FOR AGENDA

SM/10/138

May 21, 2010

To: Members of the Executive Board

From: The Secretary

Subject: **Paraguay—Selected Issues**

This paper provides background information to the staff report on the 2010 Article IV consultation discussions with Paraguay (SM/10/137, 5/21/10), which is tentatively scheduled for discussion on **Friday, June 4, 2010.** At the time of circulation of this paper to the Board, the authorities of Paraguay have indicated that they need more time to consider whether they will consent to the Fund's publication of this paper. Publication will only proceed upon the receipt by the Fund of the member's explicit consent. Any requests for modifications for publication are expected to be received two days before the Board concludes its consideration.

Questions may be referred to Mr. Rennhack (ext. 37350), Ms. Daban Sanchez (ext. 37961), and Mr. Acosta Ormaechea (ext. 37391) in WHD.

Unless the Documents Section (ext. 36760) is otherwise notified, the document will be transmitted, in accordance with the procedures approved by the Executive Board and with the appropriate deletions, to the WTO Secretariat on Tuesday, June 1, 2010; and to the European Commission, the European Investment Bank, the Food and Agriculture Organization, the Inter-American Development Bank, and the United Nations Development Programme, following its consideration by the Executive Board.

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PARAGUAY

Selected Issues

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Approved by the Western Hemisphere Department

May 21, 2010

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A. Introduction

1. **In the near term, Paraguay may receive a sharp increase in revenues from electricity sales from the Itaipu dam, raising the question of how to manage these resources effectively**. This windfall would come from the July 2009 agreement between Paraguay and Brazil to triple the price of Paraguay's electricity exports to Brazil, if this agreement is ratified by both legislatures (Box 1). It would offer important opportunities, while posing certain challenges. One of the main challenges is to guarantee the efficient and sustainable use of the windfall. This is especially important given its temporary nature and the projected declining profile of Itaipu revenues, which are estimated to reach ½ percent of GDP by 2025. Another important challenge is to avoid that the windfall could further reduce the incentive to mobilize tax revenues, which are lower in Paraguay (as a share of GDP) than in similar countries in terms of income per capita and dependence on natural resource revenues. This is especially critical at the level of sub-national governments, which may make less of an effort to mobilize taxes, because of the existing sharing mechanism for Itaipu revenues.

2. **This paper outlines a medium-term fiscal strategy and a management mechanism to address the challenges posed by the Itapu windfall**. It proposes to deposit the windfall in a special fund, which could help mobilize public support for saving part of the windfall and building a buffer for the future. The fund could also provide an easy and transparent way to present and manage the stocks and flows associated with the windfall. In line with best practices, the fund management should be supported by special legislation, which will include stringent investment and transparency rules, as well as, clear criteria for the selection of the projects to be funded.

3. **The document is organized as follows. Section B overviews the main challenges and risks posed by the revenues derived from Itaipu**. Section C describes the main components of a sustainable fiscal strategy to overcome these risks and challenges. Section D presents key considerations to design an effective fund to manage the forthcoming windfall. Section E summarizes and concludes.

[1] Prepared by Teresa Dabán-Sánchez and Walter Zarate.

Box 1. Revenues from the Hydroelectric Plant Itaipu

Under the Itaipu Treaty, Paraguay and Brazil agreed to exploit jointly the hydroelectric resources of the Parana River In addition, both countries agreed on the creation of a binational entity, the Binational Itaipu,[1] for the administration of the dam. Under the Treaty it was agreed that the two countries will be obliged to acquire, either jointly or separately, all of the power produced by the dam Itaipu at cost.

The Itaipu Treaty mandates that Binational Itaipu pay royalties to each country. The royalties are compensation for the use of the water of the Parana River in the production of electric energy. The royalties are calculated as the product of the electric energy effectively produced by the dam, measured in GWh, and a fixed price by GWh in U.S. dollars, established in the Treaty at US$650 per GWh. In order to maintain constant their real value in U.S. dollars, the royalties are updated monthly basis according to the Industrial Production Index and the CPI of the U.S. In 2009, royalties paid to the Paraguayan government amounted to US$222 million (1.5 percent of GDP).

The Treaty also gives each country the right to purchase the energy not used by the other country for its own consumption. The volume of electric energy that Paraguay annually acquires from Itaipu is still well below its 50 percent share. In particular, in 2008 Paraguay only acquired 18 percent of its share or 9 percent of Itaipu's total production. Under these circumstances, the Treaty gives Brazil the right to acquire, at cost, the electric energy not used by Paraguay.

Paraguay receives a compensation for the sale of the excess of electric energy to Brazil. The compensation is calculated according to the product of the amount of energy sold to Brazil in GWh, and a price per GWh established in the Treaty at US$350 multiplied by a factor M. The compensation is also updated on a monthly basis in line with the Industrial Production Index and CPI of the U.S.. The factor M originally took the value of 3½ in the Treaty and has been revised upward on several occasions (now stands at 5.1).[2]

According to a July 2009 agreement between Brazil and Paraguay, the compensation that Paraguay receives from Brazil could rise substantially over the medium term. In 2009, Brazil paid a compensation of US$120 million to Paraguay (0.8 percent of GDP). Once the agreement is ratified by the two legislatures, compensation to Paraguay would rise by US$240 million (1.5 percent of GDP) to US$360 million (equivalent to a tripling in the parameter M to 15.3).

An important portion of Itaipu revenues are at present shared with sub-national governments. The central government currently transfers 30 percent of both royalties and compensations to sub-national governments. A recent law requires the central government to share 50 percent of royalties with sub-national governments (*municipalities* and *gobernaciones*) by 2013. However, the distribution of compensation payments is still unclear, since this is not mandated by law.

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[1] The Itaipu Treaty was signed on April 26, 1973 and will expire in 2023. The Binational Itaipu was created on May 17, 1974.

[2] At present Paraguay receives US$45 per MWh (US$45,000 per GWh), almost one-third of the price currently paid in the Chilean market, where the price is 120US$ per MWh. Even though the costs of exporting to Chile would be higher, $60/MWh, than the cost of production of Itaipu ($42/MWh), the profit from exporting to Chile ($60/MWh) is 20 times higher than the only benefit that Paraguay gets from exporting to Brazil, namely the compensation of $3/MWh.

B. Main Challenges and Risks Posed by Itaipu Revenues

4. **Itaipu revenues may pose important macroeconomic, intergenerational, political economy and governance challenges**. Some of the challenges derive from the macroeconomic and budgetary difficulties of managing large and relatively volatile funds. Some of other challenges derive from the way in which these funds are generated, without the scrutiny of taxpayers, donors, and lenders. Specifically:

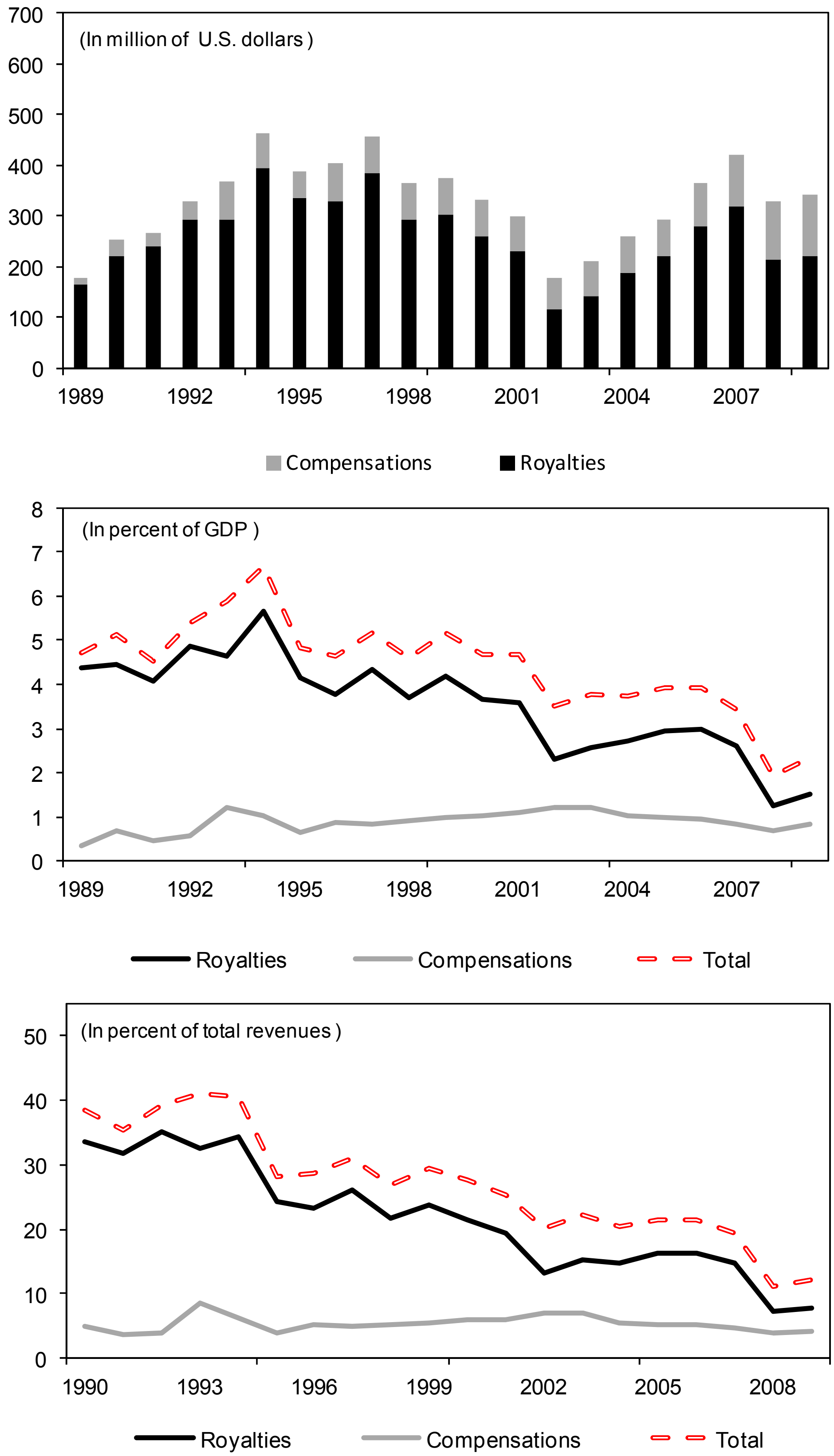
- ***Volatility***. As they are generated in U.S. dollars, the Itaipu revenues present certain volatility. In addition, Itaipu revenues could vary as a result of the sudden increase in some of the parameters used in their calculation, such as the one derived from the recent agreement with Brazil. If the windfall derived from the new arrangement is fully spent, it could put some pressure on the country's administrative capacity, and lead to waste or an increase in spending programs of questionable quality.

- ***Budget dependence***. Paraguay's central government budget highly depends on the 2⅓ percent of GDP revenues derived from the binational Itaipu (Figure 1). Actually, when Itaipu revenues are excluded, the public balance surplus of 0.1 percent of GDP achieved in 2009 becomes a 2⅓ percent of GDP deficit. This is mainly the result of Paraguay's low tax ratio, which at present amounts to only 12.7 percent of GDP, even lower than in peer countries with similar income per capita and volume of resource revenues.

- ***Rentier mentality***. The theory of *rentier states* sustains that countries that receive substantial amounts of resource revenues from the outside world on a regular basis risk become unaccountable to their citizens and less prone to promote the increase in tax collections (see Moore, 2004). Although data are scarce, anecdotal evidence suggests that the existing mechanism to share Itaipu revenues among levels of governments may have substantially discouraged the subnational governments' efforts on tax mobilization. Itaipu revenues may have also discouraged in the past, and may continue to discourage in the future, tax reforms in Paraguay.

- ***Declining profile over time***. Although the energy generated by the Itaipu dam is considered a renewable resource, Itaipu revenues are estimated to decline overtime. The declining profile will result from the following factors: (i) the unitary price per GWh, in U.S. dollars, is adjusted monthly in line with the CPI and the Industrial Production Index of the U.S., which probably will grow by less than Paraguay's nominal GDP; and (ii) the electricity surplus currently exported to Brazil is expected to shrink over time, in tandem with the envisaged increase in Paraguay's domestic consumption of electricity (Box 2).

Figure 1. Itaipu Revenues



Box 2. Long-Term Projections of Itaipu Revenues

Paraguay's revenues from Itaipu are projected to decline even under favorable assumptions. These assumptions include:

- *Itaipu production remains constant.* This assumption seems reasonable as the dam is already operating at maximum capacity.

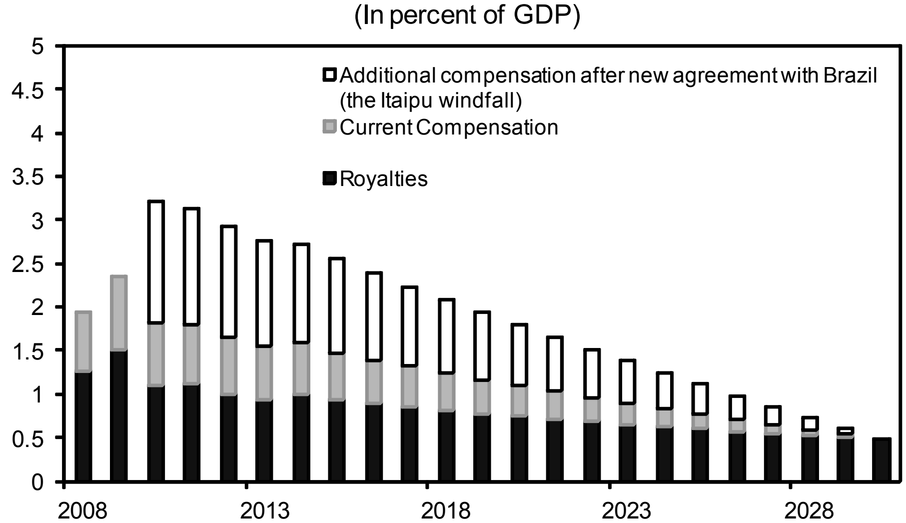
- *Paraguay's domestic consumption of electric energy increases by 5 percent during 2010–15 and by 10 percent during 2016–30.* As Paraguay's domestic consumption of power increases, the volume of excess energy to be sold to Brazil will be smaller, and the compensation received from Brazil will decrease.

- *Economic activity in Paraguay will grow faster than industrial production and consumer prices in the United States.* During 2010–30, staff projects nominal economic activity in Paraguay to grow by 8–10 percent a year, while nominal growth in the U.S. economy is projected at about 5 percent a year.

- *Real exchange rate of the guaraní against the U.S. dollars remains constant during the projection period.* This implies a small depreciation of the guaraní to offset the expected inflation differential between Paraguay and the United States.

Under these assumptions, Itaipu revenues are projected to decline from the current 2⅓ percent of GDP to less than ½ percent of GDP by 2025. The recent agreement with Brazil to triple the compensation payments, if ratified by the legislatures, would lead to a rise in Itaipu revenues in the near term. However, even these additional revenues would sharply in relation to GDP by 2025, under these assumptions.

Paraguay: Itaipu Revenues Projections
(In percent of GDP)



C. Strategy to Manage Itaipu Revenues

5. **A sustainable medium-term fiscal strategy would help address the challenges and risks associated to Itaipu revenues**. The strategy should aim to (i) increase tax revenues to help diversify the government's revenue sources away from Itaipu revenues; (ii) implement a medium-term fiscal framework, which would aim at smoothing the expenditure envelope over the medium-term; and (iii) adopt a mechanism to save part of the Itaipu windfall to provide a more sustainable source of revenue.

6. **As in other natural resource-rich countries, Paraguay could adopt a rule to determine the portion of the Itaipu windfall to be saved**. Some of these rules would also allow for a certain degree of intergenerational equity, in the sense that future generations will also enjoy part of the windfall. Options include (see Figure 2):[2]

- ***Going on a binge rule***. One option could be to spend the whole annuity of the windfall, under the so-called "going on a binge" or "hand to mouth" rule. However, this rule has important drawbacks. First, it would privilege current over future generations; and, it would lead to a non-sustainable fiscal path, since substantial fiscal adjustment, which will may be difficult to implement, would be needed when the Itaipu windfall start declining.

- ***Bird-in-hand rule***. Under this rule the government would spend only the interest income accruing from accumulating the windfall revenues in a fund. A similar rule is used by Norway, for instance, where the oil revenues contribution to the annual budget cannot be larger than 4 percent of the return of the oil fund. This rule would yield small annual payments during the first years, while the stock of additional revenues accumulates.

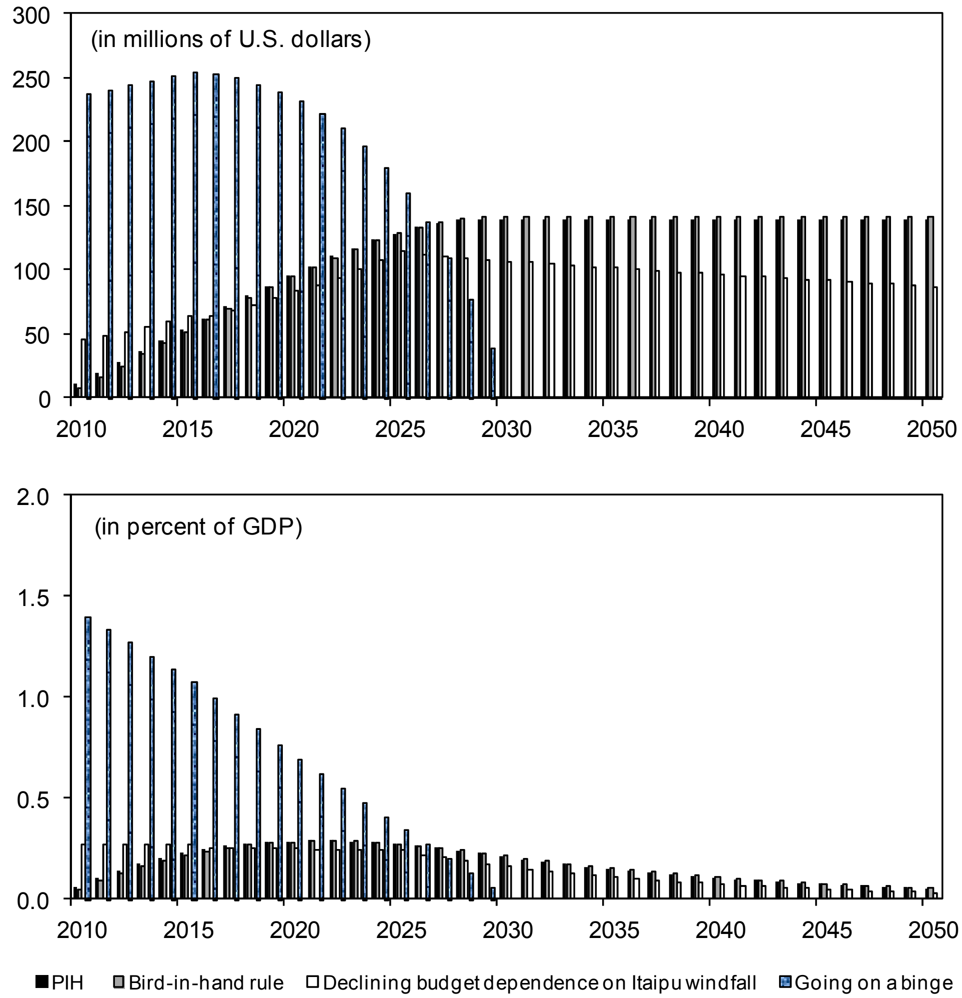
- ***Permanent Income Hypothesis (PIH)***. The PIH implies that a transitory increase in resource revenues should not influence the current level of spending.[3] Therefore resource windfalls should be almost completely saved to ensure a stable path of spending overtime. Under this rule, the government would use in fiscal year t only the sustainable (permanent) annual income, (SIt) which is the maximum amount that can be spent from the Itaipu windfall in that year and still leave enough savings. This amount would equal the real rate of return multiplied by the net present value (NPV) of all of the windfall inflows in the future. In the case of Paraguay, the NPV of the

[2] See Dabán and Hélis (2010) for a more detailed presentation and a discussions of the pros and cons of the most commonly rules used by resource-rich countries.

[3] The PIH has been applied by several resource-rich countries, including Timor-Leste and Saõ Tomé and Príncipe (see Segura, 2006, and Kim, 2005), and has been proposed for Gabon (Leigh and Olters, 2006), and Trinidad and Tobago (Velculescu and Rizavi, 2005).

future windfalls is not much higher than annual payments in the early years, and for this reason, this rule does not deviate much from the bird in hand rule.

Figure 2. Annuities for Itaipu Windfall Under Different Rules



- ***Declining budget dependence on the Itaipu windfall***.[4] Another option is a rule that links the share of windfall to be spent with progress on increasing tax revenues. If the authorities make good progress in increasing the tax ratio (and reducing dependence on Itaipu revenues), the Itaipu windfall could be spent more rapidly. This rule would suggest that, if tax revenues rose by 0.3 percent of GDP a year, the government could

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[4] This kind of adjustments to the PIH has been proposed for other countries. In the case of São Tomé and Príncipe and Chad the PIH annuity has to be rescaled down in line with national administrative absorptive capacity (see Segura, 2006 and Dabán and Lacoche, 2007). For the case of Gabon, Leigh and Olters (2006) proposed a smoothing mechanism rule for consolidating the non-oil primary deficit to the sustainable PIH level, which given Gabon's relative high tax ratio, focuses on gradually reducing expenditure. East-Timor also allows for deviations from the PIH under special circumstances and based on clear guidelines.

spend 0.3 percent of GDP a year out of the windfall. The rest of the windfall would be invested in a fund, which could reach a sufficient balance to provide a permanent annuity by 2025, although somewhat less than under the PIH.

D. Key Considerations for the Design of a Fund for the Itaipu Windfall

7. **This section proposes the design and implementation of a special fund for the management of the windfall expected from Itaipu**. Key considerations would include: (i) where to deposit the windfall; (ii) the legal framework to govern its management; (iii) the criteria to identify the projects to be funded; (iv) special requirements for transparency and communication; and (v) guidelines for efficient management of the fund.

8. **The Itaipu Fund could be managed as a separated account.** According to best practices, the revenues derived from the Itaipu windfall should be deposited in the government's treasury account, together with the rest of government revenues. However, Paraguay may find it useful to create a separate account to help insulate deposits and withdrawals from political pressures, which in turn could help mobilize public support for this step. Paraguay could benefit from the enactment of a special piece of legislation for the Itaipu Fund, which could be altered only under special majorities in congress to ensure a high degree of legal stability. Such a law should: (i) establish the main purpose of the fund (i.e. a saving fund); (ii) exclude the windfall from the current de facto rule that earmarks 30 percent of compensations to subnational governments; (iii) outline the rules that will govern the annual withdrawals; and (iv) specify the circumstances (e.g. national emergency) under which the law would authorize annual withdrawals above the rules.

9. **The management of the Itaipu Fund would depend on the volume, the expected use, and time horizon of the envisaged savings**. In case of small-to-moderate deposits, which are expected to be used in the short to-medium term, and mainly on domestic transactions, the fund could be a domestic currency-denominated account managed under a well defined protocol. The main transactions will entail manageable deposits and withdrawals and unsophisticated and limited investment operations. However, in case of large deposits, which are expected to be saved for the long run, it would be advisable to maintain the fund as a foreign-currency denominated off-shore account, which could be managed by the central bank (e.g. Norway) or outsourced to a financial institution (e.g. Saõ Tomé and Principe), according to a more sophisticated investment strategy. The strategy could be return-driven, yet conservative, with prudent provisions for diversification of risks and liquidity. The ministry of finance should take responsibility for designing the investment strategy, with assistance from a non-partisan Investment Committee to add an extra layer of independent control.

10. **The legal framework should also establish the criteria for the allocation of the Itaipu Fund among line ministries**. The authorities' intention to allocate the Itaipu windfall to funding infrastructure and IT projects is well placed. On a first stage, and in line with

previous advice to save part of the windfall, the fund could focus on supporting projects of reduced scale but with high impact. To enhance the project effectiveness and efficiency, the legal framework could establish that the Itaipu Fund will be distributed among line ministries in response to their project submissions, which could be assessed by the ministry of finance.

11. **All of the operations of the Itaipu Fund should be as transparent as possible and subject to special audits**. The success of the Itaipu Fund—in terms of both actual financial returns and public perception—will depend in part on the transparency of its operations. Therefore, it would be advisable to establish specific reporting mechanisms, including: (i) a short report describing the Itaipu Fund's annual activities, comprising an inflow and outflow statement and a balance sheet presentation; (ii) the overall annual return on the assets of the fund; and (iii) a statement by independent external auditors.

E. Conclusion

12. **Itaipu revenues represent a great contribution to Paraguay's budget resources, but pose specific challenges**. To address these challenges, Paraguay's government should adopt a forward-looking fiscal strategy. The strategy's main goals should be to contain budget dependence on Itaipu revenues, preserve fiscal discipline, and allow for the gradual and sustainable transformation of the envisaged, yet temporary, windfall into other forms of financial, physical and human capital. This could be achieved by implementing medium-term fiscal plans to keep public expenditure in line with Paraguay's absorptive capacity, save some of the windfall to insure future financing of public spending, as Itaipu revenues decline, and increase tax revenue. The creation of a special fund could help mobilize public support for saving part of the windfall and building a buffer for the future. The fund could also provide an easy and transparent way to present and manage the stocks and flows associated to the Itaipu windfall.

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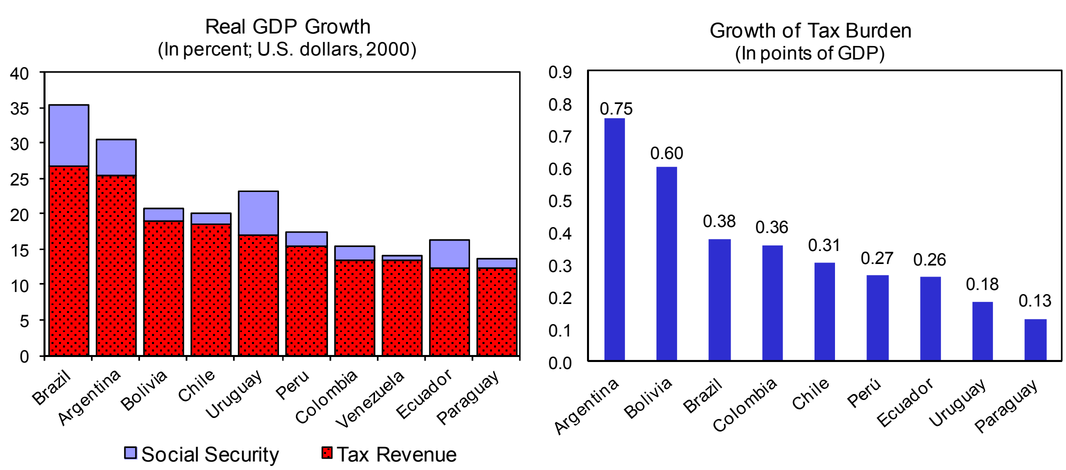
II. PARAGUAY'S TAX SYSTEM IN A REGIONAL PERSPECTIVE[1]

A. Introduction

1. **In 2004, the government implemented a comprehensive tax reform aimed at simplifying and increasing the efficiency of Paraguay's tax system**. The measures included a substantial broadening of the base of the VAT and corporate income tax, the introduction of a new personal income tax, the creation of a new agricultural income tax, and the adjustment of some excise tax rates. A new legal framework for tax and customs administration also came into force in 2004, which permitted modernizing procedures and operations, improving control over goods and revenue collection, and addressing key human resource issues. With the exception of the personal income tax, the 2004 reform has been fully implemented, and tax revenues rose to almost 12 percent of GDP in 2008 from 9 percent of GDP in 1990.

2. **Nonetheless, even with this reform, Paraguay's tax revenue-to-GDP ratio remains quite low by regional standards**. In addition, Paraguay's tax ratio has increased only moderately, especially when compared with other South American economies (Figure 1). This reflects Paraguay's low rates, narrow bases—which practically exclude agribusiness activities—and weak tax administration.

Figure 1. Average Growth of Real GDP and Tax Burden, 1991–2008



Source: IMF staff calculations.

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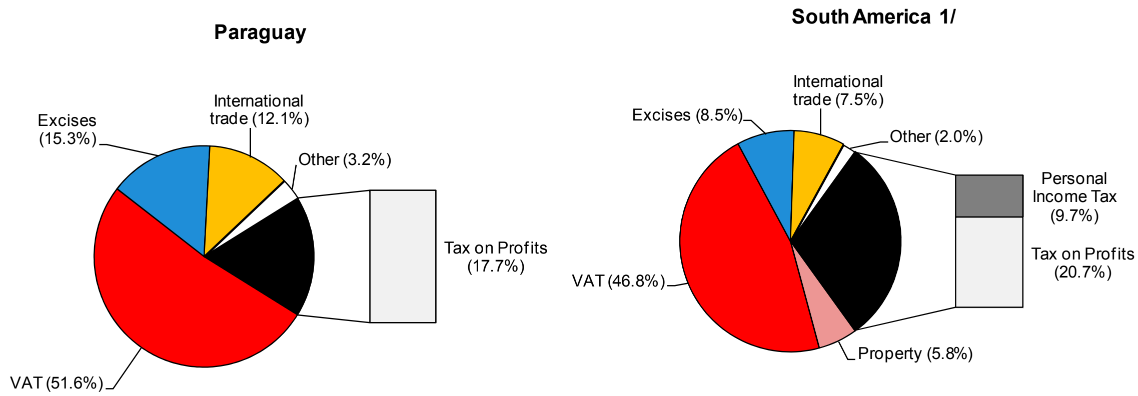
[1] Prepared by Ernesto Crivelli (FAD).

3. **Also, Paraguay's tax structure relies more heavily on indirect taxation compared to elsewhere in the region (Figure 2)**. The sum of VAT, excises, and import duties account for 79 percent of total tax revenue in Paraguay, while those taxes account on average for 62.8 percent of total tax revenue in other South American countries. In Paraguay, income taxation accounts for 17.7 percent of total revenue, while in other South American countries it accounts on average for 30.4 percent of total tax revenue.

Figure 2. Tax Structure in Paraguay and South America, 2008
(As percentage of total tax revenue)



Source: IMF staff calculations.
1/ Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Venezuela, and Uruguay.

4. **This paper assesses the main elements of Paraguay's tax system in a regional perspective and provides some tax policy recommendations for strengthening revenue mobilization**. The paper is organized as follows. Section B assesses Paraguay's structure of indirect taxes, and Section C evaluates its direct taxes. Section D provides concluding remarks.

B. Indirect Taxation

5. **The VAT provides almost half of total tax revenue.** Paraguay's VAT rate is only 10 percent, the lowest in the region (Table 1), but its productivity (the ratio of VAT revenue as percentage of GDP to the VAT standard rate) is 64 percent, among the highest in South America. This unexpectedly high VAT productivity reflects in large part the high revenues from re-exports (about 2 percent of GDP). Much of the re-export trade is informal, with payments of VAT on the imports that are not deducted when the goods are re-exported.[2] More than 50 percent of VAT revenue is collected at customs.

[2] See Varsano, R, Fenochietto, R and Agostini, C., 2009, "*Paraguay: Diagnostico del Sistema Impositivo Vigente en 2008,*" International Monetary Fund.

Table 1. VAT Rates, Revenue, and Productivity in South American Countries, 2008

	Current Standard VAT Rate	Current Other Positive Rates	Total VAT revenue			Revenue Productivity 1/ Based on	
	In percent		In percent of final consumption	In percent of GDP	In percent of Tax Revenue	Final Consumption	GDP
Uruguay	22.0	10.0	12.5	8.4	36.1	0.54	0.38
Brazil 2/	20.5	Multiple (25 rates)	10.5	13.5	38.0	0.51	0.66
Chile	19.0		11.5	8.9	44.3	0.61	0.47
Argentina 2/	21.0	10.5; 27.0	10.1	10.6	34.6	0.48	0.50
Bolivia	13.0		7.6	10.0	48.1	0.51	0.77
Venezuela, Rep. Bol.	9.0	8.0; 24.0	10.9	4.7	33.1	0.78	0.52
Peru	16.0		7.4	6.6	37.9	0.46	0.41
Colombia	16.0	1.6; 3.0; 5.0; 10.0; 20.0; 25.0	6.9	5.7	36.8	0.43	0.36
Ecuador	12.0		7.1	5.4	32.7	0.59	0.45
Paraguay	**10.0**	**5.0**	**6.3**	**6.4**	**45.1**	**0.63**	**0.64**
Unweighted average	15.8		9.1	8.0	38.4	0.55	0.51

Sources: IMF, country documents; GFS, *World Economic Outlook*; and IBFD, *Taxation in Latin America*.

1/ Revenue productivity = Total VAT revenue as percentage of consumption or GDP, divided by the VAT standard rate.

2/ General government.

6. **Narrowing exemptions from the VAT remains an issue for reform**. Most importantly, all agricultural products are exempt from the VAT. In addition, a number of goods and services—including some basic consumption goods (e.g. basic food items) and pharmaceutical goods—are subject to a reduced rate (5 percent). The widespread use of VAT exemptions and reduced rates not only diminishes revenues, but also creates incentives for misclassification of items, and may lead to increased credits and refunds. Moreover, empirical evidence suggests that VAT exemptions and reduced rates may be an inefficient way to provide relief for low-income families: expenditure policies, in areas such as education and health, may be more effective tools for pursuing equity objectives.[3]

7. **Paraguay's excise taxes differ from neighboring countries in two ways**:

- ***Many products taxed at low rates***. In Paraguay, a widespread number of imported, as well as domestic goods are subject to excise taxes at five different relatively low rates (Table 2). This differs substantially from common practices in similar countries where only a few products (alcoholic and non-alcoholic beverages, tobacco products, fuels, and motor vehicles) are subject to excise taxes at very high rates (see excise tax rates for cigarettes in some countries in Table 2). In Paraguay, however, about 19 categories of goods are subject to excise taxes at very low rates (1, 5, 8, 10, and 12 percent). In the case of goods subject to the 1 percent tax rate, the revenue may not cover the associated administrative cost.

[3] L. Ebrill, M. Keen, J-P. Bodin, V. Summers, 2001. *The Modern VAT*. International Monetary Fund.

- ***Inappropriate definition of tax base***. In the case of domestically produced goods (like cigarettes), the tax base is determined by the production price instead of the final consumption price. This increases the risk of fraud, as it creates incentives for factories to open retail stores and transfer the product at a lower price. For that reason, it is common practice in the region to use the final consumption price to determine the tax base.

Table 2. Paraguay: Excise Tax Rates, 2008
(In percent)

Product	Current Tax rate
Cigarettes	12
In percentage, by countries	
Argentina	67
Bolivia	50
Chile	60
Paraguay	12
Peru	30 to 50
Cigars	12
Tobacco	12
Sodas up to 2% alcohol	5
Beer	8
Conac, gin, ron, liquors	10
Champagne, and equivalent	10
Alcohols, for fuels	12
Rectified alcohols	5
Perfumes, make up	10
Pearls, jewels, gold, etc	5
Air conditioning	1
Dishwashers, washmachines, dryers, cd players, cell phones, etc.	1
Watches	5
Musical instruments	1
Weapons, amunition	5
Toys and recreation articles	10

Source: Paraguayan Tax Code; and IMF staff calculations.

C. Direct Taxation

8. **Corporate income tax (CIT) revenue in Paraguay is low compared to other South American economies**. The CIT consists of two separate taxes: (i) a general tax on profits from commercial, industrial, and non-personal services (IRACIS), and (ii) a tax on profits from agriculture (IMAGRO). The tax rate for the IRACIS and the IMAGRO was reduced to 10 percent by 2006, becoming the lowest corporate tax rate in the region (Table 3). Interestingly, tax collection of the IRACIS increased to 2.2 percent of GDP, reflecting improved tax administration efforts as well as the lower incentive to evade this tax.

Table 3. Corporate Income Tax in Latin America, Top Rates
(In percent)

	2003	2004	2005	2006	2007	2008
Argentina	35.0	35.0	35.0	35.0	35.0	35.0
Bolivia	25.0	25.0	25.0	25.0	25.0	25.0
Brazil	25.0	25.0	25.0	25.0	25.0	25.0
Chile	16.5	17.0	17.0	17.0	17.0	17.0
Colombia	35.0	35.0	35.0	35.0	33.0	33.0
Ecuador	25.0	25.0	25.0	25.0	25.0	25.0
Paraguay	**30.0**	**20.0**	**10.0**	**10.0**	**10.0**	**10.0**
Perú	30.0	30.0	30.0	30.0	30.0	30.0
Uruguay	35.0	35.0	35.0	35.0	35.0	35.0
Venezuela	34.0	34.0	34.0	34.0	34.0	34.0
Average LA	29.1	28.1	27.1	27.1	26.9	26.9

Source: IMF staff calculations; ECLAC.

9. **The main area for reform of Paraguay's CIT is to strengthen collections under the IMAGRO**. Although agriculture accounts for about a quarter of the economy, this tax yielded revenues of only 0.02 percent of GDP in 2008. Staff estimates that revenues from this tax could be raised through the following measures:

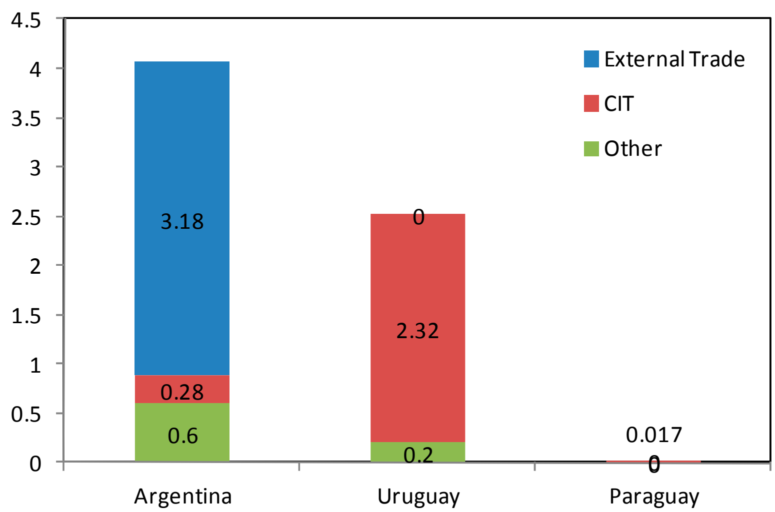
- ***Unify the tax treatment by size of property***. This tax applies separate treatment to large properties (more than 300 ha of productive land in the East Region and more than 1,500 ha of productive land in the West Region) and to medium-sized properties (more than 10 ha and 20 ha in the East and West Region, respectively). While large properties are subject to the standard 10 percent CIT rate, medium-sized properties are subject to a presumptive income regime at a tax rate of only 2.5 percent. This differential treatment provides an incentive to artificially subdivide property into small holdings to pay the lower tax rate.

- ***Limit deductions for large property owners***. For large properties owned by individuals, all personal and family expenses—when supported by invoices— can be deducted from the IMAGRO. This feature supports compliance with the VAT by encouraging the use of invoices. However, big properties are allowed to deduct up to 20 percent of gross income spent in supporting individual owners of neighboring medium-sized and small properties—a deduction with little justification.

- ***Ensure phase out of the VAT credit***. Initially, the VAT payments could be credited against the final IMAGRO tax liability, and these credits could be carried forward if the VAT credit exceeded the tax liability in a given year. In September 2008, this benefit was eliminated for large properties, but since the accumulated VAT credits are considerable, it could take several years to phase out this deduction completely. The government would benefit from developing a firm estimate of the pipeline of these VAT credits and setting a deadline for using the carry-forward provision. Also, this deduction should be removed for medium-sized properties as well.

10. **Complementary measures could help improve the contribution of agriculture to tax revenue**. Alternative forms of taxation have been adopted in the region as complementary measures to the income tax on agribusiness activities (Figure 3). Some countries rely on presumptive income tax from land, while others have well-designed property/wealth taxes based on objective indicators such as area, land, or capital value. Another alternative is a tax on the sales of agricultural products. The tax base is determined considering the sales price (without VAT), or the FOB price in case of exports, or the market value of the product in case of manufacturing (own use as input). Although taxes on specific products or activities are suboptimal, a sales tax may be acceptable as a second best instrument to help offset the challenges of ensuring that the tax burden is distributed fairly among different sectors.

Figure 3. Tax Burden on Agriculture, 2008
(In percent of GDP)



Source: IMF staff calculations.

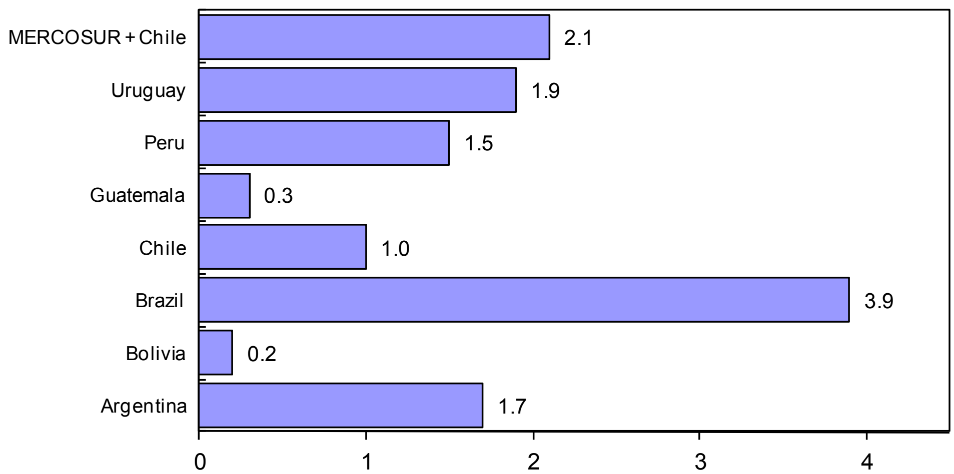
11. **The 2004 tax reform created a personal income tax (IRSCP), but implementation has been put off**. Indeed, congress has voted on several occasions to postpone the functioning of the PIT, including a decision in April 2010 to reconsider implementation in 2013, leaving Paraguay as one of the few countries in the world without a personal income tax. Besides increasing revenue mobilization, Paraguay's PIT includes a several features that could strengthen the administration of other taxes. Specifically:

- **It allows for deduction of invoiced personal and family expenses without limit**. Although the direct contribution of the IRSCP to the tax revenue is estimated at

0.2–0.3 percent of GDP a year[4] (Figure 4), it will contribute to the formalization of the economy and could significantly help improve collection of the VAT, excise taxes, and import duties.

- **It would also require disclosure of a taxpayer's net worth to help strengthen tax compliance**. There could be a powerful tool to control undeclared income being used to buy property and/or financial assets, and in fact, some Latin American countries, such as Brazil and Argentina, do rely on this tool. Of course, this mechanism must be complemented by effective tax administration.

Figure 4. Personal Income Tax, 2008
(In percent of GDP)



Source: IMF staff calculations.

D. Conclusions

12. **Paraguay's tax ratio is low and tilted towards indirect taxation by regional standards**. Paraguay's tax ratio (12.7 percent of GDP) has increased only moderately during the recent period of high growth, in 2003–08, especially when compared with other South American countries. This reflects Paraguay's low rates, narrow bases—which practically exclude agribusiness activities—and weak tax administration. This could also be the result of an excessive focus on indirect taxation.

13. **Efforts to bring Paraguay's tax ratio in line with peer countries should focus on broadening tax bases and improving administration further**. Reforms should focus on:

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[4] After the 7-year transition period, according to IMF Staff estimates. Bolivia and Guatemala have PIT with similar a design. The direct contribution of the tax in those countries ranges from 0.2–0.3 percent in 2008.

- ***VAT****:* the list of reduced rate items and exemptions should be streamlined as the application of reduced rates to a large number of goods and services results in significant revenue losses, incentives for misclassification of goods, and increased demand for refunds. The exemption on agricultural products should be revised.

- ***Excises****:* the tax base should be redefined to include fewer products, as it simplifies administration costs with very little revenue loss. A schedule for gradually meeting regional rates on main products (tobacco and alcohol) should be considered.

- ***Taxation of agriculture****:* Income from agriculture should be subject to the same tax principles as other sources of income. Reform of the income tax on agriculture (IMAGRO) in this direction should include disallowing deductions for other than business costs and inventory losses, and implementing a unified regime for big and medium-sized properties. The recent elimination of the possibility of using VAT paid on production inputs against income tax liabilities is a welcome measure. In addition, and despite not being a "first best," a sales tax on some agricultural products (as the Uruguayan IMEBA) at a rate of 2–3 percent could be considered to reinforce the tax burden on agriculture.

III. The Monetary Policy Transmission Mechanism in Paraguay[1]

A. Introduction

1. **The Central Bank of Paraguay (BCP) has a clear legal mandate to preserve the stability of prices and the financial system**. The BCP's policy monetary framework includes instruments that are in line with conventional practices, such as open-market operations with sterilization bills (*Instrumentos de Regulation Monetaria,* IRM), reserve requirements that vary by type of deposit and currency, a short-term collateralized liquidity facility,[2] and, sporadically, foreign exchange intervention. Under this framework, the BCP seeks to influence liquidity conditions through operations with IRM. It also maintains a flexible exchange regime, relying on foreign exchange intervention to smooth seasonal and erratic movements in the exchange rate. Moreover, as part of the transition to an inflation targeting (IT) framework, the BCP has announced for the past few years an annual inflation objective of 5 percent with a range of +/- 2.5 percent.

2. **However, the BCP may need to adapt its monetary policy framework as it moves towards a full IT framework**. One key area of reform is to strengthen the effectiveness of the policy interest rate to provide a clear signal of the stance of monetary policy. To that end the BCP should consider moving away from current methods to influence liquidity conditions, which can muddy perceptions of the direction of monetary policy. The BCP transacts in IRM through auctions in which it tailors both the quantity and maturity to the perceived needs of banks, with IRM at maturities ranging from 35 to 546 days, creating a yield curve of policy interest rates. Also the BCP has in the past conducted large-scale spot purchases of foreign exchange to conduct monetary policy. In 2009, it purchased US$1 billion of reserves, when injecting liquidity in the banking system through purchases of IRM proved to be especially challenging. This approach can confuse the market by signaling—perhaps erroneously—that the BCP also has an objective for the exchange rate.

3. **This paper analyzes the effectiveness of some of the different policy instruments and offers several recommendations to enhance the role of the policy interest rate**. Section B analyzes the effect of different instruments of monetary policy with a standard VAR analysis. Section C discusses several recommendations to enhance the effectiveness of the policy interest rate. Section D offers concluding remarks.

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[1] Prepared by Santiago Acosta-Ormaechea and Teresa Dabán-Sánchez.

[2] In 2008 the BCP adopted a short-term collateralized liquidity facility, with a maturity of one to ten days at a 7.5 percent interest rate. It has not been used so far, as banks believe it would send a negative signal.

B. Evidence on the Transmission Mechanisms of Monetary Policy

4. **The transmission mechanism of monetary policy in Paraguay is analyzed using a VAR model**. In particular, the following structure for the VAR is assumed:

(1) $$Y_t = A(L)Y_{t-1} + B(L)X_t + U_t$$

where *A(L)* and *B(L)* are a *n* x *n* and a *n x k* polynomial matrix in the lag operator *L*, respectively, Y_t is a *n* x *1* vector of endogenous variables and X_t is a *k* x *1* vector of exogenous variables. The latter vector is included to control for exogenous disturbances that may affect the dynamics of the model.[3] Finally, U_t is a *n* x *1* vector of (possibly correlated) estimated residuals. The vectors Y_t and X_t include the following variables

(2) $$Y_t' = \begin{bmatrix} R_t & IP_t & P_t & M_t & E_t \end{bmatrix}$$

(3) $$X_t' = \begin{bmatrix} FF_t & WCPI_t & IP_t^{bra} \end{bmatrix}$$

where R_t is the policy rate, represented as the average interest rate on outstanding BCP's sterilization bills, the IRM; IP_t is the industrial production index; P_t is the consumer price index; M_t is money in circulation; E_t is the nominal bilateral exchange rate against the U.S. dollar; FF_t is the U.S. Federal Reserve fund rate; $WCPI_t$ is the world commodity price index and finally IP_t^{bra} is the industrial production index of Brazil. Structural shocks are identified using a Cholesky decomposition, with the variables ordered as in vector Y_t. This implies that R_t is contemporaneously affected only by its own shock whereas E_t, the most endogenous variable, is affected on impact by all structural innovations. All variables in the VAR are in logs and seasonally adjusted, with the only exception of interest rates, and the model is estimated in levels.[4] The sample period is 2003M1 to 2009M12, and the model assumes 2 lags.[5]

[3] Sims (1992), for instance, shows the importance of introducing the oil price index to avoid what is referred to in the literature as the *price puzzle*, a positive response of prices to a monetary contraction, in the case of the United States.

[4] Numerous robustness tests were conducted. Recursive VARs and different structural VAR models, following the identification proposed by Kim and Roubini (2000), were estimated, and the main results of the paper hold. The VAR was also estimated in first differences, with no effect on the results. Use of the nominal effective exchange instead of the bilateral exchange rate yields similar results.

[5] Standard selection criteria tend to suggest a different dynamic structure for the model. For instance, the Akaike criterion indicated 6 lags whereas the Schwarz criterion pointed to the use of 1 lag, after setting to 7 the initial number of lags to run the tests. Although the small sample size biased our choice to the use of the smallest number of lags, the estimation's residuals behaved slightly better using 2 lags instead of 1. We thus estimated the model considering 2 lags.

5. **The key results include**:[6]

- *The policy interest rate does not yet appear to be the most effective policy instrument*. The impulse response functions (Appendix 1) for a 100 basis point increase in the policy interest rate leads to small and insignificant effects on output and prices. However, results also suggest that changes in the policy rate have a small but statistically significant effect on bank deposit and lending rates.[7]

- *Changes in the quantity of central bank sterilization bills and net international reserves seem to be more effective instruments*. Alternative VARs are estimated with the policy interest rate replaced by either the stock of BCP's sterilization bills (IRM), or by the stock of net international reserves (NIR). The impulse response functions for the stock of IRM suggest that an increase in the stock of IRM (a contractionary monetary policy) leads to a decline in both the industrial production index and the price level, although the statistical significance of the responses is limited. The impulse response functions also suggest that an increase in the stock of NIR has an expansionary effect, raising industrial production as well as the price level.

- *Evidence also suggests that the policy interest rate has little effect on expected inflation (Box 1).* According to the analysis in this paper, the market adjusts its expectations for inflation in light of the past difference between expected and actual inflation, the deviation of the exchange rate from trend, and inflation in world commodity prices. Changes in the policy interest rate have no significant effect on expected inflation.

- *The exchange rate pass-through is high from a regional perspective*. A slightly modified version of the VAR model is estimated for Paraguay as well as Bolivia, Chile, Peru and Uruguay.[8] Using the impulse response functions for the price level and the exchange rate, derived from a shock to the exchange rate, we could compute a

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[6] Results are in line with Santos and Monfort (2010)'s extensive analysis of Paraguay's monetary policy.

[7] The evaluation of the pass-through of policy rates to lending and deposit rates was conducted by estimating a VAR model for the period 2003M1 to 2009M12, where the endogenous variables are the policy rate, the lending rate and deposit rate, and the exogenous variable is the U.S. Federal Reserve Fund rate.

[8] The VAR is essentially the same as the one specified in equations (1) to (3), with the only exceptions that money is not introduced in the model anymore, the industrial production index of Brazil has been replaced by the index of the U.S., $IP_t^{us.}$ The nominal bilateral exchange rate of each country against the US dollar is also included. As before, the model is estimated using 2 lags and considering the sample 2003M1 to 2009M12.

Box 1. What is Driving Inflation Expectations in Paraguay?

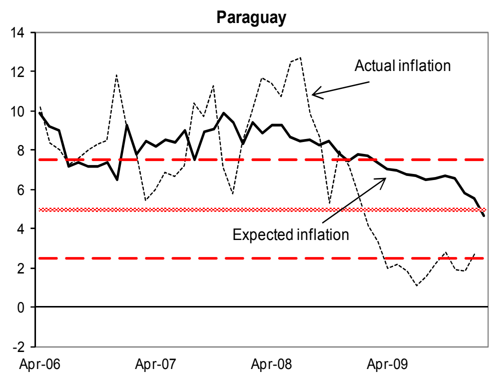
To examine the main drivers of inflation expectations in Paraguay, we estimate a regression of the monthly expected inflation rate (Π_t^e) as a function of the information set available to economic agents in the previous month. We assume that the agents' information set in t-1 includes their forecast error in t-1, (i.e. the deviation between the expected inflation rate (Π_{t-1}^e) and the actual level of inflation (Π_{t-1}) in t-1), the change in the policy rate (r_{t-1} - r_{t-2}), the output gap (y_{t-1} - $y_{t-1}^{potential}$), the deviation of the bilateral real exchange rate against the U.S. dollar from its trend (e_{t-1}-e_{t-1}^{trend}), and the world commodity price index ($wcpi_{t-1}$). The regression is estimated by transforming all variables into first order differences. Econometric results suggest that in Paraguay the policy rate has not any influence in determining inflation expectations. In addition, the negative and significant coefficient of (Π_{t-1}^e - Π_{t-1}) suggests that economic agents learn from their forecast errors, and reduce their inflation expectations in t when the forecast error in t-1 is positive. Moreover, empirical results suggest that the exchange rate depreciation, measured as the positive deviation of the exchange rate e_t with respect to its trend value, and the world commodity price index, $wcpi_{t-1}$, are important factors in driving inflation expectations in Paraguay.

Determinants of Inflation Expectations in Paraguay 1/

	Π^e_t
Constant	-0.02
	(-1.38)
$(\Pi^e_{t-1} - \Pi_{t-1})$	-0.55
	(4.35)
$(r_{t-1} - r_{t-2})$	-0.01
	(-0.83)
$(y_{t-1} - y_{t-1}^{potential})$	0.07
	(0.21)
$(e_{t-1} - e_{t-1}^{trend})$	0.57
	(1.61)
$wcpi_{t-1}$	0.37
	(2.15)
Number of Observations	43
Adjusted R Squared	0.42
Durbin Watson	1.87

Source: IMF staff estimates.

1/ t-statistics in parenthesis. All variables are transformed into first-order differences.



"proxy" for the exchange rate pass-through. That proxy is estimated as the cumulative impulse response of P_t relative to that of $E(NC/\$)_t$, according to the following formula:[9]

$$\sum_{t=1}^{j} P_t / \sum_{t=1}^{j} E(NC/\$)_t$$

where j is the relevant horizon at which the pass-through is computed, and j=2,6 and 12 months. Results in Table 1 indicate that Paraguay's short-run pass-through is relatively large by regional standards, although it remains well below one. Also, the

[9] Following Belaisch (2003).

pass-through in Paraguay is more important at longer horizons. This probably reflects the high degree of openness of the economy, as well as the high degree of dollarization.

Table 1. Exchange Rate Pass-Through
(In percent)

	Bolivia	Chile	Paraguay	Peru	Uruguay
2-months	2.0	1.3	5.0	1.9	3.5
6-months	14.2	5.2	13.8	13.8	17.2
12-months	18.6	10.6	21.9	18.4	17.2

C. Enhancing the Effectiveness of the Policy Interest Rate

6. **The results suggest that the BCP needs to strengthen the effectiveness of the policy interest rate as the main instrument of monetary policy**. Efforts could focus on several areas:

- *Continue to develop domestic financial markets.* Currently domestic money markets are thin, with very little secondary market trading of government securities. Also the banking system has a relatively high level of structural liquidity, especially when compared to similar countries. This excess liquidity reflects concerns about counterparty risk in the interbank market as well as the short average maturity of bank deposits (over 70 percent are sight deposits). These constraints on the domestic money market limit the scope to conduct monetary policy through repurchase operations in which the central bank sets the interest rate and the market determines the volume. Another factor that undermines the credit channel is Paraguay's low degree of financial intermediation, under which personal savings, retained earnings and the use of informal credit markets have become the key sources to finance consumption and investment.

- *Continue to strengthen the BCP's operational framework.* The BCP could continue to enhance its capacity to monitor and control liquidity, partly by promoting better information sharing with the ministry of finance and the cooperatives. The BCP is considering the introduction of auctions of IRM that would allow for market-based open market operations. This would represent an important improvement from the current practice of tailoring the quantity and maturity of IRM operations to the perceived needs of banks. It would be important to reduce the current high concentration of open-market operations in IRM of one year of maturity and beyond. This would allow open-market operations to focus on determining only very short-term interest rates, instead of determining the whole yield curve as it is the case now. Moreover, the BCP should adopt a more efficient payment and clearing system to reduce the risks associated with the transfer of securities and foster the development of the interbank and foreign exchange markets.

- *Improve further the communication strategy.* The recent decision to publish the minutes of the meetings of the BCP's open market committee will improve the communication and transparency of monetary policy. Over time, the BCP could rely on an explicit, forward-looking framework to convey its views, especially when actual inflation deviates from the target, and explain the actions needed to correct such a deviation.

- *Continue to discourage financial dollarization*. With Paraguay's highly dollarized financial system, financial institutions could perceive that the central bank could pay too much attention to the exchange rate, especially if there are concerns about currency mismatches on balance sheets.

- *Adopt more transparent mechanisms to intervene in the foreign exchange market*. Intervening through auctions that allow for a market-based exchange rate could help alleviate concerns that the central bank is concerned about the level of the exchange rate.

- *Implement the recapitalization of the BCP*.[10] In coming months, the central bank and the ministry of finance will implement the recently approved law by deciding on key details of the transfer of Treasury bonds to capitalize the central bank, including their maturity and interest rates. This will allow the BCP to focus more on monetary policy issues rather than on the implications of its actions on its own balance sheet, thus enhancing its credibility.

D. Concluding Remarks

7. **The analysis has shown that there is scope to enhance the effectiveness of the policy interest rate as the key instrument of monetary policy.** Currently, the evidence suggests that the policy interest rate is not the most effective instrument at this time, reducing the value of this signal of the stance of monetary policy. The BCP is already adopting several reforms that—if sustained and accompanied by other modifications—will shift the balance among its monetary policy instruments and enhance the effectiveness of monetary policy.

[10] The law establishes a transfer of marketable bonds from the Treasury to the BCP to cover the capital shortfall of the BCP estimated at 6¼ percent of GDP.

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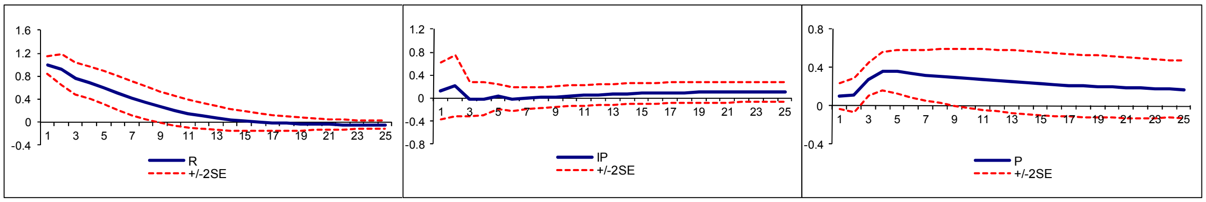
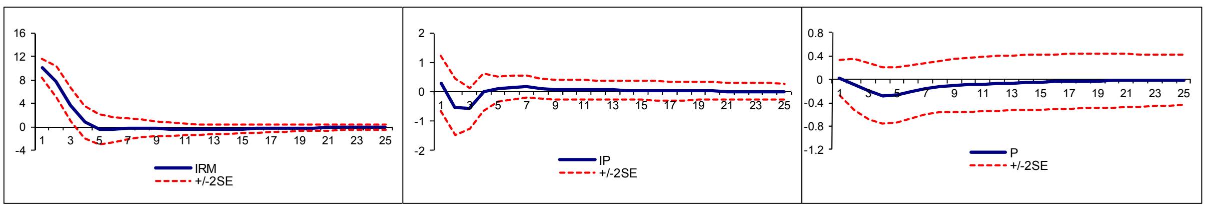
APPENDIX 1. IMPULSE RESPONSE (IR) FUNCTIONS

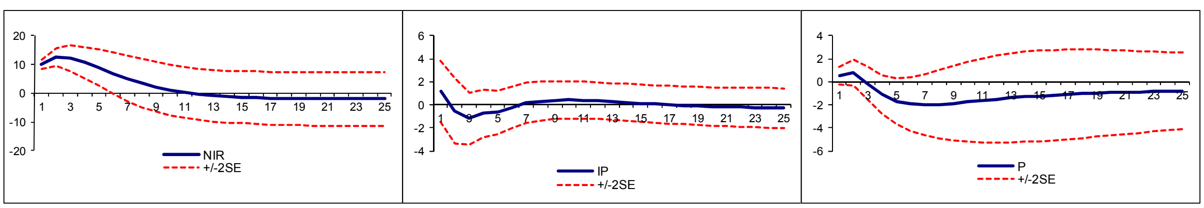
IR Function to a Policy Rate Shock
(In percent)



IR Function to a IRM Shock
(In percent)



Impulse Response to a NIR Shock
(In percent)



IV. Financial Sector Issues: Advances in the Implementation of the Financial Sector Assessment Program Recommendations[1]

A. Introduction

1. **Since 2005, the authorities have made considerable progress towards entrenching the financial system stability and fostering financial intermediation**. The reforms have been guided by the recommendations of the 2005 Financial Sector Assessment, which focused on: (i) strengthening banking supervision; (ii) putting in place an adequate regulatory and supervisory framework for financial cooperatives; (iii) strengthening the financial position of the Central Bank of Paraguay (BCP); (iv) modernizing the payment systems; and (v) developing capital markets (Box 1).

2. **Ahead of the forthcoming FSAP Update, tentatively scheduled for November 2010, this paper conducts a preliminary stock taking of financial sector reforms in Paraguay**. Sections B and C discuss the advances in regulation and supervision of banks and cooperatives, respectively. Section D focuses on the progress in strengthening the capital of the central bank. The development of capital markets is described in Section E. Section F focuses on the payment systems. Section G concludes.

B. Banking Regulation and Supervision

3. **In line with the 2005 FSAP and Fund's technical assistance, in June 2007 the authorities designed a strategy to improve banking regulation and supervision and increase compliance with the Basel Core Principles for Effective Banking Supervision (the Basel principles).** The strategy envisaged reforms to strengthening the legal and regulatory framework for banking supervision and fostering the Superintendence of Banks (SB)'s capacity to exercise effective supervision (Box 2).

4. **To date, the authorities have made good progress in strengthening the legal and regulatory framework for banking supervision.** These reforms have increased compliance with the Basel principles from 17 percent, at the time of the 2005 FSAP, to the current 27 percent (Appendix 1)**.** The main areas of progress include:

- Strengthening the regulatory framework on credit requirements, portfolio classification, provisioning requirements, credit risk management, and opening of financial institutions. The new regulations establish: (i) stricter information requirements for the granting of loans; (ii) more stringent criteria for portfolio classification; (iii) and higher provisioning requirements, especially for the nonperforming loan (NPL) portfolio. The new regulations, however, still present some weaknesses, including the maintenance of a 0 percent provision requirement for all NPLs with arrears up to 60 days.

[1] Prepared by Sylwia Nowak with inputs from Giancarlo Gasha and Marco Rodriguez (all MCM).

Box 1. 2005 FSAP: Summary of Main Recommendations

Complete reforms of banking legislation

- Approve banking law to improve institutional framework, governance rules for banks, and supervisory capacity of the Superintendence of Banks (SB).
- Improve central bank law to streamline institutional responsibilities and adopt a law for the capitalization of the central bank.
- Reduce deposit insurance coverage and premia, according to a well-defined plan.

Strengthening bank regulation and supervision

- Grant the SB more autonomy, sanctioning capacity and regulatory powers.
- Improve quality and quantity of human, material and technological resources in the SB.
- Strengthen risk-oriented supervision in the banking sector.
- Adapt internal organization and work planning of the SB to accomplish the above challenges.
- Take decisive steps to restructure the state-owned National Development Bank (BNF).

Cooperatives

- Strengthen INCOOP's capacity to supervise the sector, focusing first on the largest cooperatives.
- Enhance SB-INCOOP collaboration with respect to the supervision of the largest cooperatives.
- Develop automated credit information-sharing system between banks and cooperatives.
- Promote technical assistance for cooperatives to adapt to new regulatory standards.

Developing Capital Markets

- Discontinue application of financial transaction tax.
- Enhance quality and transparency of firms' economic and financial information.
- Implement an electronic trading system in the context of a payment system reform.

Payment System

- Approve a comprehensive payment system law, establishing a Real Time Gross Settlement (RTGS) system and a National Payment Council.
- Separate payment systems for large and small value transactions, avoiding excessive use of checks.

Box 2. Strategy to Increase Compliance with the Basel principles

In June 2007, as part of the last Stand-by Arrangement, the authorities designed a strategy to improve banking regulation and supervision and to increase compliance with the Basel principles. The strategy included the following steps:

- Approval of amended Resolution 8 on credit requirements, portfolio classification, and provisioning requirements by September 2007. The resolution was approved and entered into effect in October 2008. This regulation establishes: (i) stricter information requirements for the granting of loans; (ii) more stringent portfolio classification criteria for nonperforming loans; and (iii) higher provisioning requirements for the nonperforming loan portfolio. The main weakness of these rules is that they maintained 0 percent provisioning for all nonperforming loans with arrears up to 60 days.

- Implementation of regulations on the opening of financial institutions and credit risk management practices, and strengthening of the SB financial risk unit by December 2007. The SB introduced regulations in August 2008 for the opening of new financial institutions and in January 2009 it issued credit risk management regulations. The SB strengthened its financial risk unit by increasing the number of professionals and launching an active training program.

- Implementation, by end-2008, of additional regulatory reforms including those related to the strengthening of on-site and off-site supervision, and the improvement of financial risk management and operational practices.

- Modification, by end-2009, of the current legislation (including the General Banking Law and the Organic Law of the Central Bank) with a view to increasing the independence, management capacity, and corporate governance rules of the SB and strengthening capital requirements. These modifications are key for making substantive improvements in the compliance with the Basel Core Principles.

- Implementing regulations on the opening of financial institutions and credit risk management practices. The regulation on credit risk management introduced a uniform generic provision of 0.5 percent of the total portfolio, bolstering the coverage of provisions.

- Adopting new regulations to strengthen on-site and off-site supervision and improve financial and operational risk management practices.

- Strengthening the supervisory capacity of the SB by creating the Financial Stability Department and enhancing the legal protection for supervisors.

- Abolishing the requirement to publish the CADEF, *Calificación de Entidades Financieras*, the ranking of financial institutions published by the SB, which sent erroneous signals to the market and affected the reputation and standing of the SB. Instead of the CADEF, the SB has started to publish other financial indicators, starting this year. In addition, by mid-2010, credit rating agencies are expected to start operating in Paraguay and to assess banks.

- Launching cross-border consolidated supervision with the supervisors in Argentina, Brazil, and Uruguay. Negotiations with Peru and Spain have started.

5. **The authorities remain committed to increase compliance with the Basel principles even further by the end of this year**. In line with MCM recommendations, by November 2010, the authorities plan to modify several regulations to bring banking supervision into compliance with about 50 percent of the Basel principles. These steps include the amendment of several regulations to improve information sharing among supervisors, strengthen licensing criteria for foreign banks, enhance credit risk assessments, set provisions for problem assets, establish exposure limits, improve internal control and audit within banks, and enhance off-site supervision.

6. **Further gains in Paraguay's compliance with the Basel principles would require modifying the banking law**. The reform of the banking law is needed to strengthen the application of capital requirements, enhance the imposition of sanctions, improve further the granting of licenses and the exchange of information among supervisors, and reinforce the monitoring and control of credit risk. In particular, a loan overdue up to 59 days needs to be considered as an early indicator of a loan at risk. Further, information should be provided on debts that are 1—30 and 31—59 days overdue for the 100 individual largest debtors of each bank.

7. **The authorities have also made significant progress in strengthening public financial institutions**. The main improvements refer to the National Development Bank (BNF), which had negative capital at end-2004. By December 2009 the BNF's capital adequacy ratio had improved to 34.5 percent, and it is no longer systemically important, since its operations have been restricted by law. The new second-tier bank Development Financial Agency (AFD) commenced its operations in 2007. The AFD is funded through long-term loans from the IDB and provides long-term capital to the financial sector, in particular for mortgage financing programs. By December 2009, the AFD held a US$172 million loan portfolio.

C. Regulation and Supervision of Cooperatives

8. **Since the 2005 FSAP, cooperatives have steadily increased their participation in Paraguay's financial system**. In 2005, cooperatives' assets were estimated to account for around 10 percent of the total assets of the financial system (including banks, finance companies, and cooperatives). At the end of 2008,[2] the assets of the cooperative sector stood

[2] The final data for end 2009 are not yet available.

at US$2,088 million, divided more or less equally between the savings and credit cooperatives (SCCs) and production cooperatives (PCs). The assets, loans, deposits, and net worth of the cooperative sector represented, respectively, 24.1 percent, 23.9 percent, 16.0 percent, and 43.5 percent of those of the financial system as a whole. At present, there are over 450 cooperatives with approximately 996,000 members, with the largest 45 cooperatives accounting for about 90 percent of the total assets and total deposits of the sector.

9. **While, in general, the inter-linkages between banks and cooperatives are small, there is a high concentration of cooperatives' deposits in a few banks.** At the end of 2009, the banking loans to cooperatives constituted only 2.5 percent of banks' total loan portfolio whereas the cooperatives' deposits amounted to 3.3 percent of banks' total deposits. However, most (up to 90 percent) of the cooperatives' deposits in the banking sector are located at one of the largest banks in Paraguay (representing about a fifth of this bank's total deposits).

10. **Despite recent progress, the supervisory and regulatory framework for cooperatives could be more effective.** A number of reforms have been implemented, such as the enactment of the General Regulatory Framework for Cooperatives (GRFC) in 2007. The GRFC establishes the capital, liquidity, and provisioning requirements and the classification of loans that cooperatives must follow. It also introduces a basic framework for carrying out effective supervision. However, the GRFC norms are less stringent than those for the banking system (Table 1). In addition, an adequate framework to deal with individual and systemic problems in the sector is absent. Moreover, the independence of the supervisory agency for cooperatives, INCOOP, is compromised by, among other factors, the fact that the cooperatives participate in the selection of INCOOP's governing officers.

Table 1. Paraguay: Comparison of Regulation Banks and Cooperatives

	Central Bank regulation	INCOOP regulation
Risk assessment based on …	Person (all credits of this person carry the same risk weight)	Individual transaction (one person can have various risk categories assigned to it)
Requirement to consult Credit Bureau prior to issuing credit	Yes, mandatory consulting and reporting to Credit Bureau	No, no credit bureau available
Documentation requirement for lending	If not sufficient documentation on borrower available, then higher risk category to be assigned, including higher provisioning	Documentation requirements specified, but no sanctions
Regulation regarding connected lending	Assessment by institution/ entity	Assessment by individual person
Provisioning regulation for overdue loans	Over 90 days: 5% provision	Over 120 days: 1% provision
	Over 150 days: 25% provision	Over 180 days: 20% provision
	Over 180 days: 50% provision	Over 360 days: 50% provision
Generic provisioning	Uniform 0.5 percent	None

Source: World Bank staff.

11. **A large program of reforms to strengthen supervision and regulations of cooperatives is under discussion**. Lately, particular attention has been paid to preparing contingency plans in the event systemically important cooperatives enter into financial distress (Box 3). In addition, work is underway on several areas, with the technical assistance of MCM, including:

- A Memorandum of Understanding between the Central Bank of Paraguay (BCP) and INCOOP to regulate the inclusion of the monetary and financial information of the largest cooperatives in the monetary accounts.

- The establishment of a deposit insurance fund (a Cooperatives Insurance Fund, or FGCOOP). Last year, INCOOP proposed a draft law intended to establish a deposit insurance coverage of 55 minimum salaries or US$ 14,000—the coverage for banks and finance companies is of 75 minimum salaries or US$19,000—which would cover approximately 97 percent of the total 600,000 deposits accounts held by cooperatives. However, the cooperatives rejected the draft and proposed instead a self-regulated guarantee fund with voluntary contributions. The INCOOP considered this proposal unlawful and is working now on a new proposal.

- The implementation of a Cooperatives Stabilization Fund (FECOOP), which, according to INCOOP's proposal, would be funded with contributions from the cooperatives and would aim at providing cooperatives with a lender-of-last-resort facility. INCOOP wants the size of the contributions to depend on each cooperative's credit-rating. However, there is yet no consensus among the cooperatives on the creation of the FECOOP. In the meantime, INCOOP is working on creating a provisional stabilization fund with contributions from the largest five or six cooperatives.

- The establishment of a credit bureau (*central de riesgos*) for cooperatives, so as to mitigate the credit risk they incur and develop a greater payment culture. By mid-2010, technological resources needed for providing credit information on individual consumers in the largest SCCs should be operational.

- The improvement of the supervisory capacities of INCOOP, with the technical and financial assistance of the IDB and the German Association of Cooperatives (DRGV). This includes, among other things, setting up a standardized and automated system for the largest cooperatives, to facilitate the provision of financial information to INCOOP, the adoption of staff training programs, the definition of risk management and reporting standards, the creation of a deposit insurance system, the establishment of a credit bureau, and advice for enhancing regulation and supervision.

Box 3. Establishing Contingency Plans for the Cooperative Sector

At present, the Paraguayan authorities are still developing mechanisms for managing and resolving crises in the cooperative sector. In May 2009, at the request of the Paraguayan authorities, MCM provided technical assistance to assist the authorities in introducing a safety net and a framework for resolving crises in the cooperative sector, as well as in designing an action plan consistent with the current legal and regulatory framework to deal with the eventuality of a crisis originated in the cooperative sector. The action plan included the following measures:

- Encourage banks to absorb the assets and liabilities of the cooperatives, in a process similar to a merger, but with the capital left aside, i.e., only the assets and liabilities of the cooperative in difficulties should be transferred to the bank.

- Set, in advance, clear criteria for identifying the cooperatives eligible for bailout, and communicate such criteria clearly.

- Allow both private and public banks (such as the BNF) to participate in the resolution process. If no private bank is interested in participating, the authorities should use the BNF to absorb all the costs to prevent the likelihood of a systemic event.

- Establish a map of financial institutions that would be in a position to participate in the bailout of each eligible cooperative, including the way in which the BNF could participate in the process.

- Introduce the mechanism—with legal support— whereby banks and cooperatives agree to the transfer of assets and liabilities. A pro forma contract for the transfer of the assets and liabilities of the cooperatives should be drawn and the possible fiscal costs of those scenarios should be estimated.

- Estimate the possible fiscal costs of the alternative scenarios.

D. Strengthening the Financial Position of the BCP

12. **The authorities have taken important steps forward to strengthen the financial position of the BCP**. The law that allows the government to recapitalize the central bank through the transfer of interest-bearing treasury bonds took effect in April 2010. In the coming months, the BCP and the ministry of finance will decide on key details of the transfer, including the interest rates. This step will enhance the credibility of the BCP and give it more flexibility in the conduct of monetary policy. The main elements of the strategy include:

- The ministry of finance will issue and maintain outstanding *guaraní*-denominated government bonds worth up to 6¼ percent of the 2009 GDP (equivalent to US$971 million). The bonds would be swapped for the BCP's nonperforming assets that represent BCP's claims on the public sector. The claims are related to BCP's past quasi-fiscal activities taken on behalf of the government.

- It would be best for the recapitalization bonds to be transferable and marketable and thus suitable for developing the domestic bond market. The BCP should continuously replace the stock of its *Instrumentos de Regulación Monetaria* (IRM) with the treasury bonds, until all open market operations are conducted with these securities. The long-run scenario would see the central bank execute monetary policy through the guidance of a short-term interest rate through the use of repurchase agreements utilizing treasury debt as the underlying asset.

E. Developing Capital Markets

13. **Progress with the development of capital markets has been mixed**. In February 2008 the authorities formulated a strategy for the development of capital markets, which included: (i) improving the general business environment; (ii) enhancing the securities market regulation; and (iii) developing market infrastructure. In this area, the main developments include:

- A draft law amending the requirements for the operation of credit risk rating agencies—which is awaiting approval in the Senate (Law 3899/2009). By mid-2010, at least three credit rating agencies are expected to start operating in Paraguay. Banks, insurance companies, and the four to six largest SCCs are to be rated by a credit rating agency, with the National Securities Commission (CNV) determining the exact details.

- Memorandum of Understanding for information sharing between the SB and the CNV was signed in March 2010.

- Additional budgetary resources for CNV for the period 2009-10 period—which will allow the institution to increase its staff, provide further training, and expand and upgrade its technological requirements.

- The application of the financial transaction tax was discontinued.

- Implementation of the electronic trading system of bonds, to commence by mid-2010 (fixed-income instruments account for 90 percent of all transactions).

F. Upgrading the Payment Systems

14. **The authorities are working on upgrading the legal framework and information technology platform underpinning the payment systems**. The infrastructure for payments, clearing and settlements of securities remains inefficient; and an adequate legal framework for settlement, dematerialization, custody, netting arrangement, repurchase operations, and electronic transactions needs to be developed.

- With Fund and World Bank technical assistance, the government has prepared a draft law to address these weaknesses. The law was approved by the Cabinet, sent to Congress, and is expected to be approved by September 2010. The law will cover the legal framework for the Real Time Gross Settlement System (RTGS), the securities depository, and the automatic clearing house. The law will also formally entrust the oversight and regulation of the entire payment systems to the central bank.

- A National Payment Council is expected to be established by the end of 2010.

- The World Bank is providing technical and financial assistance to the central bank to set up the infrastructure for an automated RTGS. Test runs of the new electronic system are scheduled for the third quarter of 2010. Final implementation date is projected for the third quarter of 2011.

G. Summary and Conclusions

15. **Since the 2005 FSAP, Paraguay has made important advances with the reform of the financial sector**. The reforms' main goal was to rebuild trust in the financial system, and reversing disintermediation after several years of financial stress. These reforms have been critical to entrench the stability of the financial system and foster financial intermediation.

16. **The main areas of reforms include the following: banking regulation and supervision, the regulatory framework on credit risk management, strengthening public financial institutions, and recapitalization of the central bank**. In contrast, progress with the development of capital markets and the automated RTGS has been slower. Relevant laws have been drafted and are awaiting approval.

17. **However, Paraguay's financial system still presents some weaknesses, which calls for continued reform efforts**. The most important and urgent weakness is the significant disparity with regard to regulatory and supervisory practices between banks and cooperatives. The authorities should extend the prudential norms for banks to cooperatives to limit the scope for regulatory arbitrage. In the medium term, the regulatory and supervisory frameworks of banks and cooperatives should to convergence to a uniform system.

APPENDIX 1. BASEL CORE PRINCIPLES FOR EFFECTIVE BANKING SUPERVISION (BASEL PRINCIPLES)[1]

The 2005 FSAP determined that only five out of the thirty Basel principles (about 17 percent) were met or broadly met.[2] It is estimated that, absent any deterioration in the implementation of those initially met five principles, reforms undertaken by the Paraguayan authorities since the 2005 FSAP would bring the number of Basel principles met or broadly met to eight (or about 27 percent). These numbers reveal the challenges for the authorities in bringing the regulatory and supervisory framework in Paraguay to a level that may significantly reduce the risks to financial stability.

An important factor explaining the lower-than-envisaged progress in complying with the Basel principles in Paraguay has been the difficulty to modify banking legislation. To illustrate the importance of legal changes in the results of the FSAP, it is estimated that about ten of the thirty Basel principles (about 33 percent) require at least some modification in the banking laws to move to full compliance.[3]

The Paraguayan authorities still have some degree of maneuver to improve their Basel principles rating by introducing some modifications to the current regulatory regime.[4] In addition, improvements in the information systems and technological capabilities at the SB may help in consolidating and deepening the advances made since the 2005 FSAP in the quality of supervision. In fact, changes in regulation and in the operation of the SB may, relatively rapidly, bring the number of Basel principles met or broadly met from five to fifteen (about 50 percent). Figure A1.1 shows, starting from the 2005 FSAP ratings, and the evolution of the Basel principles rankings for Paraguay under two scenarios: (i) no immediate action is taken to improve regulation, and (ii) a short term plan to modify regulation and operations at the SB is introduced.

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[1] This Appendix is based on several Reports of Technical Assistance provided by MCM to the Paraguayan authorities in the last two years. See especially: Livacic, Ernesto, *"Informe de la Misión al Banco Central del Paraguay,"* Abril 2010.

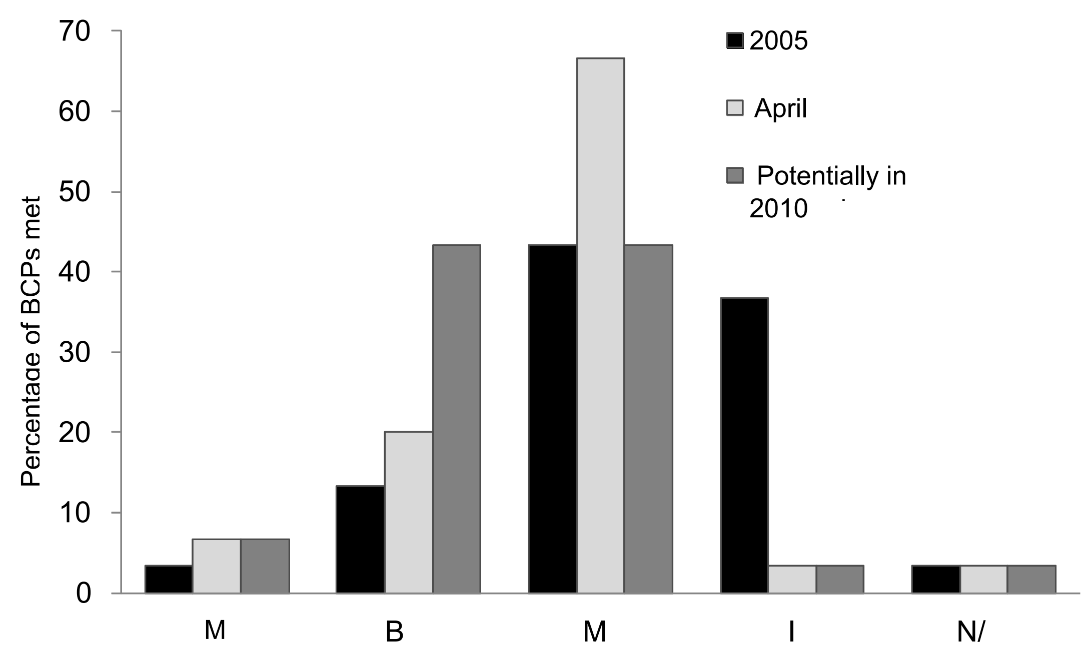
[2] The BCPs are a framework of minimum standards for sound supervisory practices and are considered universally applicable. They define 25 principles that are needed for a supervisory system to be effective. See Basel Committee on banking Supervision, *"Core Principles for Effective banking Supervision,"* BIS, October 2006.

[3] Four of these thirteen Principles require also some modification in the regulatory framework, although this is a less stringent requirement.

[4] These changes are under the discretion of the BCP Board, and even some of them can be made directly by the SB.

The changes proposed above are part of a short term strategy proposed to the SB to introduce regulatory changes and operational improvements to bring about rapid improvements in banking regulation and supervision. The strategy focuses on regulatory measures that improve credit risk management and promote sound managerial practices in the banks, improve information availability for the monitoring of credit risks by the SB, and helps in coordinating the work of regulatory agencies in Paraguay, i.e., CNV, FOGADE, SB, and the Superintendence of Insurance.

Figure A.1.1. Paraguay: Percentage of BCPs Met



Notes: Percentage of BCPs met in 2005 (black), in April 2010 (white), and potentially in November 2010, assuming that a short term plan to modify regulation and operations at the SB is introduced (grey). The ratings in the graph are: M = Met; BM = Broadly; MI=Met incompletely; and I=Incomplete.