1	9.4	58.8	1.2	2.4	0
4	0	33.3	0	0	0	66.7	0
5	0	42.9	28.6	0	0	14.3	14.3
6	0	5.5	0	0	0	0	94.6

December 2011 – June 2014

Percentage

From/to	0	1	2	3	4	5	6
0	72.5	27.4	0	0.1	0	0	0
1	0.4	98.8	0.6	0.2	0	0	0
2	0.4	25.4	63.0	7.8	3.2	0	0.4
3	1.3	18.4	7.6	62.0	4.4	5.1	1.3
4	0	11.1	0	1.6	52.4	22.2	12.7
5	0	4.8	0	0	0	23.8	71.4
6	0	1.9	0	0.5	0	0	97.6

Note:

1/ Probabilities estimated based on banks' and financial companies' loans.

2/ Rate 0 aims to reflect those loans that were paid off or new loans or loans are no longer reported to the Central of Information Office.

Source: Central of Information Office. Superintendency of Banks. Central Bank of Paraguay.

**Table 4.6: Downgrade probabilities**

Percentage

Rate	Jun 09 – Sep 11	Dec 11 – Jun 14
1	0.7	0.8
2	5.5	11.4
3	3.6	10.8
4	66.7	34.9
5	14.3	71.4

Note:

1/ Probabilities estimated based on banks' and financial companies' loans.

2/ Probability of downgrade is the sum of the items above the diagonal.

Source: Central of Information Office. Superintendency of Banks. Central Bank of Paraguay.

**Table 4.7: Upgrade probabilities**

Percentage

Rate	Jun 09 – Sep 11	Dec 11 – Jun 14
2	36.3	25.8
3	37.7	27.3
4	33.3	12.7
5	71.5	4.8
6	5.5	2.4

Note:

1/ Probabilities estimated based on banks' and financial companies' loans.

2/ Probability of upgrade is the sum of the items below the diagonal.

Source: Central of Information Office. Superintendency of Banks. Central Bank of Paraguay.

#### 4.6. Risks arising from the housing market

**Housing deficit in Paraguay is material.** Forty three percent of the families of the country has no ownership of their house or dwells in precarious living conditions.<sup>38</sup> This situation is similar among countries of the region. Taking into account Latin America as a whole, one third of the families live in inadequate housing that are built with poor quality material and lack basic services.

**Wage growth over the past ten years was higher relative to housing prices.** We compute two indicators to measure the growth of the purchasing power related to housing prices. The first one is the rental index to the wage index ratio.<sup>39</sup> The second is the housing services index to wage index ratio. The increase of the wage index (denominator) was higher than those indices related to housing (numerators). The wage index increased by

<sup>38</sup> Inter-American Development Bank (2012), "Room for Development: Housing Markets in Latin America and the Caribbean."

<sup>39</sup> The housing service series belongs to estimated rentals that tenants would pay for a similar dwelling. International Monetary Fund, General Data Dissemination System.

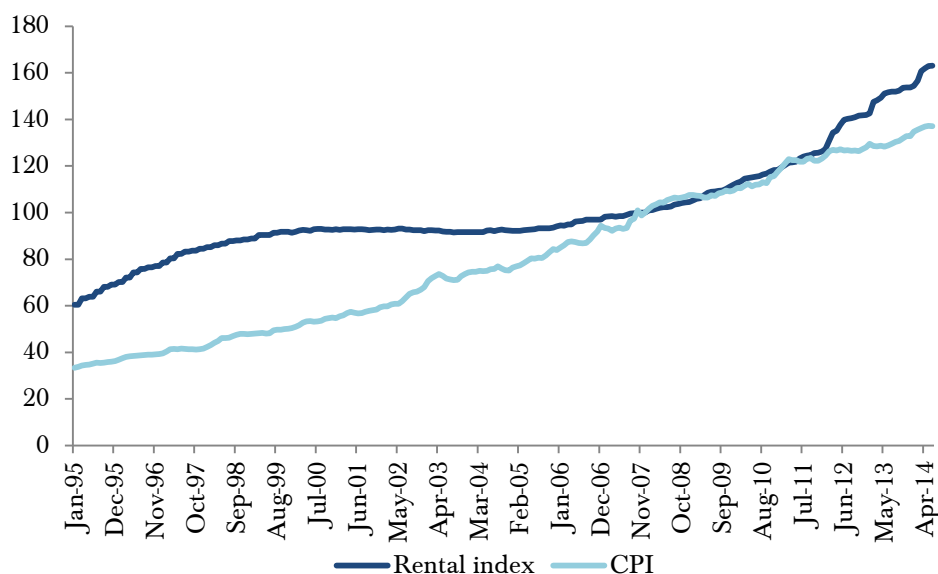
<http://dsbb.imf.org/Pages/GDDS/DQAFViewPage.aspx?ctycode=PRY&catcode=NAG00&Type=CF>

109.7 percent between 2003 and 2013. The rental index increased by 67.9 percent while the housing services index increased by 48.9 percent in the same period.

**Nonetheless, since 2012 rental prices are speeding up** (Figure 4.9 and 4.10).<sup>40</sup>

**Figure 4.9: Rental index and consumer price index**

Base index December 2007 = 100



Note: Consumer price index (CPI).

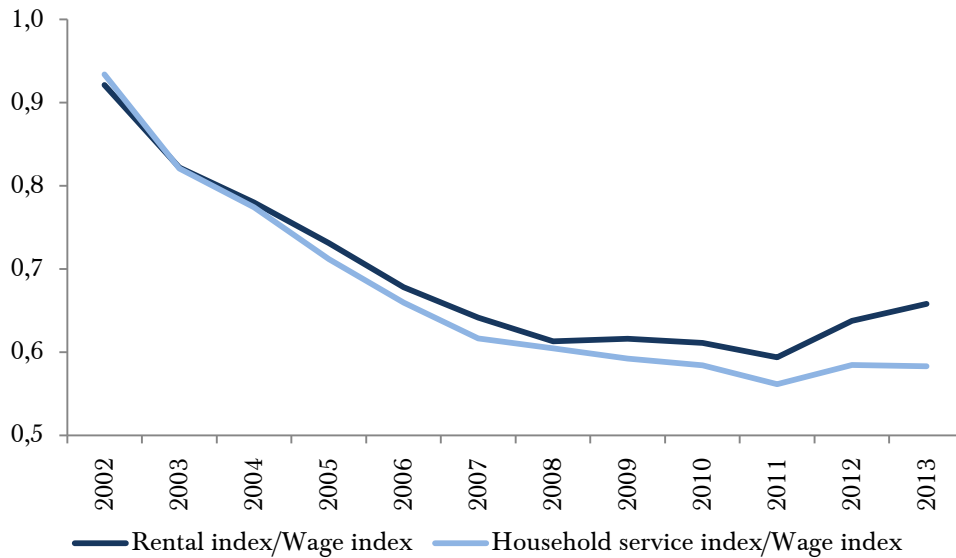
Source: Statistical Annex of the Financial Indicators Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

**Worsening traffic congestion and concentration of services in specific areas lead to a rise in housing demand.** An inefficient public transportation system forces people to incur in higher costs in terms of time and money in their daily lives. This condition along with the aforementioned concentration of services in specific has boosted the need of people to settle around their workplaces or where most of their everyday activities are carried out.

<sup>40</sup> The national minimum wage increased 84.8% in the same period.

Figure 4.10: Comparative indicators of real state sector related to wage growth



Source: Central Bank of Paraguay's calculations based on data from the Statistical Annex of the Financial Indicators Report. Central Bank of Paraguay. July 2014.

<https://www.bcp.gov.py/anexo-estadistico-del-informe-economico-i365>

**The share of loans granted to fund housing and building projects in Paraguay is low relative to the total credit portfolio.** Loans granted to fund housing and building projects represent 2.6 percent of the total loans. As a share of GDP, these loans represent 4.4 percent. The average in Latin America is 7.0 percent.<sup>41</sup> Although there was an increase in mortgage loans since the creation of the Development Finance Agency (*Agencia Financiera de Desarrollo*), the need and demand in the housing market are increasingly high. As a result, part of the population finds it difficult to gain access to this type of loans.

**There are mainly two main factors that relate the housing market with the financial system in Paraguay:**

- a) **The risk of default in the housing market.** The credit risk associated to household loans is secured by the property itself.<sup>42</sup> The collateral value of mortgage loans allowed to be considered by the bank is 70 percent of the appraisal value of the property. The NPL-ratio for this sector decreased from 7.1 percent in 2010 to 1.4 percent in June 2014. This is below the level of the

<sup>41</sup> International Monetary Fund (2012). "Keeping an Eye on Housing Markets in Latin America." Regional Economic Outlook.

<https://www.imf.org/external/pubs/ft/reo/2012/whd/eng/pdf/wreo013013.pdf>

<sup>42</sup> Resolución N° 1, Acta N° 60, dated 28 September 2007 of the Board of Directors of the Central Bank of Paraguay.

whole financial system and of the Latin American average for this type of loans (Table 4.8).

- b) **Changes in housing prices.** As loan provisions are computed based on the collateral value, these changes have an indirect impact on the former. Financial institutions must constitute these provisions to mitigate the risk of loss in their portfolio. The minimum provisions are assigned in relation to the rating category of each loan.<sup>43</sup> The computation is applied 50 percent over the outstanding loan and the remaining 50 percent over the outstanding loan net of the first provisions and collateral value. The collateral value is considered only after the second provisions.

**Table 4.8: Comparative analysis of NPL-ratios of mortgage loans**

Year	Household	Financial system	Latin America average
2010	7.1%	1.4%	2.6
2011	6.5%	1.9%	2.3
2012	3.3%	2.2%	2.3
2013	1.1%	2.1%	2.2
2014 - June	1.4%	2.5%	N/A

Note: The financial system column indicates the calculation based on banks' and financial companies' loans.

Source: Central of Information Office. Superintendency of Banks. Central Bank of Paraguay. International Monetary Fund. Global Financial Stability Report (GFSR), April 2014.

<sup>43</sup>Resolución N° 1, Acta N° 60, dated 28 September 2007 and its modifications; Resolución N° 37, Acta N° 72, dated 29 November 2011.

## Development Finance Agency

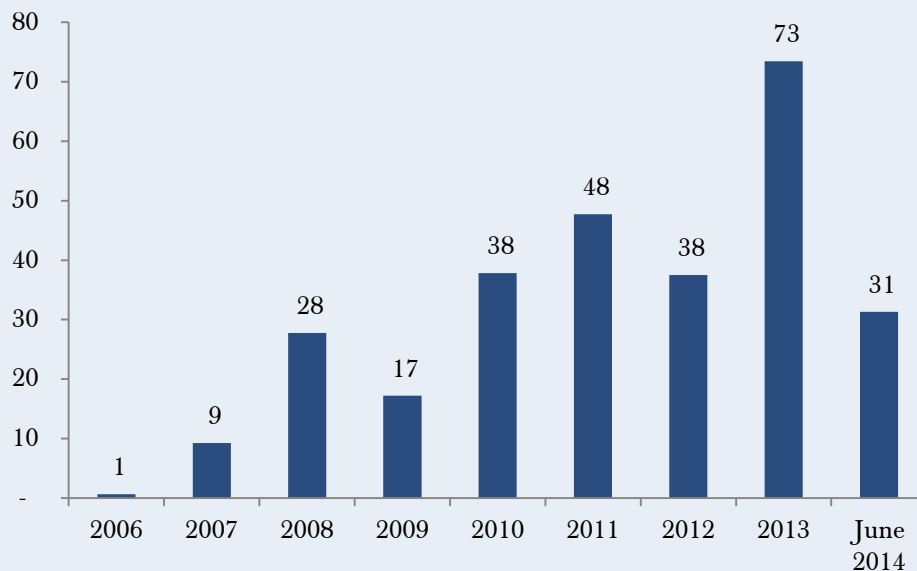
Paraguayan Law 2640/2005 established the Development Finance Agency (*Agencia Financiera de Desarrollo, AFD*). AFD is a second-tier public banking agency which, as such, offers its credit products and specialised services to the private sector. There are three specific products related to the housing market:

- **My First Home:** The beneficiaries of this program are families whose monthly income does not exceed the total amount of five national minimum wages. This program aims to support the building of new homes or the purchasing of existing houses.
- **My Home:** The beneficiaries of this scheme receive up to 500 million guaraníes. This funding aims to support the building of new homes or the purchasing or refurbishing of existing houses.
- **Procoop Home:** This is a sub product of Procoop, which also aims to funding the purchasing of existing houses or the building of new ones.<sup>44</sup>

**Low interest rates along with long term loans put in place by the AFD helped to boost dynamism in the housing market.** The first two products are offered with maturities up to 20 years through banks, financial companies and some selected cooperatives. Since 2006 to June 2014, USD 282 million worth of loans were granted to funding houses under AFD programs.

Figure 4.11: Loans granted by the AFD

Millions of USD



Source: Development Finance Agency. August 2014.

<sup>44</sup>Procoop is one of the AFD products that offer funding to members of producers' cooperatives.

## 5. Stress test

**The stress test simulates extreme situations that represent threats to the financial system.** This approach is used by central banks and supervisory organizations to perform endurance analysis. The objective of the simulations is to identify structural weaknesses in the financial system after the analysis of different risk sources. The data for this comes from the Statistical and Financial Bulletin of the Superintendency of Banks, June 2014.

**The analysis focuses on two variables: liquidity and solvency of the banks.** For the solvency analysis we simulate the reaction of the capital adequacy ratio of the banks against the following shocks: an increase in NPL, a decrease of the interest rate, and a depreciation of the guaraní. For the liquidity analysis, we evaluate the effect in terms of days that a bank could affront a withdrawal of deposits, without receiving credit assistance from the Central Bank of Paraguay. We also perform a combined shock to observe how liquidity and solvency of the system are affected at the same time by these shocks.

### 5.1. Risk analysis with an impact on solvency

**The main indicator of the solvency of a bank is the capital adequacy ratio.** This is the relation between capital and risk weighted assets and contingent assets.<sup>45</sup> The shocks simulated with the stress test affect the capital adequacy ratio of the banks through the following channels:

- a) credit risk,
- b) variations of the interest rates,
- c) variations of the exchange rate of the guaraní with respect to the USD.

#### a) Credit risk

**Credit risk is the risk that the borrowers cannot payback their credits.** To evaluate the credit risk we simulate two shocks.

**The first shock consists in an increase of the NPL-ratio of all banks in 10 percent.** This increase is proportional to the existent NPL-ratio in each of the banks. As a consequence of this hypothetical increase in NPL, the banks are obliged to increase their provisions depending on the risk categories of credits in their portfolios.<sup>46</sup> If a bank presents a capital

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<sup>45</sup> Paraguayan Law N°861/96, Article 56.

<sup>46</sup> Resolución N°1, Acta N° 60, dated 29 September 2007.

adequacy ratio of less than 12 percent this will be required to increase its capital or retain utilities.

**The second shock consists in an increase in the NPL-ratios in the bank portfolios dedicated to specific sectors.** We simulate for each sector an increase in the NPL-ratio of 30 percent. The analyzed sectors are: agriculture, commerce, consumption, exports, services, financial, live-stock, and industry.

**The results of both simulations indicate that the solvency level of the financial system is high.** After simulating the first shock, the capital adequacy ratio of the whole banking system passed from 16.6 percent to 15.5 percent. After simulating the second shock, the banks react mainly to an increase of NPL in the agricultural sector and in the wholesale commerce sector. In all the cases, the capital adequacy ratio is higher than the minimum required by national regulations (Table 5.1).

**Table 5.1: Credit risk – Shock 2**

Capital adequacy ratio (CAR) after shock 2									
	CAR before the shock	Agriculture	Live stock	Industry	Whole-sale commerce	Retail commerce	Services	Consumption	Export
Banking system	16.6	15.0	15.8	15.9	15.6	16.0	15.9	16.4	16.5

Note: Shock 2 corresponds to an increase in NPL of each sector in 30 percent.

### **b) Risk of interest rate variation**

**In this section we analyze the risk of changes in the interest rate and the effect on the net income of the bank.** The net income is the difference between assets and liabilities. The variations of net income are the result of interest earnings and payments.

**To analyze the effect of the flow of net interest on net income we calculate the individual difference and the accumulated difference of the interest flow.** We consider the maturity date of the financial instruments that the banks are trading in the market. We classify assets and liabilities in three maturity groups; with maturity of less than three months, between three and six months, and between six and twelve months. After a shock of 5 percent decrease of the interest rate, we observed that the capital adequacy ratio of the banking system passed from 16.6 percent to 16.2 percent.

### **c) Risk of exchange rate variations**

**Exchange rate variations affect the value of asset and liabilities that are denominated in foreign currency.** The risk for a bank results from the mismatch in its net open position,

that is, the difference between asset and liabilities in foreign currency. In this section we simulate a depreciation of 20 percent of the guaraní with respect to the USD.

**Exchange rate risks can be direct or indirect.** The direct risk arises from the nominal exchange rate variation that causes a revalorization of the net open position of the bank. The stress test considers the difference between assets and liabilities of the banks in foreign currency. The net open position is zero, when assets and liabilities in foreign currency are equal. The position of the bank is long, if the assets in foreign currency are higher than the liabilities in foreign currency. The position of the banks is short, if the assets in foreign currency are lower than the assets in foreign currency.

**A depreciation of the exchange rate affects positively to the banks that are long in foreign currency.** The variation of the foreign exchange position is subtracted from the capital of the bank, which affect the capital adequacy ratio.

**The indirect risk arises from the effect of the exchange rate variations on solvency and on the payment capacity of the borrowers.** A depreciation increases the value in local currency of the credits that are given in USD, which make more difficult the payment by borrowers with income in guaraníes. Besides the effect of the depreciation on capital, the stress test considers the effect through variations in credit risk. This assumes that a change in the NPL-ratio is proportional to the amount of credit in foreign currency. For this exercise, we simulate an increase in NPL-ratios of 10 percent and, as a consequence, an increase of 10 percent in provisions. The shock causes a deterioration of the classifications of the credit portfolio in each bank, for the credits that are given in USD, what leads to higher provisions and consequently affects negatively the capital of the bank.

**After the shock, all banks present capital adequacy ratios that are higher than 12 percent.** The direct shock of exchange rates leads to a capital adequacy ratio of 16.8 percent and the indirect shock of exchange rates leads to a capital adequacy ratio of 16.7 percent.

## 5.2. Liquidity risk

**The liquidity risk is the probability that a bank is not holding the necessary funds to fulfil its obligations.** This is measured in terms of the number of days that a bank would be able to undergo continuous deposit withdrawals without receiving external credit assistance.

**The stress test performs a so-called simple test and a contagion test.** The result of both tests shows that the banks in Paraguay would undergo without troubles a deposits withdrawal of the analyzed length without receiving any external credit support.

**To perform these tests we used assumptions for the percentage of sight deposits and time deposits that would be withdraw daily by the public.** The simulated shock consists in daily withdrawals of 10 percent in sight deposits and of 5 percent in time deposits, both in local and foreign currency. With respect to the structure of the assets, we assume that the banks could transform a percentage of liquid assets in cash on a daily basis. We assume that in one day 90 percent of assets would turn to illiquid assets and that 1 percent of illiquid assets would turn to liquid assets.

**The difference between both simulations is the proportionality of the shock.** The simple test considers a liquidity drainage that affects all the banks proportionally according to the amount of sight and time deposits. However, for the contagion test we assume that the liquidity drainage starts in small banks and is transmitted to larger banks. For this test, we consider that total assets are like a measure of financial security and that this financial security is related to the size of the bank. For this reason, larger banks register liquidity gains after the shock.

### 5.3. Combined shock of liquidity and solvency

**Liquidity and solvency of the banks can be affected at the same time.** In this test we observe how changes in different risk factors are related and affect the liquidity and solvency of the system.

**The effect on solvency is the result of the combination of all shocks simulated in the previous sections.** We observe a variation of the capital adequacy ratio that is caused by the effect of the following: the raising of provisions, a higher NPL-ratio, a decrease on the interest rate, and a depreciation of the nominal exchange rate.

**The liquidity shock is similar to the utilized in the previous test.** The simulated shock consists in daily withdrawals of 10 percent in sight deposits and of 5 percent in time deposits, both in local and foreign currency. With respect to the structure of the assets we assume that the banks could transform a percentage of liquid assets in cash on a daily basis. We assume that in one day 90 percent of assets would turn to illiquid assets and that 1 percent of illiquid assets would turn to liquid assets.

**The observed variable is the capital adequacy ratio.** Figure 5.1 shows the capital adequacy ratio before and after each shock. At the same time, it presents the capital adequacy ratio after a combination of all the shocks simulated in this chapter. This combined shock has the highest effect on the capital adequacy ratio of the financial system. Figure 5.2 presents the test applied in June 2013. In this case also, it is the combined shock the one with the highest effect on the capital adequacy ratio.

The effect of the shocks on liquidity is performed based on two indicators. Firstly, the total liquidity ratio is defined as liquid assets over total assets. Before the shock, the total liquidity ratio was 35.4 percent, and after the shock it reached 14.7 percent. Secondly, the short-term liquidity ratio is defined as liquid assets over short-term liabilities. The short-term liquidity ratio passed from 83.1 percent before the shock to 101.9 percent after the shock.

Figure 5.1: The effect of the shocks on the capital adequacy ratio  
June 2014

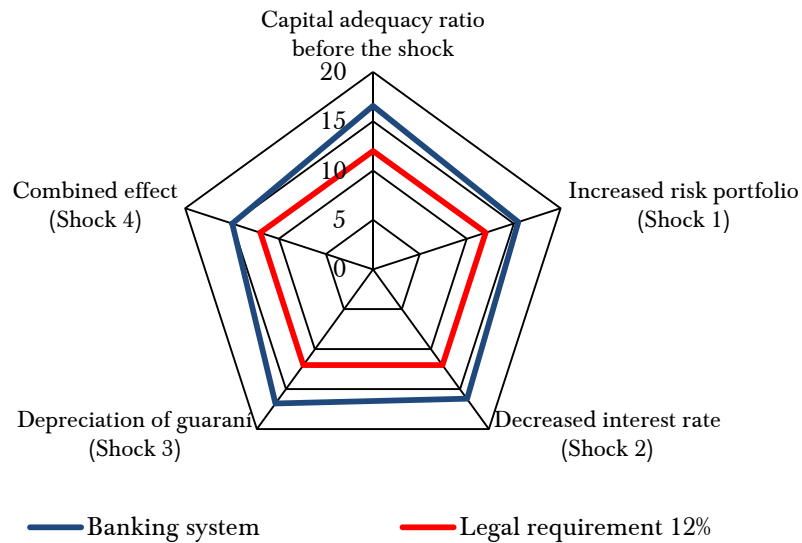
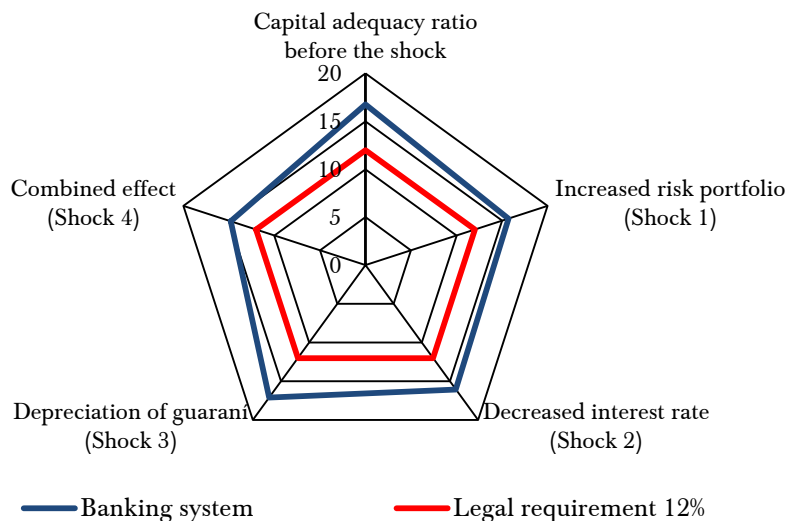


Figure 5.2 The effect of the shocks on the capital adequacy ratio  
June 2013



## 6. Regulations

These are the Circular Letters and Resolution Letters corresponding to the first semester of 2014:<sup>47</sup>

### 6 January 2014      **Circular SB. SG. N°0012**

The Superintendency of Banks communicates the adjustment of the minimum capital for all supervised entities.

[https://www.bcp.gov.py/userfiles/files/Circ\\_SBSG\\_12\\_2014\\_Capital\\_minimo\\_2014.pdf](https://www.bcp.gov.py/userfiles/files/Circ_SBSG_12_2014_Capital_minimo_2014.pdf)

### 15 January 2014      **Circular SB. SG. N°00036**

The Superintendency of Banks communicates to all entities of the financial system that the Ministry of Finance formalizes the verification procedure for documents of Associations that operate under special laws.

[http://www.bcp.gov.py/userfiles/files/Circ\\_SBSG\\_36\\_2014\\_Verificacion\\_escrituras\\_Abogacia\\_Tesoro%281%29.pdf](http://www.bcp.gov.py/userfiles/files/Circ_SBSG_36_2014_Verificacion_escrituras_Abogacia_Tesoro%281%29.pdf)

### 28 January 2014      **Resolución N°3, Acta N°7**

The Board of Directors of the Central Bank of Paraguay disposes that the entities of the financial system must necessarily include information with respect to payments derived from the use of the specified financial instruments in the electronic and printed statements of credit cards.

[https://www.bcp.gov.py/userfiles/files/Informaci%C3%B3n\\_Tarjetas\\_28\\_01\\_2014.pdf](https://www.bcp.gov.py/userfiles/files/Informaci%C3%B3n_Tarjetas_28_01_2014.pdf)

### 21 February 2014      **Resolución N°34, Acta N°12**

The Board of Directors of the Central Bank of Paraguay indicates to the Superintendency of Banks to supervise the compliance of Resolution N° 3, Act 7, dated 28 January 2014, which will become effective from 1 May 2014.

[https://www.bcp.gov.py/userfiles/files/Resolucion\\_N\\_34\\_Acta\\_N\\_12\\_Fecha%2021\\_02\\_14.pdf](https://www.bcp.gov.py/userfiles/files/Resolucion_N_34_Acta_N_12_Fecha%2021_02_14.pdf)

### 25 February 2014      **Resolución N°1, Acta N°13**

The Board of Directors of the Central Bank of Paraguay approves the regulation of the standing deposit facility.

[https://www.bcp.gov.py/userfiles/files/Resolucion\\_N1\\_Acta\\_N13\\_Fecha\\_25022014.pdf](https://www.bcp.gov.py/userfiles/files/Resolucion_N1_Acta_N13_Fecha_25022014.pdf)

### 4 March 2014          **Resolución N°2, Acta N°15**

The Board of Directors of the Central Bank of Paraguay modifies the Article 3°) that regulates the foreign exchange term operations (currency forwards), approved by

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<sup>47</sup> Circular Letters contain information of general character, while Resolution Letters contain authorities' decisions with respect to specific cases.

Resolution N° 8, Act N° 13, dated 26 February 2013.

[https://www.bcp.gov.py/userfiles/files/Resolucion\\_N %2013 Acta N 15 04032014.pdf](https://www.bcp.gov.py/userfiles/files/Resolucion_N_%2013_Acta_N_15_04032014.pdf)

**4 March 2014**                    **Circular SB. SG. N°000152**

The Superintendency of Banks communicates to all entities of the national financial system that Circular SB.SG. N°0027/2003 remains without effect.

[http://www.bcp.gov.py/userfiles/files/Circ SBSG 152 2014 Recursos exterior.pdf](http://www.bcp.gov.py/userfiles/files/Circ_SBSG_152_2014_Recursos_exterior.pdf)

**2 April 2014**                    **Circular SB. SG. N°00338**

The Superintendency of Banks communicates to all entities of the national financial system the new daily sheets models for foreign exchange position.

[http://www.bcp.gov.py/userfiles/files/Circ SBSG%20 338 2014 Posicion Cambios.pdf](http://www.bcp.gov.py/userfiles/files/Circ_SBSG%20338_2014_Posicion_Cambios.pdf)

**24 April 2014**                    **Resolución N°13, Acta N°28**

The Board of Directors of the Central Bank of Paraguay extends Resolution N° 1, Act N° 60, dated 28 September 2007, that approves the "Regulation for the classification of assets, credit risks, provisions, interest payments".

[https://www.bcp.gov.py/userfiles/files/Resolucion\\_N 13 Acta N 28 Fecha 24 04 2014.pdf](https://www.bcp.gov.py/userfiles/files/Resolucion_N_13_Acta_N_28_Fecha_24_04_2014.pdf)

**7 May 2014**                    **Resolución SB. SG. N°0074**

The Superintendency of Banks modifies the Chart of Accounts.

[https://www.bcp.gov.py/userfiles/files/Res\\_SBSG\\_74\\_07\\_05\\_14\\_compra%20cartera%281%29.pdf](https://www.bcp.gov.py/userfiles/files/Res_SBSG_74_07_05_14_compra%20cartera%281%29.pdf)

**9 May 2014**                    **Resolución SB. SG. N°0075**

The Superintendency of Banks communicates to all entities of the financial system the normative reference for transfer operations in the financial system.

[https://www.bcp.gov.py/userfiles/files/RES\\_SB\\_75\\_2014\\_160714.pdf](https://www.bcp.gov.py/userfiles/files/RES_SB_75_2014_160714.pdf)

**12 May 2014**                    **Circular SB. SG. N°599**

The Superintendency of Banks communicates to all entities of the financial system the validity of Article 39° of Law N°489/95 "The Law of the Central Bank of Paraguay", that disposes the validity as mean of payments in the national territory of the coins and notes emitted by the Central Bank of Paraguay, and that these are to be received for their nominal value.

[https://www.bcp.gov.py/userfiles/files/Circ SBSG 599 2014 BILLETES %26 MONEDAS VALOR NOMINAL%281%29.pdf](https://www.bcp.gov.py/userfiles/files/Circ_SBSG_599_2014_BILLETES_%26_MONEDAS_VALOR_NOMINAL%281%29.pdf)

**19 May 2014**                    **Circular SB. SG. N°602**

The Superintendency of Banks reminds the public that the withdrawal notes of all sight deposit accounts and bank checks are different instruments that fulfil completely

different functions.

[https://www.bcp.gov.py/userfiles/files/Circ\\_SBSG\\_602\\_19052014\\_Utilizacion\\_instrumentos\\_financieros\\_boletas\\_extraccion\\_cheques\\_LOGO%281%29.pdf](https://www.bcp.gov.py/userfiles/files/Circ_SBSG_602_19052014_Utilizacion_instrumentos_financieros_boletas_extraccion_cheques_LOGO%281%29.pdf)

**4 June 2014                      Circular SB. SG. N°0691**

The Superintendency of Banks informs all currency exchange offices with respect to Article 42, 4) of Law N° 2794/05 regarding currency exchange offices.

[http://www.bcp.gov.py/userfiles/files/Circular\\_SBSG\\_0691\\_CASAS\\_CAMBIOS\\_6486\\_2014\\_SINIESTROS.pdf](http://www.bcp.gov.py/userfiles/files/Circular_SBSG_0691_CASAS_CAMBIOS_6486_2014_SINIESTROS.pdf)

**11 June 2014                      Circular SB. SG. N°0735**

The Superintendency of Banks makes reference to numeral 3.3 regarding the regulation for emission, operation, and administration of credit cards of the national financial system.

[http://www.bcp.gov.py/userfiles/files/CIRC\\_0735\\_2014\\_BANCO\\_FINANCIERAS\\_SAP\\_VS\\_7997\\_2014\\_TARJETAS.pdf](http://www.bcp.gov.py/userfiles/files/CIRC_0735_2014_BANCO_FINANCIERAS_SAP_VS_7997_2014_TARJETAS.pdf)