URUGUAY
Policy Notes: Challenges and Opportunities 2010-2015

June 22, 2010

Argentina, Paraguay and Uruguay Country Management Unit
Poverty Reduction and Economic Management
Latin America and the Caribbean Region

Document of the World Bank
CURRENCY AND EXCHANGE RATE
(As of June 22, 2010)
Currency Unit = Uruguayan Pesos
US$1.00 = UR$20.95

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACCE</td>
<td>Agency for Contract Hiring and State Purchases</td>
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<tr>
<td>AFAP</td>
<td>Pension Funds Administrators</td>
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<td>AFE</td>
<td>State Rail Administration</td>
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<td>ANP</td>
<td>National Ports Administration</td>
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<td>ANTEL</td>
<td>National Telecommunications Administration</td>
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<td>BCU</td>
<td>Central Bank of Uruguay</td>
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<td>CEIBAL</td>
<td>“One Computer Per Child” Program</td>
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<td>CFU</td>
<td>Rail Corporation of Uruguay</td>
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<td>CIER</td>
<td>Commission for Regional Power Integration</td>
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<td>CPS</td>
<td>Country Partnership Strategy</td>
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<td>CVU</td>
<td>Road Corporation of Uruguay</td>
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<td>DGI</td>
<td>Internal Revenue Service</td>
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<td>DINASA</td>
<td>National Water and Sanitation Board</td>
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<td>DNETN</td>
<td>National Nuclear Energy and Technology Board</td>
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<td>DNH</td>
<td>National Hydrography Board</td>
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<td>DNV</td>
<td>National Roadways Board</td>
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<td>EE</td>
<td>Energy Efficiency</td>
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<td>ETC</td>
<td>Full-Time Schools</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GEF</td>
<td>Global Environmental Facility</td>
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<td>GEI</td>
<td>Greenhouse Gasses</td>
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<td>HOI</td>
<td>Human Opportunity Equality Index</td>
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<td>LNG</td>
<td>Liquefied Natural Gas</td>
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<td>RE</td>
<td>Renewable Energy</td>
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<td>IADB</td>
<td>Inter-American Development Bank</td>
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<td>IFRS</td>
<td>International Financial and Reporting Standards</td>
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<td>ILD</td>
<td>International Long Distance</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>INCO</td>
<td>Institute for Computing</td>
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<td>IRAE</td>
<td>Income Tax on Economic Activities</td>
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<tr>
<td>KTEP</td>
<td>Kilo Equivalent Tons of Petroleum</td>
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<tr>
<td>MGAP</td>
<td>Ministry of Livestock, Agriculture and Fisheries</td>
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<td>MIEM</td>
<td>Ministry of Industry and Mining</td>
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<td>MTOF</td>
<td>Ministry of Transport and Public Works</td>
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<tr>
<td>MW</td>
<td>Mega Watts</td>
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<tr>
<td>MWh</td>
<td>Megawatt hour</td>
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<td>PACC</td>
<td>Support Program for Business Competitiveness</td>
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<td>PMEGEM</td>
<td>General Measures for Mitigation and Adaptation to</td>
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<td>ACC</td>
<td>Climate Change</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>PPR</td>
<td>Natural Resources Management Project</td>
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<td>UNFCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<td>ILD</td>
<td>Larga Distancia Internacional</td>
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<td>IMF</td>
<td>Fondo Monetario Internacional</td>
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<td>INCO</td>
<td>Instituto de Computación</td>
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<tr>
<td>IRAE</td>
<td>Impuesto a la Renta de Actividades Económicas</td>
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<tr>
<td>KTEP</td>
<td>Kilo Toneladas Equivalentes de Petróleo</td>
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<tr>
<td>MGAP</td>
<td>Ministerio de Ganadería y Agricultura</td>
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<td>MIEM</td>
<td>Ministerio de Industria y Minas</td>
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<td>MTOF</td>
<td>Ministerio de Transporte y Obras Públicas</td>
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<td>MW</td>
<td>Mega Watts</td>
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<tr>
<td>MWh</td>
<td>Megawatt hora</td>
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<tr>
<td>PACC</td>
<td>Programa de Apoyo a la Competitividad de Conglomerados</td>
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<tr>
<td>PMEGEM</td>
<td>Medidas Generales para la Mitigación y la</td>
</tr>
<tr>
<td>ACC</td>
<td>Adaptación al Cambio Climático</td>
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<tr>
<td>PPP</td>
<td>Asociación Público-Privada</td>
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<tr>
<td>PPR</td>
<td>Proyecto Producción Responsable</td>
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<tr>
<td>UNFCC</td>
<td>Naciones Unidas sobre el Cambio Climático</td>
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PREFACE

This publication is the result of team work within the World Bank and jointly with the government of Uruguay. In particular, the themes of the Notes were selected by the outgoing authorities based on past and ongoing work at the World Bank, and they prioritize areas where Bank cooperation would add the most value.

The objective of the Policy Notes is twofold: (i) to present the incoming government team with a menu of policy options in areas where the World Bank has local and international experience; and (ii) to provide a reference framework for the dialogue between the new government and the World Bank on the new Country Partnership Strategy (CPS). This volume presents a menu of policy options in various areas, which could be implemented in the short term (12-18 months), and others in the medium term (2-3 years). Choosing the policy measures as well as their prioritization, both within sectors and between sectors, will be done by the Uruguayan authorities.

On February 2-3, 2010, a World Bank team discussed the Notes with the elected government of Uruguay, led by President of the Republic Mr. José Mujica, Vice President Mr. Danilo Astori, and the designated ministers Mr. Fernando Lorenzo (Economy and Finance), Mr. Luis Almagro (Foreign Affairs), Mr. Roberto Kreimerman (Industry, Energy and Mining), Mr. Ricardo Ehrlich (Education and Culture), Ms. Graciela Muslera (Housing, Territorial Ordinance and Environment), Mr. Tabaré Aguerre (Livestock, Agriculture and Fishing), Mr. Eduardo Brenta (Labor and Social Security), Mr. Daniel Olesker (Public Health), Mr. Enrique Pintado (Transport and Public Works), Ms. María Simón (Undersecretary of Education and Culture), Ms. Ana Olivera (Undersecretary of the Ministry of Social Development, and later Mayor of the Municipality of Montevideo), Mr. Conrado Ramos (Deputy Director of the Office of Planning and Budgeting) and Mr. Diego Cánepa (Prosecretary of the Presidency of the Republic).

On February 4, 2010, the World Bank team met also with the leadership of the main opposition parties: the National Party, led by Dr. Luis Alberto Lacalle; the Colorado Party, led by Dr. Pedro Bordaberry; and the Independent Party, lead by Dr. Pablo Mieres. We are very grateful for the comments by those delegations, which were also important inputs for this volume.

Apart from the authors listed in the previous page, many people contributed to the production of this book, with comments and technical support.

On the Uruguayan side, we agreed on the topics and received valuable comments from Mr. Álvaro García, former Minister of Economy and Finance, Mr. Andrés Masoller, Undersecretary of the MEF, Mr. Michael Borchart, Director of Economic and Financial Advisors at the MEF, Mr. Fernando Lorenzo, Minister of Economy and Finance, Ms. Mariella Maglia, Economist at the MEF, and Mr. Adrián Fernández, Advisor in the Office of the Executive Director at the World Bank.
At the World Bank, we received comments from Mr. Felipe Sáez and Ms. Yanina Budkin, at the Buenos Aires office, Ms. Valeria Bolla and Mr. Peter Siegenthaler, at the Montevideo office, and from Mr. Marcelo Giugale, Director of LCSPR, and Mr. Rodrigo A. Chaves, Sector Manager of LCSPE, in Washington, D.C.

The meetings in Montevideo were organized with the support of colleagues at the World Bank office in Montevideo, in particular Ms. Sylvia Albela, Ms. María Inés Ferres, Ms. Rosina Saavedra, and Mr. Juan Pablo Puig Fernández. Ms. Tammy Lynn Pertillar and Ms. Patricia Chacón Holt in Washington, D.C., and Ms. Mariela Álvarez at the World Bank office in Buenos Aires, improved the document.

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The Peer Reviewers of the Notes were Edgardo Favaro (PRMED) and Jordan Schwartz (LCSSD).

The Task Manager was David E. Yuravlivker (LCSPE). The Notes were written under the supervision of the Sectoral Leaders José Roberto López-Cálix (PREM – Poverty Reduction and Economic Management), Franz Drees-Gross (LCSSD – Sustainable Development Department), and Hermann von Gersdorff (HD – Human Development: Social Sectors), under the overall guidance of Pedro Alba, Director for Argentina, Paraguay and Uruguay.
EXECUTIVE SUMMARY

1. The policy notes have two objectives: (i) to present the incoming government team with a menu of policy options in areas where the World Bank has local and international experience; and (ii) to provide a framework for the dialogue between the new government and the World Bank on the new Country Partnership Strategy (CPS). As such, the discussion of these notes with the authorities was also an opportunity to undertake preliminary consultations on the Bank’s support to Uruguay for 2010-2015.

2. The themes of the notes were selected by the outgoing authorities based on ongoing and completed World Bank work, and they prioritize areas where Bank cooperation would add the most value. Topics include Human Opportunity Index estimations, improvements in the education and social protection systems, infrastructure financing and regulation, logistics and international trade, transportation, electricity, climate change and agriculture, macroeconomic policy, capital market development, public sector management, and innovation and growth in the forestry and software industries.

Background: Current strengths and future challenges

3. Uruguay’s economy is small, but it has many strengths and high potential for growth and social development. The country has a long democratic tradition, a political system characterized by clear rules of the game and governability, and solid institutions at all levels. Uruguay is one of the most equitable countries in Latin America and enjoys a social peace notable in the region. Good macroeconomic management following the 2002 crisis has reduced country vulnerabilities and strengthened confidence in its institutions. These characteristics are very valuable assets for promoting foreign and domestic investment, essential to sustain the high growth achieved in recent years. Another asset is the high coverage of the education system, although education quality has recently become a challenge.
4. **Uruguay is no longer content comparing itself to countries in the region, and has turned its sights to the developed countries.** To maintain the high growth of recent years and converge toward OECD countries, Uruguay needs to increase investment from 18-19 percent of GDP to 23-25 percent and at the same time continue reducing poverty and inequality. Deepening the strategy of opening in commerce, services and knowledge can help achieve these targets, generating attractive opportunities for the country’s younger generations.

5. **Among the pending challenges, improving the quality of social spending is a critical task.** The administration of President Vázquez tripled resources for public education from US$500 million annually to US$1.5 billion, and society deserves to know the results of this expense in terms of teaching and learning results. This was a central theme in the recent election campaign as well as a key concern of the new administration. Consolidating reforms in health and further progress in social security are also important challenges.
6. **Developing the basic infrastructure needed for accelerated growth is a further challenge.** This is linked to the country’s vision of its future, its role within MERCOSUR and its opening to the world. The needs are multiple, from maintaining roads and renovating the railroad system to ensuring electricity supply, expanding water sanitation coverage and continuing the spectacular development experienced by the port of Montevideo in the past decade.

7. **The new administration is developing a strategy to regain and sustain high growth rates with social equity, while taking into account environmental impacts.** This vision of the future will be successful as a function of its ability to generate employment and adequately prepare the next generations of Uruguayans, and retain young people in the country. The macroeconomic policy measures taken in the short and medium term will have a decisive impact on these outcomes.

8. **Five priority actions areas have been identified: education, social protection, infrastructure, vulnerability to external shocks, and public sector reform.** The Notes present policy options in each one of these areas.
Uruguay has made substantial progress in equality of opportunity for children, but still has much to do.

9. Uruguay is already one of the most equitable countries in Latin America, and has made substantial progress in reducing poverty and inequality. Between 2006 and 2008, the national poverty rate fell from 27.5 percent to 21.7 percent, and the Gini coefficient of 0.42 is one of the lowest in Latin America. The Human Opportunity Index is an innovative new measurement based on two variables: (i) the coverage of education and other basic services for children aged 0 to 16; and (ii) the level of inequality in access to those services. As such, the index evaluates the two principal factors determining the probability that children have access to the tools needed to overcome poverty, and the link between that probability and characteristics such as race, gender, family income, parental education, and place of residence.

10. The results indicate that while Uruguay is relatively well positioned in the provision of basic services, little progress has been made in the past decade in other indicators of equality of opportunity. The analysis finds that: (a) Uruguay’s overall equality of opportunity performance is good; (b) the equitable provision of basic services such as education, vaccines and basic infrastructure is high; but (c) the country has important lags in education quality (low probability of completing nine years of education due to drop outs), access to preventive health
check-ups, and access to quality housing and sanitation. In Uruguay, poverty is particularly concentrated among children and young people.

11. **Several policy actions can improve this situation:**
   - Improve the management of the Family Transfer program (*Asignaciones Familiares*), expanding coverage and at the same time promoting the education of children by a stronger control of school attendance conditionality (up to completing ninth grade on time), but without excluding from benefits those who do not complete this requirement.
   - Reinforce social spending in disadvantaged regions.
   - Strengthen efforts to reduce grade repetition and drop outs among students from the lowest socioeconomic backgrounds.
   - As the *Plan Ceibal* laptop program is extended to secondary school, thoroughly evaluate its impact and, if justified, invest more into telecommunications infrastructure to improve Internet access in the entire country.

**The national education system confronts fundamental challenges**

12. **Uruguay has an adequate level of average years of education.** However, students learn relatively little compared to those in other countries, and learning outcomes are highly unequal. The system faces efficiency problems in transforming available resources into learning at the level of schools, teachers, students, families and the system as a whole.

13. **The central challenge for Uruguay is to address the learning deficits of its students, particularly in terms of cognitive abilities.** Several studies have shown that cognitive abilities are more valuable for those with fewer years of education, meaning that this strategy would also help diminish inequality in learning outcomes and improve income distribution. In addition, the system has not shown results commensurate with the increase in resources it received in recent years.

   - **Equity of access:** The average coverage of the education system hides important differences among students from different socioeconomic backgrounds. In spite of improvements, the difference in net coverage rates between the wealthiest and poorest quintiles was 37 percentage points in 2005. Almost half of young Uruguayans who begin secondary education drop out before graduation, and the majority of the students who drop out are from low-income households.

   - **Education quality and the quality of learning outcomes:** Student results from the national evaluation system (applied in 1996, 1999, 2002, 2005 and 2009) have improved over time. This improvement is more notable for students from low-income backgrounds, indicating that learning gaps between high and low income students are shrinking. Nonetheless, even though Uruguay has better results in the 2006 PISA exams than other Latin American countries, student performance was lower than in OECD countries (with the exception of Mexico). At the same time, the country has one of the highest variations of learning results among countries participating in PISA, above the expected level considering its income inequality.
14. The following policy actions can improve this situation:

- **Fully implement pre-school education for four year-olds—obligatory since 2009—and expand it to three year-olds, while ensuring pre-school education quality.** A strong pre-school foundation is essential for improving the quality of primary education.

- **Continue expanding Full Time schools for students from disadvantaged backgrounds.** At the end of 2009, 37,600 students attended Full Time schools. Recent evaluations show that these schools have a significant impact on learning, fully justifying their higher costs.

- **Give schools more operational autonomy within a framework of accountability.** Experiences in other countries show that greater administrative autonomy regarding teacher hiring and school processes have a positive impact on learning outcomes. This is particularly true if combined with national graduation exams and greater parental participation in the education system.

- **Raise the quality of teachers.** The key for excellence in education is the quality of the teachers. In countries with good education systems, teachers are socially respected and the selection process is very competitive. Several studies have shown that the quality of teachers has a much greater impact on learning than classroom size. The growing demand for teachers that cannot be covered can be supplemented with university graduates with a background in teaching. Schools and teachers should be supported with tools and programs to identify underperforming students and those at risk of dropping out. This will help to support students with special needs and reduce inequalities in student learning.

15. These policy options are aimed at modifying what occurs in the classroom via direct interactions with teachers. These measures and those mentioned previously are complementary and mutually supportive in their impact on learning.

**Social protection systems can be improved in several ways**

16. The social protection system functions efficiently in Uruguay, with high but manageable fiscal costs and an appropriate impact. The majority of reforms and adjustments implemented in recent years have improved the system by broadening coverage, increasing sustainability and reinforcing impacts. Pension reforms, unemployment insurance and family transfers are well oriented and should have positive effects in the short, medium and long term.

17. However, there are several challenges that could be addressed by the new administration, in particular: (i) employment policies and adjustments to unemployment insurance; and (ii) expanding coverage of the new Family Transfer system. Regarding the first point, the main challenge is to develop legislation that effectively protects displaced workers and facilitates their reintegration into the labor market. On the second point, the challenge is to implement legislation already approved. It would also be important to incorporate into the transfer system people over 65 years old who are in poverty and do not have any income.

18. Current restrictions to access unemployment insurance have been undermined the system’s effectiveness. Alternative and/or complementary systems that have had good results in
other countries could be implemented in Uruguay. These include, for example, workfare schemes, wherein the unemployed individual undertakes public work for a basic salary; training and qualification scholarships; or partial job financing agreements with the private sector. Each of these options has advantages and disadvantages as well as varying fiscal costs that need to be considered carefully. The new National Employment and Vocational Training Institute (Instituto Nacional de Empleo y Capacitación Vocacional) could adapt these programs to the Uruguayan context.

19. **The main challenge for the Family Transfer program is to incorporate those who are eligible but, for various reasons, are currently outside the system.** While in some cases this could be due to a lack of interest, specific problems exist related to identification and custody of children (such as lack of documentation or precarious custody by the family) that impede eligible families from collecting benefits. A second issue is the critical impact of school attendance conditionality, especially during the last years of secondary school. While this is a reasonable requirement to promote continued studies, it would be important to identify youth who are eligible for the benefit but do not attend school, and facilitate their reinsertion into the education system, so that the conditionality works as a mechanism for inclusion.

**In infrastructure, improved trade facilitation via low-cost logistics services will promote the country as a regional hub centered on the port of Montevideo**

20. **In the last two decades, Uruguay has gradually emerged as a regional hub for the southern cone.** The port of Montevideo is strategically located at the mouth of the Paraguay-Paraná water system that connects the interior of Argentina and Uruguay with Paraguay, Bolivia and southern Brazil. Due to its geographic position, the port of Montevideo offers logistics services and connection points to these markets via rail, water and road links. Currently, almost two-thirds of the freight passing through the port of Montevideo is trans-shipped to and from these countries. Supported by the free port and duty free legislation, providers of maritime services and other logistics services have achieved a reasonably competitive level of productivity in the region.

21. **In the two decades following the 1992 port sector reform and the introduction of competition by private operators, the Uruguayan port system has experienced spectacular growth.** Container traffic via the port of Montevideo has increased ten times, from around 64,000 twenty-foot equivalent units (TEU) in 1990 to more than 675,000 TEU in 2008. Just since 2004, Montevideo moved from 7th to 4th place among ports in the southern cone, now only behind Santos, Buenos Aires and Valparaíso in container traffic.

22. **The transition of public management to a service contract model, however, is not complete.** Under this model, different private operators lease port infrastructure from the state and add/maintain their own infrastructure (cranes, conveyor belts, buildings, etc.). However, the National Port Administration (Administración Nacional de Puertos—ANP) continues operating some port services directly or indirectly (via a 20 percent share in the Terminal Cuenca del Plata). At the same time, significant additional investments are being planned to equip the
container port of Montevideo for post-Panamax ships. To avoid conflicts of interest with its role as regulator of port services—an essential function to ensure fair competition and additional investment—Uruguay should consider completely removing ANP from these operations.

23. **To grow even more as a regional hub, Uruguay needs to attract greater transit flows by offering cost-effective value-added services.** The country’s future as a regional hub depends principally on its ability to reduce logistics costs. These costs depend on geography and the volume of business, but also on the cost and quality of public and private services that facilitate trade, including customs. As a result, the government could consider adopting measures in three areas:

- Expand port installations, particularly those oriented to trans-shipment;
- Develop an inter-modal hub to attract greater volumes of Argentine, Brazilian and Paraguayan freight; and
- Improve integration of the different components of the logistics chain, with emphasis on the customs, regulatory and transport policy environments (see below).

*Overcoming transport bottlenecks is critical to expand trade and the forestry sector*

24. The quality and coverage of road and port infrastructure is excellent compared to regional standards, but railroad infrastructure requires a comprehensive overhaul so that Uruguay can position itself as a logistics hub for the southern cone.

25. **Highways.** Thanks to the concentration of public investment in highways and the priority given to maintenance over new construction, 88 percent of national highways are paved. Unlike other public infrastructure sectors, highway investment doubled in the last decade, in part due to substantial financing mobilized by the autonomous Uruguay Roads Corporation (*Corporación Vial del Uruguay*—CVU).

26. **Railroads.** The Uruguayan rail system is without doubt the weakest link in the national transport system. It is publicly owned, and operated by the State Railroad Administration (*Administración de Ferrocarriles del Estado*—AFE). Of the 3,000 km of track in the national network, 1,400 km were abandoned. Freight volumes on the remaining 1,600 km are about 205,000 ton-km/km, very low by regional standards (400,000-550,000 ton-km/km) and far lower than the levels needed for financial viability. Labor productivity is the lowest in South America and operating income covers less than 50 percent of operating costs.

27. **Restoring rail service is essential to prevent the accelerated deterioration of roads caused by the growing cargo loads transported by the forestry sector.** Currently, maintenance efforts are not keeping up with the damage caused by heavy trucks operating on primary and secondary roads. Past governments have recognized the need to selectively improve the quality of several sections of the rail network (mainly the Rivera-Montevideo and Fray Bentos-Tacuarembó lines) and to modernize AFE operations. Public-private partnership (PPP) models have been proposed for investment in infrastructure/maintenance and in freight operations. While the Uruguay Railway Corporation (*Corporación Ferroviaria del Uruguay*—
CFU) has begun rehabilitating some sections of priority lines, a bidding process for a broader rehabilitation of the network was not successful.

28. The new administration could consider revising the projects and bidding specifications drawn up by the AFE and CFU to confirm expected transport volumes and generate more detailed projects (which reduce risks faced by bidders), and to update cost estimates. Options to reform AFE itself range from a cautious focus on gradual modernization (purchasing new equipment and rolling stock to increase productivity, redistributing the labor force, and other measures) to a more radical focus based on the PPP model for freight operations. The role of the public sector in passenger services could be based on a more comprehensive evaluation of transportation in the Montevideo metropolitan area.

29. The institutional structure of the Ministry of Transport and Public Works (Ministerio de Transporte y Obras Públicas—MTOP) should evolve to help consolidate Uruguay’s role as a regional transport hub and to address the challenges of the rail sector. While resource allocation is generally efficient within transport subsectors (the road sector in particular), few studies and resource allocations exist between subsectors. For example, the MTOP could consider establishing a new unit dedicated to evaluating all public transport investments. In addition, modernizing the rail sector requires a clear separation between the roles of defining policy, providing services, and investment. An entity to regulate the rail sector could be created (initially within the MTOP), as well as a specific unit to manage the railway modernization process.

Improving the quality and efficiency of water and sanitation, electricity and telecommunications services is a priority

30. Coverage. Uruguay has achieved notable progress toward universal access of basic infrastructure in the last decade. Electricity access is nearly universal. Telecommunications coverage is widespread, with significant competition among international long distance and mobile telephone services. Public approval of these services is among the highest in the region, with 44 percent of the population reporting a high level of satisfaction, compared to the regional average of 26 percent. While residential running water coverage has risen to 98 percent, the coverage of water sanitation service is just 53 percent, below the levels achieved by Chile, Colombia, Mexico, and several Brazilian states with similar levels of income. Also, all infrastructure sectors in Uruguay require further investment, better regulation and good management to achieve (or maintain) universal coverage while keeping up with technological change and the growing sophistication of demand (particularly in telecommunications) and improving service efficiency and quality.
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31. **Sectoral investment rose substantially since 2002, to 2 percent of GDP, but still has not recovered pre-crisis levels (2.4 percent in 1999-2001).** Investment in telecommunications fell from 0.6 percent of GDP to 0.4 percent (2008), in electricity from 1.24 percent of GDP to 0.7 percent (2007) and in water and sanitation from 0.3 percent of GDP to 0.2 percent (2008). A conservative estimate of investment needs to maintain Uruguay’s infrastructure base is about 3 percent of GDP, while 5 percent of GDP is needed to achieve the broader target of universal coverage in the medium term. To expand telecommunications coverage, improve networks and incorporate new technology would require sustained investments on the order of 0.6 percent of GDP. In electricity, just to maintain existing infrastructure assets would call for investments of 1 percent of GDP, while increasing electricity generation (via both traditional and renewable sources) and ensuring a reliable supply (via, for example, the interconnection with Brazil) would require 1.6 percent of GDP. In water and sanitation, sustained investments of about US$70 million per year (0.24 percent of GDP) are necessary to provide universal sanitation services, increase the volume of wastewater treatment, reduce the high level of water losses and improve the operational efficiency of OSE.

32. **Policy options.** Several instruments could be applied individually or jointly to increase investment: (i) appropriate incentives to increase the efficiency of service providers; (ii) higher tariffs to close the gap between current service demand and long-term marginal costs; (iii) borrowing by service companies in national or international markets; (iv) converting profit transfers from service companies to the national government into dividend payments; and (v) private investment to complement the state’s investment capacity:

- **Increasing efficiency.** The most important challenge facing ANTEL is increasing labor force efficiency. Despite improvements following the liberalization of the telecommunications market in 2004, ANTEL still has a rate of 661 fixed and mobile subscribers per employee (compared to 1,929 and 1,311 subscribers per employee in Argentina and Chile, respectively). For UTE, commercial and distribution losses (17.9 percent in 2007), are down from 20 percent in 2005 but still well above the pre-crisis level (14.5 percent). OSE faces three notable efficiency issues: (i) unmetered water
(53.7 percent in 2008, compared to averages of 40 percent in Brazil and 34 percent in Chile); (ii) labor efficiency (4.1 employees/1000 water and sanitation connections, well above industry best practices of 0.4-2.0 employees/1000 connections); and (iii) sub-optimal tariff collection levels.

- **Tariffs.** While fixed telephone and water charges are high by regional standards, electricity prices charged by UTE are below other countries in the region (apart from Argentina, Venezuela and Paraguay). Water sanitation rates are even lower than running water rates, although the service is costlier to supply and attends wealthier sector of the population.

- **Debt.** Although loans have been the traditional vehicle for capital investments by public service companies, a range of other alternatives has developed in recent years in Uruguay and other countries, including: (i) domestic bonds backed by revenues; and (ii) public offerings of shares belonging to or created by the company, or shares in the service companies themselves.

- **Replacing profit transfers with dividend payments.** Profit transfers to the national treasury could be replaced by dividend payments, taking into account the characteristics of each company. Limited share offers by the companies in the Montevideo stock market could provide a market test of the appropriate dividend level.

- **Private investment.** Private infrastructure investment has averaged only 0.5 percent of GDP in the last 15 years, well below Argentina (1.9 percent) and Chile (2.2 percent). The telecommunications, port and road sectors have attracted private investment, but private sector activity in electricity has been conspicuously low despite a favorable energy law in 1997 and Uruguay’s reputation as a reliable commercial partner that respects its commitments. Private investment is not a panacea, but rather a potential complement to public investment in a context of fiscal restrictions.

33. **Improving regulatory quality.** Uruguay has regulatory agencies for telecommunications (URSEC) and water and electricity (URSEA), but a 2008 international survey of citizens, companies and experts found regulatory quality to be below OECD or even Latin American standards (Governance Matters: Worldwide Governance Indicators, 2008). Regulatory and management autonomy, institutional transparency, and accountability are key areas requiring improvement to allow regulators to promote more efficient service provision and transparency in establishing service tariffs.

The electricity sector faces the challenge of ensuring electricity supply at a reasonable cost

34. **Security of supply.** Considering that hydroelectric generation represents 63 percent of total installed capacity, the combination of several dry years, growing demand (7.5 percent average consumption growth in 2006 and 2007), insufficient thermal reserve capacity and difficulties acquiring electricity from Argentina and Brazil have led to a risky situation for ensuring electricity supply at a reasonable cost. To address this problem, Uruguay could:
• **Intensify energy efficiency programs.** These programs have already led to substantial energy savings, via investment in new technologies and public awareness campaigns. Significant opportunities exist to increase savings further by replacing inefficient lights for public institutions (70 percent are mercury lights and 10 percent incandescent) and residential clients. Other measures include: (i) revising equipment norms and labels; (ii) further increasing public awareness via courses and campaigns; (iii) establishing a fund to promote the adoption of energy efficient equipment, particularly by industry; and (iv) developing a network of energy efficiency service provision companies.

• **Address bottlenecks in transmission and distribution.** The six 500KV/150KV transformer stations in Uruguay are operating at almost 100 percent capacity, which represents a risk of power cuts if one of them fails. Apart from the greater Montevideo area, the southeast (Punta del Este and Maldonado) and the northeast (Salto and Artigas) are at the greatest risk due to transmission and transformer bottlenecks.

• **Develop a renewable energy market.** Uruguay is making important investments in renewable energy. Wind and biomass power can already compete with the existing UTE thermal generation plants and the open cycle backup plants that use liquid fuel due to the lack of natural gas. Given capacity factors that typically vary between 30 and 40 percent, Uruguay has favorable conditions for wind energy. Also, forestry waste products offer good opportunities for increased generation from biomass. To stimulate renewable energy investment, the options are: (i) guarantee network supply tariffs to stimulate renewable energy generation (the model used by Spain, France and Germany, among others); or (ii) establish a minimum percentage of electricity that must come from renewable sources (the model used in the United Kingdom, Austria and Belgium). In general, guaranteed supply tariffs have proved to be a more efficient incentive for incorporating renewable energy into the matrix.

• **Upgrade the interconnection with Brazil from 70 MW to 500 MW.** Considering that the marginal cost of additional generation in Brazil is significantly below the cost of thermal generation in Uruguay, expanding the interconnection with Brazil is an attractive alternative.

• **Increase reserve thermal generation and base charge capacity.** Options could include the use of atmospheric fluidized bed combustion (mature, commercially available and relatively friendly to the environment) or combined cycle electricity plants. However, the first option would require new port installations to handle loads of imported coal, while for the second, increased LNG imports and the subsequent sale of power to Argentina would probably be necessary to achieve economies of scale. It would also be possible to explore natural gas imports from Bolivia. Further, Uruguay needs to develop financial instruments to cushion the impact of higher electricity costs on public finances during dry years, as production cost increases are inherently volatile and it is not feasible to transfer them to tariffs in real time.
Agricultural development can contribute not just to growth but also to protect the family economy.

35. The agriculture and food production sector continues to be an important and dynamic part of the national economy. With an average growth rate of 7.6 percent between 2001 and 2007, the sector has grown nearly twice as fast as GDP and now represents about 10 percent of the economy (15 percent if agriculture food processing is included). The agricultural sector has shown a high capacity to respond to international food quality and sanitation norms, which are increasingly rigorous. While exports of raw and processed agricultural products represent about 60 percent of total Uruguayan exports, about two-thirds of the total value of exports comes from the animal product markets (meat, leather and wool), which are highly competitive and sensitive to international norms. Agriculture generates 12 percent of national employment, due to the preeminence of labor-intensive small and medium enterprises in the food sector.

36. However, Uruguayan agricultural producers are exposed to a range of internal and external shocks, such as price volatility in products and external inputs (feed, fertilizer and fuel) and drought. The 32,700 family farms (77 hectares on average) with low technology levels have less capacity to respond to these shocks than the 19,400 medium and large producers (715 hectares on average), who are highly productive and oriented toward the export market.

37. Principal problems and policy options. In recent years, Uruguay has begun to build a more integrated vision for inclusive agricultural development that combines agricultural competitiveness and integration in world markets with an emphasis on maintaining the socioeconomic fabric of rural areas. The principal components of integrated rural development program include:

- **Increase the productivity and marketability of agricultural foods.** Key policy options include: (i) continue and expand improvements in veterinary and food security norms (for example, expanding the systems of agricultural establishments to other links in the value chain and broadening the focus beyond foot-and-mouth disease to other animal ailments such as brucellosis; (ii) provide incentives to adopt more modern technology (in agricultural establishments, in greater value-added processing, and in product development and marketing); and (iii) develop knowledge and human capital, helping young agricultural producers establish themselves, and expanding geographic coverage of technical assistance services.

- **Strengthen agro-environmental adaptation.** Policy options to promote sustainable natural resource management include: (i) safeguard biodiversity; (ii) create a national soils information system to better protect water and soils through territorial planning; (iii) reduce ammonia emissions; (iv) use pesticides sustainably; and (v) create an eco-certification system.

- **Coordinate sectoral and non-sectoral rural development activities.** Many developed economies have found that creating a governmental coordination entity such as a rural development commission charged with coordinating investments undertaken by ministries and sectoral agencies (in roads, rural housing, coverage of basic services,
social and sanitary services, etc.) has led to important benefits for overall rural development. This coordination is particularly important to: (i) improve the quality of life in rural areas through the provision of basic services, without which younger and more entrepreneurial agricultural producers would probably migrate to urban areas; and (ii) promote non-agricultural income opportunities (in tourism, for example).

In the context of economic recovery, protection against climate change is an emerging necessity

38. Climate change projections show a moderate increase in temperatures and a greater volume and variability of precipitation in Uruguay until 2050. Average temperatures are expected increase by 0.3 to 0.5 degrees Centigrade by 2020 and by 1.0 to 1.8 degrees by 2050. These changes are more moderate than for South America as a whole. Agriculture is the sector that contributes the most greenhouse gas emissions in the country. Although the sector’s potential for reduction is significant, Uruguay has not yet sufficiently explored carbon trading opportunities, particularly in ranching, which accounts for more than 92 percent of the country’s total methane emissions. At the same time, reducing vulnerability to climate change, especially seasonal and rain variability is increasingly important for the agricultural sector.

39. The country has taken important steps to address issues of adaptation and to apply mitigation measures in several priority sectors, including agriculture. In 2004, the Program of Measures to Mitigate and Adapt to Climate Change (Programa de Medidas Generales sobre Mitigación y Adaptación al Cambio Climático) was established, proposing a series of mitigation and adaptation measures in response to climate change to be applied in several sectors, including agriculture, forestry, water resources, fishing resources and biodiversity. In March 2009, President Vázquez reaffirmed high-level political support for adapting to climate change. He underlined the need to establish a disaster fund linked to climate change and weather emergencies, emphasized better management of water resources, and called for greater information exchange and institutional coordination. In November 2009, the National Climate Change Response System (Sistema Nacional de Respuesta al Cambio Climático) was approved to coordinate and plan public and private activities linked to mitigating and addressing climate change risks; in addition, the National Climate Change Action Plan (Plan Nacional de Acción de Cambio Climático) 2010-2015, links actions with the budget and other financing sources.

40. The principal options to address these issues could be, in the short and medium term, the use of better climate and weather information on the part of agricultural producers. In the long term, measures could include:

- Irrigation and other infrastructure investments and improved management of natural resources (which requires long-term investments in human capital and institutions); and
- Policy and institutional framework changes, including areas related to national and regional climate policies, insurance systems and risk management, water supply and allocation, and natural resource policies.
Making all this possible requires maintaining a prudent macroeconomic framework, developing the capital market, strengthening public institutions and promoting innovation.

Figure 4: Institutional Framework

Managing external vulnerabilities calls for prudent macroeconomic policy, with emphasis on reduced and sustainable public debt, lower dollarization, containing inflationary pressures and adequate management of external financing needs.

41. During the recent global recession, the Uruguayan economy showed greater fortitude than many other emerging economies. In 2009, Uruguay was one of the few Latin American countries with positive growth (nearly 3 percent). This strength is the result of solid macroeconomic management, a flexible exchange rate, and improvements in the banking system, all of which made the country less vulnerable to external shocks. Recognizing this strength, JP Morgan recently rated Uruguayan bonds as a “defensive” investment instrument, while Fitch raised its outlook on the Uruguayan economy from stable to positive.

42. However, vulnerabilities do persist, in particular the high levels of public debt, dollarization and inflationary pressures. Gross public debt is still high, although it is down from 100 percent of GDP in 2003 to 57 percent at the end of 2009. The steep increase in international reserves implies that net debt is half of that ratio. Considering that three-quarters of
public debt is denominated in foreign currencies, the country is exposed to exchange rate fluctuations. Continuing to reduce the debt burden will free up resources to conduct countercyclical fiscal policy. This policy generates public savings during good times to be used when the cycle reverses or when adverse climate phenomena create unexpected fiscal gaps. The Public Debt Limit Law acts in practice as a fiscal rule by limiting the fiscal balance, but it could be improved.

43. **Dollarization has an impact through other channels, too.** Private corporate debt in the banking system is also highly exposed to exchange rate risk, as a result of the high level of currency mismatches that weaken company balances. Lower levels of dollarization, with measures to promote debt in pesos, would help the exchange rate function better as a shock absorber against external shocks to the economy.

44. **Inflationary pressures and capital flows restrict the margin for a counter-cyclical monetary policy.** At the end of 2008, when the country began feeling the impacts of the international financial crisis, the Central Bank of Uruguay (Banco Central de Uruguay—BCU) had to maintain high interest rates to compensate for the impact of rising commodities prices and salary increases. Only in early 2009, as inflationary pressures receded, the BCU was able to cut interest rates by several points. Low interest rates could reinforce the economic recovery now underway. Also, lower rates would slow capital inflows, which appreciate the exchange rate and hurt export competitiveness.

45. **Uruguay’s external financing needs are substantial but manageable.** Thus far, external balance of payments financing needs have been easily covered by capital inflows, and a similar phenomenon is occurring with the fiscal financing gap. However, while the government has had success in re-profiling its debt and cushioning short-term obligations, larger amortization payments are scheduled for 2011 and 2017-2018. Also, if external conditions deteriorate again, additional resources will be needed, such as multilateral financing or new debt issuances.

*Developing the capital markets would be an important contribution to financing investment and, by extension, to economic growth*

46. **Uruguay’s capital markets are very small and dominated by sovereign debt issues.** Stock markets are among the least developed in the region: market capitalization is only 0.5 percent of GDP, compared to 61 percent in Brazil, 51 percent in Peru, 46 percent in Colombia and 21 percent in Argentina. While considerable demand exists for securities by pension fund administrators—who can invest up to 25 percent of their portfolio in equity (now only 4 percent), there is little offer, in part due to the tradition among local companies to finance themselves through retained earnings or commercial bank loans.

47. **Congress has recently approved a new Capital Markets Law, after an extensive consultation process.** The law includes, among other items, dispositions to increase investor confidence, including good governance requirements, greater supervision, control of market abuse, and stronger disciplinary actions. The new law includes also tax incentives, mandates the
creation of a Market Promotion Committee (Comité de Promoción del Mercado) and strengthens the regulatory framework.

48. **The main policy options to promote capital markets development are:**

- Establish the Market Promotion Committee and review the institutional and regulatory framework to facilitate implementation of the new law;
- Explore incentives through the tax code, training or other areas to help promote use of the market;
- List selected public companies on the stock market; and
- Promote the development of public-private partnerships (PPPs), the internationalization of Uruguay’s capital market, and the creation of a market specialized in small and medium enterprises.

The public sector reform agenda is extensive, but four issues are key: customs, financial management systems, public procurement and the national statistics system

49. **Uruguay is relatively well positioned regarding public sector management compared to the rest of Latin America.** The country compares well in the quality of its institutions, management of public procurement, the lack of favoritism in governmental decisions and the low level of “unofficial payments” needed to obtain a public contract. In 2009, Transparency International ranked Uruguay and Chile as the two countries with the lowest perceived corruption in the region. But further improvements are possible, which is why public sector reform was one of the priorities of the Vázquez administration and is one of the main priorities of the Mujica administration. The Vázquez administration successfully implemented important reforms in the tax authority (Dirección General Impositiva—DGI), but efforts to reform customs stalled and were only partially implemented.

50. **Customs reform is essential to facilitate international trade and thus promote growth.** The World Bank ranks Uruguay at 86 among 150 countries in logistics operations, behind Argentina, Brazil and Chile and well below comparable middle income countries elsewhere in the world. Apart from ethical considerations, greater customs efficiency is a necessary condition to expand Uruguay’s role as a regional hub. If no action is taken, the cost to the economy could increase and Uruguay would decline as an international trade hub. The options facing the new administration are:

- Advance with a comprehensive reform along a similar line to the DGI reforms; or
- Begin partial and sequential changes, which could be easier politically but run the risk of backtracking.

51. **Financial management is not up to date.** While the legal framework (TOCAF) is appropriate, the integrated financial management system (SIIF) used by all central government agencies has weaknesses. In particular, transactions are not registered just once, accounting and budgetary systems are fragmented and there is no link between budget programming and
execution. To update the system and integrate all public sector operations, the new administration has three options:

- Re-engineer the existing system, which would bring only partial improvements compared to the current situation;
- Design a new conceptual framework and a corresponding new vision for SIIF, that would be more costly but would lead to better results in the medium term; or
- Design a new conceptual framework and improve the existing system while at the same time developing a new version of SIIF. This option would also require modernizing procedures and oversight institutions.

52. **Public procurement could be better regulated.** The State Contracting and Purchasing Agency (Agencia de Contrataciones y Compras del Estado—ACCE) was created as part of the 2009 budget review, but a complementary legislative proposal to regulate public procurement has still not been presented to Congress. The new agency would facilitate negotiating better terms from suppliers and provide more transparency in government transactions. In the short term, the administration should designate ACCE authorities and complete a unified supplier registry. In the medium term, a new regulatory and legal framework for public procurement should be developed.

53. **The existing national statistics system needs to be strengthened and expanded.** Uruguay has a well-developed national statistics system, but statistics need to be more readily available for decision making, which requires an important restructuring and training effort. The creation of the Integrated Social Information System (Sistema Integrado de Información del Área Social—SIIAS) is an important step in the right direction. The priority now is to institutionalize the system, integrate the education sector and Plan Ceibal into it, and strengthen its use for program monitoring and evaluation.

*An innovation policy for the productive sectors plays a central role in export development, and the forestry and software sectors provide a number of lessons in this regard*

54. **In the last decade, the software and forestry sectors have experienced rapid growth.** The dynamism and diversification of their markets is notable. Software exports tripled since 2000, while forestry exports now go to 25 countries. In 2008, their combined exports represented 9.3 percent of total exports. Both sectors are relatively new, but their development strategies were very different: the forestry sector enjoyed public support from the beginning, while the software sector was launched by the private sector and received public support only after it was already established. Thus, it’s interesting to see what lessons can be learned from these two cases.

55. **In the forestry sector, the emphasis was on expanding planted areas and increasing value added, but challenges persist.** As the world economy recovers from the crisis, production expansion will generate additional pressures on the poor performance of the railway system, and on other modes of transport for forestry products connecting production areas to export departure points.
56. In the software sector, the emphasis is on taking advantage of the country’s connectivity, while its potential is threatened by the lack of technical personnel as well as remaining telecommunications infrastructure needs. Addressing the lack of human resources requires increasing the number of graduates and improving the quality of technical education. In the short term, providing more information about employment prospects and increasing scholarships in related areas of study can help attract more students. In the medium term, scientific education quality needs to be improved at the secondary and tertiary level, and a strategy should be designed to encourage young graduates to stay in the country. Continuing to expand telecommunications bandwidth will also be essential to increase sectoral productivity and facilitate expansion.

Final comments

57. The Notes present a menu of policy options in different areas, which are summarized in the Policy Matrix (see below). The matrix includes measures for the short term (12-18 months) and the medium term (2-3 years). The priorities among these policy options, both within and between sectors, will be defined by the Uruguayan authorities. The World Bank is ready to support the government in the implementation of these policies.
Table 2: Policy Options Matrix

<table>
<thead>
<tr>
<th>MACRO AND FISCAL POLICY</th>
<th>SHORT TERM OPTIONS</th>
<th>MEDIUM TERM OPTIONS</th>
</tr>
</thead>
</table>
| Fiscal sustainability and counter-cyclical macroeconomic management | - Continue reducing the debt/GDP ratio.  
- Evaluate the performance of the Debt Limit Law as a fiscal rule, and improve it so that it: (i) generates fiscal savings in good times of growth to be used during recessions; and (ii) strengthens the sustainability of public debt in the medium term.  
- Maintain inflation within the target range of 4-6 percent.  
- Contain the growth of public spending to improve the public primary balance in 2010. | - Maintain fiscal discipline and exchange rate stability, to generate fiscal space and improve debt indicators.  
- Synchronize the fiscal rule with monetary policy to reinforce the recovery.  
- Reduce the inflation target range to 3 percent-5 percent. |
| Vulnerable due to the following factors:  
- Debt/GDP ratio continues to be high, with high exposure to exchange rate fluctuations.  
- Inflationary pressures limit the margin for monetary policy.  
- High dollarization limits the ability of the exchange rate to absorb external shocks. | | |
| The country’s financing needs are considerable, but manageable. | | |

<table>
<thead>
<tr>
<th>PUBLIC SECTOR EFFICIENCY</th>
<th>SHORT TERM OPTIONS</th>
<th>MEDIUM TERM OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial administration</td>
<td>- Define a new conceptual model and modernize SIIF.</td>
<td>- Develop a new information system that responds to the new conceptual model and, based on that, revise the legal and institutional framework of each one of the SIIF’s key subsystems: accounting, budgeting, treasury and oversight.</td>
</tr>
<tr>
<td>Obsolescence of SIIF and inadequate conceptualization of existing legislation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Public sector procurement | - Name ACCE authorities.  
- Design a national procurement strategy. | - Develop a new regulatory framework for procurement.  
- Improve the electronic procurement system. |
| Lack of a regulatory agency. | | |
| National statistics system | - Institutionalize SIIAS.  
- Design a program to strengthen national statistics.  
- Design a system to evaluate the impact of social programs, as well as monitoring and impact indicators. | - Include the education sector and Plan Ceibal in SIIAS.  
- Develop an impact evaluation system for social programs. |
| Obsolescence of the system as a tool for decision making and lack of data needed to evaluate the impact of social programs. | | |
| Customs | - Design a comprehensive customs reform, redesign and simplify procedures, promote transparency and adopt international standards.  
- Design a plan to improve human resource management.  
- Adopt an inspection system based on risk management and auditing after clearance. | - Sequentially implement the comprehensive reform, including the human resource component.  
- Adopt the single window for international trade.  
- Modernize information and technology systems. |
| Obsolescence of the customs system and low transparency. | | |
**CAPITAL MARKET**

<table>
<thead>
<tr>
<th>Legal and regulatory framework</th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Regulate the new Capital Markets Law.</td>
<td>• Implement the new regulatory framework.</td>
</tr>
<tr>
<td></td>
<td>• Complete the internal reorganization of BCU to improve supervision.</td>
<td></td>
</tr>
</tbody>
</table>

**Develop the capital market**

<table>
<thead>
<tr>
<th></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Promote public-private partnerships, the stock market listing of companies and the development of a structured finance market.</td>
<td>• Facilitate the listing of public companies in the stock markets.</td>
</tr>
<tr>
<td></td>
<td>• Revise tax regulations to offer incentives for companies to enter the market and increase the pool of investors.</td>
<td>• Internationalize Uruguayan capital markets.</td>
</tr>
<tr>
<td></td>
<td>• Create a Capital Market Promotion Committee as called for in the new law.</td>
<td>• Create a specialized exchange within the stock market for listing small and medium enterprises.</td>
</tr>
<tr>
<td></td>
<td>• Improve transparency and information disclosure, adopt IFRS and implement bankruptcy reform.</td>
<td></td>
</tr>
</tbody>
</table>

**FORESTRY INDUSTRY**

<table>
<thead>
<tr>
<th>Channel national savings toward the forestry sector</th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Revise the tax treatment of portfolio investors in the sector, making it equal to the treatment of IRAE for investments managed by third parties.</td>
<td>• Coordinate between issuers, pension fund administrators, and brokers to make more liquid financial instruments.</td>
</tr>
<tr>
<td></td>
<td>• Modify tax legislation in accord with this revision.</td>
<td></td>
</tr>
</tbody>
</table>

**Conflict over natural resources (water and land)**

<table>
<thead>
<tr>
<th></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Improve the prior environmental authorization procedure</td>
<td>• Improve the institutional framework for public hearings.</td>
</tr>
<tr>
<td></td>
<td>• Strengthen DINASA.</td>
<td>• Define general criteria for conflict resolution that provide security to investment projects.</td>
</tr>
<tr>
<td></td>
<td>• Introduce into the MGAP’s Cattle Program indicators on the profitability of joint production with forestry.</td>
<td>• Introduce market mechanisms to facilitate marketing of the production of small producers.</td>
</tr>
</tbody>
</table>

**SOFTWARE INDUSTRY**

<table>
<thead>
<tr>
<th>Human resources</th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of qualified technicians.</td>
<td>• Draw up a strategic plan to address the problem.</td>
<td>• Increase the number of engineering and basic science graduates.</td>
</tr>
<tr>
<td></td>
<td>• Create and publicize a survey of labor supply and demand.</td>
<td>• Strengthen the business and language training for engineers.</td>
</tr>
<tr>
<td></td>
<td>• Create a system to measure gaps in human resources.</td>
<td>• Implement plans to promote labor market insertion during study.</td>
</tr>
<tr>
<td></td>
<td>• Establish sectoral standard.</td>
<td>• Implement distance learning courses</td>
</tr>
</tbody>
</table>

**Productive finance**

<table>
<thead>
<tr>
<th>Lack of financing for start-ups.</th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Create a system of guarantees.</td>
<td>• Access sources of long-term financing.</td>
</tr>
<tr>
<td></td>
<td>• Provide incentives to attract venture capital with access to international networks.</td>
<td>• Incentivize the creation of venture capital funds.</td>
</tr>
<tr>
<td></td>
<td>• Create a system of business information in line with international standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Promote internal and external associative activities (fusions).</td>
<td></td>
</tr>
</tbody>
</table>

**Information infrastructure**

<table>
<thead>
<tr>
<th>Limited and expensive international connection.</th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Increase bandwidth in line with international standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Strengthen the state procurement system.</td>
<td></td>
</tr>
<tr>
<td><strong>FINANCING AND REGULATION FOR INFRASTRUCTURE INVESTMENTS</strong></td>
<td><strong>SHORT TERM OPTIONS</strong></td>
<td><strong>MEDIUM TERM OPTIONS</strong></td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>-------------------------</td>
<td>-------------------------</td>
</tr>
</tbody>
</table>
| Universal access to high-quality infrastructure services at competitive prices | - Improve the operational, commercial and financial efficiency of public companies.  
- Establish efficient tariffs that cover operational, investment and maintenance costs, taking into account the poorest consumers.  
- Access loans from multilateral credit organizations and private financial institutions, and make use of other local finance instruments such as trusts, supplier credit and public securities offerings.  
- Explore financing via public-private partnerships (PPPs). | - Convert transfers from public companies to the central government into dividends, taking into account the characteristics of each company.  
- Strengthen and consolidate regulatory agencies.  
- Strengthen corporate governance. |

<table>
<thead>
<tr>
<th><strong>LOGISTICS</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
</table>
| Develop Montevideo as a highly efficient inter-modal hub for regional freight transport | - Implement innovative operational practices to reduce delays at the port that negatively impact highway transport.  
- Increase port infrastructure investment. | - Develop an effective and efficient inter-modal logistics platform that utilizes all available modes of transportation.  
- Raise the quality and lower the costs of port service operations.  
- Harmonize the tax code and regulatory framework with those of neighboring countries to avoid differing transport costs. |
| Develop an efficient logistics system for the interior of the country | - Design official statistics for the sector, with sufficient coverage to illustrate the scale and activities of logistics operators and their costs, disaggregated by mode of transport. | - Develop specific and specialized labor force capacities throughout the logistics chain.  
- Implement, in cooperation with MERCOSUR partners, rules necessary to ensure services, infrastructure and border control that are adequate for the functioning of the logistics system. |

<table>
<thead>
<tr>
<th><strong>TRANSPORT</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
</table>
| Improve the efficiency of transport and port service provision | - Improve land transport and port infrastructure, particularly oriented toward trans-shipment.  
- Rehabilitate the railway infrastructure to transport forest products and reform AFE to improve efficiency. | - Expand the port system to encourage hub ports.  
- Promote competition within and between ports. |
| Strengthen institutional, regulatory and resource allocation efficiency | - Improve MTOP’s multi-modal strategic planning capacity.  
- Improve resource allocation between inter and multi-modals.  
- Focus private investment on priority sectors. | - Strengthen transport sector regulatory agencies.  
- Complete the port sector regulatory framework. |

<table>
<thead>
<tr>
<th><strong>ELECTRICITY</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
</table>
| Ensure a secure, sufficient and reliable electricity supply at reasonable costs | - Continue promoting energy efficiency by developing regulatory, institutional, financial, informational and technical instruments.  
- Facilitate the flow of electricity by improving the transmission and distribution networks.  
- Strengthen the sector’s regulatory and institutional framework. | - Develop non-conventional renewable energies.  
- Strengthen the regional electricity market.  
- Invest in base and backup thermal generation.  
- Develop financial instruments to help absorb higher generation costs in dry years. |
<table>
<thead>
<tr>
<th><strong>FAMILY AGRICULTURE</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
</table>
| **Develop integrated and inclusive rural agriculture** | ● Update and expand animal tracing systems.  
● Increase technology productivity and adaptability.  
● Apply efficient agro-ecological and water resource techniques.  
● Create an eco-certification system.  
● Create a national soil information system as an input to territorial planning. | ● Establish financing mechanisms and institutional agreements (for example, the creation of a rural development fund).  
● Diversify rural income.  
● Integrate existing tracing systems into internationally accepted food security certification systems. |

<table>
<thead>
<tr>
<th><strong>CLIMATE CHANGE</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
</table>
| **Reduce vulnerabilities to adverse agro-climate phenomenon** | ● Identify priorities to adapt agriculture to climate change and to mitigate its impacts on agriculture. | Implement measures related to:  
● Carbon emissions.  
● Mitigating the effects of drought (water provision).  
● Improve technologies in the long term. |

<table>
<thead>
<tr>
<th><strong>EDUCATION</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
</table>
| **Improve learning quality** | ● Fully implement pre-school for all four year-olds, obligatory since 2009, and eventually expand to three year-olds.  
● Promote the teaching profession and design mechanisms to recruit and retain good teachers. | ● Improve education quality at all levels.  
● At institutions and schools:  
  ○ Introduce greater accountability.  
  ○ Introduce greater autonomy at the school level.  
  ○ Improve the teacher selection and evaluation systems. |
| **Reduce inequalities in outcomes** | ● Continue expanding the Full Day school program for students from disadvantaged backgrounds.  
● Increase the emphasis on generating abilities and on vocational education, by promoting technical secondary schools (Bachilleratos Tecnológicos). | ● Consolidate the Full Time school program for disadvantaged populations.  
● Develop processes for the early identification of students with special needs, and intervene when a student is falling behind to improve his/her performance. |

<table>
<thead>
<tr>
<th><strong>SOCIAL PROTECTION</strong></th>
<th><strong>SHORT TERM OPTIONS</strong></th>
<th><strong>MEDIUM TERM OPTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unemployment insurance</strong></td>
<td>● Develop a scheme that effectively includes unemployed workers and facilitates their reinsertion into the labor market.</td>
<td>● Broaden the coverage of the unemployment insurance, which is still insufficient, particularly by international standards.</td>
</tr>
</tbody>
</table>
| **Family transfers** | ● Identify potential beneficiaries who, for different reasons, are not yet covered by the system.  
● Continue implementing the new program.  
● Monitor completion of conditionality via information gathered by the SIIAS. | ● Unify the existing programs (a single law with clear benefits).  
● Incorporate 200,000 new beneficiaries into the system. |
CHAPTER 1.

EQUALITY OF OPPORTUNITY AND EXCLUSION IN URUGUAY

1.1 Uruguay is one of the most egalitarian countries in Latin America and has made significant progress in reducing poverty and inequality, but more work remains to be done. Reducing existing poverty levels, although low, represents an important challenge to a society that values equality, considering the impact of poverty on the opportunities of future generations. Poverty in Uruguay is especially concentrated among children and youth. The objective of this note is to analyze the opportunities for Uruguayan children regarding education and other basic opportunities needed to overcome future poverty. The measurement of opportunities focuses on coverage and unequal access for children 0-16 years, considering that children—unlike adults—cannot be expected to take decisions and make efforts themselves to access basic goods and services. As well, children cannot be considered responsible for pre-determined circumstances at birth such as their race, gender, family income, education level of their parents and place of residence.

1.2 The results of measuring and analyzing inequality of opportunities indicate that Uruguay faces the following challenges:

- **Dimensions of Opportunities for the 21st Century**: Uruguay has performed well in the equitable provision of basic services such as education, vaccinations and basic infrastructure. However, important challenges remain in service quality, particularly education, for a medium-high income country like Uruguay. These challenges are apparent in analyzing the probability of completing sixth and ninth grade on time, access to preventative health check-ups, and access to quality housing and sanitation services. As well, in spite of the achievements of Plan Ceibal in broadening access to computers and the Internet, certain groups still face problems in technology access.
- **Geographic Disparities**: Significant disparities remain in service access between departments and between urban and rural areas.
- **Disadvantaged Groups**: Education and income level of parents are the most important circumstances associated with the access of children to basic services.
- **Stagnation over Time**: Uruguay has registered little progress on different dimensions of equality of opportunity during the past decade.

1.3 Policy Options:

- **Reorient social spending by department and increase public investment in disadvantaged regions.**
- **Combat grade repetition and school desertion.**
- **Continue expanding Plan Ceibal to secondary education and invest in telecommunications infrastructure to improve Internet access across the entire national territory.**
- **Promote investment in human capital among children via more strict conditionality for family transfers (including completing sixth grade on time).**
- **Incorporate ways to exit poverty into the design of the family transfer program.**
A. Contribution of the Equality of Opportunity Focus in Uruguay

A.1 Equality of Opportunity, Poverty and Inequality in Uruguay

1.4 Uruguay is one of the most equitable countries in Latin America and has made important progress in reducing poverty and inequality, but much work remains to be done. Recently, inequality has shown a slight increasing tendency. Levels of moderate poverty have declined slowly as the effects of the 2002 economic crisis have dissipated, but still remain above 20 percent (Figure 1.1).

Figure 1.1: Evolution of Poverty and Inequality in Uruguay

<table>
<thead>
<tr>
<th>Year</th>
<th>Moderate Poverty</th>
<th>Inequality</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>24.3</td>
<td>0.350</td>
</tr>
<tr>
<td>2003</td>
<td>31.3</td>
<td>0.400</td>
</tr>
<tr>
<td>2004</td>
<td>31.9</td>
<td>0.450</td>
</tr>
<tr>
<td>2005</td>
<td>29.2</td>
<td>0.500</td>
</tr>
<tr>
<td>2006*</td>
<td>27.5</td>
<td>0.550</td>
</tr>
<tr>
<td>2007*</td>
<td>26</td>
<td>0.600</td>
</tr>
<tr>
<td>2008*</td>
<td>21.7</td>
<td>0.650</td>
</tr>
</tbody>
</table>

Note: (*) As of 2006 the ENHA has nationally representative coverage. 2002-2005 ECH undertaken in urban areas only.

1.5 Uruguay has a pending agenda of improving social indicators to the levels of the OECD and countries of the same per capita income in other regions of the world. Benchmarking with other countries highlights the relative performance of Uruguay, and shows variation among indicators. In the case of grade repetition in primary education and progression to secondary education, Uruguay has one of the worst performances, and finds itself in a position well below what would be expected in a country with almost universal primary education coverage and its level of per capita income (Figure 1.2).\(^1\)

\(^1\) Figure 1.2 shows that Uruguay is 30th percentile of countries by performance. Uruguay performs well in access to Internet and indicators related to health access.
1.6 The continuation of existing poverty levels, although low, represents an important challenge to a society that values equality, considering the impact of poverty on the opportunities of future generations. Additionally, the inter-generational transmission of poverty tends to negatively affect the accumulation of human and physical capital, essential for economic growth. Poverty in Uruguay is particularly concentrated among children and youth (Figure 1.3). As such, this note concentrates mainly on analyzing the opportunities of Uruguayan children regarding education level, education quality, access to basic services, and the chances of progressing to secondary or tertiary education. The structure of opportunities is crucial for children from disadvantaged homes to overcome poverty in the future. To address these issues, an analysis of income poverty or unsatisfied needs is insufficient. This note proposes following the methodology of equality of opportunities (World Bank, 2008).

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2 In many countries in Latin America and the Caribbean this figure is U-shaped, registering a higher concentration of the poor among children and the elderly outside the workforce (World Bank, Equality of Opportunity Study for Brazil, under preparation). In the case of Uruguay, transfer and pension systems have effectively reduced the incidence of poverty among the elderly (World Bank, 2007).
1.7 The principal of equality of opportunities is that the place of birth, gender, race, household income and parental education levels should not pre-determine the access of children to a level of well-being and basic services necessary to develop their own abilities.

**Figure 1.3: Distribution of Poor Individuals by Age (Official Moderate Poverty Line)**

Source: Authors based on ENHA 2006 and 2007.

### A.2 Measuring Equality of Opportunities

1.8 The measurement of equality of opportunities used here follows the principals described in the 2006 World Development Report by the World Bank and the methodology laid out in World Bank (2009). The operative measure of “opportunities” is based on access to basic goods and services considered critical for individual development and for which universal access—by public or private provision—is a socially valid and feasible objective. The measurement of opportunities focuses on coverage and unequal access for children 0-16 years, considering that children—unlike adults—cannot be expected to take decisions and make efforts themselves to access certain basic goods and services. As well, children cannot be considered responsible for pre-determined circumstances at birth such as their race, gender, family income, education level of their parents and place of residence. Nonetheless, these circumstances can have important consequences on access to basic goods and services. Box 1.1 details the construction of the Human Opportunity Index (HOI) used in this note.

---

Box 1.1: Human Opportunity Index (HOI)

The HOI is a synthetic measure of equality of opportunity in basic services for children 0-16 years. Its measurement employs the following formula:

\[ IOH = \bar{p} \left(1 - D\right) \]

\[ \hat{D} = \frac{1}{2\bar{p}} \sum_{i=1}^{n} w_i \left| \hat{p}_i - \bar{p} \right| \]

Where \( \bar{p} \) represents average coverage or access to a service or group of services or opportunities.

\( D \) measures the inequality in the distribution of opportunities or unequal coverage among children from distinct population groups of pre-determined circumstances (parental education, urban or rural area of residence, gender, race, parental income).

\( w_i \) is an expansion factor to weight the observations included in the samples.

\( \hat{p}_i \) is the estimated probability of having access to a service or opportunity for each of the observations in the sample or group of interest.

Thus, the HOI increases as a function of whether the average coverage or access themselves increase, and that coverage is more equally distributed. The HOI ranges from 0 (zero coverage or complete inequality) to 1 (universal coverage). The HOI penalizes inequality by increasing the value of \( D \). For countries with identical coverage levels, the HOI of a country will be lower with greater coverage inequality.

The HOI is estimated for each of the sub-groups of basic goods or services such as access to education or drinking water, which are fundamental for future economic opportunities and on which a social consensus exists on the goal of universal coverage. In a report for Latin America and the Caribbean, the World Bank (2008) includes goods and services that form part of the Millennium Development Goals to facilitate comparisons between countries. This group of goods and services can be broadened to adapt the index to the standards of more advanced middle-income countries such as Chile, Brazil or Uruguay with objectives beyond the MDGs.

The HOI can be aggregated as a simple average to include a range of goods and services. It can also be estimated by geographic areas and population groups, to compare access to opportunities and to improve the targeting of public programs and social spending.


1.9 Uruguay has among the highest levels of equality of opportunity for children of 19 countries in Latin America and the Caribbean for basic opportunities (access to drinking water, water sanitation services and electricity, completing sixth grade on time and attending school for 10-14 year-olds), with levels very similar to Argentina, Costa Rica and Venezuela (Figure 1.4).
1.10 This note includes additional opportunities in the case of Uruguay, as it is a middle-high income country relatively advanced for the region. Table 1.1a shows the exogenous circumstances considered to define groups of interest in Uruguay. Table 1.1b shows a list of opportunities or goods and services considered basic for an open, relatively developed economy such as Uruguay. The following section reviews some of the more notable results from the HOI estimations using these criteria. Additionally, results are analyzed in more detail by department and over time.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>(1) Gender (binary boy/girl)</td>
</tr>
<tr>
<td></td>
<td>(2) Place of residence (binary urban/rural)</td>
</tr>
<tr>
<td></td>
<td>(3) Afro or indigenous descent</td>
</tr>
<tr>
<td>Head of Household</td>
<td>(4) Years of schooling</td>
</tr>
<tr>
<td>Household</td>
<td>(5) Per capita household income (log national currency)</td>
</tr>
<tr>
<td></td>
<td>(6) Single head of household (binary)</td>
</tr>
<tr>
<td></td>
<td>(7) Number of household children under 16</td>
</tr>
</tbody>
</table>
Table 1.1b: Equality of Opportunity in Uruguay – Opportunities

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete sixth grade on time</td>
<td></td>
</tr>
<tr>
<td>School attendance, 10 – 16 years</td>
<td></td>
</tr>
<tr>
<td>Repetition rate</td>
<td></td>
</tr>
<tr>
<td>Access to computer/Internet</td>
<td></td>
</tr>
<tr>
<td>Languages (speak or write English)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking water</td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td></td>
</tr>
<tr>
<td>Water sanitation (access to public network)</td>
<td></td>
</tr>
<tr>
<td>Irregular settlements</td>
<td></td>
</tr>
<tr>
<td>Non-flooding zones</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventative health check-ups (medical/dental)</td>
<td></td>
</tr>
<tr>
<td>Doctor visits if sick</td>
<td></td>
</tr>
</tbody>
</table>

B. Challenges for Equality of Opportunity in Uruguay

B.1 Dimensions of Opportunity for Uruguay in the 21st Century

1.11 The results of the HOI estimations on the national level for the opportunities listed in Table 1.1b are summarized in Figure 1.5.\textsuperscript{4} In education opportunities, HOI values for completing sixth grade on time and not repeating years in primary and secondary school reveal important challenges regarding quality and equity in the education system. The coverage of completing sixth grade on time could be higher for a country of Uruguay’s level of development, and repetition disproportionately affects relatively disadvantaged groups.\textsuperscript{5} This result is particularly important considering that the explicit national goal of basic obligatory education is to complete ninth grade.

1.12 For Uruguay in the 21st century, not only is school progression important, but also human capital accumulation in the form of skills and abilities transferable to different sectors of the labor market (World Bank, 2007 Investment Climate Survey). HOI indicators in these areas include the ability to speak English (14-18 year-olds) and access to computers and the Internet, which although currently low are expected to increase substantially thanks to Plan Ceibal. HOI results in health are also positive, with high scores for visiting doctors in case of sickness. Results regarding health insurance should have increased as a result of the recent health system reforms. Remaining challenges relate to improved equitable access to preventive health care visits, such as dental check-ups.

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\textsuperscript{4} Information sources are the Widened Household Survey (\textit{Encuesta Ampliada de Hogares}) 2006 and the Household Survey (\textit{Encuesta de Hogares}) 2007. The 2006 survey is used to generate a greater number of estimations since it included special modules on housing, education and health services.

\textsuperscript{5} One interesting result is the rates of repetition and completing sixth grade on time by gender, which show a notably worse result for boys compared to girls. The repetition rate has remained stable over time and has resisted coming down (see Education Note).
In the area of infrastructure and housing, the biggest challenges remain in the area of water sanitation service provision, an indicator focused on both the quality of life and environmental impacts (access to the public network). Access to housing in non-flood prone areas also registered a relatively low HOI, while access to housing in regularized settlements is fairly high despite recent growth in irregular settlements in the country’s main urban areas (Figure 1.5).

**Figure 1.5: Disaggregated HOI, National**

B.2 Geographic Disparities

Reducing geographic disparities in the structure of opportunities in health, education and infrastructure is another important challenge for Uruguay. In education, substantial differences are apparent among departments, with the worst opportunity structure found for finishing sixth grade on time in San José and Artigas and the best in Rocha, Durazno, Colonia and Lavalleja (Figure 1.6). Notably, while one might expect Montevideo and Canelones to have high HOI scores, they are below the average in education, in large measure due to a high level of inequality among circumstance groups. Health access opportunities also show important geographic disparities (Figure 1.7). San José and Artigas register the lowest HOI scores for two of the three dimensions considered, while Montevideo and Canelones have relatively high scores, consistent with their high service coverage. The impact of recent health reforms on geographic coverage is not yet clear.
Figure 1.6: HOI: Geographic Disparities in Education Indicators (by Department)

Source: Authors based on ENHA 2006.

Box 1.2: Opportunity Analysis of Excluded Zone: Irregular Settlements and Flood Prone Areas

Irregular settlements have grown significantly in Uruguay in the past decade, and now account for an estimated 6 percent of the country’s housing, according to data from the ENHA and a study by the National Housing Service (Servicio Nacional de la Vivienda). This could be an underestimate of the total percentage of informal housing. Irregular settlements tend to be comprised of precarious housing and infrastructure and imply geographic barriers to accessing quality education and health services. Similarly, housing located in flood-prone areas—in regularized or irregular settlements—tend to be more precarious than those located in areas not prone to flooding. The following figures estimate HOI for the opportunity of good housing, defined as housing not located in flood-prone areas or irregular settlements. Highly urbanized departments such as Montevideo register the worst HOI scores for irregular settlements, but the best HOI scores regarding housing in areas not prone to flooding.
Figure 1.7: HOI: Geographic Disparities in Health Indicators (by Department)

Source: Authors based on ENHA 2006.

Figure 1.8: Geographic Living Disparities

Source: Authors based on ENHA 2006.

Note: In some departments the number of observations of irregular settlements is very low, meaning these results should be considered only indicative and preliminary.
B.3 Disadvantaged Groups

1.15 An analysis of the relative importance of different circumstances defining groups within the HOI reveals that household income, parental education and department of residence are the most important circumstances related to equitable access to basic goods and services for children 0-16 years old (Table 1.2). This finding confirms the importance of policies for education and cash transfers as well as programs focused on low-income households already under implementation in Uruguay, the targeting of which could be improved even further by employing the equality of opportunity criteria.

1.16 In the case of completing sixth grade on time, gender is the third most important determinant with boys as the disadvantaged group, registering higher rates of drop out and repetition than girls. This is a common phenomenon in developed countries such as the United Kingdom and Australia as well as the English-speaking Caribbean, and is becoming more frequent in Latin America. In turn this suggests a need to revise Millennium Development Goal 3 on gender parity in education, which has traditionally focused on girls (Commonwealth Secretariat and Commonwealth of Learning, 2006 and World Bank, 2008).

1.17 Geographic disparities by department show a high relative importance for equitable access to sanitation and completing sixth grade on time, which confirms the role of regional disparities noted in the previous section. That is, geographic differences are not only because a population with certain characteristics lives there, but also in part due to geographic differences per se.

1.18 Ethnicity in and of itself is not an important determinant of opportunity gaps in Uruguay, unlike other countries in Latin America. However, Afro-Uruguayans tend to register lower levels of income and education and also face labor market discrimination (Bucheli, 2008). As a result, it is important to continue anti-discrimination policies and pay special attention to the school performance of children from Afro-Uruguayan households.

Table 1.2: Ranking of Circumstances According to Relative Importance in the HOI (2006)

<table>
<thead>
<tr>
<th>Circumstance</th>
<th>Access to Sanitation</th>
<th>Completing 6th Grade on Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic location</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Parental education</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Per capita income</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of siblings</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Gender</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Presence of both parents</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Afro descendent</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Authors based on ENHA 2006.
Notes: Preliminary results. Access to sanitation: household is connected to the public network.

B.4 Structure of Opportunities over Time

1.19 Despite beginning the past decade with a high level of opportunities, the stagnation in the structure of opportunities in Uruguay is an important challenge. Continued
improvement in the structure of opportunities is essential to sustainably and steadily reduce poverty and inequality (World Bank, 2007).

1.20 Small improvements are apparent in the HOI for equitable access to electricity, water and sanitation between 1996 and 2006, contrasting with stagnation for HOI education and health scores (Figure 1.9).\(^6\) Other countries in the region have registered significant improvements in the aggregate HOI over a similar period (World Bank, 2009).

![Figure 1.9: Evolution of HOI in Uruguay and Latin America, 1996-2006](image)

Source: Authors based on ENHA 2006 and 1996 National Census.

Note: The comparison used the 1996 census rather than the 1996 ENHA as the latter did not include rural areas.

C. Public Policy Options and Equality of Opportunity in Uruguay: The Equity Plan and Policy Options to Improve the Structure of Opportunities

C.1 Equity Plan and Equality of Opportunities

1.21 Social policies oriented to reduce inequality and poverty in Uruguay are based on the national Equity Plan, under implementation since the start of 2008.\(^7\) The plan includes an assistance element to address the basic needs of those living in extreme poverty as well as children and the elderly, and elements to promote educational, labor and economic opportunities and greater social inclusion.

1.22 From the point of view of leveling the playing field and making opportunities more equal, the key components of the plan include the Family Transfers program, education policies for infants and adolescents, and specific interventions within other programs intended to reduce the gaps in basic services for disadvantaged groups and between geographic areas.

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\(^6\) This uses data from the 1996 census and the 2006 ENHA, which are not strictly compatible, meaning the comparison is merely indicative.

\(^7\) In the words of former President Dr. Tabaré Vázquez in the prologue of the plan’s document: “…In a few weeks we will begin implementation of Equity Plan’s principal components that bring into being and deepened the strategy to overcome poverty and reduce social inequality as a condition for creating an integrated and inclusive country.” [www.mides.gub.uy](http://www.mides.gub.uy).
1.23 One of the basic tools to improve monitoring and evaluation as well as targeting under the Equity Plan is the Integrated Social Information System (**Sistema Integrado de Información del Área Social**—SIIAS). This system is currently under design with the support of the World Bank and will provide harmonized data on social program beneficiaries and social indicators (see Public Sector Policy Note). The system can be easily expanded to include key equality of opportunity indicators.

### C.2. Family Transfers and Equality of Opportunity

1.24 Strengthening the Family Transfers program as the main source of income transfers to households is another of the achievements of the Equity Plan (see Social Protection Policy Note for more information on the origins and characteristics of this program). Family Transfers provides a cash transfer for every child in the beneficiary household, conditioned on primary or secondary school attendance and health checkups. This type of conditional cash transfer is inspired by the recent experiences of Uruguay and other countries in the region (**Mexico’s Oportunidades, Peru’s Juntos, Chile Solidario** and Brazil’s Bolsa Familiar, among others). Conditional transfers can have an important impact in reducing current poverty, but also the poverty of the next generation through household investments in the health and education of children (World Bank, 2009, Conditional Cash Transfers).

1.25 The Social Protection Policy Note indicates that the program’s most important challenge is to increase effective coverage to reach the infant population living in situations of poverty or vulnerability. The equality of opportunity focus can be useful to improve the design of the Family Transfer program, in two ways. First, measuring access to education and health goods and services with the HOI can help refine targeting and coverage mechanisms for disadvantaged populations. Specifically, the program could offer differentiated transfer amounts to provide greater incentives to finish secondary school. This theme is also discussed in the Education Policy Note. The program could provide links to special education programs for population groups or geographic regions where completing primary or secondary school on time registers a low HOI score.

1.26 As well, an equality of opportunity focus can contribute to making program conditionality more effective in guaranteeing the highest possible investment in human capital as a result of the transfer. Mexico’s **Oportunidades** program has experimented with refining the mechanisms of secondary school conditional transfers to make them more appropriate to the conduct and attitudes of children above the age of 12. In the case of Uruguay, it would be important to evaluate if the school attendance conditionality is truly effective between sixth and

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9 The World Bank (2007) estimated that a significant impact of the Citizen Income program—cash transfer component of the National Social Emergency Attention Program (**Plan de Atención Nacional a la Emergencia Social**—PANES) that closed in December 2007—was the reduction of extreme poverty, but not of moderate poverty. Transfers were estimated to have played an important social protection role during the economic recovery and could have helped preserve household investment in human capital. However, family transfers conditioned explicitly on household investments in health and education are more effective for the human capital investment of children and poverty reduction in future generations.
ninth grade (the end of obligatory schooling). Another important element to consider is clear incentives to avoid grade repetition.

1.27 Experience internationally, and in Uruguay with the implementation of PANES, highlights the challenge of exiting poverty with help from social assistance programs. To exit poverty and assistance programs, internal actions are required within the programs, but also with complementary services outside the program’s jurisdiction. The poverty exit agenda is totally consistent with the dynamic expansion of equality of opportunities and the sustainability of programs it promotes.

1.28 Existing experiences that seek to incorporate the exit agenda into program design can be classified into two types:

- Internal structural improvements: Conditional transfer programs include conditions related to the accumulation of human capital that seek to break the inter-generational transmission of poverty. Program effectiveness can be increased with: (i) reforms to some basic parameters of the transfers, for example time limits per household in Chile (two years), the US (five years) and Mexico (7-9 years); and (ii) expanding incentives to invest in human capital. Another example of changes in the parameters is to gradually reduce the amount of the monetary benefit over time.

- Complementary services: Establish links with complementary services that help participants overcome obstacles, such as human capital accumulation to improve productivity and the chance to find a job. In particular, links could be created with: (i) other social assistance services and social workers who accompany the most vulnerable families; and (ii) employment services and other activities to increase productivity. One interesting example along these lines is the Programa Puente (“Bridge Program”) within Chile Solidario.

C.3 Orienting Infant and Adolescent Education Policy

1.29 Uruguay’s education system has practically universal coverage in primary and basic secondary education (up to ninth grade). As HOI results for completing sixth grade on time indicate, and in line with the Equity Plan, the emphasis in the offer of education opportunities should be in improving the quality of public education and reducing repetition and secondary school drop out rates. These themes are discussed in more detail in the Education Policy Note.

1.30 To address grade repetition and drop out rates in primary and secondary school, it is important to identify the most vulnerable groups as well as the most vulnerable schools, and to design programs specifically for those populations. In the case of vulnerable social groups, the education of the parents is very important, and tends to be lower in low-income households and Afro-Uruguayan households. Gender is also important, with boys at a clear disadvantage.

1.31 From the perspective of opportunities, the education system should help develop certain critical skills to join the labor market on more equal terms. As noted in the first section, the ability to speak English and manage computers and information technology is concentrated

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10 Starting in January 2009, MIDES launched a pilot Plan Puentes (“Bridges Plan”) to assist adolescents and adults above 16 years old with only a primary education to reintegrate into secondary education.
among more advantaged groups, specifically children in medium-high income households in 2006. The government began *Plan Ceibal* in 2007 with the ambitious premise of offering a computer to every child and their teachers, utilizing schools to distribute laptops to achieve this goal. *Plan Ceibal* has successfully and quickly broadened access to computers and Internet in schools.

1.32 Currently *Plan Ceibal* is seeking to expand to secondary education, a priority that is well worth supporting to improve equality of opportunity at the secondary level and ensure the relevance of skills and learning to the demands of the labor market. As well, public infrastructure is needed to expand equality of opportunity in Internet access beyond the school (households, Internet cafes, public libraries) to make the most of the positive impact of computing access.
CHAPTER 2.

URUGUAY EDUCATION SECTOR

Principal Developments in the Education Sector

2.1 Coverage: Coverage of the Uruguayan education system is good compared to Latin American standards. Currently the country has almost universal coverage in pre-primary education for five year-olds,\(^{11}\) and universal coverage in primary education (grades 1 to 6) and the first cycle of secondary school. Gross enrollment rates have risen steadily, with rates over 100 percent in 2008 for primary and the first cycle of secondary education (Figure 2.1).

Figure 2.1: Gross Enrollment Rates in Uruguay (2000 – 2008)

![Graph showing gross enrollment rates from 2000 to 2008 for pre-school, primary, first cycle secondary, and second cycle secondary education.]


2.2 Gross enrollment rates above 100 percent is not a guarantee that all students are actually in school, as these rates include both students at the appropriate age for their grade as well as over-age students. The net enrollment rate\(^ {12}\) is a better indicator for education coverage of the population who, according to their age, should be at a corresponding education level. Despite having primary and secondary enrollment rates above the Latin American average (93 percent and 59 percent, respectively), Uruguay has net secondary enrollment rates below Argentina and Brazil, as well as OECD countries (Figure 2.2).

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\(^ {11}\) Enrollment of five year-olds is nearly 100 percent, while enrollment for four year-olds is about 75 percent. The Government aims to achieve universal coverage of four year-olds and expand coverage to three year-olds.

\(^ {12}\) The gross enrollment rate compares the total number of enrolled students with the percentage of the school-age population of that grade level. The net enrollment rate considers in the numerator only students of the age for a given grade who are actually enrolled at that level.
2.3 **Equity in access.** Secondary enrollment rates hide important differences among students with different socioeconomic profiles. Despite gains since the 1980s, in 2005 the net enrollment rates of the bottom and top socioeconomic quintiles differed by 37 percentage points.

2.4 About half of the Uruguayans who begin secondary school drop out before graduation, and the majority of drop outs come from low-income households. The high drop out rate combined with the growing number of youth who are not enrolled or in the labor market is worrying. Although this topic requires more investigation, these numbers appear to indicate that the transition from the school to the labor market can be particularly difficult for some sectors of the population, in particular for those who drop out of the education system, a problem that could call for government intervention.

2.5 **Education quality and equity of learning outcomes.** Student results in the national evaluation system (applied regularly in 1996, 1999, 2002, and 2005, with another round completed in 2009) indicate a rise in average qualifications. This increase is much more marked among students from low-income households, and thus indicates that the learning outcome gap between low and high-income houses has narrowed.

2.6 In spite of this reduction, the qualification gap between privileged and underprivileged households continued up to the 2002 evaluation. In that year, 88 percent of primary students from “favorable” households passed the language test, while only 55 percent of students from “very unfavorable” households did. The results for mathematics were 72 and 36 percent, respectively. In 1999, only 39 percent of secondary students attending schools in a low socioeconomic environment had a high grade on the mathematics test, compared to 85 percent from schools in a high socioeconomic environment. In the language tests, the corresponding grades were 46 and 87 percent.
2.7 The 2005 evaluation results, which are not directly comparable to earlier years,\textsuperscript{13} indicate a plateau in test outcomes, especially among children from disadvantaged backgrounds. Improving learning outcomes, especially for students from disadvantaged households, continues to be a challenge for Uruguay.

2.8 The national evaluations are useful for monitoring changing performance over time. International evaluations allow for comparing students with their peers in other countries. Uruguay participated in the 2003 and 2006\textsuperscript{14} Program for International Student Assessment (PISA) in language, mathematics and science for 15 year-old students. The 2006 results indicate that although Uruguay had higher results than other Latin American countries that participated in the tests (apart from Chile), student performance was below the level achieved by OECD countries, with whom Uruguay competes in international markets. Notably, Uruguay’s results show a high standard deviation (even above the level expected by its income inequality), an issue that will be addressed later in this note (Figure 2.3).

![Figure 2.3: Average and Standard Deviation in PISA Reading 2006, By Country](image)

2.9 **Education investment:** In 2006, public spending on education in Uruguay reached 3.3 percent of GDP, considerably below the Latin American average of 4.3 percent, and even further below the 5.1 percent of GDP registered in middle income Latin American countries (Figure 2.4).

\textsuperscript{13} This is due to a change in methodology from using item response theory in the 2005 evaluation.

\textsuperscript{14} The country also participated in the Latin American evaluations of LLECE and SERCE, as well as PISA 2009.
2.10 **Plan Ceibal**: Uruguay has achieved the world’s highest application of the One Laptop per Child initiative. Through *Plan Ceibal*, the country has distributed personal computers to all students in public primary education (380,000 students) and provided connectivity infrastructure to primary schools (80 percent of schools now have at least one access point, covering 95 percent of public primary school students). Authorities intend to continue expanding to public secondary schools. As well, studies are underway to evaluate the impact of the plan on social inclusion and student learning, which should result in recommendations on how to improve the plan’s implementation.

**Main Issues in the Education Sector**

2.11 **Education continues to be a valuable investment for an individual, especially higher education.** Rates of return permit the calculation of the annual percentage increase in income for studying one year at a given education level. Annex Table A2.1.1 presents the estimates of private returns for the different education levels from 1991 to 2008. Looking at the years 1999 and 2008, returns have remained relatively constant, apart from the returns to complete university education, which have doubled.

2.12 Rates of return for 2008 were examined in more detail to test the hypothesis that once the first cycle of secondary school is finished, the only appreciable returns are for completing university, and as such, those who do not expect to study for eight more years—either due to a lack of vocation for studying or for the opportunity cost it represents—will not do so.\(^\text{15}\) However, as Annex Table A2.1.1 shows, return rates do not follow this storyline, but rather show the opposite: higher returns are still found for remaining in the education system instead of entering the labor market, where returns to work experience are only 5 percent per year.

\(^{15}\) This could explain the observed drop out rate in the second cycle of secondary school.
2.13 It is also notable that the technological bachelor’s degree (BT) from the Universidad del Trabajo del Uruguay (UTU) and the bachelor’s degree from secondary school (BS) have similar rates of return. Returns for an incomplete BT are 5.3 percent compared to 6.8 percent for an incomplete BS, while the returns are 23.7 percent for a completed BT and 27.6 percent for a completed BS. These similar rates indicate a possible advantage for the BT, considering that those students generally come from more disadvantaged households. Hence, a BT may offer greater value added. This evidence, along with other arguments discussed below, could justify the recommendation that BT should be expanded as an alternative to general secondary education, but focused on general cognitive abilities.

2.14 Comparing salaries by education level with Chile indicates that Uruguay’s salary profile is relatively flat (Sapelli, 2009). This could indicate that salaries for less skilled jobs could be high in relative terms in Uruguay, and that salaries for more qualified jobs are relatively low. It remains unclear whether the flat salary profile in Uruguay is a consequence of the decoupling of the education system with the necessities of the labor market (that is, it reflects productivity differences) or if it depends on differences in the regulation and operation of the labor market. A labor market with a higher union influence, notably the public sector, could explain the flat salary profile: a high minimum salary followed by a salary evolution that has little relationship to experience and merit. If this were to be the explanation, it would also help explain why skilled workers emigrate from Uruguay.

2.15 The phenomenon of youth who neither study nor work: education system or labor market? Relatively high salaries compared to productivity among unskilled workers, as is the case in Uruguay, could be behind the phenomenon of young people who neither work nor study, which is considered by some to be a potentially explosive social problem. These youth have left school to work, but have not found a job and have abandoned the search. This could be the result of skill-biased technological change, identified as the cause of many labor market trends globally. For example, lower unskilled employment in Europe is attributed to technology shocks, as the reduced demand for unskilled workers in a relatively rigid labor market (including for salaries) results in higher unemployment. In the US, which has a more flexible labor market, the same technology shock led not to higher unemployment but to lower salaries, increasing income inequality. In this case, the hypothesis is that the Uruguayan labor market is closer to the European model than to the US. The percentage of youth who neither work nor study is around 24 percent of those between 17 and 24 years old in Uruguay in 2008 (Figure 2.5).  

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16 In Italy this percentage is about 7 percent, in Spain 4 percent, and Portugal 5 percent. South American countries have rates similar to Uruguay.
2.16 **The Uruguayan education system delivers a low level of abilities, especially for more disadvantaged students.** To interpret the PISA results, it is important to note that performance levels are determined by the OECD and indicate the ability to undertake progressively complex tasks. The OECD determines that level 2 is the minimum necessary to function in the labor market. For example, a reading level “below 1” corresponds to an individual who may be able to read, but cannot use reading to learn. Some 42 percent of Uruguayan students ranked below level 2 in science, 47 percent in mathematics and 46 percent in reading (Annex Table A2.1.3). Thus nearly half of the students do not have the minimum level of competence in reading or mathematics, and a third of Uruguayan 15 year-olds don’t reach level 2 in either one. In Spain and Poland\(^{17}\) between a fifth and a half of the population do not reach minimum levels, while in Uruguay the rate is almost double (between two-fifths and half of the population). This is a challenge that Uruguay should address.

2.17 What explains these performance differences? Based on the estimates of Bellei, Valenzuela, Osses and Sevilla (2009), this study decomposes Uruguayan outcomes compared to Spain and Poland in the mathematics PISA (Table 2.1). The analysis breaks down the average test result difference attributable to different characteristics between countries (for example, schools with more or less educational resources), and the test result difference attributable to how those characteristics are utilized (for example, more or less efficiency in how educational resources are used).

\(^{17}\) Poland was chosen for comparison because it has similar economic development levels to Uruguay and achieved, along with Chile and Korea, the highest advances in PISA between 2000 and 2006. Spain was chosen as a comparator as an OECD country that shares relevant cultural aspects with Uruguay.
Table 2.1: Decomposition of the Test Result Differences between Uruguay and Spain-Poland, PISA Mathematics 2006

<table>
<thead>
<tr>
<th></th>
<th>Spain</th>
<th>Poland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total difference PISA mathematics with Uruguay</td>
<td>53.2</td>
<td>68.6</td>
</tr>
<tr>
<td>Explained by differences in characteristics</td>
<td>9.4</td>
<td>-19.6</td>
</tr>
<tr>
<td>Explained by differences in how those characteristics are utilized</td>
<td>43.8</td>
<td>103.2</td>
</tr>
<tr>
<td>Proportion explained by differences in characteristics</td>
<td>17.7%</td>
<td>-8.2%</td>
</tr>
<tr>
<td>Proportion explained by differences in how those characteristics are utilized</td>
<td>82.3%</td>
<td>108.2%</td>
</tr>
</tbody>
</table>

Source: Own elaboration based on Bellei, Valenzuela, Osses and Sevilla (2009).

2.18 The decomposition indicates that the main source of testing result differences between Uruguay and the other countries has to do with the efficiency of the education system, that is, how characteristics are transformed into student learning. As such, Uruguay appears to have less ability to “transform” the conditions and characteristics of its schools into the learning outcomes of its students.

2.19 At the same time, as highlighted in Figure 2.3 above, PISA test results show a high standard deviation, indicating a high degree of inequality in education outcomes among 15 year-old Uruguayan students. Comparing average results and standard deviations on the 2006 PISA language test with Spain, Poland and Chile while controlling for socioeconomic status, Uruguay has a much higher variance in outcomes in all income deciles than the other countries (Annex Table A2.1.4). This clearly illustrates that uneven learning achievement is a transversal problem affecting all income groups in Uruguay.

2.20 These results also point to a learning inequity problem, as the results gap in Uruguay between the highest and lowest deciles in language (1.48), mathematics (1.40) and sciences (1.27) is higher than in Spain (about 1.21 on average), Poland (1.26) and Chile (1.38).

Policy Options

2.21 Uruguay has achieved adequate levels of average education attainment, but students learn comparatively little and learning results are highly unequal. The education system faces evident efficiency problems in converting available resources at the school, teacher, system, student and family levels into learning.

2.22 The central challenge for Uruguay is to address the learning deficits of its students. Increasing cognitive abilities should be at the center of Uruguay’s growth strategy. Studies have shown that cognitive abilities are more valuable for those with less education, meaning this strategy would also help diminish learning inequality and improve income distribution.

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18 Annex Tables A5 and A6 show the results for PISA mathematics and science.
19 Hanushek and Woessman (2008) demonstrate that if cognitive ability test results are included in economic growth regressions, years of schooling loses significance. This indicates that the population’s stock of cognitive ability, and not the years of schooling, is important for growth. Years of education are only relevant as a function of how much they increase the stock of cognitive abilities.
Policy Options for Students

2.23 Achieve universal pre-primary education for all 4 year-old children, expand coverage to 3 year-olds, and ensure pre-primary education quality. Several recent studies (Carneiro and Heckman 2003, Cunha et al 2006) have demonstrated that the process of human capital formation should start early, be of high quality, and be followed by similar interventions to sustain impact. Little can be done at the secondary and tertiary levels if the investment in human capital started late and was not of high quality.

2.24 A World Bank study (2007) estimated the costs of these alternatives and their probable impacts based on a literature review of international experiences. Universal pre-primary education for all 4 year-olds implies an annual cost of US$1.5 million—a relatively low fiscal impact—and it would likely result in an extra 1.1 years of education on average for 16 year-olds. A steady quality increase to achieve the standards of the US by 2015 would represent an annual cost of US$92.7 million; it would likely improve learning outcomes, increase the number of years of education and improve labor market insertion indicators. Its fiscal impact would be substantial. As a complementary measure, the country could expand the coverage of pre-primary education to 3 year-olds.

Policy Options at the Level of Schools, Institutions and Teachers

2.25 Continue the policy of expanding Full Time schools to students from disadvantaged backgrounds. The goal should be to reach half of enrolled students from disadvantaged backgrounds, estimated at 100,000. The annual cost of achieving this goal would be about US$9.1 million. This would have an estimated average impact on national evaluations of 0.3 points in mathematics and 0.2 points in language, which would in turn result in better labor market outcomes for these students.

2.26 Combine greater accountability and autonomy for schools as a means of achieving better learning outcomes. International evidence suggests that an institutional structure that introduces accountability via publicly disclosed external tests (for example, exit exams at different education levels) generates appropriate incentives to increase the performance of the education system. Making the results public allows for the evaluation of the education quality of different schools and the performance of individual students. Uruguay could implement an

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20 The World Bank report (2007) found no evidence for impacts of policies related to equipment and delivery of educational materials.

21 As of December 2009 the country has the capacity to offer 37,600 students places in Full Time schools.

22 This is consistent with promoting greater social participation—in particular by parents—in the education system.
exit exam from the first cycle of secondary school\textsuperscript{23} to evaluate the knowledge level of 15 year-olds and validate whether they are prepared to enter the labor market.\textsuperscript{24}

2.27 Uruguay does not start from scratch in this regard. The country already has a national evaluation system that can be expanded to serve as the base for an accountability system. For example, the system evaluates 6th grade students every three years via a student sampling. This system could transit to an annual evaluation, and possibly over the long term to include students from different grades (a second level could be to evaluate at the end of the first cycle of secondary and a third could be for the last year of secondary). All students, not just a sample, should take the exam. As well, the current exams have no consequence (no prize or punishment), a characteristic that could be modified. Exam results are not made public and the information is not passed on to parents, but only to school authorities. In many education systems, monitoring and results improvement monitoring have been separated, to avoid conflicts of interest within the institutions. In Uruguay, these roles can be filled by the National Public Education Administration (\textit{Administración Nacional de Educación Pública}—ANEP) (helping the schools) and the ministry (evaluating performance).

2.28 The autonomy of school operations should be another axis of reform. This can take different forms, all of which move toward giving schools more autonomous decision-making authority. In particular, autonomy in personnel decisions (teachers) and in processes can benefit student learning. This is particularly true if combined with national exit exams. Exit exams can help align the objectives of students and schools (and the overall system), as they highlight the aspects of autonomous management that leads to successful exam results. International experience suggests that decentralization (autonomy) works if accompanied by accountability mechanisms.\textsuperscript{25}

2.29 With the aim of quantifying the impacts of these reforms, and following Woessman et al (2007), Table 2.2 predicts the impact of the suggested reforms on PISA science and mathematics results.

\textsuperscript{23} Bishop (2006) describes the characteristics that a system of this type should have: the external exam should be based on the curriculum, as opposed to an exam that only measures basic abilities; a minimum level of knowledge should be defined by external criteria and not criteria internal to the schools; it should measure the entire possible range of knowledge levels; and it should have consequences for the student and cover a large proportion of the student population. This implies that the exam should take place at a point during schooling when the drop out rate is not high, as otherwise a significant proportion of students would not be evaluated. This reinforces the idea that the exam should be at the end of the basic cycle of secondary school.

\textsuperscript{24} The problem with accountability systems is that they can lead to strategic behavior on the part of the schools that can work against poorly performing students. For example, schools could try to exclude students having difficulties learning. Such a system requires measures to detect and prevent these types of behaviors.

\textsuperscript{25} These two axes complement one another by clearly determining which educational objectives are tested on the exit exams, and leave schools the ability to decide how to achieve those objectives.
Table 2.2: Predicted Impact of the Proposed Reforms on Science and Mathematics Test Results

<table>
<thead>
<tr>
<th>Reform Measures</th>
<th>Exit Exam</th>
<th>Contracting Autonomy</th>
<th>% Private Schools</th>
<th>Public Financing</th>
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<tr>
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<td>OECD Average</td>
<td>56% Science, 65% Mathematics</td>
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<th>Predicted Impacts</th>
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Source: (Author’s Estimations)

2.30 Applying the exit exam to the same percentage of students as the OECD average—56 percent in science and 65 percent in mathematics—would increase science test scores by 7.7 points on average and 7.2 points in mathematics. An increase in contracting autonomy for schools from 15 percent to 41 percent would raise results by 9 points on average in mathematics and 6 points in science. Clearly, these reforms would have important impacts on teaching quality in Uruguay.

2.31 And the teachers? Barber et al. in their 2007 report concluded that the key to education system excellence is the teacher, who in the end is the one who can change what happens inside the classroom. The report identifies teacher selection as critical for success. This is a complex task. First, making an effective teacher selection requires observing them at work in the classroom. Second, a good selection system should finish with a period of testing, in which the best remain and those who do not perform as well receive training or eventually are released if their performance does not improve. In many countries this is not possible because teacher organizations will not permit it (teachers cannot be removed). In this case, the system has no mechanism to “repair mistakes.”

2.32 Just as important as facilitating departures from the teaching profession is facilitating the entry of more qualified teachers. Obstacles to becoming a teacher should be removed, and alternative pathways should be implemented for people already in a different profession. Identifying and keeping good teachers can generate savings through larger class size (as is the case in England).
case in South Korea and Singapore, for example). Class size has very little impact on learning, while the quality of the teacher is of primary importance.

2.33 A second theme that Barber et al identify as key is the need for a support network for schools and students with weak performance, to reduce learning inequalities. As the study notes, “High performance education systems effectively intervene at the school level and identify those that are not performing satisfactorily with the objective of raising performance standards. Systems of excellence intervene at the level of each student and develop processes and structures within the school capable of identifying when a student is beginning to fall behind, intervening to improve the child’s performance.” These types of reforms have faced opposition in the past, as some believed their main impact was to stigmatize poorly performing schools and students.

2.34 Implementing policies to identify at-risk schools and students would help address the problem of the high number of youth who neither work nor study. The objective would be to keep them in the school system as long as possible. Identifying students at risk of dropping out, possibly combined with some type of cash transfer conditioned on attendance, could help reduce drop out rates.

2.35 Continue with the development of education applications for Plan Ceibal and evaluate their impact. Pilot applications are being developed throughout the country to complement Plan Ceibal (for example, on-line learning evaluations and cartoon-type education programs) and to evaluate the plan, both in terms of education impact and on social integration. Continued support for developing and evaluating these pilot applications is crucial to identify those that could potentially be implemented in all primary schools in the country. Evaluating the educational and social integration results of Plan Ceibal is also important, to identify ways to improve its impact.

Policy Options for the Curriculum: Vocational Education

2.36 Vocational education does not currently have a clear future in the world. The information revolution of the 1980s has dramatically changed the demand for skills. Work time dedicated to routine cognitive and manual activities has declined significantly, while time dedicated to analytic and non-routine cognitive activities has increased. This shift has led to a strong rise in the demand for those with high cognitive and non-cognitive skills, which are by definition general skills, to the detriment of more focused and specific skills requiring lower cognitive skills. As well, the focused skills required in the labor market change more rapidly. Thus, while focused skills could still be in demand for the next few years, this demand will rapidly decrease and only general cognitive skills will allow for easy professional conversion when this occurs.

2.37 The evidence presented above on rates of return for the technology bachelor degrees shows that these are useful for students from lower socioeconomic backgrounds, providing skills that generate greater future returns, but at the expense of more general skills, according to PISA scores. This is a dangerous recipe, as the current returns are sufficiently attractive to suggest that reform is not needed and that students should be given incentives to enter the technological schools. However the instability in returns to specific skills does not guarantee that these returns will remain steady over time. The technology schools in their current state could generate a
cohort of graduates with skills that will be obsolete in the future, leaving them very vulnerable to technology shocks. As well, opting to provide general skills to children of higher socioeconomic backgrounds while those of poorer backgrounds receive specific skills would seem to perpetuate (over the life cycle) the original inequality. Hence, the technology schools should focus on providing students from less advantaged socioeconomic backgrounds with more general skills that provide a degree of labor market flexibility.

2.38 Educational experts are currently in consensus on the difficulty of vocational education to stay up to date on which technical careers are in demand and which technical skills students should master. The need for great flexibility runs up against the rigid operations of strongly centralized systems. These systems would benefit from greater flexibility and feedback mechanisms, which could be part of the autonomy and accountability systems discussed above.
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<th>KEY ISSUE</th>
<th>SHORT-TERM POLICY OPTIONS</th>
<th>MEDIUM-TERM POLICY OPTIONS</th>
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<td>Improve learning quality and reduce inequality in outcomes.</td>
<td>At the Student Level:&lt;br&gt;• Provide universal pre-primary education for 4 year-olds and expand coverage to 3 year-olds.</td>
<td>At the Student Level:&lt;br&gt;• Ensure the quality of pre-primary education.</td>
<td>• Universal pre-primary education.</td>
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<td>At the Level of Schools, Institutions and Teachers:&lt;br&gt;(a) Primary Education:&lt;br&gt;• Continue expanding Full Time schools to student populations in disadvantaged environments.</td>
<td>At the Level of Schools, Institutions and Teachers:&lt;br&gt;(a) Primary Education:&lt;br&gt;• Continue expanding Full Time schools to student populations in disadvantaged environments.</td>
<td>• Quality accreditation institutionalized.</td>
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<td>• Continue developing educational applications for Plan Ceibal and evaluate their impact.</td>
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<td>• 100,000 students in Full Time schools.</td>
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<td>(b) Primary and Secondary Education:&lt;br&gt;• Eliminate obstacles to becoming a teacher.</td>
<td>(b) Primary and Secondary Education:&lt;br&gt;• Introduce greater accountability.</td>
<td>• Educational applications developed for Plan Ceibal.</td>
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<td>• Introduce greater school autonomy.</td>
<td>• Easier entrance of qualified people into the teaching profession.</td>
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<td>• Improve systems for selecting and evaluating teachers.</td>
<td>• Student learning evaluations for all students, with results disseminated to schools and parents.</td>
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<td>• Develop processes and structures in the schools capable of identifying when a student is falling behind and intervening to improve performance.</td>
<td>• Autonomy in resource management for the schools.</td>
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<td>• Teacher evaluation system in operation.</td>
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<td>• Detection system for students at risk of dropping out developed and implemented at the school level.</td>
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<td>Greater emphasis on general abilities in vocational education.</td>
<td>Secondary Education:&lt;br&gt;• Use the technology schools to provide a greater general skills education to students from lower socioeconomic backgrounds, to improve their flexibility in the labor market.</td>
<td></td>
<td>• Draw up a profile of technology school graduates and identify general skills students should have by graduation.</td>
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REFERENCES


Sapelli, C., 2009 Returnos a la educación y dotación de habilidades cognitivas en Uruguay: Diagnóstico y algunas recomendaciones de política para el sector educación, Mimeo.


## Table A2.1.1: Yearly Evolution of Private Return Rates to Education (Uruguay 1991-2008)

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<td>0.0438***</td>
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Standard errors in parenthesis

*** p<0.01, ** p<0.05, * p<0.1

Source: Based on Sapelli (2009).
Table A2.1.2: Decomposition of Rates of Return to Education in Uruguay, 2008

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<td>Completed Pre-School</td>
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Robust standard errors in parenthesis

*** p<0.01, ** p<0.05, * p<0.1

Source: Sapelli (2009).
Table A2.1.3: PISA 2006 Results

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<th>Country</th>
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<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
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<td>23.4%</td>
<td>18.0%</td>
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<tr>
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<table>
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<td>24.3%</td>
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<table>
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<th>Level 3</th>
<th>Level 4</th>
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Source: Sapelli (2009).

Table A2.1.4: International Comparison of PISA 2006 Reading Test Results, by Decile

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<th></th>
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<td>89.9*</td>
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<td>486.3*</td>
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<td>113.1</td>
<td>8</td>
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<td>519.7*</td>
<td>84.5*</td>
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<td>89.4*</td>
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</table>

Source: Sapelli (2009). * = Average or standard deviation significantly different from Uruguay.
### Table A2.1.5: International Comparison of PISA 2006 Mathematics Test Results, by Decile

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<th>Chile Average</th>
<th>Chile Standard Dev.</th>
<th>Spain Average</th>
<th>Spain Standard Dev.</th>
<th>Poland Average</th>
<th>Poland Standard Dev.</th>
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*Source: Sapelli (2009). * = Average or standard deviation significantly different from Uruguay.

### Table A2.1.6: International Comparison of PISA 2006 Science Test Results, by Decile

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<th>Chile Standard Dev.</th>
<th>Spain Average</th>
<th>Spain Standard Dev.</th>
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*Source: Sapelli (2009). * = Average or standard deviation significantly different from Uruguay.
CHAPTER 3.
SOCIAL PROTECTION SYSTEM IN URUGUAY

Introduction

3.1 Uruguay has one of the most developed social protection systems in Latin America, comparable in some aspects to OECD countries, but it also faces serious challenges. The Uruguayan social protection system is one of the oldest and most developed of the region, created more than a century ago. The principal policy of the sector has been (and still is) the pension system, but other programs were created more recently to cover various social risks and population groups. Uruguay has demographic indicators similar to more developed countries, and its pension system has comparable coverage and expenditure indicators. Nonetheless, some areas of the social protection system face more complex challenges requiring the close attention of the authorities.

3.2 The social protection system includes more traditional social security programs, such as pensions, contributive family transfers, and unemployment insurance, and more recent and generally non-contributive schemes. Apart from the pension system, since the first half of the 20th century Uruguay has had legislation in place on unemployment insurance and family transfers, although its effective implementation has been progressive and more recent. The majority of these programs (originally fragmented and organized by economic sector) have been contributive in character, with the objective of offering social protection to workers and their families from different economic sectors. Although some smaller non-contributive benefit schemes already existed, it was only in the final years of the past century that authorities began to design and implement more broadly policies specifically oriented to informal, unemployed or inactive population groups, partly in response to the deterioration of the job market in those years.

3.3 The recent development of a non-contributive protection scheme (fundamentally via transfer programs for families and children) has begun to respond to one of the most serious problems that Uruguayan social protection system faced toward the end of the 20th century. Since the creation of a program of family transfers for low-income households in 1999, Uruguay has developed an active protection policy oriented towards those without formal employment, expanding the coverage of traditional programs and implementing new schemes. Between 1999 and 2009, nearly 250,000 children—an increase from about a third to more than half of the population under 18—were incorporated into the family transfer program, with a greater focus on the poorest groups.

3.4 The reforms contributed to improving the living conditions of the population, in a context of sustained economic growth. Between 2004 and 2008 the poverty level fell by nearly 40 percent and the extreme poverty rate dropped by more than 60 percent, while unemployment fell by nearly half. These improvements in basic living condition indicators reflect the generalized improvement in the economic and social situation in Uruguay, which the family and children protection programs (Ingreso Ciudadano, Tarjeta Alimentaria and Asignaciones Familiares) contributed to directly.
3.5 The principal challenges for the social protection system in the short and medium term center around the implementation of the recent reforms and the formulation of a more effective unemployment policy. In recent years, important reforms have been adopted permitting access to social protection benefits for groups of elderly, children and families who had previously been excluded. These reforms have been very important and their implementation is still underway. On the other hand, the social protection system of unemployment insurance for workers does not appear effective: less than 5 percent of unemployed workers receive a benefit, and employment programs promoting reinsertion into the labor market have had little impact.

**Context, recent reforms and principal challenges**

3.6 Social protection policies are a central element in Uruguay’s development strategy. Uruguay has one of the strongest traditions in Latin America of promoting well-being. Since the beginning of the 20th century, Uruguayan society has built a strong consensus around the responsibility of the state to promote social equity and reduce poverty. As a result of this vision, Uruguay has evolved into one of the countries with the greatest equity and lowest poverty in the region, in part thanks to the active role of public social policy.

3.7 Successive economic crises at the end of the past century weakened the social model in Uruguay. Extreme poverty was practically non-existent until the end of the 1990s, but the impact of the crisis in 2002 produced a sharp increase, along with a rise in the number of people living below the overall poverty line. By 2003, poverty (30 percent of the population) and extreme poverty were at record levels. Income distribution was becoming increasingly less equal since the beginning of the 1990s, although this tendency appears to have reversed in 2008 (Figure 3.1).

![Figure 3.1: Poverty and Income Distribution Indicators, Uruguay 1989-2008](source: CEDLAS and INE (2009))

3.8 The economic and social situation improved rapidly after the crisis, although not in all aspects. Starting in 2004, both poverty and extreme poverty began a clear downward
tendency, and in 2008 both had reached the lows of the previous decade (17 percent for poverty, 1.5 percent for extreme poverty). This improvement occurred in parallel with improvements in the labor market and other indicators. Nonetheless, it is noteworthy that the Gini index for income distribution has remained relatively high.

3.9 In the labor market, overall tendencies were similar to poverty indicators, but labor inequality worsened. The unemployment rate, which had increased slowly over the 1990s, rose sharply as a result of the crisis to reach 17 percent of the labor force in 2002, before descending to reach in 2008 the same level as 20 years earlier. Among the employed, the labor market deterioration had less of an impact during the 1990s on labor informality: the percentage of workers not contributing to social security increased only 3 percentage points between 1989 and 2002. In contrast, the economic recuperation in recent years was accompanied by a strong improvement in this indicator, falling by half (almost 15 percentage points) between 2004 and 2008. However, this improvement was not uniform. While the informality rate of the wealthiest quintile of employed workers fell from 38 percent in 1991 to 13 percent in 2008, the informality rate of the poorest quintile rose from 59 percent to 65 percent (peaking at 80 percent in 2004) (Figure 3.2).

Figure 3.2: Labor Market Indicators, Uruguay 1989-2008

![Figure 3.2: Labor Market Indicators, Uruguay 1989-2008](image)

*Note: Informality refers to the percentage of the employed population not contributing to social security.*

*Source: CEDLAS, INE and Rofman et al. (2008).*

3.10 Authorities have implemented different initiatives related to the social protection system. The policies adopted had important impacts on several programs in the sector, including the contributive and non-contributive schemes. In the first group, laws passed in 2008 on the pension system, modifications to the police and bank pension funds and the reform of unemployment insurance were particularly important. For the non-contributive scheme, the 2005 creation of PANES (including *Ingreso Ciudadano* and *Tarjeta Alimentaria*) were major changes, along with the 2008 Equity Plan.
3.11 Even after these reforms, serious challenges remain in some areas of social protection policy. Protection for unemployed workers and actions necessary to facilitate their reinsertion into the labor market is clearly the most critical issue requiring the attention of the authorities. A secondary issue relates to income transfer programs (in particular Family Transfers and food support), which have acquired a fundamental role in poverty reduction policy but have not yet been completely implemented. In contrast, the pension system appears to be functioning within reasonable parameters and does not represent a challenge in the short term. The following paragraphs briefly describe and discuss each of the sectors.

The pension system

3.12 After several years of debate, in 2008 the pension law was modified to reduce the time of service required and facilitate retirement. Following the pension reform of 1996, one of the most controversial aspects was the requirement of at least 35 years of service to access benefits. After a broad public debate, the government proposed to reduce this requirement to 30 years, and also to flexibilize access to retirement for older workers (reducing the minimum required age to 65). In both cases, the new law—which was approved in October 2008—established that the benefits for those who retire under these conditions would be reduced.

3.13 The expected impact of these reforms is an increase in the coverage of the older adults, which since the 1990s had registered a slight declining tendency. By permitting access for workers with fewer years of contributions, with scaled benefits, the reform eliminated the exclusion from the system of potential beneficiaries with significant work histories and also softened some of the inequities generated by “absolute limits” between those who had the right to receive a benefit and those who did not. These types of limits are not only inequitable, but they also produce a strong incentive for fraud among those near the cut-off point, weakening the institutional framework of the pension system.

3.14 The main problem that these reforms seek to resolve (declining pension coverage for older adults) is shared by other countries in the region. In recent years, many Latin American countries have identified coverage as one of the principal issues in their pension policies, and have designed reforms to address it. Argentina, Brazil and Chile, in different ways, have adopted measures tending to flexibilize access and integrate contributive and non-contributive schemes. In Argentina this was done with a broad moratorium scheme that allowed retirement for those who have not achieved 30 years of contributions; in Brazil via the implementation of a non-contributive pension scheme; and in Chile through the creation of a new solidarity component in its pension system that integrates practically all older adults.

3.15 A second group of pension reforms is linked to an overhaul of the functioning of two independent funds, for police and bank employees. Following the 2008 reforms, these two funds improved sustainability and transparency. The changes introduced parametric adjustments (related to retirement age, expected benefits and years of contributions) and also—in the case of the bank employee fund—widened the contributive base (incorporating, for example, employees of financial institutions who had previously not contributed).
3.16 Lastly, an important component of recent pension policies relates to contribution collections. In the last few years several modifications were implemented for the collection of social security contributions. As part of a tax law reform, contribution rates among various sectors were homogenized. As well, a number of exemptions and reductions were eliminated through administrative decisions, the single tribute system was revised and system controls were strengthened.

3.17 The fiscal situation of the pension system appears stable, and has improved in recent years. Public spending on retirement and pensions remained at about 11-12 percent of GDP during the 1990s. Following the crisis of 2002, GDP contracted by about 2 percent; and since 2005 retirement benefits has tended to decline as a share of GDP, in part due to the sustained growth of GDP. As a result, in 2008 the Social Pension Bank (Banco de Previsión Social—BPS) spent less than 7 percent of GDP on retirement and pension benefits, while the police and military retirement funds together spent about 1 percent more. In these conditions, the fiscal situation can reasonably considered to be under control, although the magnitude of the retirement program implies that any change could directly impact the public accounts, meaning it is critical to maintain close attention to the evolution of these indicators.

Unemployment insurance

3.18 Unemployment insurance in Uruguay has, since its creation, had a limited impact on unemployed workers. Since being consolidated as a program administered by the BPS in 1981, the insurance has served two functions. On the one hand, in the more traditional scheme workers who lose formal salaried jobs in the private sector can request benefits in the form of a monthly payment equal to half their salary (with minimum and maximum limits). At the same time, the program allows for a benefit to workers who have not definitely lost their jobs but who are suspended temporarily or, in some cases, have their working hours reduced. During the current decade, between 50 and 80 percent of the beneficiaries of the program were not unemployed, but rather faced a temporary layoff or reduced working time (Figure 3.3). The insurance never covered more than 5 percent of unemployed workers, and in recent years the figure has been under 2.5 percent—meaning only one in 40 unemployed workers received an insurance benefit.

Figure 3.3: Unemployment Insurance-Coverage and Structure of Beneficiaries, Uruguay 2001-2008
3.19 **The low insurance coverage is due to very restrictive eligibility requirements.** On the one hand, the program only offers benefits to salaried private sector workers who have been laid off, thus excluding public sector workers, the self-employed and of course workers in the informal sector. As well, the program establishes a limit of six months of benefits, and a new request is not permitted for another year. Among the unemployed in 2008, 15 percent were seeking employment for the first time, while 53 percent were private sector salaried workers who did not qualify for various other reasons (85 percent of these were in the informal sector). Curiously, nearly 20 percent of the unemployed appear not to have a clear reason for being excluded from the program and only 2.5 percent received cash benefits.

3.20 **At the same time, the unemployment insurance program has a second objective related to the suspension of the workers.** According to labor law, a company can suspend its workers for a set period or reduce working times under certain conditions. In these cases, workers have the right to request unemployment insurance benefits, even though they are not formally unemployed. In 2008, nearly 80 percent of program beneficiaries fell into this group (Figure 3.3).

3.21 **The low insurance coverage is reflected in the relatively minor importance of program costs.** Uruguay’s unemployment insurance budget in 2008 was a bit less than 1 billion pesos, equal to 1 percent of total BPS expenditure. The low level of program resources strongly limits any possible impact. Considering the totality of unemployed workers in Uruguay and the amount spent on just this group (excluding temporary suspensions and reduced working times), unemployment insurance spent less than US$5 for each worker in 2008.

3.22 **Unemployment insurance was reformed at the end of 2008.** Among the main changes were the adoption of a scaled reduction in benefits (to promote a more rapid reintegration into the labor market), a reduction to four months for temporary work suspensions, and an extension of benefits to 12 months for those over 50 years old. While these changes are positive in improving incentives facing program participants, they are not likely to have a significant impact on insurance coverage indicators.

3.23 **Along with the unemployment insurance reforms, authorities approved the creation of the National Institute for Employment and Professional Training (Instituto Nacional de Empleo y Formación Profesional).** The institute replaces the National Employment Board (Junta Nacional de Empleo) in the role of promoting employment and developing training policies. While its recent creation makes it impossible to evaluate medium-term impacts, the implementation of a new institutional mechanism is an important step for the developing more proactive public policies in this area.
Non-contributive income transfer programs

3.24 Although Uruguay has had a non-contributive pension scheme for several decades, until recently they had limited access and impact. Between the start of the 1990s and the end of 2005, the principal non-contributive program—pensions for the elderly and disabled—oscillated between 60,000 and 65,000 beneficiaries, accounting for about 4 percent of total BPS expenditures. Nearly half of these benefits were directed to those over 65 years old without their own resources, while the rest went to individuals with different types of disabilities.

3.25 In 2000, an innovative new process had begun, with the opening of a program of transfers to families. Starting in 2000, transfers were initiated for families with insufficient resources, eliminating the previous requirement of a having formal job. The number of beneficiaries expanded progressively and, at the start of 2004, the new program had a bit more than 100,000 beneficiaries. A modification implemented in 2004, flexibilizing the conditions of access, allowed the number of beneficiaries to grow to more than 200,000 by the end of 2005.

3.26 In 2005, as part of the Social Emergency Plan, the Ingreso Ciudadano (“Citizen Income”) plan was launched, offering further benefits to households in extreme poverty. This temporary program was closed in 2007, and was substituted starting in 2008 with the new Family Transfer program, with higher benefits and an incentive structure for secondary students, as part of the Equity Plan. At the start of 2009, nearly 330,000 children received this benefit, on top of the 200,000 who continue to receive contributive family transfers.

3.27 The Ingreso Ciudadano and the new Family Transfer program have been the main social protection tools in recent years, with a focus on low-income households and children. An analysis prepared by the World Bank in 2007 estimated that Ingreso Ciudadano had a strong positive impact on the extreme poverty level, reducing it by nearly one-third. As well, the programs appear to have been quite effective in including the poorest households into the social protection system—the percentage of households in the poorest quintile not receiving any income transfer declined from 50 percent in 2003 to about 20 percent three years later, and more than 85 percent of children living in poverty received family transfers in 2008.

3.28 The financial cost of the Family Transfer system reached about 0.4 percent of GDP in 2008. This level will have risen in 2009, as the new scheme (which pays significantly higher benefits) had not yet been completely implemented in the previous year, and had just achieved the projected number of beneficiaries (330,000) by the end of 2008. Further, the original program design estimated a total of 550,000 beneficiaries, meaning an important number of children that would qualify for the program had not yet started receiving transfers. If these qualified beneficiaries are incorporated into the program, the total annual cost could reach 0.8 percent of GDP.
3.29 Together with *Ingreso Ciudadano*, the *Tarjeta Alimentaria* ("Nutrition Card") program was also implemented and continues to function. Approximately 55,000 families had received a card by the end of 2008, a number projected to have risen to 85,000 in 2009. This card allows beneficiaries to purchase food and other goods directly from a network of stores, complementing the resources transferred via other programs. The monthly amount of the card varies according to the number of children (or pregnant women) in the household, and is equivalent to about 60 percent of the value of family transfers.

3.30 These reforms have aspects in common with those implemented in other countries in the region. In recent years, many countries in Latin America introduced conditional cash transfers to alleviate poverty and promote human capital accumulation among the poorest sectors of society. The experiences of *Bolsa Familiar* in Brazil, *Oportunidades* in Mexico and *Chile Solidario* in Chile, among others, have been analyzed extensively both in academia and policy circles.

3.31 The model adopted in Uruguay differs from these other programs in the breadth of its coverage and generosity of its benefits, as well as the fact that its central objective is to sustain income rather than promote the accumulation of human capital, as this is not considered a serious problem in Uruguay.

*Summary and Conclusions*

3.32 As discussed in the previous section, the Uruguayan social protection system is functioning efficiently, with high but manageable costs and adequate impacts. The majority of the reforms and adjustments put in place in recent years have improved the system by broadening coverage, increasing sustainability and strengthening impact. The reforms related to pensions, unemployment insurance and family transfers have been well oriented and should have positive effects in the short, medium and long term.

3.33 Nonetheless, several challenges remain that should be faced by the incoming administration. The principal themes for attention are centered around unemployment insurance and employment policy on the one hand, and completing the implementation of the Family Transfer system on the other. In the first case, the challenge mainly relates to the need to develop a legislative framework that effectively protects unemployed workers and facilitates their reinsertion into the labor market, while in the second case the challenge is to complete a reform already underway. By contrast, the other programs of the social protection system appear to be running well and do not require significant actions to modify them, but rather continuity of actions already under way.
3.34 **Uruguay owes unemployed workers a more effective and inclusive unemployment protection scheme.** The restrictions currently imposed by the existing legal framework, which impede access to unemployment insurance, undermine the effectiveness of the program. A number of alternative programs, which have been tested with varying degrees of success, could be applied in Uruguay, such as “workfare” programs in which the unemployed do public works in exchange for a basic salary; training schemes and scholarships; or partial financing agreements with the private sector. Each of these options has advantages and disadvantages, as well as differing fiscal impacts that should be carefully considered, with the aim of designing and adopting a scheme that responds effectively and sustainably to the labor market conditions in Uruguay. The new National Employment and Professional Training Institute could be an appropriate agency to develop and implement these policies.

3.35 **Regarding the Family Transfers program, the principal challenge is to identify and incorporate potential beneficiaries who, for various reasons, are not currently covered.** While in some cases this could be due to lack of interest, concrete problems exist regarding the identification and permanent residency of children (such as the lack of documentation or precarious tenancy conditions on the part of families), which impede access to the program. A second critical aspect is the impact of conditioning the transfer on school attendance, especially in the last years of secondary school. While this may be reasonable to promote permanence in the education system, it is important for authorities to identify youths who could receive the benefit and facilitate their reinsertion into the education system, such that the conditionality does not operate as an exclusion mechanism but rather to bring young people into school. The Uruguayan authorities are aware of this challenge and are developing a strategy to include these young people in the education system and the transfer program.
CHAPTER 4.
INFRASTRUCTURE FINANCING AND REGULATION

Introduction

4.1 Although coverage and quality of public services and basic infrastructure in Uruguay is relatively high compared to middle income Latin American countries, all sectors require more investment, better regulation and enhanced corporate governance to improve the efficiency and delivery of their services and to reach and maintain universal coverage. Infrastructure investment is also essential for economic growth, regional integration and greater social welfare and equity. The provision of quality infrastructure services is particularly crucial for Uruguay given its strategic location at the crossroads of MERCOSUR. Uruguay’s success in increasing exports, attracting foreign direct investment and providing services to its neighbors as the primary motors of economic growth depends on the sustained provision of quality public services and the maintenance of a sound infrastructure base.

4.2 Over the past decade Uruguay has made impressive strides towards achieving universal access to basic infrastructure services, and as depicted in the table 4.1 below, it is one of the regional leaders in providing these services. Moreover, public approval of these services remains one of the highest in the region, with 44 percent of the population indicating a high level of satisfaction compared to the regional average of 26 percent. Nevertheless, given the increase of technological change and demand sophistication, there are widening disparities in terms of coverage, quality, delivery standards, efficiency and prices. The main deficiency is sanitation service. According to the WHO/UNICEF definition, the entire population has access to improved drinking water and sanitation facilities; however, when defined by household connections to the distribution and collection networks, access to sanitation services drops to 53 percent, putting Uruguay below Chile, Colombia and Mexico as well as several comparable Brazilian states.

4.3 The prevailing goal for infrastructure investment is to universal access to basic services at competitive prices to enhance welfare, catalyze economic growth and improve competitiveness. All sectors require significant financing to achieve and preserve universal access and invest in system maintenance and efficiency. These notes will focus on three household infrastructure services, namely telecommunications, electricity and water supply and sanitation (WSS), and review five financing options: (i) efficiency improvements; (ii) tariffs; (iii) loans; (iv) reduced transfers; and (v) private sector participation. These notes will also argue that improved regulation and corporate governance are crucial prerequisites for financing investment and improving competitiveness.

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Table 4.1: Basic Service Coverage

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<td>22</td>
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Source: World Bank

**Investment Needs**

4.4 Uruguay has significant catching up to do in terms of matching past levels of investment and equaling current regional levels of investment. Overall investment has recovered since the regional economic crisis, but compared to Chile, the regional leader in investment per GDP, the gap in investment levels has grown from 3.6 percent in 1998 to over 10 percent in 2008. The public sector has a transformative role to play in financing infrastructure investment in Uruguay. As shown in the figure 4.1 below, public investment in infrastructure fell precipitously from a pre-crisis average of 2.35 percent to 1.5 percent of GDP in 2002, and recently infrastructure investment has gradually climbed to an average of only 1.77 percent of GDP. This puts Uruguay behind Chile, where 4.25 percent of GDP is annually invested in infrastructure, as well as Colombia, Argentina and Brazil, where infrastructure investment stands at 3.0 percent, 2.11 percent and 1.99 percent, respectively. This note will argue that the combined needs of the telecommunications, electricity and WSS sectors mean that it is necessary to invest a minimum of 3 percent of GDP to maintain current levels of coverage and quality, but to achieve broader goals such as universal access, it is essential to invest 5 percent of GDP annually in infrastructure.

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33 *Estrategia de Desarrollo para un País con Futuro*. CERES. Presentation made on October 6, 2009.
4.5 Significant telecommunications investment has transformed Uruguay into one of the top technological performers in Latin America. Uruguay, for example, currently has the region’s highest rate of internet users. Although the National Telecommunication Administration (ANTEL) holds a monopoly on fixed telephone lines, there are nineteen private companies providing ILD services and two private companies providing mobile phone access. Data from the Regulatory Unit for Telecommunications Services (URSEC) indicates that the number of telephone subscribers and internet users has boomed while the cost of these services has declined. Overall performance as measured by the Digital Opportunity Index, which measures eleven technology indicators, puts Uruguay ahead of all countries in the region except for Chile and Argentina.

4.6 Despite these impressive statistics, investment in the telecommunications sector is still necessary to keep pace with cutting edge technology. As shown in the figure 4.2 below, public investment in the sector fell from an average of 0.61 percent of GDP before the crisis to a current average of 0.38 percent of GDP. As penetration soared and tariffs declined with the opening of the sector to private sector participation in the ILD and mobile markets, the private sector could provide the missing investment to continue to generate efficiency and service quality gains. If Uruguay could regain its past level of telecommunications investment, whether through private or public sources, it would continue to ensure near universal access to these services, with a focus on providing these services to the poor.

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38 Implementation Completion and Results Report for the Uruguay: Public Services and Social Sectors Structural Adjustment Loan, 2007.
39 Ibid
41 ANTEL plans to connect 2,200 public schools to the internet by 2009, and as of 2008 it had already connected 1,456 schools. Ibid.
Electricity

4.7 It is important to focus energy investment on securing a reliable and adequate supply to meet Uruguay’s growing needs. Local sources are currently limited to hydropower and thermal generation, with recent developments in renewable sources, but hydropower has been practically developed in its entirety and thermal generation involves high costs. Uruguay has long depended on its neighbors for energy imports, but when shortages forced Argentina to cut electricity exports in 2004, it exposed Uruguay’s precarious dependence and brought to the fore questions such as ensuring the supply of sufficient, secure and cost effective energy to meet national demand. Recent high oil and gas prices further exposed the fragility of the current equilibrium of energy supply and demand and caused financial losses to the National Administration of Power Plants and Electricity Transmission (UTE). As shown in the figure 4.3 below, electricity investment represented 1.24 percent of GDP before the crisis, but this has since fallen to 0.64 percent of GDP. During the past few years with the objective of satisfying growing internal energy demand (4.9 percent annual growth from 2002 to 2007), UTE has intensified its energy efficiency and saving programs, increasing investment in expanding thermal generation, developing alternative resources to meet demand and advancing an interconnection project with Brazil to facilitate the import of hydroelectric energy. This investment alone will cost approximately US$320 million as it involves electricity conversion and the construction of power lines to connect the system with the market. Simply to maintain the status quo, Uruguay needs to invest 1.0 percent of GDP annually in electricity infrastructure, but to increase

42 See policy note on electricity.
43 The conversion station is already under construction and it will cost US$140. The transmission system in Uruguay will cost approximately US$125 million. The transmission system in Brazil will cost US$65 million and will probably be financed by BNDES.
electricity generation, through traditional and renewable sources, and to secure a reliable supply, the ideal investment level is closer to 1.6 percent of GDP. In terms equivalent to projected 2009 GDP, this represents US$300 million as a minimum and US$500 million as an ideal.

Figure 4.3: Total Investments in Electricity - Uruguay

![Figure 4.3: Total Investments in Electricity - Uruguay](image)

Source: Private Participation in Infrastructure (PPI) Database, Uruguay Ministry of Finance and Serven and Calderon, 2008

**Water and sanitation**

4.8 While universalizing access to sewerage services is an important investment priority, other areas of focus include expanding wastewater treatment capacity, reducing dramatically high levels of water losses and resolving network maintenance and reliability problems. The 2004 Constitutional Amendment made WSS services the exclusive purview of the public sector, with the National Water Supply and Sanitation Utility (OSE) responsible for WSS in the entire country, except for Montevideo, where sanitation services are provided by the municipality. Investments in service expansion over the past decade have led to near universal in-house water connections and significant improvements in the number of connections to the sewerage system.44

4.9 If Uruguay is to meet the Millennium Development Goals (MDGs) to reduce the number of people without access to potable water and improved sanitation, significant investment is required to provide sanitation to the 47 percent of households without these services. As shown in the figure 4.4 below, average public investment in WSS slipped from an average of 0.29 percent of GDP before the crisis to only 0.19 percent in recent years.45 Another country with a mature WSS sector with high coverage, Chile invests approximately 0.60 percent of its GDP

44 Since 2002, OSE has provided an additional 81,000 new water supply connections, including 5,400 individual household connections in informal settlements in Montevideo which sprung up after the crisis, increased access to sanitation services from 26 to 32 percent outside the capital and expanded wastewater treatment through the construction of three new plants serving 60,000 people. Implementation Completion and Results Report for the Uruguay: Public Services and Social Sectors Structural Adjustment Loan, 2007.

annually in WSS. Simply to fulfill the objectives of the MDGs, Uruguay needs to invest approximately US$300 million until 2015, which means US$50 million annually over the next six years, which represents approximately what OSE has annually invested during the last decade. However, to reduce water losses, enhance operational efficiency and reach universal access to sanitation services by 2025, Uruguay should ideally invest between US$70 and US$80 million every year.

Figure 4.4: Public Investments in Water and Sewerage – Uruguay

Financing Options

4.10 Uruguay has a variety of options for financing infrastructure investment. A first option is to build on ongoing internal restructuring reforms to promote a set of economic incentives raising performance efficiency and productivity and enhancing service delivery. A second option is through tariffs, looking for opportunities to close the gap between actual tariffs and marginal costs. A third option is loans by exploring new opportunities in the national and international financial markets. A fourth option is to phase out profit transfers from the utilities to the government. Private investment is a fifth option for financing those sectors without legal restrictions that make private sector participation unviable, and it could play an important role complementing public financing capacity. Private sector participation is also a tool to introduce healthy competition to sectors need of improving efficiency and productivity.

Improved efficiency

4.11 All available evidence points to the fact that there are tremendous gains to be made in terms of improving operational, commercial and financial efficiency in Uruguay’s public utilities. Incentives and tools such as competition between service providers, modern corporate

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46 Private Participation in Infrastructure (PPI) Database, Uruguay Ministry of Finance and Serven and Calderón, 2008. Observe that Chile has already reached almost 100 percent coverage of wastewater collection and treatment, which makes its WSS sector more mature and stable and significantly less needed of capital investment compared to Uruguay.
governance, effective regulation supported by proper regulatory accounting, internal and external benchmarks and wide public dissemination of performance information have proven to improve efficiency of service provision and, by so doing, raise capital through savings in investment and operational costs. In the telecommunications sector, the power of these reforms was demonstrated by the market liberalization in 2004. Within ANTEL, however, there is still room for improvement. For example, ANTEL is heavily staffed with 661 fixed and mobile telephone subscribers per employee compared to 1,929 and 1,311 in Argentina and Chile, respectively, suggesting that good results in terms of coverage and quality could be further improved.

4.12 In the electricity sector, certain inefficiencies are within UTE’s control, such as reducing high electricity losses of approximately 20 percent though continued focus on commercial management and comprehensive network renovation and expansion. However, UTE is also plagued with difficulties outside its control, such as the global spike in petroleum prices and local drought, which have exposed weaknesses in the past policy of relying on hydropower generation and depending on supplies from Argentina while not focusing enough on inter-connection with Brazil. The switch from hydropower to thermal generation is an expensive process, and has been a financial strain on UTE for the past several years. High energy prices have also contributed to higher operational costs, suggesting both inefficiencies and opportunities. One opportunity would be to create a stabilization fund to save during periods of relatively low generation cost with hydropower and spend during periods when expensive thermal generation is needed. This type of fund would help end investment variations and eliminate the need to reduce system maintenance and efficiency improvement programs as a last source of financing.

4.13 In the water sector, the high level of losses, close to 54 percent, is the main source of inefficiency and greatly exceeds losses in Brazil (40 percent) and Chile (34 percent). OSE’s program to combat water losses in a holistic manner (through commercial and engineering practices) needs to be aggressively supported as it is expected to have significant results. For example, a 5 percent reduction in water losses is a net financial gain of over US$20 million by 2012. Moreover, with 4.1 employees for every 1000 connections, OSE’s labor productivity is outside the optimal range of 0.4 to 2.0 exhibited by the most efficient water utilities in the region. It has been estimated that a 10 percent improvement in labor productivity would result in a net financial gain of almost US$10 million in by 2012, while a 20 percent improvement would result in a financial gain of almost US$18 million in the same period. Another area of savings is to improve the revenue collection rate by some 2 to 3 percent as this would result in a net financial gain of US$9 million and US$13 million, respectively, by 2012.

47 Abundant and transparent public information allows social control to play the major role in overseeing the markets and the companies.
48 International Telecommunications Union Indicators.
49 Although by 2007 technical and commercial losses have been reduced to 17.9 percent from 20 percent in 2005, these figures are still far away from the pre-crisis level of 14.5 percent. Memoria anual 2007. Administración Nacional de Usinas y Transmisiones Eléctricas.
50 OSE Indicadores de Desempeño, 2009.
51 World Bank calculation based on the methodology used to appraise the Second Phase of the ongoing OSE Modernization and Systems rehabilitation Project (APL-2) and OSE’s current financial projections.
52 Ibid
53 Ibid
Tariffs

4.14 Tariffs are another option for financing of infrastructure development. According to the law, tariffs are set by the executive based on recommendations by the regulators, but in practice the fiscal and political considerations continue to play a more central role in defining tariffs than efficiency criteria. There is the most latitude to increase sewerage tariffs given the difference with the marginal cost of providing the service. In the case of water and in other sectors a tariff increase would be more controversial. In the telecommunications sector, for example, tariffs are set by competition. Between 2005 and 2007, the private sector catalyzed a drop of more than 20 percent in the price of mobile telephone calls, but the lack of competition in the fixed line network meant that prices rose by 3 percent over the same period and they continue to be one of the highest in the region. In the electricity sector, as shown in the figure 4.5 below, UTE tariffs are lower than Brazilian and Chilean utilities. Tariffs cover operational and maintenance costs but not capital costs for the required future expansion of the power generation system. Tariffs have been raised to cover generation difficulties, thus it is unlikely that they can be raised again in the near term. However, it is important not to reduce tariffs as this would contribute to the deterioration of UTE’s balance sheet.

Figure 4.5: Residential Electricity Tariffs in Latin America

4.15 In the WSS sector, OSE’s tariffs are high enough to cover operating and maintenance costs, ensure medium-term profitability and generate sufficient revenue to support commercial borrowing for ambitious investment programs. Water tariffs have recovered since falling in US dollar terms during the economic crisis, but sewerage tariffs are below the marginal cost of delivering the service as well as those of water, even though wastewater collection and treatment cost more to deliver than potable water. Traditionally low sewerage tariffs have effectively provided a cross-subsidization between services favoring the one offered to the wealthy. As tariff increases are always controversial, it is important to accompany them with educational campaigns to explain the reasons behind the increase and its impact on the poor and the

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54 International Telecommunication Union (ITU).
56 OSE Estados Financieros, 2008.
57 Project Appraisal Document for the Uruguay: OSE Modernization and Systems Rehabilitation Program (APL2)
environment. These educational campaigns are particularly important in the sanitation sector, where the rate of connection to the network has historically been low, which makes the actual cost of delivering the service above the estimated cost and restricts potential access to the service. These reasons make it desirable to seek political agreement with the support of the local authorities and explore other types of incentives, such as direct subsidies to the poor.

**Loans**

4.16 While loans are traditional options for financing capital investment in public utilities, there are other means without sovereign guarantees, such as revenue backed local bonds, commercial syndicated loans and public-private partnerships (PPP). Loans could be both long-term from international financial institutions and medium-term from commercial banks. UTE already finances part of its investments by issuing bonds on the local capital market. As per its by-law, UTE has utilized a special purpose vehicle structure, such as *fideicomiso* and a separate company to finance specific investment programs, which do not benefit from national government guarantees but provide flexibility in terms of public sector debt limits and process. For example, their local bond had a trust structure that involved de facto securitization of UTE’s revenue stream. The bond was rated the same as the sovereign rating (AAA by Fitch = BB-). UTE recently launched a US$20 million *fideicomiso* to provide electricity for 4,000 rural households in a further step towards universal electricity coverage throughout the country.58

4.17 From the private sector perspective, the key financing challenges are for OSE and UTE to better position themselves in the market. In the case of OSE, private financiers would look for appropriate increases in tariffs, a stable regulatory and legal framework and transparent and timely disclosure of financial and operational performance. OSE has developed a good disclosure policy, making most financial and operational information available on its website, but there are still institutional weakness in terms of project preparation and contracting. In the case of UTE, private financiers would look into its reliance on domestic hydropower and imports from Argentina as this leaves the utility vulnerable to drought and unreliable supply. Diversification of energy sources is important to manage revenue and profit fluctuations. Uruguay’s utilities and departments rely on private collection agencies to collect tariffs and taxes. This makes it easier for banks and capital markets to separate the revenue flows and create a trust structure, on the back of which municipalities and utilities can issue bonds.

4.18 Two other options are supplier credits and the participation of the departments in supporting infrastructure investment, particularly in WSS given the local nature of this sector, as OSE and the municipalities have a common interest in boosting the implementation of these types of works. Supplier credits are used when a company has to finance part of the investment by securing a loan from a commercial bank before work can commence. This is a favorable option, which OSE has already successfully explored in the construction of the fifth transmission line. Urban integrated water management projects are one possibility that could enhance collaboration between OSE and the municipalities. Departments could access local capital markets and commercial bank loans, and through these means support these types of projects. For example, the municipality of Montevideo issued a *fideicomiso* local bond on the back of

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58 UTE is currently investigating affordable alternatives for supplying the remaining approximately 2,000 rural households with electricity, possibly through solar panels.
urban transport revenue. Municipalities would be required to improve the disclosure of financial information to help private financiers to extend loans to the departments.

**Transfers**

4.19 Another financing option is the progressive phase out of profit transfers from public utilities to the national treasury. The transfers could be replaced by an organized practice of paying dividends for the capital invested in these utilities. One possibility would be to recognize a certain return for the capital invested in these utilities, which would compensate the government for its investment and at the same time have a highly positive effect on financial management by promoting innovation and financial discipline.

**Private sector participation**

4.20 Investment needs not met by the sum of aforementioned options will need to be covered by new financing initiatives, including the private sector. Uruguayans have traditionally been supportive of their public utilities, and for this reason the participation of the private sector in household public services sector has been limited. In the case of WSS services, voters overwhelmingly decided in the 2004 Constitutional Referendum to make their provision the exclusive right of the state. There is limited competition from private operators in the telecommunications sector, as well as energy to a very small degree. Given the high standards set by the participation of the private sector in telecommunications, it seems beneficial to consider the possibility of expanding the role of private sector financing in the electricity sector. Private companies could invest in renewable energy and electricity generation to meet Uruguay’s growing needs either through the creation of new companies, particularly in generation as envisaged by the 1997 energy law, or by selling shares of the utilities or their subsidiaries to the public. One promising example is the private sector contribution to the Botnia Biomass power plant, which currently generates 2 percent of national demand. The energy law allows for future private sector investment and the main institutions, including a regulatory and an operator of the wholesale power market, are already in place to facilitate this participation. Incentives to boost private investment could improve to meet national energy security demands and remove barriers to economic growth.

4.21 Another promising alternative is initial or secondary public offerings of shares of companies that belong to or are created by the utilities and even shares of the public utilities themselves. The option of offering shares is particularly promising as a way of simultaneously raising capital, improving the company’s performance and projecting it in the international arena to learn and teach while competing for new business opportunities. Several possibilities have been demonstrated in the past decade with excellent operational and financial results, rapid economic growth and international projection of public companies. Colombia’s Empresas Públicas de Medellín is a successful example of a fully municipally owned multi-sectoral utility leading successful PPPs to explore business opportunities, raise private capital and respond to the need for social engagement in marginalized regions. The offer of a limited number of shares by one or more public companies on the Montevideo Stock Exchange would allow these companies to access new sources of financing and the population to access new sources of savings. Market discipline would also create incentives for efficiency and provide a degree of competition to
monopolistic utilities. The conditions of supply, and in particular the extent of the divided offered to prospective buyers, will define the size of regular transfers to the Treasury, thus explaining the transfer policy suggested in the section above.

4.22 As a country with a solid reputation as a reliable and serious commercial partner, respectful of its commitments and agreements, Uruguay is an attractive destination for foreign direct investment (FDI). FDI is crucial in a low-savings country such as Uruguay as it adds to public investment and brings with it technology and innovations that significantly improve the economy’s productivity. Validating reforms made since the crisis, foreign investment in Uruguay grew from 0.8 percent of GDP in 1998 to over 4 percent in 2008. However, compared to other countries in the region, Uruguay ranks the lowest in terms of the percentage of total infrastructure investment that comes from the private sector. For example, private investment in infrastructure in Chile is 2.2 percent of GDP, but in Uruguay it has been only 0.5 percent of GDP over the past fifteen years. Moreover, in Chile, Argentina and Brazil the private sector finances approximately 70, 50 and 40 percent, respectively, while in Uruguay only 19 percent of infrastructure investment comes from private sources. Uruguay’s recent economic performance, notably its prudent macroeconomic management, demonstrates that the country possesses the necessary capacity for reform to attract FDI and other forms of private investment. Another way of capitalizing on this source of financing is through strengthening regulation and improving corporate governance of public utilities (Figure 4.6).

![Figure 4.6: Private Investment in Infrastructure](image)

Source: Private Sector Participation in Infrastructure Database

**Regulation and Corporate Governance**

4.23 Independent regulatory agencies supported by well conceived, respected sector laws and solid long-term vision, planning, procurement and financial management practices are crucial prerequisites for infrastructure investment and a determinant factor in ensuring quality and

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59 *Estrategia de Desarrollo para un País con Futuro*. CERES. Presentation made on October 6, 2009.
60 *Uruguay: Fiscal Space for Infrastructure Investment*. The World Bank, 2006
61 Private Participation in Infrastructure Database. World Bank’s Infrastructure Economics and Finance Department and the Public-Private Infrastructure Advisory Facility (PPIAF).
efficiency in delivering infrastructure services. Bank studies have shown that the existence of independent regulatory agencies increases labor productivity and collection rates, decreases operational expenditures and service interruptions and adjusts tariffs to more rational levels.\(^{62}\) Appropriate regulation and corporate governance is the best way of incentivizing efficiency and service quality in sectors where monopolies make true competition impossible, and is particularly important for attracting private capital. Uruguay’s small domestic market and the traditional strength of its public utilities call for technically competent and institutionally independent multi-sector regulators to design and enforce the regulations. The autonomous Regulatory Units for Communication Services (URSEC) and Energy and Water Services (URSEA) have made important strides towards establishing the proper frameworks. However, they require further strengthening and consolidation to effectively regulate the public utilities which have accumulated tremendous authority as national monopolies with extensive coverage and high quality service. Their weaker points appear to be in the areas of regulatory and managerial autonomy, institutional transparency and accountability.\(^{63}\) These findings are reflected in the responses given by the enterprises, citizens and experts to an international survey about regulatory quality in Latin America, which considered Uruguay’s regulatory quality weak by Latin American standards, suggesting that private investors may feel uncomfortable with the current regulatory environment (Figure 4.7).\(^{64}\)

![Figure 4.7: Worldwide Governance Indicators: Regulatory Quality – 2008](http://info.worldbank.org/governance/wgi/index.asp)

4.24 The regulators are also responsible for promoting collecting and disseminating performance information that allows consumers to make informed decisions about services and hold monopoly providers accountable for their quality and price commitments. Open access to standard corporate information as well as a reasonable level of confidence in the accuracy and reliability of that information is central to the accountability of public utilities and to their overall effectiveness. URSEC and URSEA already publish performance indicators for the

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\(^{63}\) Ibid.

telecommunications and electricity and WSS sectors which document operational performance and service delivery. In the WSS sector, where service has been decentralized on a regional basis, the publication of indicators provides some form of competition between the different regions and systems of OSE, thus incentivizing efficiency and higher quality service. Nevertheless, the collection and dissemination of public information requires improvement, with information about performance and quality of services disseminated in a way that the public can exert some social control, complementing the work of the regulators.

4.25 Corporative governance is another area that requires further strengthening as found by the World Bank study on sector performance.65 One possible plan of action would involve the promotion of transparency and disclosure, more compelling internal and external accounting, stronger internal control mechanisms, improved procurement and financial management practices, modernized management processes, revised procedures to select and appoint Directors to the Boards and establish Board functions and strengthened performance orientation for public utilities.

4.26 The option of reviewing the functions and responsibilities of Boards and the entities exercising control over their business objectives is particularly interesting for its potential to reduce conflicts between government entities with control over public utilities, increase accountability and clarify decision-making mechanisms, consequently raising efficiency and performance. One direction to implement this option is to put Board members in charge of defining the utility’s vision, policies, strategies and medium and long-term objectives, leaving managers (particularly the CEO) with the responsibility of carrying out the decisions of the Board, including the implementation of investment programs and the oversight of the day to day operation of the utilities. Board members would be committed to the overall principles, policies and objectives of the elected government and work towards the execution of these principles in the utility under their oversight. Based on the policy and strategy they define, Board members would set principles, define directions, objectives and targets, and transmit them to the selected managers who would be responsible for implementing them in the most efficient manner and reporting back to the Directors to whom they would be accountable. Sector knowledge and professional competence would be highly desirable to be selected as a Director but no more than political vision and commitment to the objectives and targets of the elected leaders. Managers, on the other hand, should be first and foremost technical specialists, respected in their fields of expertise for their competence and achievements, and skilled administrators with sufficient practical experience to lead the utilities. Managers should be given full responsibility for the daily management of the utilities as well as technical, financial and managerial autonomy. While being a Manager is a full-time job, the role of a Board member would not require constant dedication and it may be undertaken concurrently with other positions within and outside the public administration.

Conclusion

4.27 The goal for financing infrastructure investment in Uruguay is to go beyond maintaining the status quo and universalize access to high quality basic services at competitive prices to improve social welfare, catalyze economic growth and improve economic competitiveness. The challenge is to do this in a fiscally responsible manner. This note lays out five financing options, from the traditional to the innovative, that will help Uruguay boost infrastructure investment to at least 3 percent of GDP and ideally up to 5 percent of GDP annually. While short term options include loans from commercial banks as well as other means of accessing the national capital market through stock offerings, revenue backed bonds and supplier credits, these options require strengthening of the nascent regulatory framework and improving corporate governance. Under more medium term options, it is crucial for public utilities to enhance their operational, commercial and financial efficiency through increased labor productivity reduced production and distribution losses and improved revenue collection. Two other medium term options are the adjustment of tariffs to cover the costs of providing services and progressively reducing transfers from the public utilities to the central treasury, possibly by replacing these transfers through the payment of dividends for capital invested in public utilities. However, given the magnitude of the challenge, the private sector is necessary to bridge the gap between public financing options and overall investment needs. The combination of both public and private financing will help Uruguay achieve the objective of maintaining one of the region’s most dynamic infrastructure sectors while also achieving improvements that will benefit the entire population. Lastly, it is imperative to continue to strengthen the emerging regulatory framework and improve and strengthen corporate governance.
Table 4.2: Matrix of Policy Recommendations

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>SHORT AND MEDIUM TERM POLICY OPTIONS</th>
<th>MILESTONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universalize access to quality infrastructure services at competitive prices to improve social welfare, catalyze economic growth and improve competitiveness of the Uruguayan economy.</td>
<td>• Improve the operational, commercial and financial efficiency of the public utilities</td>
<td>• Increase labor productivity</td>
</tr>
<tr>
<td></td>
<td>• Tariffs that cover operational, maintenance and investment costs and meet affordability standards</td>
<td>• Reduce production and distribution losses so that they are among the top 20 percent in the region</td>
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<tr>
<td></td>
<td>• Improve the operational, commercial and financial efficiency of the public utilities</td>
<td>• Improve revenue collection rate</td>
</tr>
<tr>
<td></td>
<td>• Tariffs that cover operational, maintenance and investment costs and meet affordability standards</td>
<td>• Raise sewerage tariffs to cover cost of providing service</td>
</tr>
<tr>
<td></td>
<td>• Tariffs that cover operational, maintenance and investment costs and meet affordability standards</td>
<td>• Explore less traditional options for financing capital investment through the national financial market, including fideicomiso, share offerings and supplier credits</td>
</tr>
<tr>
<td></td>
<td>• Improve the operational, commercial and financial efficiency of the public utilities</td>
<td>• Progress reduction of transfers from the utilities to the central government</td>
</tr>
<tr>
<td></td>
<td>• Tariffs that cover operational, maintenance and investment costs and meet affordability standards</td>
<td>• Replace transfers with an organized practice of paying dividends for capital invested in public utilities</td>
</tr>
<tr>
<td></td>
<td>• Loans from multilateral and commercial banks, and other means of accessing national financial market, such as revenue-backed local bonds and other types of fideicomiso, public share offerings and supplier credits</td>
<td>• Explore public-private financing partnerships in sectors that allow private participation</td>
</tr>
<tr>
<td></td>
<td>• Improve the operational, commercial and financial efficiency of the public utilities</td>
<td>• Expand private investment in renewable energy and electricity generation</td>
</tr>
<tr>
<td></td>
<td>• Progressive reduction of transfers from the utilities to the central government</td>
<td>• Strengthen and consolidate regulatory agencies</td>
</tr>
<tr>
<td></td>
<td>• Explore public-private financing partnerships in sectors that allow private participation</td>
<td>• Improve regulatory and managerial autonomy, institutional transparency, accountability and collection and dissemination of public information so that regulatory agencies are among top 20 percent in region</td>
</tr>
<tr>
<td></td>
<td>• Strengthen corporate governance</td>
<td>• Strengthen corporate governance</td>
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<tr>
<td></td>
<td>• Strengthen and consolidate regulatory agencies</td>
<td>• Regulatory agencies regularly publish performance indicators</td>
</tr>
<tr>
<td></td>
<td>• Strengthen corporate governance</td>
<td>• Redefine functions and responsibilities of Board Members and managers</td>
</tr>
</tbody>
</table>
CHAPTER 5.

TRADE AND LOGISTICS: AN OPPORTUNITY FOR URUGUAY

5.1 Over the last two decades, Uruguay has developed into a regional hub for the Southern Cone. The Port of Montevideo, Uruguay’s principal port, currently handles about 7 percent of all MERCOSUR container shipping. Currently, 63 percent of goods that pass through Uruguay’s ports originate from the port’s hinterland (Paraguay, Bolivia and parts of Argentina and Brazil). Uruguay’s attractiveness as a logistics hub is due to several factors. Its central location in the south-eastern South American market; its free-trade-zone legislation; more competitive transit times to major destinations than from Buenos Aires; low port costs and the Paraguay-Paraná river connection to inland production areas.

5.2 As logistics hubs emerge and prosper based on their ability to reduce costs, lowering logistics costs seems of particular importance to Uruguay. Logistics costs are in part functions of geography and scale, but are also determined by the quality of infrastructure, the efficiency of business logistics and the effectiveness of trade facilitation.

5.3 Uruguay’s growth potential as a logistics hub is closely tied to its ability to facilitate trade for the Southern Cone. The size of Uruguay’s GDP and external trade alone do not generate sufficient cargo volumes to make Montevideo an attractive main port for shipping lines on the East Coast of South America. To grow as a regional hub, a highly efficient logistics system is required that facilitates both domestic trade and regional transit flows. More cost effective logistics will not only support domestic trade, but also make it more attractive for regional cargo to transit through Uruguay. Greater transit flows, in turn, will generate the necessary scale economies that will allow local trade to benefit from lower unit shipping costs. In addition, transit cargo generates additional revenues and provides the opportunity to develop Uruguay’s logistics industry based on the resources of the transit and transshipment cargo industry.

5.4 As logistics hubs emerge and prosper based on their ability to reduce costs, lowering logistics costs seems of particular importance to Uruguay. Despite progress made, the WB Logistics Performance Indicator shows Uruguay lagging behind other countries, and in the region. Uruguay ranks 79th out of 150 countries according to the 2007 LPI - below Argentina, Brazil and Chile - and performs less well than the LAC and Upper Middle Income averages. The ranking within the subcomponents is as follows: customs efficiency (86th), infrastructure quality (70th), affordability and availability of international shipments (100th), logistics competence (85th), tracking & tracing ability (77th), domestic logistics costs (103rd) and timeliness of services (82nd).

5.5 The benefits of trade facilitation reform for lowering logistics costs and promoting trade could be substantial. Empirical estimates suggest that a 10 percent reduction in transport costs could increase trade by 3.6 percent (Maritinez-Zarzoso and Wilsmeier, 2009). Such a reduction in transport costs could be achieved by either a 10 percent increase in port connectivity; a 30 percent reduction in the time required to comply with border procedures; or a 50 percent rise in container through-put. Put differently, such reforms would leave Uruguay with
port connectivity similar to Argentina, time required to comply with trade border procedures similar to Mexico; and a comparable container through-put rate to the Port of Buenaventura in Colombia.

Recent developments in logistics

5.6 Recent years witnessed a rapid expansion of international trade and a dramatic change in trade structure. The liberalization of trade in goods and services, new integrated transport networks, advances in information communication technology and modern business logistics have created unprecedented business opportunities for the trade and transport industry, as companies increasingly rely on global supply chains from the multiple sourcing of raw material to the production and final distribution of the finished product. Companies are also increasingly taking steps to concentrate merchandise in regional distribution centers to improve their competitiveness by reducing inventory and raw material procurement costs, and by providing swift, customer-oriented just-in-time services and value added logistics services.

5.7 International trade increasingly flows along major trade routes which connect a hierarchical network of logistics hubs. These hubs are special nodes that form part of a global logistics network that replicates at different scales: domestic, regional and international. In order to play a strategic role in global transportation, logistics hubs have to be capable of facilitating efficient connectivity between various nodes in a transport network. The main benefit of such hubs is that they serve as catalysts for agglomeration and scale economies, which are crucial for lowering the unit cost of international shipments. In 2007, the top 20 ports handled about 50 percent of world container port traffic. Major trade routes connect East Asia and North America, East Asia and Europe and Europe and North America. Latin American and Africa lie off the major trade routes.

5.8 International ports have been transformed from their original role as cargo handlers for import/export to international transshipment hubs and gateways for regional distribution. As about ninety percent of world trade in volume is transported by sea today, and maritime traffic nearly doubled between 2003 and 2007 (UNCTAD, 2008), ports play a central role in modern transport logistics. Port facilities are also increasingly linked up with dedicated logistics zones, which act as regional distribution centers and provide important services such as e.g. bonded warehousing and valued added logistics (i.e. light processing of goods, customization, after-sales services).

5.9 Containerization has played a central role in modern transport logistics. Containers, invented in the last 1960s, allow for intermodal transport operations that enable door to door service. Traditionally transport services were influenced by the nature of the commodity being handled; the global use of containers enabled facilitates intermodal freight transport (rail, ship, truck). Containerization has led to the evolution of complex global patterns of movement establishing global container lines that offer point to point services. How the various players in between are able to cater for the necessary seamless and efficient services has become a critical factor in maintaining a market edge (Phillips, 1993).
5.10 Logistics hubs emerge and prosper based on their ability to reduce costs. Cost and time in logistics are in part functions of geography and as such in most cases the development of logistics hubs depends on the location of the hub relative to the major flows of traffic. UNCTAD (1992) maintains that a port is strategically located if it has at least one of the following three characteristics: location on the major maritime routes, situated in or near large center of production or consumption and has a deep natural harbor with significant landside development potential. But determinants of logistics costs extend beyond geography; the quality of infrastructure (World Bank 2006); the efficiency of business logistics (Guasch and Kogan, 2006) and effective institutions (Wilson et al. 2004) are also highly relevant.

5.11 An efficient and cost-effective logistics system facilitates trade and fosters growth and competitiveness. For many countries, logistics costs – costs associated with e.g. the transportation, storage and distribution of goods from producer to consumer – are often a greater impediment to trade than external tariffs (Gonzalez et al. 2007). Reducing logistics costs has a significant impact on growth and competitiveness (World Bank, 2005c, 2006b and 2007b) as an efficient transport system facilitates trade by opening up international markets to local producers and consumers.

5.12 For many countries, logistics costs – for example costs associated with the transportation, storage and distribution of goods from producer to consumer – are often a greater impediment to trade than external tariffs (Gonzalez et al. 2007). Reducing logistics costs has a significant impact on growth and competitiveness (World Bank, 2005c, 2006b and 2007b) as an efficient transport system facilitates trade by opening up international markets to local producers and consumers.

Case of Uruguay

5.13 Even though Latin America lies off the major global trading lanes, increasing trade volumes in recent years have led to the growth of regional traffic flows and the emergence of some regional hubs, including Uruguay. According to the UNCTAD (2008) the ports in Latin America and the Caribbean handled 6.8 percent of world container traffic in 2006. Traffic volumes have increased rapidly over the past decade, both in terms of container traffic and bulk commodities. In fact, bulk commodities, have had higher rates of increase, riding on the wave of the boom in prices that preceded the current global financial and trade crisis. In terms of overall traffic volumes Brazil handled the largest traffic volume followed by Mexico, Argentina and Chile, reflecting the dominance of bulk trade in these countries. However, over the period 2004–2007, Belize, Colombia and Uruguay experienced the highest growth rates in port throughput volumes.

5.14 Over the last two decades, Uruguay has developed into a regional hub for the Southern Cone. To illustrate, the Port of Montevideo currently handles about 7 percent off all MERCOSUR container shipping. More than four-fifths of the country’s trade volumes pass through the port of Montevideo. Currently, 63 percent of goods that pass thorough Uruguay’s ports originate from the port’s hinterland (Paraguay, Bolivia and parts of Argentina and Brazil). Figure 5.1 identifies the hinterland for different ports in the Southern Cone and shows Uruguay’s potential for hinterland expansion (Hodara, Opperti and Puntigliago, 2008).
5.15 Uruguay is geographically well positioned to act as a gateway for regional trade and as a regional transit hub. The Port of Montevideo, Uruguay’s principal port, is centrally located in the River Plate Basin and is a central gateway to the south-eastern and central markets of South America. It further serves as the entrance point to the Paraguay-Paraná river system, which not only connects with the hinterlands of Argentina and Uruguay, but also the landlocked countries’ Paraguay and Bolivia, as well as interior parts of south-western Brazil. Due to its geographic location, the port of Montevideo has been a strategic access point to these markets from the end of the 19th century (Figure 5.1)

Figure 5.1: Uruguay’s Port Hinterland

Source: Hodara, Opperti and Punti (2008)

5.16 A favorable regulatory framework has further supported the recent development of Uruguay as a logistics hub. In particular the laws of Free Trade Zones and of Free Ports (Law N° 15.921 approved in 1987 and Law N° 16.246 approved in 1992, respectively) established a regulatory framework which enabled the provision of logistics services by both national and foreign providers. The port legislation allowed services providers to handle goods in transit, while the free trade zone legislation enabled providers to add value to traded goods, destined mainly to MERCOSUR countries, and to a lesser extent other regional markets. The approbation of the Free Port Law in 1992 was followed by particular strong growth in Maritime Transport and Port Services during 1993 and 1994.

5.17 Transport and transport related services activities account for around one third of service exports. The main activity within this sector is port activity, mainly related to transshipment. Maritime transport and related port services accounted for about 43 percent of total value added in Transportation & Storage Services. The production of Supporting and Auxiliary Transport Activities (including those associated with air and maritime transport and storage) increased their share from about 30 percent in 1988 to about 50 percent in 2008 of value-added in Transportation and Storage Services. The other modes of freight transportation have had a significantly less dynamic performance in recent years.
5.18 Almost one third of the exports of transportation services are performed from FZ and these are characterized by their intensity in logistics activities. In the FZ, the activities carried out are primarily logistics related to some transformation of goods. In the evolution of specialization within the export of transport services, the FZ takes up prominently but transshipment port activity is still predominant. In 2008, transshipment cargo accounted for 52 percent of container traffic handled by the Port of Montevideo. Transshipments increased from about 70,000 TEU in 2000 to 350,000 TEU in 2008, mainly due to a sharp increase in transshipments from Argentina (see Figure 5.2). Transshipment capture from Argentina is largely the result of greater port and terminal efficiency, in particular for refrigerated containers. As an example, transshipment operations in Montevideo save one day of transit time for fruit exports from Patagonia compared to the Buenos Aires.

Figure 5.2: Containerized Cargo Traffic in the Port of Montevideo, in Thousands of TEU

A Rationale for Trade Facilitation Reforms

5.19 Trade facilitation can be broadly defined as the set of policies aiming at reducing logistics costs. These policies can range from the simplification and standardization of customs procedures, to investment in physical infrastructure projects such as port improvements or road constructions. In an international environment of declining tariffs, trade facilitation has been at the forefront of policy discussions as the next key policy option to diminish trade costs for developing countries.

5.20 Trade facilitation measures can be perceived along two dimensions: investment in “hard” infrastructure (highways, railroads, ports, etc.) and in “soft” infrastructure (transparency, customs efficiency, institutional reforms, etc.). A particular interest of this distinction resides in comparing the benefits and costs of investment or policy reform along both dimensions. Large investments in physical infrastructure projects to improve infrastructure quality alone do not necessarily lead to lower transport prices or a more efficient logistics system; complementary steps in regulatory reform are also often required. To illustrate, certain regulatory barriers (market access restrictions, technical regulations, and customs regulations)
can protect inefficient logistics operators and discourage the entry of more cost-efficient operators. Reforms to enhance competition are therefore crucial to lower trade costs and improve the overall logistics system. In a more competitive environment, measures to improve physical infrastructure are likely to produce better results.

5.21 **Quantitative analysis provides empirical underpinnings for the rationale and impact of trade facilitation reform in Uruguay.** Portugal-Perez and Wilson (2009) capitalize on the information spanned by several commonly used trade facilitation measures (Doing Business’s Trading Across Borders; the World Economic Forum, Transparency International; and the World Bank’s Logistics Performance Indicator) and construct trade facilitation indicators for ‘hard’ and ‘soft’ infrastructure to quantify the impact of trade facilitation reform on trade (see Box 4 for methodological detail).

5.22 **Uruguay lags the region in efficiency of Trading across the Border.** Table 5.1 ranks the best performing countries in Latin America along four trade facilitation dimensions. Uruguay is shown to be the second best performer in Business Environment, and is ranked eighth in both Infrastructure and ICT. Uruguay’s performance is less impressive in efficiency of Trading across the Border, due to the high number of documents required and the time taken to complete export and import procedures.

5.23 **Substantial trade gains expected from trade facilitation reforms.** Illustrative estimates by Portugal-Perez and Wilson (2009) show that improvements in infrastructure quality up to at least half the level of the United States could increase Uruguayan exports by about US$872 million. Efficiency of Trading across Borders appears another important indicator to focus on. If investment and regulatory reforms were to reduce the number of documents and the time required to comply with export and import procedures to half the level of the US, exports are estimated to increase by about 3.7 percent (or an equivalent US$166.5 million compared to exports in 2007).

5.24 **Trade facilitation reforms aimed at efficient and cost-effective logistics system should benefit both domestic trade and regional transit flows.** Scale economies from greater trade volumes, in turn, are expected to further enhance the cost-effectiveness of Uruguay’s logistics system.

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66‘Hard’ infrastructure relates to e.g. ports and road networks, while ‘soft’ infrastructure captures transparency, customs efficiency, the business environment, etc.
Table 5.1: Trade Facilitation Indicators: Best Performers in Latin America, 2007

<table>
<thead>
<tr>
<th>Country</th>
<th>Hard Indicators</th>
<th>Country</th>
<th>Soft Indicators</th>
<th>Country</th>
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</tr>
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<tr>
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<td>Paraguay</td>
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<td>Venezuela</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Source: Portugal-Perez and Wilson (2009)

Policy Recommendations

5.25  **Uruguay’s potential as a regional logistics hub depends on its ability to increase the scale of its operations while reducing overall logistics costs with trade facilitation reforms.** Policy measures should therefore aim to facilitating both domestic trade and regional transit flows. Such a strategy should consider three main strains: (1) strengthening of the port logistics system to function as a gateway port for Uruguay’s domestic cargo; (2) development of Montevideo as highly efficient, intermodal hub for Argentinean, Paraguayan and Brazilian cargo; and (3) developing efficient hinterland logistics systems.

5.26  **All three strains are related and mutually reinforcing.** Cost-effective handling of domestic import/export cargo is critical for the development of Uruguay’s domestic economy and industry. Transit cargo generates the necessary scale economies that will allow local exporters and importers to benefit from more competitive shipping costs. In addition, transit cargo generates additional revenues and provides the opportunity to develop Uruguay’s logistics industry based on the resources of the transshipment cargo industry.
5.27 Going forward better integration of the various components in the logistics chain is important for the continuous improvement of Uruguay’s logistics system. Uruguay has potential to develop into a regional logistics hub for the Southern Cone, but to reap its fullest potential, future developments should target the development of an integrated logistics chain system with a strong focus on inter-modality. For this to materialize, at the minimum, transport policy, Customs, and the regulatory environment need to be oriented towards supporting an integrated logistics chain, in both a national and transnational context.

5.28 In sum, Uruguay’s transport policy, customs and the regulatory environment should therefore be oriented towards supporting an integrated logistics chain in both a national and transnational context.

Transport Policy Reform

Strengthen the Port System

5.29 Montevideo should actively seek to increase the number of vessel calls. Montevideo currently does not have a large number of vessel calls. Key to attracting more vessel calls are investment in port infrastructure to attract greater levels of transshipments and an increased scale of port operations; the enhanced ability of the port to turn around vessels quickly, which is a function of several factors including equipment, processes, systems, and general efficiency; and a well designed strategy to market the Port of Montevideo.

5.30 Port efficiency could be greatly improved by a ‘Single Window’. While data exchange between shipping lines and customs authorities, as well as between shipping lines and port authority is paperless for transshipments, other procedures related to domestic imports and exports require extensive, and often parallel, documentation. A ‘Single Window’ approach where all port related information between private and public agents is communicated within an integrated, computerized system would greatly improve the efficiency of cargo management.

5.31 As the Port of Montevideo is constrained by depth and the absence of land for expansion, access to a highly efficient multimodal network that connects to an extended hinterland would also help preserve attractiveness and exploit scale economies. The port depends on substantial dredging to handle some of the larger vessels increasingly deployed by shipping lines. In addition, this port faces landside constraints to expansion. To compensate for these physical constraints, the port will have to enhance strategies to increase its efficiency and productivity.

Reinforce Hinterland Connectivity

5.32 Enhanced Hinterland connectivity is the key to Uruguay’s potential as a logistics hub. More than four-fifths of the country’s trade volumes pass through the port. The Port of Montevideo’s hinterland extends to Paraguay, Southern Brazil, Argentina and Bolivia, and Uruguay is generally well connected to all its neighbors. Uruguay possesses all the major modes of transport on which to build a logistics platform. However the performance and level of integration of the national transport system is such that it suffers significant disadvantages when
compared to neighboring countries. In particular, air, river and rail components are underutilized due to weaknesses in infrastructure and operational efficiency (for a full account of transport related constraints the reader is referred to the Policy Note on Transport).

5.33 **Efficiency of road transport sector should be improved.** Road transport suffers from delays at the port and at border crossings; moreover, transport fleet faces low utilization rates. Delays can add as much as one day in transit time. The delays can be reduced with the implementation of innovative operational practices; new gate and inspection technology and infrastructure; improvements to customs facilitation; and a port community system. Higher road transport costs compared to neighboring countries are partly due to differences in national taxation and regulatory regimes. Harmonization of such regulations across countries would serve to level the operating environment. Freight rates are also elevated as cargo is often only carried on one leg of the journey. Such unmatched transport flows could be reduced by more efficient information systems, such as online freight exchanges which act as ‘clearinghouses’ where available cargo spaces are efficiently matched with shippers’ needs.

5.34 **Rail traffic has stagnated despite recent increases in national and regional freight volumes.** Incompatible gauge width with Brazil; the need to rehabilitate a substantial part of the rail link to Argentina and Paraguay; and absence of a rail-road interface severely hamper the inclusion of Uruguay’s railways as part of an integrated logistics chain that connects the port with its hinterland. Improving efficiency in the railway system is important to provide a viable alternative to road transportation. A multimodal approach that uses both rail and road would further help to increase rail freight volumes.

**Enhance Scope for Multimodal Operations**

5.35 **Enhancing the potential of Uruguay as a logistics hub requires optimizing the use of all available modes of transport to develop an efficient multimodal logistics network.** While Uruguay has the infrastructure to provide seamless multimodal logistics services, the various components of the logistics infrastructure are presently operated as separate systems, with little complementarities. As it is, the port-land interface, especially railroad-maritime multimodal transport at the Port of Montevideo, remain largely underutilized. Deliberate measures should be taken to develop efficient interfaces between these components. Multimodal transport requires the possibility of transporting containerized merchandise in a time sensitive and flexible manner.

5.36 **The Ro-Ro concept** has potential for transit transportation, in particular between **Uruguay and Argentina.** The Ro-Ro concept, which is effectively used in the Danube basin would not only provide high flexibility for transit transportation but also reduce delays at border crossings, load times, pollution and road accidents. Implementation of the Ro-Ro concept requires a common regulatory regime between participating countries.

5.37 **Modal interfaces and multimodal operations in Uruguay can be designed and extended through the development of freight villages.** Especially built for the intermodal transfer of goods, freight villages provide a way of increasing the capacity of the port by offering

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67 Ro-Ro or roll on/roll off refers to ships designed to carry rolling-stock cargo which does not require cranes to be loaded or off-loaded but is driven on and off the ship's decks.
off-site storage and handling facilities for cargo. Such freight villages would be developed in proximity to the Port of Montevideo and to Carrasco Airport and would be framed and integrated within the free port regime.

**Endorse Transnational Infrastructure Initiatives**

5.38 Enhanced regional hinterland accessibility requires greater interconnectivity between Uruguay’s transport networks and its neighbors. Greater regional interconnectivity requires regional cooperation and is therefore directly linked to progress in regional integration efforts, such as those under MERCOSUR, LAIA and IIRSA. These platforms could be used more effectively to build a consensus on transnational infrastructure needs and to promote regional trade facilitation.

5.39 In particular, Uruguay should take advantage of the identification of the Port of Montevideo as a central port for the ‘MERCOSUR-Chile’ axis within the IIRSA initiative. Recent projects in Uruguay’s IIRSA portfolio specifically aim to strengthen Uruguay’s position as a regional logistics centre through improvement of the sea-land interfaces. Efficiency gains at a gateway port are likely to benefit all countries along the transport chain.

**Redirect Customs Towards Trade Facilitation**

5.40 Uruguay’s dependence on international trade requires efficient and effective trade facilitation institutions. Inefficient Customs operations add a premium to transport costs and undermine Uruguay’s ability to attract investments and trade. Uruguay’s ambition to evolve into a logistics hub requires a re-orientation of Customs towards an effective trade facilitator for both domestic trade and regional transit flows. This requires striking the right balance between the need for security and business-friendliness.

5.41 Key areas in need of reform are: human resources management, auditing and inspection. Due to its dual role as trade facilitator and border protection agency, customs needs to strike the right balance to facilitate efficient and secure integrated logistics chains. Reform implies: increasing human resource capabilities; simplifying release and clearance procedures; the adoption of a single window approach and effective risk management analysis; adherence to international standards; and cooperation with other border agencies and the private sector are essential prerequisites for an efficient and flexible Customs organization that facilitate cross-border flows.

5.42 An effective Customs Transit Regime is important to attract transit flows. An efficient Customs transit regime should allow goods in transit to travel through Uruguay’s Customs territory free of import duties and other charges and without the need for physical inspection en route during transit, other than the checking of the transit document, the seals and the external conditions of the load compartment or container.
Establish a Business Friendly Operational and Regulatory Environment

5.43 Although Uruguay’s regulatory framework for logistics has been quite progressive and instrumental for the growth of the sector, a complementary regulatory framework is needed to establish a more secure business environment. Uruguay’s success as a regional hub further depends on the cooperation of Uruguay’s trading partners to develop and enforce all the necessarily rules for an integrated, logistics chain.

5.44 Encourage non-discriminatory access to infrastructure and adopt pro-competition safeguards. Logistics services providers require access to available infrastructure to operate. The current regulatory environment could be improved by introducing legislation that ensures nondiscriminatory access to infrastructure and encourages the use of the same. It also requires pro-competition safeguards that ensure that infrastructure operators do not prevent others from providing services. Pro-competition safeguards would also avoid possible conflicts of interest in cases where owner/regulators are also service providers; e.g., the case of National Port Authority (ANP) who currently not only regulates the port but also is a minority share holder in the Terminal Cuenca del Plata (TCP) container terminal. Such a complementary regulatory framework is needed to establish a more secure business environment.

5.45 Cooperation among trading partners remains an important condition for achieving an integrated logistics chain. Although Uruguay’s unilateral policies will continue to play a relevant role in the development of the logistics industry, further developments, in particular aligned with transit facilitation, will require stronger collaboration among trading partners in a number of areas. For instance, cross-border collaboration is required to address constraints faced by an integrated, transnational logistics chain. As an example, the development of Ro-Ro transportation will require coordination and collaboration with Argentina and Paraguay.

5.46 Need to address border controls and improve transit regime. There is also an urgent need to address other areas of cooperation among MERCOSUR and associated countries. In particular, border controls need to be improved to reduce delays and to improve the provision of services. Moreover, land transportation is the main mode of delivery of transit goods, and while a well developed land transportation regime exists, its operation is impaired by inadequate computer systems; insufficient infrastructure; and the absence of trained personnel in neighboring countries that require investment decisions by the incumbent country.

5.47 A regional approach to lifting restrictions on sabotage operations offers great potential to lower transport costs. Available evidence suggests that lifting such restrictions would lower freight rates, lead to better use of spare capacity, result in more frequent services; minimize the need for waivers; encourage greater competition in the market; and increase trade volumes especially of water-borne cargo. However, such liberalization would have to be tackled gradually, in a manner that is sensitive to the operators in each country and ideally, after harmonization of the regulatory regimes.
Complementary Agenda

5.48 Reliable and up-to-date statistics on logistics are essential to developing effective transport and trade facilitation policies. To date, official statistics lack sufficient coverage to provide a detailed picture of the size and activities of the entire sector. There is also no comprehensive information about Uruguay’s logistics costs. Such information is needed to provide a better understanding of the full costs of the different modes of transport; to establish a reference data source for the transport profession and to assist evaluation of the effectiveness of government policy against pre-determined policy targets.

5.49 Importance of capacity building and continued professional development for all actors involved in logistics, especially road transportation and Customs. While logistics service providers within free zones are highly sophisticated, an efficient logistics system requires a skilled workforce along the entire logistics chain. Capacity building and continued professional development for all actors involved in logistics are therefore important. Uruguay’s education system should therefore be geared towards supporting the needs of the logistics community.

Closing Remarks

5.50 Overdependence on shipping lines bears potential risks. The Port of Montevideo currently benefits from the strategy of Latin America’s biggest shipping company (CSAV) to intensify the use of Montevideo as a transshipment hub for cargo from Southern Argentina. The port, in this case, is also benefiting from the existing cabotage restrictions that restrict foreign flagged vessels from moving cargo between Argentinean ports. However, dependency on shipping lines bears potential risks as shipping lines are known to act footloose and have in the past moved between ports in search of the best economic offer (Sanchez and Wilmsmeier, 2006).

5.51 Although Montevideo is currently the largest transshipment port in the River Plate, the Port of Rio Grande is emerging as a significant competitor. Rio Grande (Brazil) has several advantages over Montevideo. While transshipment activity is crucial for Montevideo to reach a sufficient volume in freight to attract shipping services, Rio Grande has access to a significant captive hinterland that generates high economies of scale. The Port of Rio Grande can also handle larger ships than Montevideo and Buenos Aires. Its port access, unlike in the others does not depend on the dredging of long access channels.

5.52 Future port infrastructure development on the East Coast of South America will also influence the structure of shipping liner services. Once main ports, like Santos (Brazil), provide greater water depths, shipping lines are likely to respond and change port calls. If ports are not prepared, shipping lines will bypass them and only provide them with feeder services (e.g., Buenaventura, Colombia). This would reduce the direct connectivity of Uruguay’s ports and affect Uruguay’s attractiveness as a logistics hub.

5.53 Expanding into traditional core markets and new niche markets as well as focusing on developing as a gateway for Paraguay seems like a good option for increasing competitiveness and reducing dependency on shipping lines.
<table>
<thead>
<tr>
<th><strong>Table 5.2: Policy Matrix</strong></th>
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<tbody>
<tr>
<td><strong>SHORT TERM</strong></td>
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<tr>
<td><strong>Strengthen port system as gateway port</strong></td>
</tr>
<tr>
<td><strong>Develop Montevideo as a highly efficient, intermodal hub for regional cargo</strong></td>
</tr>
<tr>
<td>Develop efficient hinterland logistics system</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td><strong>Capacity Building:</strong> To compete at an international level, a highly-skilled logistics workforce is required. While logistics service providers within Uruguay’s FZ are highly sophisticated, an efficient logistics system requires a highly skilled workforce along entire logistics chain. Capacity building and continued professional development for all actors involved in logistics, in particular in the road transportation sector and customs, are therefore important.</td>
</tr>
<tr>
<td><strong>Data collection:</strong> To date, official statistics lack sufficient coverage to provide a detailed picture of the size and activities of the entire sector. There is also no comprehensive information about Uruguay’s logistics costs. Such information is needed to provide a better understanding of the full costs of the different modes of transport; to establish a reference data source for the transport professions and to assist evaluation of the effectiveness of government policy against pre-determined policy targets.</td>
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</tbody>
</table>
CHAPTER 6.
THE TRANSPORT SECTOR

Strategic Context and Diagnostic of the Uruguayan Transport Sector

Principal Characteristics

6.1 In terms of coverage and quality, transport infrastructure and services in Uruguay are very good compared to other Latin American countries and middle-income countries in other regions. Uruguay’s transport system is reliable and high quality, reflected in low indirect costs. Reforms improved the highway, freight transport and port sub-sectors, optimizing available resources and utilizing them efficiently compared to neighboring countries. Uruguay has improved the capacity and quality of transport infrastructure to respond to the rising volumes of international trade and internal production, in particular in the forestry and agriculture sectors.

6.2 Uruguay is in a position to convert itself into a regional logistics and distribution hub, both because of its location and the potential development of infrastructure and logistics management. The logistics sector exported services during 2008 valuing more than US$1 billion. Investment projects planned and underway have the common objective of positioning Uruguay as a distribution center for regional markets. Uruguay intends that its logistics sector act not just transversally to support the competitiveness of all other productive sectors, but to become a specialized productive sector in itself. To help achieve this goal, the Ministry of Transportation and Public Works (Ministerio de Transporte y Obras Públicas—MTOP) in October 2008 transformed the National Investment and Planning Office into the National Logistics, Investment and Planning Office (Dirección Nacional de Logística, Planificación e Inversiones—DNLPI), in charge of the development and promotion of the national logistics sector. Simultaneously, DNLPI was assigned the task of creating the National Logistics Institute (Instituto Nacional de Logística—INALOG), a non-government public organization with representatives of the executive branch as well as businesses generating freight shipments, offering logistics services, and generally involved in international trade.

6.3 Uruguay’s infrastructure and transport system is generally reliable and of high quality, reflected in low indirect transport costs, with the exception of the railroad system. User perceptions on the quality of the system are high, as are objective quality indicators for road infrastructure, highway freight transport and the port sector. The major exception is the railroad system, which is low quality and uncompetitive. Its infrastructure network has deteriorated after many years of disinvestment, the operating company lacks minimal levels of efficiency required to run the system, staff have not been upgraded, and the company loses US$10 million annually. Past reform efforts have included different forms of private participation, which were not successful for various reasons. After failed reform efforts, the administration of President Vázquez opted to rehabilitate part of the railway infrastructure with public funds, as an essential condition for any future reform.

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68 This policy note considers the road, railroad and port sub-sectors, analyzed from the point of view of their infrastructure and services. The air and airport subsectors are not considered due to time and budget limitations and the low influence of this sub-sector in cargo transport in Uruguay.
6.4 The growing efficiency of transport services in Uruguay, especially road and port services, is directly related to sector reforms of the past decade to modernize service provision, increase investment and find new sources of financing. These reforms left the formulation of policies, planning and supervision firmly in the hands of the government, while providing incentives for private sector and public-private participation in operations and service provision. Although the MTOP did not abandon all operational activities, at this time they are secondary to its policy and oversight roles. The reformed institutional framework has been very effective in strengthening Uruguay’s efficiency and competitiveness.

6.5 In recent years Uruguay has experienced a growing volume of international trade, but the volume of freight flows is unbalanced, which complicates the profitability of the transport system. Between 2005 and 2008, the Uruguayan economy grew by 6.6 percent annually, driven in large measure by external demand for agro-industrial products and some industrial goods. Maritime freight flows experienced a sharp rise, principally through the port of Montevideo, which grew 100 percent between 2001 and 2008 (in 2008, Montevideo moved 400,000 containers, 60 percent of which was transit or transfer freight). The railroad system moved around 1.3 million tons in 2008, recovering the level of 2000. However, due to the structure of trade, the land and maritime freight flows are unbalanced, which affects the efficiency of the freight transport system as return journeys are often with empty containers. Uruguay exports 1.26 times to Brazil the amount it imports, and with Argentina it imports 2.4 times the amount it exports. This implies 20 percent of empty container returns from Brazil and 58 percent from Uruguay to Argentina.

Road Sub-Sector

6.6 Policies favoring roads over other modes of transport and prioritizing maintenance have optimized resources available for road infrastructure. The quality and security of road infrastructure in Uruguay is high compared to other countries in Latin America with comparable income levels. The national road network (8,782 km) is administrated by the MTOP through the National Road Office (Dirección Nacional de Vialidad—DNV). Of this network, 2,239 km are considered international corridors, 1,371 km are in the primary network, 3,883 km in the secondary network, and 1,005 km in the tertiary network (See Table 6.1). The departmental road network (about 62,000 km) is administrated by the 19 departmental governments. The percentage of paved roads in the national network is the highest in the region, and its current condition is among the best.

Table 6.1: Condition of the Primary Network

<table>
<thead>
<tr>
<th>Country</th>
<th>National road network (km)</th>
<th>Percentage Paved</th>
<th>Condition of the national paved road network (%)</th>
</tr>
</thead>
<tbody>
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<td>Good</td>
</tr>
<tr>
<td>Argentina</td>
<td>38,484</td>
<td>81</td>
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<tr>
<td>Brazil</td>
<td>92,038</td>
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<td>Colombia</td>
<td>16,528</td>
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</tr>
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<td>Peru</td>
<td>17,101</td>
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</tr>
<tr>
<td>Uruguay</td>
<td>8,782</td>
<td>89</td>
<td>57</td>
</tr>
</tbody>
</table>

Source: National road offices, most recent data available.
6.7 Investment in the road sector has increased substantially in recent years, from 2.9 billion pesos to 7.5 billion pesos in 2009 (constant 2009 pesos). The relatively high quality and coverage of the road network is the result of several years of favoring road infrastructure over other modes of transportation, and by prioritizing maintenance. Following the road sector reforms, the MTOP has correctly prioritized road maintenance over new road construction. In 2008, MTOP improved regulations and strengthened effective control over the freight transport system to preserve the condition of the network.

6.8 MTOP’s road management has historically been good, always prioritizing the preservation of assets even during times of crisis. As a result, the current condition of the network does not appear to require substantial increases in spending on maintenance, although it would be important to reinforce initial investments in rehabilitating the secondary road network. An analysis of road maintenance and investment spending during the last five years and the resulting benefits measured by reduced vehicle operating costs shows that high levels of efficiency have been achieved. As a result, presupposing continued spending on maintenance and selective upgrades in the secondary network, efficiency gains will be found mainly in new projects or changes in standards for certain parts of the network—that is, in components where efficiency remains low.

6.9 Uruguay has a well-balanced market for highway freight transport services, with a high level of formality and low negative externalities, unlike many other Latin American countries. The freight transport market progressed toward formalization and professionalization after the successful reforms of 1995. More than 4,000 professional transportation companies now operate in the country.

6.10 An efficiency analysis indicates that higher vehicle use rates would bring greater potential gains to freight transport services than gains from improved road infrastructure. Raising vehicle occupancy rates from 0.6 to 0.7 would save on average 14 percent of operating costs, which would translate into US$41 million over the entire transport fleet. Vehicle occupancy rates are fundamentally determined by the company’s ability to obtain freight for the return journey, a task made difficult by the structure of Uruguay’s trade. Nevertheless the impact of this situation is substantial and merits policy consideration.

Railway Sub-sector

6.11 Railway transportation is relatively backward and inefficient. The railway network is state property and managed by the State Railway Administration (Administración de Ferrocarriles del Estado—AFE),\(^69\) regulated by its own law and a dependency of the MTOP. No land transport and national railway policy exists to define the rules of the game in the transport market and public investment. The institutional framework has gaps and the roles of the government and the AFE are confused. The private sector does not participate in the railway sector. Legal instruments were drawn up to incorporate the private sector into freight transport,\(^69\) AFE, established in 1975, is in charge of cargo and passenger services as well as the maintenance, administration and operation of the country’s railway infrastructure. More recently the Railway Corporation of Uruguay (Corporación Ferroviaria del Uruguay—CFU) was created to invest in the railway sub-sector.
but the initiative has not yet shown results, in large part because the scheme did not permit the 
private sector to intervene in operations.

6.12 The condition of the railway infrastructure is deplorable, limiting operations to 
1,600 km of the 3,000 km network (the rest is abandoned). Two international connections 
exist: one in the north with Brazil with a different gauge and another in the northeast with 
Argentina, with the same gauge (1,435 km). Both connections are with privately-operated 
railways. The condition of the network administered by AFE is deficient. Infrastructure capacity 
is low and the rail lines are in poor condition. This situation generates a high rate of accidents 
and problems, which increases operating costs and reduces the reliability of service. AFE’s 
rolling stock is old, inadequate, and has varying technical specifications, which further increases 
operating costs. The current average density of freight transport on the network is 180,000 t-
km/km, well below the economic viability limit for a railway.

6.13 AFE is in a critical economic, technical and management situation. The company and 
the railway system are in a state of technical deterioration resulting from many years of 
management practices that have not been modernized, making it extremely difficult to imagine 
achieving change with the same management scheme. Without a complete restructuring, a 
successful turnaround is not likely. AFE has too many employees and its productivity is the 
lowest of all railway systems on the continent. Up to now, personnel reduction has occurred only 
via natural attrition. Operating income is not sufficient to cover personnel costs, and the state is 
forced to subsidize half of its budget, an unjustified cost to the society (Table 6.2).

Table 6.2: Benchmark between AFE and Argentine Regional Railways

<table>
<thead>
<tr>
<th>Operator</th>
<th>Ton-km (millions)</th>
<th>Average distance of freight traffic (km)</th>
<th>Ton-km per km of operating railway (millions)</th>
<th>Ton-km per locomotive in service (millions)</th>
<th>Ton-km per wagon in service (thousands)</th>
<th>Ton-km per agent (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEPsa</td>
<td>1.357</td>
<td>458</td>
<td>430</td>
<td>37</td>
<td>680</td>
<td>1696</td>
</tr>
<tr>
<td>Mesopotamico</td>
<td>844</td>
<td>618</td>
<td>401</td>
<td>34</td>
<td>622</td>
<td>1406</td>
</tr>
<tr>
<td>FCO</td>
<td>682</td>
<td>605</td>
<td>548</td>
<td>69</td>
<td>514</td>
<td>1554[1]</td>
</tr>
</tbody>
</table>

[1] Values for the FCO come from the World Bank, with the exception of labor productivity where it was assumed that the 439 
employees are dedicated exclusively to freight.
[3] Considering in service eight 2,000 horsepower GE locomotives and 10 Alstoms, after deducting two for suburban service and 
considering every two Alstom locomotives as main line locomotive and two GEs of 1,500 HP.

6.14 Nevertheless, railway transport has important potential considering increasing 
freight flows, and in particular the latent demand for the transport of forest products. 
AFE’s main business is transporting 1.3 million tons of freight concentrated in eight products. If 
the market for forest products grows as projected in coming years, the number of trucks on 
principal, secondary and national roads will triple, causing excessive traffic and a deterioration 
of the road network. Investing in railway infrastructure and operating AFE more efficiently are 
necessary to make railways a competitive alternative for the expected flows of forest products.
6.15 The government visualizes railway modernization based on the incorporation of public and private capital and complementing the management capacity of the AFE with private management in service delivery. The railroad system and its international connections should form a fundamental element in the long-term project of converting Uruguay into a logistics and services center for the southern cone. An Office of Railway Regulation will need to be created at the central level (MTOP), principally to regulate the conditions of competition and safety. The MTOP is aware that the effort to improve railway management was poorly conceived and considers several elements as necessary to successfully pursue reform: (i) a land transportation policy; (ii) a railway policy; (iii) an institutional structure within MTOP that develops and applies these policies; (iv) improvements in the management capacity of AFE; and (v) a coherent development plan for AFE, formulated after the previous steps and possibly including some form of private sector participation.

**Port Sub-sector**

6.16 The Uruguayan port system has grown significantly following the port reforms, with the movement of containers indicating dynamism and modernization. The port reform, which introduced intra-port competition via private participation, has been successful. Port tariffs declined, freight volumes are higher and port infrastructure investment increased. The port system is under the responsibility of two public offices within the MTOP: the National Hydrography Office (Dirección Nacional de Hidrografía—DNH), for tourist port management, and the National Port Administration (Administración Nacional de Puertos—ANP), for commercial ports. Prior to 1990, the Uruguayan port sector was highly inefficient, with inadequate installations, an onerous bureaucracy, high costs, cross-subsidies with other port uses and a centralized organization. When the government decided to reform the sector in 1992, traffic was declining in the country’s principal port, Montevideo. This port saw a jump in productivity from 64,286 twenty-foot equivalent units (TEU) to 454,531 TEU in 2005 and 675,273 TEU in 2008 (Figure 6.1). While Uruguay’s maritime connectivity index is slightly below its neighbors, this has not affected the average number of boats serving Montevideo compared to neighboring ports. Montevideo rose from 7th in 2004 to 4th position in 2008 among all southern cone ports in terms of container movement, after Santos, Buenos Aires and Valparaíso, and represents a bit more than 20 percent of sub-regional traffic.

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71 A detailed analysis with various efficiency indicators is found in “Uruguay: Informe de Política de Desarrollo (DPR): Eficiencia en Infraestructura Productiva y Provisión de Servicios: Sectores de Transporte y Electricidad”, World Bank, 2007. These include average boat productivity, average unloading times, gross crane productivity, average container time in terminal, dock occupancy rate, and average turnaround time. The analysis clearly indicates that intra-port competition has lowered user tariffs.
The port of Montevideo expansion strategy is appropriate to improve efficiencies of scale by permitting larger ships into the port, reducing maritime transport costs to users. In May 2007, TCP began a US$42 million project to expand the terminal, extending the dock to 350 meters long and 25 meters wide for a total surface area of 30 hectares, with a depth capacity of more than 14 meters. The dock would have post-Panamax cranes sufficient to serve ships with 17 rows of containers. The total investment is around US$70 million, and will extend service to ships of 6,000 TEU (the current limit is ships of 3,000-4,000 TEU). In 2007, the ANP dredged the access canal to the port to 11.5 meters, and has called for bids for a US$33 million contract to deepen the canal to 13 meters. Other projects at Montevideo include: (i) construction of a new container terminal for US$260 million (approved by law in July 2009, and to be put out for bidding in 2010); (ii) construction of C Dock, a multipurpose deep dock 333 meters long to be managed by the ANP, to be built at an estimated cost of US$62 million to be financed with a loan from the IADB; (iii) construction of D Dock at a cost of US$25 million financed with private investment; (iv) construction of a grain and forestry product terminal on the breakwater at a cost of US$24 million financed by private investment; (v) landfill the North Access to gain 12 hectares for freight transport operations, to be managed by the ANP; and (vi) construction of Puerto Capurro in the fishing zone, to be managed by ANP, with a public investment of US$35 million and private investment of US$40 million.

Public and private investments are also underway to expand ports in the interior. Investments are financing the following projects: (i) new passenger terminal at Puerto de Colonia (US$7 million); (ii) crane and signaling repairs the port of Salto (US$500,000); (iii) rehabilitation of dock for container operations and dredging the entrance to Almirón, and bidding for a fixed crane at the port of Paysandú (US$4 million); (iv) dock for landing craft, extension of deep water dock, and new container crane at Nueva Palmira (US$10 million); (v) extension of deep water dock and infrastructure improvements at Fray Bentos (US$6.5 million); and (vi) feasibility studies for a customs tunnel and intermodal railway terminal at Puerto Sauce in Juan Lacaze.
Institutional Issues

6.19 The institutional structure of the MTOP, planning procedures and the regulatory framework could be improved to increase efficient resource allocation between transport modes. The cost-benefit analysis on the land transportation sector carried out for this study points to potential improvements through reallocating resources between transport modes. Despite its role in policy formulation and planning, the institutional structure of the MTOP does not facilitate the execution of these responsibilities. Until 2007, the MTOP had no multimodal planning office and thus had not developed a global transport sector analysis, but rather focused on individual sectors. Planning and budgeting is done by sub-sectors, in the offices of Roads, Hydrography and Transport, achieving high optimization of resources (particularly in the road sector) but without assessing tradeoffs between transportation modes with planning tools. As well, while the regulatory framework and regulatory units in the transport sector have been successful thus far, going forward they should be consolidated and their roles clearly defined to manage the growing competition as a result of rising freight flows and private participation.

6.20 The implementation of the policy agenda proposed in this note should begin with a central government institutional framework consistent with the role defined for this level and with overall transport policies. The principal institution in the system is the MTOP, which defines and applies sectoral policies. These policies should be consistent with national economic and social policies, and consider budgetary restrictions. Transport policies should be coordinated with productive development and regional/local policies. The following entities might be considered for the MTOP to achieve these goals: (i) a planning and public investment transport project evaluation unit; (ii) a regulation and oversight unit for the transport market; (iii) a railway regulation office; (iv) the Uruguay Railway Corporation (Corporación Ferroviaria del Uruguay), which already exists but lacks a clearly-defined role in applying railway sector policies; and (iv) management of the railway modernization plan.

Financing, Investment and Public Expenditure Management in Transport

6.21 Road sector investment rose significantly in the past five years. In 2007, investment recovered to the level before the 2002 crisis, and in 2008 and 2009 investment doubled (Figures 6.2 and 6.3). The majority of this additional investment was achieved through the National Development Corporation (Corporación Nacional para el Desarrollo) and the Uruguay Road Corporation (Corporación Vial del Uruguay).
Unlike past years when investment was limited to maintaining assets, the recent investment increase expanded transportation assets. Management of roads in Uruguay has been exemplary: road maintenance spending has been maintained despite the crisis, and as a result the road network continues to offer very acceptable services. The past five years also saw investment in important new projects considered necessary by transport studies.  

The government has employed various instruments to boost infrastructure investment. Road infrastructure expansion has been financed by the Uruguay Road Corporation (Corporación Vial del Uruguay—CVU), a limited liability corporation owned by the state, and the National Development Corporation (Corporación Nacional para el Desarrollo—CND). These corporations have channeled funds from international organizations such as the Andean Development Corporation (Corporación Andina de Fomento—CAF), the IADB and the World Bank, which complemented tradable securities issued by the CVU. CVU’s own resources for the entire period of the road concession have risen to US$903.1 million: (i) US$514.7 million from tolls (approximately US$30 million per year); and (ii) US$388.4 million from MTOP subsidies (US$24 million annually). To maintain scheduled projects and cover the gap between income and expenditures, the CVU has accessed external financing via a CAF loan for US$70 million, an IADB loan for US$100 million, bond issues for US$30 million and bank loans for US$20 million. Apart from rehabilitation and maintenance work envisioned in the contract for the concessioned network, CVU investments also included rehabilitation and new works on international corridors as part of the IIRSA project (Route 26 and Route 12), the Montevideo ring road, the East Access to the Montevideo Airport, the new lanes in the Interbalnearia road, and the new lanes on Route 1.

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Section II: Principal Challenges and Policy Options

A. Principal Challenges for a Long-term Transport Sector Strategy in Uruguay

6.24 The development of logistics and transport activities would be based on transshipment, due to low domestic demand—the challenge is to generate sufficient value added. Transit activities imply the consumption of national resources and do not necessarily add much value. The government should ensure that related activities, companies and jobs are also created that allow for the generation of value added. These types of activities include packaging and handling in freight transfer zones, although in some cases activities could be more sophisticated.

6.25 Highway transport infrastructure and services do not have sufficient capacity to manage the projected freight load, and the railway system has low quality and efficiency levels in its current state. To accommodate expected demand, developing the railway system is the most efficient solution in the long term (20 years). Rehabilitating and upgrading the railways implies an initial investment starting during this administration, and modernizing the management of AFE. Without both of these actions, railway transport will not be an alternative, and the highway system will generate greater negative externalities attempting to handle the additional freight load.

6.26 The competitiveness of the port of Montevideo is fundamental to increase logistics and transport activity, and must be maintained in the medium and long term. Expanding the port of Montevideo is a basic condition for Uruguay to develop its logistics potential. The port’s competitiveness must be maintained, and experience shows that intra-port competition has promoted this. Authorities should complete the transition to the Landlord Port model and strengthen ANP’s capacity as ports regulator and administrator.
Land freight transport services are of good quality but should increase efficiency, particularly the vehicle occupancy index. The freight transport market should improve its vehicle occupancy index, and promote competition in specialized freight segments.

In general, the analysis found that the fundamental bottleneck in the transport system is the need for a qualitative jump in infrastructure capacity, and not in the already medium or high levels of efficiency. As a result of the 2002 crisis, Uruguay pursued a strategy of optimizing available transport infrastructure in the different sub-sectors. In land transport, highways were prioritized over railways, for sub-sector efficiency reasons. More recently, in a more favorable economic context, the government has increased investment in new infrastructure such as the Montevideo ring road, widening Route 1, expanding the port of Montevideo and some secondary ports, and the ongoing work on the railway system. The challenge now is to continue this expansion policy in a more restrictive context due to the international financial crisis.

**SHORT AND MEDIUM-TERM POLICY OPTIONS IN THE TRANSPORT SECTOR**

Short and medium-term policy options to address Uruguay’s transport challenges can be grouped into three pillars.

### Pillar 1: Increase port and land transport infrastructure capacity

**Short-term Policy Options**

- **Rehabilitating railway infrastructure is an essential pre-condition for developing an adequate transport alternative for forestry products.** AFE’s rail rehabilitation plan, using CFU funds and already partially begun, includes the renovation of some rail sections in the western sector of the network. Important investments are planned to rehabilitate and upgrade network sectors with greater freight transport potential. A first priority should be to rehabilitate the Rivera-Montevideo and Fray Bentos-Tacuarembo lines, which are more competitive for freight transport, and work can be expanded in a second phase depending on the results of the initial investment. These investments might be prioritized with the use of public resources.

- **Considering the magnitude of the investments (more than US$150 million), it would be appropriate to revise the project prepared by AFE and CFU with three principal objectives in mind:** (i) study the demand potential by sector to precisely define estimates and incorporate them into contracts; (ii) draw up a more precise technical plan to diminish risks; and (iii) plans should be translated into fixed volume capacities for each section and the official budget should be based on unitary costs. An economic and social evaluation of the planned investments should be undertaken by network sector.

- **Finalizing the expansion of the port of Montevideo is a necessary condition for Uruguay to develop as a logistics center.** The expansion of the deepwater dock will allow for larger boats, thus increasing freight trans-shipment to the rest of the region and reducing maritime transport costs due to efficiencies of scale.
Medium-term Policy Options

- The analysis suggests developing a road infrastructure program specifically for logistics. This should include access to ports, city ring roads and bridges, and a program to ensure that all international corridors support freight trucks of the maximum authorized loads. The expansion of the Montevideo ring road is a priority in this regard.

- A program to make railway infrastructure uniform is also recommended as a step toward future improvements. This requires implementing the highest standards across the network and putting them into action as demand and resources permit.

Pillar 2: Maximize the efficiency of transport service provision

Short-term Policy Options

- AFE should be reformed to achieve greater efficiency; without such a reform, railway infrastructure investments will be in vain. The government has stated that the railway sector and the AFE in particular will not undergo changes in the short term. AFE will maintain its monolithic structure and will adopt modernization measures to achieve greater operational efficiency. This will principally include a reduction in personnel, greater information flow and incorporating modern technology.

- Reforming the AFE implies an important modification in company management and culture, in line with efforts undertaken in similar railways elsewhere. This should be undertaken as part of an integrated modernization policy for AFE. Possible modifications, among others, include: (i) drawing up plans to acquire rolling stock and communications equipment; (ii) eliminating affected station agents and adopting radio communication; (iii) increasing the productivity of train operations personnel; (iv) increasing the productivity of the Alstom locomotives to the level of GE 2000; (v) increasing the productivity of AFE wagons from one trip every 8.8 days to one trip every five days; (vi) increasing the productivity of rolling stock maintenance personnel; and (vii) increasing the productivity of rail line maintenance personnel. AFE should also keep separate cost accounts for passenger and freight, with the aim of understanding the economics of each service.

- Developing a “freight exchange” model can increase vehicle occupancy rates in highway transport. The freight exchange concept is widely used in Europe and consists in an independent entity that arranges return freight for transport vehicles. This system can increase the rate of loaded return vehicles even for small companies and can increase the access of shippers to specialized vehicles—two major efficiency problems in the Uruguayan market due to asymmetric information. This type of system began in France in 1965 as a public initiative, and over time has grown to include transport in other countries. With the arrival of more advanced information systems, freight exchanges are today used in almost all European countries, run generally by the private sector via the Internet. The low amount of freight and number of companies in Uruguay suggests that the public sector is best placed to initiate this type of effort. The National Development Corporation (Corporación Nacional de Desarrollo) could be a good candidate, as its independence and public character would give it a degree of impartiality, but the business chambers of transporters and shippers could also undertake the effort.
Medium-term Policy Options

- The analysis points to the need for a thorough modernization of railway transport, both for freight and passengers. This reform should be part of a national transport policy, based on a national railway policy and a modernization policy for AFE. The private sector could be involved as new companies and services, in existing state-owned lines, or in new lines. Private investment could also be possible in the network administered by AFE, in infrastructure, equipment or service management. Private sector participation in railways can take multiple forms, from total ownership and management of assets to managing services under contract for defined periods. A clear vision of the future role of railways in the national transport system will help define this policy. For example, if railways are expected to require significant investments that the state is not willing to undertake (due to other social commitments), or if greatly increased management efficiency will be required, authorities may want to incorporate the private sector by investing resources and/or leveraging private experience in management and navigating competitive marketplaces. To address these questions, a national level freight transport study would be recommended to identify the most efficient long-term size and characteristics for the railway freight system. For passengers, the public sector will have to define its willingness to provide subsidies for services that are not profitable, and/or the feasibility of private sector services with or without subsidies.

- The state should define its role and the role of AFE in the provision of railway passenger services. A diagnostic is needed on the problems of urban and suburban transport in Montevideo, including all transport modes in the public and private sector, service supply (rail infrastructure, equipment and rolling stock) and market operation. This diagnostic, as well as estimated transport demand, should form the basis of decision making on the role of rail in passenger services and identifying various options moving forward. These options should address the investment requirements in rail improvement, the purchase or refurbishment of equipment, traffic control systems and numerous other aspects that a passenger rail system requires as part of the broader urban transportation system.

- Intra-port and inter-port competition should continue, as a means to improve the efficiency of the ports; it is critical that the expansion the TCP terminal not undermine competition. Competition among port terminal operators has generated important efficiencies. This policy should continue by concessioning at least a second container terminal in the port and encouraging the activity of different port operators.

- The small and medium enterprise (SME) program of the CND, or another specific program, could be used to support small transport companies. The MTOP could seek to ensure that SME programs in Uruguay encourage and facilitate the participation of transport companies. As well, the MTOP should ensure that the Chamber of Transporters makes potential beneficiary companies aware of the existence of these programs.

- Promote the development of logistics activity zones and value added services by maintaining and developing the legal and regulatory framework for incentivizing the creation of logistics activities. Uruguay has comparative and competitive advantages through its legal framework, especially the statute on free ports, tax free zones, extra-port container terminals and their storage units. The country has significant human capital and
laws that promote investment, such as the law protection national and foreign investments, which offers significant tax incentives.

**Pillar 3: Strengthen institutional, regulatory and resource allocation efficiency**

**Short-term Policy Options**

- **MTOP’s institutional framework should be strengthened to move to multi-modal investment planning.** Strengthening the recently created National Logistics, Planning and Investment Office should be a priority, with highly qualified personnel and corresponding tools and processes. This office should support planning by existing sectoral units, but above all should link with other ministries to optimize public investment, creating public investment clusters whenever possible. One potential vehicle could be a 10-year logistics infrastructure and services investment plan to orient a multi-modal vision and begin dialogue with other ministries.

- **Finalize the law creating INALOG.** The executive branch created the National Logistics Commission (Comisión Nacional de Logística—CONALOG) in May 2009 via Decree 237/09, and sent to Congress a proposal to create that National Logistics Institute (Instituto Nacional de Logística—INALOG). CONALOG was created as a precursor to INALOG, and will cease functioning once the proposed law is approved.

- **Create an office of railway regulation at the MTOP.** This office would mainly oversee competition and safety conditions of the railway system, defining and verifying security standards, public investments, level crossings, railway market regulation, transport competition and multi-modal transport, among other tasks.

**Medium-term Policy Options**

- **The government should aim to develop an integrated transport system.** This implies finding formulas to incentivize integration of different transportation modes for both freight and passengers, as well as integrating the transport system into overall economic and social activities. In turn this means developing different transport modes according to their comparative advantages and seeking a more efficient and flexible system, both economically and socially.

- **The government should complete the transition of the port sector to the new Landlord Port model via the total separation of the regulatory and operational functions of the ANP.** The ANP should be responsible for managing and regulating port installations, leaving port operations in the hands of the private sector. The increasing port activity and interest of new operators make it essential to clearly distinguish the ANP as a regulator and not as an operator, to avoid disincentivizing private sector participation. The GOU can find other public organizations, such as the CND, to participate in joint ventures or port concessions rather than the ANP if it wishes to maintain public participation, but the regulator should not continue to be involved in operations in a port that it regulates.

- **Transport sector policy and planning should move from sub-sectoral management to a multi-modal view of management across the entire territory, with the end goal of moving freight and people.** Current planning and decision-making by the MTOP
have led to relatively high levels of efficiency in sub-sectoral resource allocation, but the MTOP lacks the ability to undertake objective decisions between different modes of transport. Looking forward to a new stage of development requires thinking and planning in a different manner: integrating the infrastructure and service dimensions and addressing all modes of transportation. Lastly, the territorial impact of infrastructure should be incorporated into decision-making to maximize spatial benefits.
Pillars

1. INCREASE LAND AND PORT TRANSPORT INFRASTRUCTURE
   - Increase highway transport infrastructure capacity with a view to logistics
   - Rehabilitate railway infrastructure for forestry products
   - Expand the port system promoting hub ports

2. MAXIMIZE THE EFFICIENCY OF LAND TRANSPORT SERVICE Provision
   - Improve the efficiency of land freight transport services
   - Reform AFE for greater efficiency
   - Promote inter- and intra-port competition

3. STRENGTHEN INSTITUTIONAL, REGULATORY AND RESOURCE ALLOCATION EFFICIENCY
   - Improve the MTOP’s multi-modal strategic planning capacity
   - Improve the allocation of resources between modes
   - Focus private investment on the most appropriate sectors
   - Strengthen transport sector regulatory agencies
   - Complete the port sector regulatory framework
Policy Options

- Increase highway transport infrastructure capacity with a view to logistics
- Rehabilitate railway infrastructure for forestry products
- Expand the port system promoting hub ports

Recommendations

- (i) Maintain the management and investment trends but improve the secondary network, increasing quality to a level between the primary network and the current situation; (ii) Design an infrastructure program specifically for logistics, which should mainly include Access to ports, ring roads around cities, bridges and a program ensuring that all international corridors can support the maximum authorized cargo truck size; and (iii) Prioritize the development of the Montevideo ring road.
- (i) In light of the growing freight flows generated by the forest product transport, prioritized the rehabilitation of the Rivera-Montevideo and Fray Bentos-Tacuarembo rail lines, and in a second phase—depending on the results of the first phase—expand rehabilitation work; and (ii) Prioritize this investment with public resources.
- (i) Expand the TCP Terminal at the port of Montevideo; and (ii) Maintain feasibility studies on a deep water part to reconsider the issue within eight years.

- Improve the efficiency of land freight transport services
- Reform AFE for greater efficiency
- Promote inter- and intra-port competition

- (i) Develop a “freight exchange” project to improve highway freight vehicle occupation rates; (ii) Increase information on supply and demand to promote greater competition in specialized market niches; and (iii) MTOP should create mechanisms to support increased professionalization among shippers, including SMEs that lack efficiencies of scale.
- (i) Modify company management and operational culture; (ii) Rationalize personnel; (iii) Introduce equipment to improve productivity; and (iv) Consider allowing private participation in operations via a joint venture with AFE, favoring the participation of a private partner in freight operations to introduce new management and marketing practices.
- (i) Continue promoting inter- and intra-port competition even with the expansion of terminals, ensuring that operator monopolies are not created but rather that new operators enter the market as business opportunities arise; and (ii) Concession a second terminal at the Montevideo port to an operator different from TCP.
Opciones de Política

- Improve the MTOP’s multi-modal strategic planning capacity
- Improve the allocation of resources between modes
- Focus private investment on the most appropriate sectors
- Strengthen transport sector regulatory agencies
- Complete the port sector regulatory framework

Recomendaciones

- (i) Policy and planning formulation in the transport sector should move beyond the lens of sub-sectoral infrastructure management to the management of multi-modal transport chains throughout the national territory, integrating infrastructure and services and attending the needs of all transport modes equally; (ii) Prioritize the strengthening of the recently created Investment Planning Office (Dirección de Planificación de Inversiones) with highly qualified personnel and corresponding methodologies and tools; and (iii) Develop a Ten-Year Infrastructure and Logistics Services Investment Plan as a base tool for this office to orient the multi-modal vision and begin dialogue with other ministries.

- (i) Continue promoting private investment in port infrastructure, encouraging a level of competition that ensures efficient outcomes; (ii) Continue developing private road concessions in high-demand sections of the road network and give CVU concessions to network sections with lower demand; (iii) Continue attracting private capital to CVU through share sales; and (iv) Considering its grade of deterioration, risks and limited possibilities of immediate return on investment, the railway network should be rehabilitated with public investment.

- (i) Continue the transition of the port sector to the new model via the total separation of ANP’s regulatory and operational functions. ANP should be responsible for regulation and the management of port installations, leaving port operations in the hands of the private sector; and (ii) The GDU should consider other public agencies, such as the National Development Corporation (Corporación Nacional de Desarrollo) to participate in joint ventures or port concessions instead of ANP if public participation is to be maintained in these activities.
CHAPTER 7.

THE ELECTRICITY SECTOR

Introduction

7.1 Context. The Uruguayan electricity sector has evolved in a context of relatively scarce domestic energy resources and a relatively modest demand for energy. Uruguay’s own energy resources are limited to hydroelectric and other non-conventional sources such as biomass, solar and wind power. Traditional sources have been almost completely developed, while renewable energies are still incipient, with the exception of biomass. In 2004, own energy production was 1,483 kiloton-petroleum equivalent (ktep), of which 484 ktep was from hydropower and 997 ktep from biomass and wood residues. Primary energy imports totaled 2,114 ktep, meaning that local energy production satisfied only 39 percent of national consumption.

7.2 In per capita terms, Uruguay’s energy demand is relatively low compared to other Latin American countries. While Argentina and Chile consume around 1,660 and 1,732 ktep per resident per year respectively, Uruguay’s consumption is around 832 ktep.

7.3 With the launch of the Botnia cellulose plant in 2008, the share of the industrial sector in national energy consumption rose considerably, from its traditional third ranking behind transport and residential to first place in 2008, with 33 percent of national consumption. The transport sector now consumes 29 percent of the total and the residential sector 23 percent. Trade and agriculture/fishing account for 8 and 7 percent, respectively.

7.4 The objective of this note is to outline the principal characteristics of the energy sector and its main challenges, and to offer a series of policy alternatives to overcome these challenges in the medium and long term.

Uruguay’s Electricity Sector

7.5 Primacy of hydropower. Installed energy capacity in Uruguay is 2,510.5 MW, of which 1,583 MW correspond to the hydroelectric plants, including the Salto Grande plant shared equally with Argentina. The remaining capacity is basically thermal power, though some wind and biomass generation projects are underway. This capacity attends a peak demand of about 1,689 MW.\(^\text{73}\) About 56 percent of installed capacity is owned and operated by UTE, Uruguay’s public electricity company. The rest corresponds to Salto Grande (945 MW), to co-generation or to small private non-conventional renewable energies.\(^\text{74}\)

7.6 Installed generation capacity remained practically unchanged in recent years, until the incorporation of the Punta del Tigre plant in August and October 2006, with the last two groups in January and March 2008, with a backup capacity of 300 MW. All major potential

\(^{73}\) Historic peak of 1,684 MW reached in July 2009.

\(^{74}\) Currently five private companies generate power for their own consumption and sell the excess production to the network: Botnia, 161 MW from biomass; Agroland, 0.3 MW wind; Nuevo Manantial, 10 MW wind; Las Rosas, 1.2 MW biogas and Zenda, 3.2 MW natural gas.
hydroelectric capacity has already been developed—the plants of Terra (152MW), Baigorria (108MW), Palmar (333MW) and Salto Grande (945MW)—and available thermal plants have low performance due to their age, such as the Battle plant, or by design in the case of the open cycle gas turbine plants, intended to act as reserve or backup to the electricity system. The absence of new generation installation initiatives in 1995-2005 was the result of an explicit strategic decision to take advantage of the development of markets in Argentina and elsewhere in the region, which would allow for imports to Uruguay in the case of need as well as exports of hydroelectric power to Argentina and Brazil in years with high rainfall. To facilitate this exchange, Uruguay currently has two interconnections, one of 500 KV with Argentina, via Salta Grande, and a limited interconnection of 70 KV with Brazil, in Garabí.

7.7 **Significant and growing electricity consumption.** Per capita electricity consumption, at 875 kWh per year, is high compared to other countries in Latin America. Argentina and Chile consume 749 and 536 kWh respectively, while the Latin American average is 457 kWh and the southern cone average is 683 kWh. Following the severe economic and financial crisis of 2002-2003, consumption grew on average 4.9 percent year from 2002 to 2007. During this period the demand factor rose by between 56 and 64 percent, meaning maximum demand grew at a rhythm slightly below the supply of energy to the network. Between 2006 and 2008, electricity consumption rose 8 percent, from 6,613 GWh to 7,114 GWh, or a per capita value of 2,143 kWh. Expected growth during the next decade is 3.5 percent per year.

7.8 **Service coverage and quality.** Electricity service coverage in Uruguay is very high, above 98.7 percent. According to data from the Regional Energy Integration Commission (Comisión de Integración Energética Regional—CIER), this is above the average coverage rates for countries with public electricity service. Quality is good, and is perceived as such by both companies and residential users. Business losses due to electricity supply interruptions equal 1.1 percent of sales, compared to between 2 and 3 percent in the cases of Argentina, Brazil, Chile and Mexico. The total time of annual service interruption is low compared to other Latin American electricity companies, and the frequency and duration of interruptions have fallen substantially in the last decade. CIER surveys of residential users regularly put UTE among the top positions among electricity providers. After confronting considerable levels of electricity loss during the 2002-2003 crises, UTE implemented a series of measures to reduce them. In December 2007, the total value of losses was about 20 percent, of which 8-10 percent was for technical causes and the rest for non-technical causes. Those values remain high and should be reduced.

*Recent evolution of the electricity sector*

7.9 **The Uruguayan electricity sector faces difficulties in reliably and efficiently satisfying growing internal demand.** This is basically due to frequent droughts, growing demand, insufficient backup thermal generation and the impossibility of utilizing guaranteed supply contracts to import electricity from neighboring countries. Spot imports, however, have helped meet demand. In dry years, 2006 for example, imports covered 46 percent of demand. (Table 7.1)

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75 According to the World Bank’s 2007 Investment Climate Survey, companies perceive good service quality.

76 Of this 20 percent, 3 percent is in the transmission sector and 17.9 percent in the distribution and sales sector.
### Table 7.1: Electricity Imports in MWh

<table>
<thead>
<tr>
<th>Year</th>
<th>Argentina (MWh)</th>
<th>Brazil (MWh)</th>
<th>TOTAL (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>707,640</td>
<td>61</td>
<td>707,701</td>
</tr>
<tr>
<td>2000</td>
<td>1,328,015</td>
<td>62</td>
<td>1,328,077</td>
</tr>
<tr>
<td>2001</td>
<td>116,815</td>
<td>5,877</td>
<td>122,692</td>
</tr>
<tr>
<td>2002</td>
<td>558,958</td>
<td>153</td>
<td>559,111</td>
</tr>
<tr>
<td>2003</td>
<td>433,913</td>
<td>315</td>
<td>434,228</td>
</tr>
<tr>
<td>2004</td>
<td>1,934,774</td>
<td>413,143</td>
<td>2,347,917</td>
</tr>
<tr>
<td>2005</td>
<td>834,863</td>
<td>750,346</td>
<td>1,585,209</td>
</tr>
<tr>
<td>2006</td>
<td>2,023,753</td>
<td>808,638</td>
<td>2,832,392</td>
</tr>
<tr>
<td>2007</td>
<td>573,629</td>
<td>214,960</td>
<td>788,589</td>
</tr>
<tr>
<td>2008</td>
<td>832,648</td>
<td>128,794</td>
<td>961,442</td>
</tr>
<tr>
<td>2009*</td>
<td>737,613</td>
<td>433,249</td>
<td>1,170,861</td>
</tr>
</tbody>
</table>

*January to June 2009.

Source: DNEN

7.10 In 2008, the combination of a drought, high fuel costs and limited electricity availability in neighboring countries resulted in a substantial increase in supply cost. This tendency continued into 2009. Total supply costs hit a historic high of US$900 million in 2008, but were already US$586 million in the first half of 2009. Due to this cost increase, the Ministry of Economy and Finance granted US$105 million in loans to UTE to mitigate the financial difficulties faced by the company.

7.11 In light of these difficulties, the government has in recent years taken measures to ensure electricity supply and evaluate alternatives for the future: (i) energy efficiency and savings programs were intensified; (ii) investments were made in backup thermal generation (*Punta del Tigre* and ongoing work at Batlle); (iii) progress was made on bi-national agreements, including the design and financing of an interconnection project with Brazil to facilitate imports; (iv) purchase contracts for renewable non-conventional energy (biomass and wind) were put out for bidding and finalized, and studies of renewable energy sources are ongoing; and (v) a multi-party study group was convened to evaluate the nuclear alternative as an energy source.

### Principal Challenges and Policy Options

7.12 The principal challenge of the electricity sector and one of the priority objectives of energy policy is to ensure a safe, reliable and sufficient supply of electricity at a reasonable cost. Various policy options can help achieve this goal.

7.13 **Energy Efficiency.** While Uruguay has a relatively low per capita energy intensity (832 ktep per capita), per capita electricity consumption is high (875 kWh per capita/year), suggesting important potential savings in different sectors that could contribute to reducing growing demand, postpone investments in generation, transmission and distribution, and increase supply reliability. According to a recent study on energy sources and uses, the industrial sector could potentially save 12 percent of energy consumption, the agricultural sector 13 percent, and the residential sector 10.3 percent just through improved lighting.
Beyond this potential, energy efficiency measures are economically justified both on the national level and for UTE. In the short term, the shortage of hydro and natural gas resources will mean increased consumption of liquid fuel to operate the thermal plants. Due to high fuel costs, the variable costs of power from the backup plants and Hall B of the Batlle plant (including technical losses) are above electricity prices. Fuel costs for units 5 and 6 (the most efficient at Batlle) plus losses are above almost all electricity tariffs, apart from high-consumption residential, commercial and industrial consumers. In these conditions, energy efficiency and demand management measures are economically profitable for the UTE and society as a whole. As well, energy efficiency and demand management measures will postpone the need for investments, producing additional long-term benefits.

In light of this potential, the government has promoted energy efficiency measures and, in extreme cases (drought) savings measures. Since 2005, an energy efficiency project funded by the GEF and managed by the World Bank has been underway. The project, under execution by the Ministry of Industry, Energy and Mines with the participation of the UTE, aims to: (a) review norms and regulations to promote greater efficiency; (b) establish a standards program for equipment and labeling; (c) disseminate information on energy efficiency via courses and publicity campaigns; (d) establish an energy efficiency fund to finance improvements, particularly in the industrial sector; and (e) promote companies dedicated to energy efficiency to put in practice measures identified by the project. Due to the prolonged periods of drought, in 2005 and 2006, a program of energy savings was implemented, obligatory in the public sector and voluntary for residential and commercial users. This campaign led to a temporary electricity demand reduction of about 8 percent. A large part of the success was that national authorities achieved a degree of solidarity and compliance among the population.

To achieve greater efficiency, UTE also put in place a program to replace incandescent light bulbs with low-consumption bulbs. This program replaced 2.3 million bulbs with an estimated savings of about 450 GWh.

The transformation of the energy market to more efficient consumption requires, beyond political support, that the market offer energy efficiency services and efficient electronic appliances. The ongoing Energy Efficiency Project is helping lay the foundations such that energy savings measures have the necessary regulatory, financial, informational and technical instruments. This work should be expanded and refined to ensure the desired energy efficiency outcomes. The recent approval of the Energy Efficiency Law was a positive step in that direction.

Improve electricity transmission and distribution networks. Uruguay’s interconnected system is comprised of: (i) 771 km of 500 KV lines connecting the hydroelectric plants—located in the northeast and central parts of the country—with demand, more than 60 percent of which is located in the south; and (ii) 3,549 km of 150 KV lines that interconnect the main cities and include a supply ring for Montevideo. Given the relevance of hydroelectric power and the growing participation of imports from Argentina and Brazil, the transmission system is a key component for a secure energy supply.
7.19 Currently the system has bottlenecks. The six sub-stations (500 KV/150 KV) are operating at nearly 100 percent of transformation capacity (1,800 MVA). If one of those transformers fails, the system would face a risk of blackouts. This situation worsens as demand increases. Another bottleneck is associated with the lack of distribution network flexibility in some cities. In Montevideo, for example, the 10 150 KV sub-stations are not totally interconnected, hindering the reliability of the system.

7.20 A similar situation is found in the southeast (Punta del Este and Maldonado) and in the northeast (Salto and Artigas), regions that are growing strongly due to tourism and agricultural development. These two regions do not have sufficient transmission and transformation capacity to supply current and expected future demand. Investment in new 150 KV short lines and substations is crucial.

7.21 Regarding distribution, several medium-to-low voltage transformers are reaching the end of their useful life. This negatively affects service quality. In 2007 the duration of consumer power cutoffs was about 15 hours, compared to 10 hours in 2004. As well, the lack of investment in new consumption metering technologies could explain why planned reductions in power losses were only partially successful. Total energy losses in 2007 were around 20 percent, including transmission, distribution and sale, compared to 13.5 percent in 2000 and 20.2 percent in 2004. These levels are high compared to similar systems and markets elsewhere in the region. To address this, increased investment in distribution systems is needed in the short and medium term.

**Box 7.1: Loss Reduction Programs – Lessons Learned**

The implementation experience of loss reduction programs in developed countries have demonstrated that success depends on four key elements: 1) a strong commitment by the distribution companies to implement the program; 2) an integral focus including technical, social and human resource issues; 3) a program justified by the social benefits it will generate and the equity it will achieve; and 4) responsibility on the part of the implementing agency in establishing objectives and achieving results.

With these four elements in mind, action plans should consider at minimum the following activities:

- **Market segmentation.** Focus on large users, including with inspections.
- **Publicity in cases of electricity theft.** Social sanctions for large users have been an effective tool.
- **Operational reengineering and availability of reliable information** that allows for a close tracking of users and the detection of riskier users.
- **Credibility in communications and a political commitment to combat theft,** whatever the identity of large users found to be stealing power.

**Successful cases in the region**

<table>
<thead>
<tr>
<th>Distributor</th>
<th>Initial loss level</th>
<th>Final loss level</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codensa Colombia</td>
<td>22%</td>
<td>9%</td>
<td>1997 - 2007</td>
</tr>
<tr>
<td>Edesur Argentina</td>
<td>24%</td>
<td>11%</td>
<td>1992 - 2007</td>
</tr>
<tr>
<td>Edelnor – Peru</td>
<td>18%</td>
<td>8%</td>
<td>1994 - 2007</td>
</tr>
<tr>
<td>Chilectra - Chile</td>
<td>21%</td>
<td>6%</td>
<td>1985 - 2007</td>
</tr>
</tbody>
</table>
7.22 **Develop financial instruments to cover supply costs in dry years.** In light of the importance of hydropower in Uruguay’s energy basket, droughts can imply a considerable increase in generation costs. This cost cannot be directly transferred to consumption tariffs, due to its intrinsic volatility. As a result, extremely dry years lead to pressures on spending and the public budget. To protect against this, the country could develop some type of financial mechanism that would cushion additional costs during drought years.

7.23 **Develop non-conventional renewable energies.** Renewable energies can play an important role in the future supply of electricity. Considering the current cost of conventional energy, non-conventional renewable energy is an option to help reduce dependence on imported energy. Wind and biomass power compete favorably with conventional generation systems, in particular with UTE’s existing thermal plans and open-cycle emergency thermal plants that operate with liquid fuel due to the lack of natural gas. Technical advances combined with the high cost of conventional fuels are making renewable energy more viable. Biomass generators, small hydroelectric plants and wind farms on a large scale with high factor capacity can, depending on their insertion point in the network, practically compete with fossil fuel plants (apart from coal). With Uruguay’s human capital, a greater penetration of renewable energy could permit the development of local capacity and the formation of scientific-productive centers with export potential to other countries in the region.

7.24 **Uruguay has taken initiatives to promote renewable energy development.** In March 2006 the executive issued a decree granting incentives for private generation of wind, biomass and small-scale hydroelectric plants. A goal of 60 MW (20 MW for each of the three sources) was established for the first round, launched by UTE in August 2006. Following that round, UTE has contracted for energy supply from five renewable energy projects: three biomass plants of 10 MW each and two wind plants of 2 MW and 4 MW, at prices between US$78/MWh and US$90 MWh. With this experience, in August 2009 a new decree called for purchase contracts of wind power up to 150 MW. Also, since January 2009 the UTE is operating a 10 MW wind farm in Sierra de los Caracoles. With the support of Japan’s Cool Earth initiative, a first 300 KW photovoltaic solar farm is under construction on the grounds of the Salto Grande dam.

7.25 **Resource availability.** According to the first studies on the subject, wind power has favorable characteristics in Uruguay. Capacity factors oscillate between 30 and 40 percent, depending on region. Work supported by the GEF Wind Power Project is underway to develop a wind map detailing available resources. A number of attractive renewable biomass sources exist, such as waste from forestry and rice production. The change in soil use in recent years shows the potential for this resource (Table 7.2). According to studies, forestry waste in the countryside and in mills would supply an installed capacity of an additional 200 MW between 2009 and 2015.

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77 "Generación de Energía Eléctrica a partir de la Biomasa en Uruguay. La dendroenergia." DNETN, October 2006.
Table 7.2: Changes in Soil Use, 1990 – 2000

<table>
<thead>
<tr>
<th>Soil use</th>
<th>1990</th>
<th>%</th>
<th>2000</th>
<th>%</th>
<th>% Change 1990-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousands of hectares</td>
<td></td>
<td>Thousands of hectares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle ranching</td>
<td>11,268</td>
<td>71.3</td>
<td>10,150</td>
<td>61.8</td>
<td>-9.9</td>
</tr>
<tr>
<td>Agriculture</td>
<td>2,764</td>
<td>17.5</td>
<td>2,343</td>
<td>14.3</td>
<td>-15.2</td>
</tr>
<tr>
<td>Rice production</td>
<td>699</td>
<td>4.4</td>
<td>1,732</td>
<td>10.5</td>
<td>147.8</td>
</tr>
<tr>
<td>Pasture</td>
<td>466</td>
<td>2.9</td>
<td>741</td>
<td>4.5</td>
<td>59.0</td>
</tr>
<tr>
<td>Intensive agriculture</td>
<td>514</td>
<td>3.3</td>
<td>505</td>
<td>3.1</td>
<td>-1.8</td>
</tr>
<tr>
<td>Forestry</td>
<td>93</td>
<td>0.6</td>
<td>949</td>
<td>5.8</td>
<td>920.4</td>
</tr>
<tr>
<td>Total</td>
<td>15,804</td>
<td>100.0</td>
<td>16,420</td>
<td>100.0</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Source: MGAP-DIEA, 2008 based on the national census.

7.26 **Cogeneration.** Vapor and/or heat cogeneration of electricity is almost always competitive in cost terms. Estimates of potential are not yet clear. Some studies find that the country’s cogeneration potential is low, while others consider that it could contribute significantly to the national generation capacity and produce important energy savings. DNETN, under the Energy Efficiency Project, is currently studying the potential dimensions of cogeneration in Uruguay.

7.27 Considering existing resources, the challenge consists in creating the conditions for private or public projects to generate electricity at competitive prices from renewable or cogeneration sources. Systems to promote renewable energy could include pre-established prices to stimulate supply (Spain, France, Greece, Portugal and Germany, among others), price subsidies to stimulate demand, for example via tax benefits (Holland), competitive bidding (Ireland), or an obligatory minimum quota of renewable energy in the sales mix for suppliers or the purchasing mix for consumers (England, Austria, Belgium, Chile). Uruguay has already made progress on a competitive bidding system. In general, pre-established price systems have had more success in developing electricity generation from renewable sources. One policy option to diversify the matrix and improve energy security is to apply an energy purchase policy of feed-in prices, with pre-established tariffs and transparent management.

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78 Cogeneration is a process by which electric and thermal energy (for example vapor, hot water, ice, cold water, cold air) are obtained simultaneously.

79 Studies undertaken for the Energy Efficiency Project by MIEM indicate cogeneration potential on the order of 40 MW, while other estimates are as high as 120 MW.
Box 7.2: Incentives to Develop Renewable Energy: Costs and Benefits of Each System

<table>
<thead>
<tr>
<th>Goals defined by price</th>
<th>Quantity of renewable energy developed</th>
<th>Reduction of costs/prices</th>
<th>Resource diversity</th>
<th>Market sustainability</th>
<th>Development of local industry</th>
<th>Investor security</th>
<th>Simplicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quantity of renewable energy in the short term</td>
<td>Cost efficient if tariffs are periodically reviewed and adjusted</td>
<td>Excellent</td>
<td>Technically and economically sustainable</td>
<td>Excellent</td>
<td>Risk can be reduced with price guarantees and PPP</td>
<td>Simpler to design, administer and ensure contract completion</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goals defined by quantity</th>
<th>If complied with, realistic targets can be achieved</th>
<th>Better to reduce costs and prices via the bidding process</th>
<th>Favors the most economic technologies</th>
<th>Technically and economically sustainable</th>
<th>Favors low-cost technologies and establishes new actors in the industry</th>
<th>Lack of price certainty. Risk can be reduced with PPP</th>
<th>More complex to design and administer, and more complex for the generators</th>
</tr>
</thead>
<tbody>
<tr>
<td>If complied with, realistic targets can be achieved</td>
<td>Better to reduce costs and prices via the bidding process</td>
<td>Favors the most economic technologies</td>
<td>Tied to the resource planning process. If support is maintained, financing will be stable</td>
<td>Favors low-cost technologies and establishes new actors in the industry</td>
<td>Can generate certainty if well designed. Higher risk than with goals defined by price</td>
<td>More complex than by price and less complex than by quantity</td>
<td></td>
</tr>
</tbody>
</table>

Bidding System

| Quantity established in the bidding process | Good system to reduce costs | Favors the most economic technologies | Tied to the resource planning process. If support is maintained, financing will be stable | Favors low-cost technologies and establishes new actors in the industry | Can generate certainty if well designed. Higher risk than with goals defined by price | More complex than by price and less complex than by quantity |


7.28 **Strengthen the regional electricity market.** The strategy of acquiring electricity in the region has encountered difficulties because of the situation of the Argentine energy sector. Until recently, Uruguay based its energy supply strategy on its hydroelectric resources, contracts with Argentina to purchase electricity as well as natural gas for its own thermal plants, purchases on the Argentine spot market when prices were below the marginal cost of Uruguayan thermal generation, low-scale interchanges with Brazil, and Uruguay’s own back thermal generation capacity. When Uruguay faced a period of drought at the start of 2004 that reduced hydroelectric capacity, Argentina began to face difficulties supplying its internal market while exporting all the energy it had already contracted to sell abroad. The Argentine crisis, which limited guaranteed energy to Uruguay, and the lack of opportunities to acquire guaranteed supply from Brazil, required Uruguay to put its backup thermal plants to greater use. This in turn increased fuel expenditure, as these plants are relatively inefficient due to low investment and must use liquid fuel due to the lack of natural gas. In such a situation, obtaining energy from elsewhere in the region, particularly excess hydroelectric power from Brazil, could substantially reduce Uruguay’s energy costs. The Uruguay-Argentina interconnect is robust, but the interconnection with Brazil at Rivera is small (70 MW). Hence a new 500 MW interconnection—being designed
by UTE—would be a good opportunity to improve Uruguay’s energy supply. Since Brazilian energy would be substantially less expensive than the thermal energy it would replace, simulations have confirmed the viability of the interconnection, according to UTE. Hence, investing in a strong interconnection with Brazil is a policy option worth considering.

7.29 Argentina’s energy difficulties had a negative impact on Uruguay and caused a crisis of confidence in the regional energy market as a reliable and stable supply of electricity to satisfy internal demand. However, strengthening the regional electricity market and expanding the interconnection with Brazil remain fundamental options for Uruguay, considering its location and size. Uruguay recognizes the importance and benefits of occasional electricity interchanges with both countries to optimize the operation of the energy system and help in situations of low hydroelectric power or emergencies. The factors discussed above, related to the economic crisis and Argentina’s energy difficulties, should not detract from efforts to achieve a regional electricity market.

7.30 **Investment in base and backup thermal generation.** Once medium-term local generation needs are estimated—moderated by energy saving measures, regional imports and local renewable development—Uruguay should plan out the characteristics of its future energy generation system. Coal plant technologies, in particular atmospheric fluidized bed combustor (AFBC)—a mature technology commercially available, with lower environmental problems and greater fuel flexibility—are now the lowest cost option for base energy generation, with a capacity factor of around 80 percent. Since coal is widely available on the international market, using this fuel could reduce supply uncertainty and vulnerability to price volatility. For Uruguay, coal plants have the disadvantage of requiring new port facilities to import the fuel. Secondly, combined-cycle natural gas plants are among potential systems capable of supplying base energy. The fuel could come from regional sources or be imported as liquid natural gas or gas oil. However, the size of the Uruguayan market does not justify the level of investment needed to make LNG a realistic alternative. As a result, the option currently under analysis is to install a gas reliquafication plant at the port of Montevideo to supply both the Uruguay and Argentina markets. This plant would be a joint project for both countries and would utilize installed pipeline capacity. If this project goes forward, thermal generation would clearly utilize gas.

7.31 For peak generation, open-cycle combustion turbine plants for natural gas or gas oil—with a capacity factor on the order of 20 percent—are a good option. The results of demand and supply projections will help determine the opportunities to incorporate these plants and their appropriate proportion in the system, depending on projected base and peak demand in the medium term.

7.32 **Strengthen the sector’s regulatory and institutional framework.** The Electricity Sector Regulatory Framework Law of June 17, 1997 established the separation of different

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80 Regarding possible financing sources for investment in backup thermal generation, transmission and distribution networks, and renewables, see the World Bank note on Financing the Investment and Regulation of Infrastructure Sectors.

81 This refers to the co-existence of two thermodynamic cycles in the same electricity plant. The gas cycle generates electricity via a gas turbine and the steam cycle uses one or several steam turbines. This utilizes the exhaust gases from the gas turbine to generate steam for the steam turbine, increasing efficiency.
phases of electricity service. Transmission and distribution were maintained as public services, while generation is free for private participation, with free access to the transmission and distribution networks. The law stipulates that the executive will fix norms, policies and conditions for electricity system operation, establish a regulator—currently the Energy and Water Service Regulatory Unit (Unidad Reguladora de los Servicios de Energía y Agua—URSEA)—and mandated the creation of the Wholesale Electric Energy Market administered by the Electricity Market Administration (Administración del Mercado Eléctrico—ADME).

7.33 While progress has been achieved in implementing many aspects of the regulatory framework, external and domestic changes have modified the conditions for applying some measures. The recent difficulties with electricity and natural gas sales in the region have made the creation of a regional electricity market unviable in the short term. On the domestic front, the result of public referenda in 2002 and 2003 modified the regulatory framework regarding private participation in the water and petroleum sectors. The dollarization of import contracts and the temporary halt of natural gas supplies from Argentina interrupted relations between UTE and private agents with existing supply contracts, apart from one small contract extended to 2009. The private sector did not show interest in 2002 to invest in a combined cycle generation plant in Uruguay, which is why the UTE received the mandate to move forward on the project. These circumstances have led the government to reconsider its plans and timeframe for structuring the regulatory framework and evaluate the viability and appropriateness of creating a competitive electricity market, considering the relatively small size of the national market. The government has issued Energy Strategy Guidelines as a first step to formulating a National Energy Plan to adapt sector development to the regional context and improve the efficiency of the electricity company, among other objectives.

7.34 Strengthening the institutional and regulatory framework is essential in the long term to ensure consistency between policies, regulation and the administration of companies in the sector. The regulatory framework should facilitate the participation of independent generators and co generators in the electricity market, promote efficiency in the use and supply of energy, ensure consumer protection and facilitate regional electricity interchanges. As well, the regulatory framework should be adapted to the characteristics of a market dominated by a public company, where the regulator maintains the obligation to verify costs, propose tariffs, harmonize the activities of market participants and protect the rights of consumers.

7.35 **Specific areas to strengthen.** Currently, the system to set tariffs does not have the necessary transparency. URSEA should help improve the public perception that the supplier of energy translates efficient costs into tariffs, ensure that service quality is monitored, and apply penalties when service deteriorates. The thorough application of accounting reviews and statistical regulation will allow better regulation, and will also facilitate benchmarking UTE with other electricity companies to find and take advantage of opportunities to improve efficiency. Extending tariff regulations for tension lines below 150 KV, applying a promotion mechanism—for example, feed-in tariffs—and strengthening the ADME as either an operator or to monitor power dispatching will help facilitate the entrance of other participants into the market, such as independent generators that utilize conventional or renewable energy. As well, considering that Uruguay is potentially the biggest beneficiary of a more integrated regional market, it is in its interest to develop regulations and agreements that facilitate future energy exchanges and
advance in the construction of a higher-capacity interchange with Brazil. Lastly, but of vital importance, the Ministry of Industry, Energy and Mines should be strengthened in its role as overseer of the energy sector and the institution that defines national energy policy. It is crucial that the ministry have a key role in the definition of sectoral policies and investment plans in the sector.

Summary and Conclusions

7.36 In light of the above analysis, multiple policy options need to be evaluated in depth. Overall strategic directions—which will require further quantification and analysis—might include the following:

- Develop a balanced strategy to increase energy security, probably in combination with policies to improve consumption efficiency, ensure local backup thermal generation, facilitate electricity trading and promote the development of non-conventional renewable energies.
- Increase Uruguayan production via both gas turbines (combined or open cycle, depending on the expected plant factor) or—if natural gas supply is not achieved—a coal-fired plant, with greater consequent environmental costs. Additional feasibility analysis is required to arrive at a final decision.

7.37 Whatever the type of base and backup generation in Uruguay, taking advantage of the benefits of electricity trading is an essential strategic element; this requires greater integration with southern cone markets as well as investing in interconnection infrastructure.

7.38 The interconnection with Brazil would diversify supply sources and help increase the benefits of electricity trading; realizing economies with this option should be a priority within the overall strategy.

7.39 Support for renewable energy generation via incentive mechanisms is a positive course of action that would help develop these technologies and diversify supply.

7.40 Regulating the Energy Efficiency Law and establishing regulations to facilitate cogeneration and renewable generation could contribute substantially to improving Uruguay’s energy security in the short term, while developing strategies for the longer term.
<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>SHORT-TERM POLICY OPTIONS</th>
<th>MEDIUM-TERM POLICY OPTIONS</th>
<th>GOAL</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure safe, sufficient and reliable supply of electricity at a reasonable cost</td>
<td>Continue improving energy efficiency by developing the necessary regulatory, institutional, financial and informational, and technical instruments</td>
<td>Approve regulations for the recently approved Energy Efficiency Law</td>
<td></td>
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<tr>
<td></td>
<td>Facilitate the flow of electricity by improving transmission and distribution networks</td>
<td></td>
<td>Increased sub-station capacity; replaced transformers in the distribution network; reduced level of technical losses</td>
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<tr>
<td></td>
<td>Develop financial instruments to help cover the increased cost of generation during dry years</td>
<td></td>
<td>Insurance mechanism established</td>
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<td></td>
<td>Develop non-conventional renewable energies</td>
<td>150 MW of installed wind generation</td>
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<td>Electricity purchase contracts from renewable sources for guaranteed capacity equivalent to 200 MW</td>
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<td></td>
<td>Strengthen the regional electricity market</td>
<td>Initiate work the Brazil interconnection line</td>
<td></td>
<td>Energy supply contracts and increase in spot exchanges</td>
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<td>Investment in base and backup thermal generation</td>
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<tr>
<td></td>
<td>Strengthen regulatory and institutional framework for the sector</td>
<td>Regulations approved for the Energy Efficiency Law</td>
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<td>Regulatory accounting and statistics fully implemented</td>
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## World Bank Support to the Energy Sector

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<tr>
<th>NUMBER OF LOAN/GRANT</th>
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<th>TYPE OF PRODUCT</th>
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<th>CLOSING DATE</th>
<th>TOTAL AMOUNT OF PROJECT (MILLIONS US$)</th>
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### Studies:
REFERENCES

Statistical information DNETN/MIEM


Statistical information ADME

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DNETN, 2006, Generación de Energía Eléctrica a partir de la Biomasa en Uruguay. La dendroenergía, (October).


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CHAPTER 8.
AGRICULTURE IN URUGUAY – CHALLENGES AND OPPORTUNITIES

Synthesis on evolution of agricultural sector characteristics and performance

8.1 Uruguay’s agricultural and food sector has successfully mastered past crises and retained its role as an important sector of the national economy. Despite a severe contraction during the economic crisis of 2001 and the Foot and Mouth Disease (FMD) outbreak, the sector rapidly recovered its historically driving role in the Uruguayan economy. With an average growth rate of 7.6 percent between 2001 and 2007, the agricultural sector has almost double the growth rate of the total national GDP (4.1 percent) for the same period.\(^{82}\) In 2007, the agricultural sector contributed 9.9 percent of GDP, or 15.2 percent including agri-food processing.\(^{83}\)

8.2 Responsiveness to increasingly rigorous international food safety and quality standards ensured the sector’s sustained, strong, and successful links to export markets. Exports of raw and manufactured agricultural products account for about 60 percent of Uruguay’s total export value (2008), two thirds of which are generated in highly competitive and standard-sensitive markets for animal products (meat, leather, wool).

8.3 The agri-food sector remains a significant and steady source of employment, with agriculture contributing to approximately 12 percent of national employment\(^ {84}\). In rural areas, agriculture accounts for about 70 percent of employment. The agri-food sector also provides significant employment in urban areas, both directly and indirectly through trade, industrial, and service activities. Positive employment-related spill-over effects are explained by the importance of livestock-related activities and the prominence of SMEs in the agri-food sector.\(^ {85}\)

8.4 Strong political commitment to supporting agricultural development, a favorable resource base, and structural advantages provide for further productivity and market growth prospects. In a global comparison, Uruguay has one of the highest relative shares of land suitable for agricultural production (85 percent of total land area\(^ {86}\), farmed by about 52,000 holdings with livestock and dairy as dominant production activities. About 63 percent of these are classified as relatively small family farms but with average sizes well above international family farm averages. Unlike countries where family farms mostly represent small, semi-subsistence units, Uruguay’s family farms are market oriented and managed according to

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\(^{82}\) UNFPA. Secco, J., Errea, E., 2008. Regarding the Agricultural Gross Production Value, Da Bezies, (2008) calculated that between 2001 and 2006 the annual cumulative rate was 35-45 percent in constant pesos and US dollars respectively (based on data of BCU).


\(^{85}\) The latter parallels similar structures in regions such as the European Union where the food and drink industry remains one of the most important and dynamic industrial sectors (4 million), with strong SME prevalence (280,000 SMEs), and representing the number one industry in terms of turnover (around EUR 800 billion).

entrepreneurial principles. However, several specific factors discussed in Section II make them vulnerable to external shocks.

8.5 While conducive to international market integration, high export orientation and limited interventionist agricultural policies also imply exposure to international market developments. In the 1990s and early 2000s, Uruguay’s farmers experienced declining international product prices induced by increasing large scale production and capital intensification in competing countries (especially in the US and the EU). 2008 also brought pronounced market volatility through the food crisis. But while spiking product prices at first appeared to be potentially beneficial for agricultural producers, increased inputs prices such as feed, fertilizer, and fuel, as well as capital market constraints, quickly absorbed most of the potential gains. Finally, the severe drought of early 2009 highlighted the agricultural sector’s vulnerability.87

I. Towards Integrated Agricultural Development in Uruguay

8.6 Agricultural and rural development is central to Uruguay’s economic development and social cohesion objectives. From a national growth perspective, and with the rural sector being a main contributor to national GDP and export earnings, successful agricultural and rural development would continue to make a notable contribution to national income and employment generation and consequently to overall economic growth. From an income distribution perspective, Uruguay would need to further increase agro-food productivity, market access, and income diversification, both through government transfers and perhaps more importantly-services to rural areas. These would also contribute to sustainably reducing income disparities between rural and urban areas. Unlike many countries with comparable agricultural structures (e.g., economies in Central Europe), Uruguay is uniquely positioned to make such government support to agricultural development provide for significant economic returns – its established and pronounced comparative advantages are clearly in higher value-added production activities, most prominently livestock, in a variety of related agricultural activities for export, as well as in industrial goods closely linked to these sectors.

8.7 However, Uruguay needs to address the visible discrepancy between the potential of the agricultural sector, and its contribution to sustainable growth and rural economic development. Uruguay is among the qualitatively best endowed MERCOSUR countries in terms of natural conditions for higher value-added agriculture, location and access to international transport ways, water and people. Agricultural land occupies more than 85 percent of Uruguay’s surface, and most of it is being used for livestock-based production. Currently, however, the country’s agricultural sector development is explained mainly by the performance of about 19,400 larger and medium-sized farmers (about 715 ha in size), that farm about 85 percent of Uruguay’s agricultural land, have high productivity levels by any international standards, and strong links to export markets. However, tapping into the sector’s significant development potential will require that Uruguay develops a consistent support framework targeted to the low

87 As stated by INIA, the economic losses because of the last drought are estimated between 400 and 600 million dollars, i.e. between 11 and 17 percent of the agriculture’s GDP. INIA, 2009. “Vulnerabilidad al Cambio Climático de los Sistemas de Producción Agrícola en América Latina y el Caribe: Desarrollo de Respuestas y Estrategias. Capítulo Uruguay”. World Bank, Draft Paper.
and medium technology production systems of about 32,700 family farms (with an average of 77
ha in size).

8.8 **The conditions for taking advantage of the natural and human endowment are right.** The world is facing an increasing demand for food in general, for products of animal origin in particular, and the supply of these products is relatively inelastic. Uruguay has easy access to regional and world markets through its ports. Trade relations with important international markets are strong and recent steps, such as the January 2009 European Union certification approval as a consequence of Uruguay’s significant upgrades in animal registration and product traceability, contribute to strengthen the marketability of Uruguayan products. Though Uruguay’s larger, mostly corporate, farm enterprises cater to international markets; their international competitiveness can only be sustained if further advancements in veterinary health, animal registration systems and food safety are achieved. But to ensure balanced growth of the entire sector such public services must continue to have universal coverage, but at the same time be more explicitly targeted to the family farm sub-sector. In this context, Uruguay should analyze the appropriateness of a limited but additional set of well-targeted support programs to address specific vulnerabilities — the family farm segment is not narrowly dominated by the optimization of their economic activity, but also providing livelihood, employment and residence to their owner families.

8.9 **Despite past achievements, Uruguay still faces challenges in making sufficient progress towards a modern and well targeted agricultural and rural development policy.** Over the last decade, Uruguay has increasingly embarked on supporting agriculture within an approach compatible with available fiscal and human resources and the sector’s comparative advantages. It relies on providing sector support through a balanced mix of financial transfers for investment purposes and of public services. However, significant challenges remain: economic size constraints, lower technology adaptation, and limited access to advisory and market facilitation services (especially by family farms) induce vulnerability both to external shocks, such as recent fluctuations in international markets for inputs, capital, and outputs, and domestic shocks, such as weather-related events (e.g., the 2009 drought) or the past outbreaks of Foot and Mouth Disease. Adequate response strategies to these challenges are being analyzed as part of ongoing analytical and project implementation efforts also supported by the World Bank. This includes, specific support to soil and water management (both for irrigation and livestock), and promotion of production systems that apply agro-environmental practices:

- **In the short term,** existing initiatives to improve veterinary systems, animal tracking systems, and expansion of these efforts into the wider food safety certification domain should constitute a central element of addressing economic vulnerabilities in the livestock sector as well as to further expanding Uruguay’s direct access to demanding food markets in industrialized nations;

- **In the short- to medium-term,** and in line with MGAP’s decision to create la Rural Development Directorate, Uruguay should not divert from the objective of elaborating and implementing an integrated and inclusive agricultural and rural development program targeting sectoral and territorial dimensions. Such program will require considerable analytical and financial effort, but – if based on broad consensus between government agencies - could provide for support measures aiming at increasing rural development via (i) enhancing agricultural productivity and technology adaptation; (ii)
promoting agri-environmentally sound agricultural and water management techniques; and (iii) strengthening support and coordination towards improved rural income diversification and quality of life;

- **In the medium- to long-term**, addressing vulnerabilities to adverse agro-climatic phenomena will be key to ensuring agricultural sustainability (as demonstrated by recent droughts and floods). Climate change will impact Uruguay’s agriculture, and adaptation efforts would help to prevent the effects of future weather extremes, particularly regarding the supply, storage and utilization of water for productive purposes. Equally important, climate change mitigation represents a significant opportunity for the agricultural sector. The transformation of residues from livestock and agro-industries could significantly reduce the emissions of methane and consequently improve the country’s global balance. Through its carbon sequestration potential, agricultural soils –if properly managed- represent an important sink for emissions from other sectors. If adequately incentivized by agricultural policies and advisory services, Uruguay could generate additional agricultural revenue from trading carbon emission rights on international markets.

II. Programming Options for Agricultural Development

8.10 **From Strategy to Program.** Uruguay has initiated to translate the above short-and medium-term strategic priority of integrated and inclusive agricultural development into a ‘program’. Main guiding principles are complementarily with current sector support and coherence with the objective of balanced overall agricultural rural development. In continuation of recent sector support approaches and in the light of the specific sector development challenges, Uruguay is well advised to continue focusing on further developing the provision of public services with only a limited, but well targeted set of monetary transfers in the form of investment support, aimed at addressing the vulnerabilities identified in the sectoral assessment being conducted by MGAP, with World Bank support.

8.11 Such coherent set of agricultural and rural development program elements is expected to generate the following main impacts:

- An **improved adaptation** of Uruguay’s rural sector to dynamic developments in agricultural technologies and markets, and thus address the pronounced challenge of ‘hitting a moving target’;
- An **improved balancing** of sector support. Limited targeted interventions for the family agriculture segment should be designed and adopted, as this segment represents an important component of aggregate sector performance (including ensuring that more vulnerable sub-sectors do not impede overall sectoral and rural development) and maintains an essential socio-economic fabric of rural areas; and
- An enhanced **effectiveness and efficiency** in the provision of public goods and services to rural areas and the agricultural sector.

8.12 Towards this end, future elements of an agricultural and rural development program should address challenges to both purely sectoral but also territorial development challenges. The proposed activities/measures are grouped into those: (i) enhancing agri-food productivity and marketability; (ii) reinforcing agri-environmental adaptation; (iii) facilitating income
diversification in rural areas; and (iv) improving the information base to policy programming and implementation.

i. **Enhancing Agri-Food Productivity and Marketability**

8.13 Possible actions and measures under this category aim at supporting agricultural producers and processors to cope with and adjust to the rapid changes affecting their production and marketing environment. These changes create both obstacles and opportunities for farmers, processors and marketing agents. In order to access increasingly advanced markets, it is vital for farmers and processors to keep themselves up to date with technological advances and to adapt to new consumer demands. If not, they are likely to be excluded from markets, lose shares in critical export markets, and consequently generate less income. But these new technologies have also lead to unprecedented productivity increase and thus created new opportunities for farmers. However, as these opportunities can be difficult to translate into concrete benefits, especially for smaller-scale farmers, MGAP should play an important role in generating information and facilitating the adoption of new technologies.

8.14 **Continuing and expanding upgrades in veterinary and food safety standards.** Based on recent successful programs aimed at upgrading these systems, which among others have led to the full control of the initially targeted FMD and earned Uruguay import certification for the voluminous European food market, critical further upgrades along the value chain are recommended. This is particularly relevant in light of the pronounced livestock (and export) focus and dependency of Uruguay’s agriculture. These would serve to protect both the domestic agri-food sector from economic losses due to infectious animal diseases and/or the expiry of import certifications in key export markets, as well as the protection of the domestic population from public health threats stemming from zoonotic diseases and food safety risks. Key actions are:

- Expanding the coverage of current food safety support and enforcement systems to downstream stages of the agri-food value chain (from currently a more farm-based focus);
- Broadening the disease focus beyond FMD to also address risks posed by other zoonoses (most prominently brucellosis); and
- Strengthening the regional coordination (i.e. MERCOSUR) on issues related to food safety and transboundary zoonoses.

8.15 **Promoting technology modernization and adaptation.** A critical determinant of further productivity enhancement and product standards compliance, and thus of the reduction of income disparities in the agricultural sector, is the provision of information and knowledge about, and incentives for, the adaptation and application of modern production and processing technologies. MGAP is currently analyzing underlying sector development needs and vulnerabilities, and assessing adequate response strategies, the translation of which into a policy program for effective and efficient sector support constitutes a key short-to medium term action. Though analysis/assessment are ongoing, it is recommended that key elements of such support schemes aim at:

- *Modernization of on-farm production* which would increase productivity and market access for the family farm sector in Uruguay by enhancing the more efficient use of
production factors (e.g., introduction of new technologies and innovation targeting quality, organic products, and on/off-farm diversification, including non-food sectors and energy crops, as well as improving the environmental, occupational safety, hygiene, and animal welfare status of agricultural holdings);

- **Investments into processing** adding value to primary agricultural and forestry products, both by producer groups and individual investors, which would increase access to higher value markets; and

- **Facilitation of producer cooperation** for development of new products, procurement/marketing processes, and technologies in the agriculture, food and the forestry sector, which can help promote the cooperation between agricultural producers, processors, and/or third parties, in the procurement of inputs and the marketing of products both in domestic and export markets.

### 8.16 Promoting Knowledge and Improving Human Potential.

As discussed above, Uruguay has successfully prioritized the provision of public services to agriculture over the provision of financial transfers. The following represent key aspects of a potential sector development program:

- **Promotion of Intergenerational Asset Transfer**: Uruguay’s rural population is aging and less young people consider taking on or starting up agricultural operations. This phenomenon occurs even due to moderate profitability prospects and is, among others, a reflection of (financial) barriers to entry. Many countries, such as Mexico and Central European economies with a family agriculture share similar to Uruguay, have successful implemented support schemes for the setting up of young farmers by providing preferential legal, socio-economic, and agronomic advisory services, combined with preferential eligibility for investment support programs (e.g., higher public co-financing rates in PPR-type projects); and

- **The Use of Advisory Services** has proven an efficient tool in increasing productivity and farm incomes in rural areas. Targeted and effective advisory services are currently provided in the context of MGAP’s externally financed projects and through producer groups/associations. To ensure the sustainability of service provision and expand its geographical coverage, development of a strategy and roadmap are recommended to ensure the promotion of knowledge about agronomy and sustainable land use, as well as marketing, product development, advice on national food safety regulation, and guidance in the adoption of private standards. The focus on knowledge also concerns the use of information and communication technology for animal registration and health purposes, and can give farmers better access to price and weather information, as well as enhance the access to markets by linking farmers with potential wholesalers and retailers.

### ii. Reinforcing Agri-Environmental Adaptation

### 8.17 Expanding the Promotion of Sustainable Use of Agricultural Land and Water Resources.

Agri-environment measures have become a central element of MGAP’s sector support strategy. As an example, the beneficiaries of the PPR project report significantly reduced vulnerabilities to agro-climatic extremes, water shortages (as a consequence of the support to the construction of Tajamares) as well as to soil and rangeland degradation. Also with a view to the
full WTO compliance of these measures (agri-environmental measures fall under the Green Box category), it is recommend to explore further expansion/application potentials for MGAP’s policy encouraging farmers and forest holders to employ methods of land and water use compatible with the needs to preserve the natural environment and landscape (native forest and grasslands) and improve natural resources management. Key issues to be addressed would include biodiversity, the protection of water and soil, climate change mitigation, including the reduction of greenhouse gas emissions, and the sustainable use of pesticides.

iii. Facilitating Income Diversification in Rural Areas

8.18 Ensuring the Coordination of Sectoral and Non-Sectoral Development Activities in Rural Areas. By definition, rural areas are impacted also by development activities outside the agricultural domain. Road construction, rural housing, provision of utility coverage, social and health services are examples of such responsibilities outside of MGAP’s regulatory domain. Though it is unquestionable that the financing and implementation of such activities must be overseen and conducted by specialized line ministries/agencies, it has, however, evolved as a proven model in many developed economies that appointing and empowering an interagency coordination body (“monitoring committee”, “rural development board”) for rural development activities/policies increases the synchronization, effectiveness, and efficiency of national rural development efforts. The establishment of such body would be recommended to coordinate future development activities in the rural space. Examples of key activity areas requiring inter-institutional coordination are for instance:

- **Improving the quality of life in rural areas** through provision of basic services (and the conservation and upgrading of the rural heritage) is important not only from a social perspective but also to avoid rapid demographic changes with rural-urban migration, and to keep productive and entrepreneurial segments of the population in the rural areas. Without basic services, younger generations are likely to move to urban areas in search of employment and improved living conditions; and

- **Promotion of Off-Farm Income Opportunities**: Not only the agricultural sector is of importance to increase incomes in rural areas, but other economic activities are becoming increasingly important. These can both serve the agri-food sector (such as input markets and agri-food processors) and develop within other sectors, such as tourism. It is hence important to create and coordinate an environment in rural areas that fosters all kinds of businesses and entrepreneurial activities. Diversifying the economy away from solely agricultural activities also spreads (income) risks to other sectors. This requires not only a good investment climate and access to finance, but also support to information and training targeting off-farm activities/entrepreneurs and labor.
### III. MATRIX OF POLICY OPTIONS

<table>
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<tr>
<th>Strategies</th>
<th>Short term policy option</th>
<th>Medium-term policy option</th>
<th>Milestones</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| Improve competitiveness of the livestock value chain (producers, processors, traders) | Further upgrade and expand veterinary and animal tracking systems                        | Integrate existing tracking systems into internationally accepted food safety certification system in a modernized and strengthened institutional structure | - 100 percent of cattle herds registered  
- MGAP’s veterinary systems restructured  
- Integrated food safety certification system established | - Reduction in incidents of infectious animal diseases  
- Obtaining certification for key international premium segment markets |
| Foster integrated and inclusive agricultural and rural development         | Elaborate an integrated and inclusive agricultural development program, containing elements of support aiming at  
- productivity enhancement and technology adaptation;  
- sound agri-environmental and water management techniques; and  
- rural income diversification | - Establish required funding mechanism and institutional arrangements (e.g., creation of a Rural Development Fund)  
- Implement the program | - Program adopted by government  
- MGAP’s Rural Development Directorate equipped to implement the program  
- Program implementation and mainstreaming | - Increase in agricultural Gross Value Added  
- Reduction in sectoral income disparities  
- Increase in technology adaption rates |
| Reduce vulnerability to adverse agro-climatic phenomena                    | Identify priorities for climate change adaptation and mitigation in agriculture          | Implement instruments addressing:  
- carbon emissions;  
- drought mitigation (i.e. water supply); and  
- long-term technological upgrades | - Priorities identified  
- Carbon reduction programs implemented in intensive livestock production areas  
- Water harvesting infrastructures constructed | - Reduction in agricultural carbon emissions  
- Increased resilience of farm production systems to extreme climate events |
ANNEX

World Bank Support to Agricultural Development in Uruguay

8.19 Acknowledging the above sector and policy, Uruguay has a long standing partnership with the World Bank in addressing agricultural development challenges, to develop effective strategies for the improvement of the overall performance and sustainability of agriculture, by means of increasing productivity, enhancing natural resources management and assuring a better access to services (such as technical assistance and financial services). Presently, the World Bank supports Uruguay through the following activities:

8.20 Natural Resources Management and Biodiversity Project (PPR). The PPR is mainly oriented to natural resources and biodiversity protection, promotes the organization of family and medium sized farmers in order to have a more global approach to agro-environmental activities and providing technical support to technical staff, training of farmers and several other technical assistance activities. During the last years, one of the most important strategies followed by PPR was to support water management, resulting in many of the farmers participating in PPR being less affected during the 2008/2009 drought. Moreover, PPR is leading a new initiative to address approached to climate change adaptation and mitigation through grouped carbon credits for animal manure treatment, the installation of a biogas digester and power generation in dairy systems owned by family producers.

8.21 Foot and Mouth Disease Control Project (PROSA). The PROSA project started in 2001 and was successful in eradicating FMD and in consolidating Uruguay’s leading position in the international beef market by implementing the following strategies: (i) massive vaccination of the national cattle herd; (ii) logistic support for disease surveillance and outbreak control; through an individual tracking system; (iii) capacity building and infrastructure (control labs) and (iv) identification of alternative markets for Uruguayan beef in the short term. The project closed in December 2009 with a fully satisfactory implementation. The last outbreak was reported in 2002 and Uruguay was declared “Free with vaccination” by OIE in 2003.

8.22 Family Agriculture Development Analysis. Upon request of the Ministry of Livestock and Agriculture (MGAP), the World Bank is providing analytical and advisory assistance to the government’s efforts to prepare an integrated rural development strategy. The objective is to identify policy instruments to address the main constraints faced by family agriculture and promote a more balanced agricultural sector development, while maintaining the country’s natural resources base and guaranteeing the long term sustainability of the farming community.

8.23 Vulnerability to Climate Change in Agricultural Systems in LAC Analysis, involving Uruguay as one of the focus countries. Based on a participatory approach involving key stakeholders, this analysis assesses the scope of agricultural vulnerability to climate change and focus on formulating least-cost response strategies. As a result, a primary action plan for agricultural adaptation strategies to climate change has been developed and presented to the

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88 Investments in natural resources conservation practices are subsidized. However demands by family producers far exceed the resources available under this project (currently PPR reaches 2,643 beneficiaries that represent less than 10 percent of the potential beneficiary population.)
government. This contains three main pillars concerning information system generation, water management, and insurance and risk management.
CHAPTER 9.

CLIMATE CHANGE AND AGRICULTURE

Background

9.1 **In the context of Uruguay, climate change predictions point at moderate increase in temperatures and greater volume and variability of rain.** Using IPCC estimates, average temperature increases for Uruguay are predicted to range between 0.3 to 0.5°C by 2020 and 1.0–1.8°C by 2050. These changes are more moderate than for the Southern South America region as a whole\(^89\). A continuing poleward shift in Atlantic storm tracking is forecast to make the Río de la Plata region wetter in the future. For the winter months, changes in precipitation of -5 percent to 3 percent are predicted to 2020, -12 percent to +10 percent for 2050, and -12 percent to +12 percent for 2080. For the summer months, the predicted changes are -3 percent to +5 percent to 2020; -5 percent to 10 percent to 2050, and -10 percent to +10 percent for 2080\(^90\). The net annual effects of these changes are unclear. It is the summer season that will likely continue to experience the greatest increases in precipitation. This uncertainty in rainfall patterns points to the need for increased flexibility and resilience in adaptation strategies.

9.2 **The country has taken notable steps forward in addressing adaptation challenges and pursuing mitigation measures in several priority sectors, including agriculture.** Uruguay is one of the four developing countries in the World to have submitted two national communications to the United Nations Framework Convention on Climate Change (UNFCCC), indicating a strong commitment by the government for addressing climate change across sectors. In 2004 the *Program of General Measures on Mitigation and Adaptation to Climate Change* (PMEGEMA) was established, proposing a set of mitigation and adaptation response measures to climate change to be applied to several sectors of the economy, including agriculture, forestry, water resources, fisheries and biodiversity. More recently, in November 2009, the *National Climate Change Response System* was approved for coordinating and planning the necessary public and private actions and initiatives related to risk prevention, mitigation and adaptation to climate change. Currently, the *National Climate Change Action Plan 2010-2015* is under preparation and agricultural sector actions will likely feature prominently in it. The Plan intends to link action steps with budgets and financing sources.

9.3 **Agriculture alone is the largest contributor to GHG emissions in the country** and it is also one of the most important sectors in the economy, representing 65 percent of the country’s export earnings. In relative terms (as a share of total emissions), agriculture in Uruguay is the most emitting agricultural sector in Latin America (see figure 9.1) and its intensity (as a ratio with agricultural value added) is also very large (see figure 9.2). Although significant steps have been taken in reforestation and carbon sequestration in the country, the net effect of the sector on total GHG emissions is large (50 percent of total country emissions if land use change and

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forestry are considered, see figure 9.3). Given that the emissions reduction potential of the sector is large, carbon trading opportunities have not yet been sufficiently explored in the country, in particular in the livestock sector, which is responsible for more than 92 percent of total methane emissions in the country.

9.4 Reducing vulnerability to climate change and, in particular, to seasonal variability and variations in precipitation is of increasing importance in the agricultural sector (and, in particular, for water management), coupled with more sustainable land management practices and production decisions. Some 85 percent of Uruguay’s land is suitable for agricultural production - one of the highest percentages in the world. The suitability of this land, however, is increasingly under threat from variability of rainfall and related flooding and drought spells that the country is predicted to experience. The cost of economic damages brought about by the drought of June 1999, for example, were estimated at US$250 million, while that of the floods in May 2007 were at US$45 million. Last summer 2008-2009 the government declared a state of “agricultural emergency” as a result of the extreme drought that the country was experiencing and proposed a number of mitigation measures to farmers.

9.5 Favorable effects of climate change in the short and medium term in Uruguay are likely to be exacerbated in the long run. Future temperature and precipitation increases can have a direct positive effect on land productivity for commercial and family owned farms only up to a certain level after which further temperature increases will generate an increasingly negative effect on land productivity, particularly during the summer season (Carriquiry, 2006). Climate change scenarios for Uruguay using general circulation models (GCM) predict yield reductions of 14 percent and 25 percent in maize at mean temperature increases of 2°C and 4°C, respectively (AIACC, 2006) (see Annex for further reference to studies on climate change in Uruguay).

9.6 In March 2009, President Vázquez reaffirmed the commitment at the highest political levels for pursuing climate change adaptation in the country. He called attention to the need for further work in establishing a fund for climate-related disasters and weather emergencies, highlighted the need for better management of water resources, and called for greater information sharing and institutional coordination. The latter is to include creation of a fund designed to address weather emergencies, and creation of a national working group on risk prevention and adaptation to climate change, with representation from the Executive Branch and the Congress of Governors, along with an Advisory Commission comprising technical experts from academia, technical and research institutions.

MAIN ISSUES AND POLICY OPTIONS

9.7 An Agricultural Action Plan for Southwestern Uruguay has been recently developed through a collaborative effort between INIA and the World Bank. Through a bottom-up

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92 www.lanacion.com: Por la sequía, Uruguay declara la “emergencia agropecuaria”, 12 January, 2009
93 Carriquiry, M. 2006. Effects of climate change on the Uruguayan agriculture: implications for public policies
process of prioritization of response options to reducing vulnerability to climate change in agriculture, in March 2009, an Agricultural Action Plan was presented to stakeholders in Montevideo, Uruguay, and validated by workshop participants from several Ministries and agricultural producer organizations. Though not representative of the entire agricultural sector (forestry, livestock and fisheries subsectors were not considered), this Action Plan is a good framework for identifying priority areas for adaptation interventions in the agricultural sector.

9.8 In the case of Uruguay, there were three major components of the final Action Plan, reflecting response options prioritized by stakeholders. The first was improving information and decision support systems for farmers. This included a broad set of proposed investments: improved land-use mapping and monitoring of climate and agronomic indicators, crop modeling (as a function of climate risk factors), and implementation of an early alert and climate monitoring system. The second element was improved water management, especially at the watershed level, including technological innovations, better training, and institutional strengthening. The third component of the Action Plan was the development of improved agricultural insurance and other financial instruments for risk management; including catastrophic risk insurance and creation of a national disaster compensation fund (further detail of each response option is provided in the Annex).

9.9 To the extent that proposed responses to climate change are framed in terms of increasing climate resilience, the distinction between short- and long-term interventions is perhaps less crucial. Some proposed response options have short- to medium-term impacts – for example, the use of improved climatologically and weather information by farmers. Others require long-term investments and yield benefits over a longer term horizon; these include: irrigation and other infrastructure investments, improvements in integrated management of natural resources (requiring long-term investments in human capital and institutions), and changes in policy and institutional frameworks such as those pertaining to regional and national climate policy, systems of insurance and risk management, water supply and allocation, and natural resource policy. Local stakeholders are typically highly aware of the impacts of national-level policies and institutions in framing local resource use decisions and recognize the importance of longer-term policy and institutional reforms. Investments in climate monitoring systems, for example, may be attractive both because of their relatively low costs and their immediate usefulness in supporting farmers’ decision-making. (World Bank, 2009).

Table 9.1: Typology of Public Investments Supporting Proposed Agricultural Adaptations

<table>
<thead>
<tr>
<th>Policy Option</th>
<th>Cost</th>
<th>Time Horizon</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Short</td>
<td>Medium</td>
</tr>
<tr>
<td>1. Information and decision support system (SISTD)</td>
<td>Low</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. Improved water management</td>
<td>High</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. Insurance and other financial instruments for risk management</td>
<td>Low</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

There is an important role for the public sector in facilitating adaptation to climate change. The public sector can play a key role, at a minimum, in three areas: 1) infrastructure investment, such as with regard to irrigation systems; 2) providing information to facilitate private decision-making, such as through climate change information systems and early warning systems; and, 3) institutional and policy innovations to help deal with environmental externalities and imperfect markets. Development of decision-support systems, improvement of the information base available to farmers and land managers, as well as institutional coordination mechanisms are relatively inexpensive adaptation options that have been identified as important interventions in many countries.

Areas of assistance

Given the importance of climate change in the sector (its impact and its potential), financing of climate change actions in agriculture is becoming a high priority in Uruguay. There are several areas where the World Bank can assist the government of Uruguay:

- There is vast mitigation potential in the sector that is yet to be explored. The relative contribution of agriculture to GHG emissions in Uruguay is the highest in the region. Though significant steps have been made in reforestation and carbon sequestration in the country, agriculture alone remains the highest emitting sector in the economy (82 percent). While the mitigation potential of the sector is large, there are considerable technical obstacles for its implementation. The World Bank can provide technical assistance and carbon finance instruments to assist the government in reducing its carbon footprint without affecting the growth of the sector and its role in the economy;

- Reducing vulnerability to climate change and, in particular, to the variability in precipitation is of increasing importance in the agricultural sector in the country. Considering that the agricultural sector is ahead of other sectors in the country in designing its own adaptation action plan, the focus in the sector is more on implementation and funding. The World Bank can assist the government in its effort to implement a number of the National Climate Change Action Plan steps in the sector possibly with financing under a SWAp (Sector Wide Approach) focused on climate change or specific sectoral lending; and

- A strong decision-support system will be required to ensure the sustainability of the investments in adaptation. Internally, better coordination mechanisms both horizontally (across line ministries) and vertically (between central government, local governments and farmers) are required for the effectiveness and efficiency of adaptation interventions. A focus on prevention rather than reaction to adverse climatic events could minimize the costs of these interventions. The World Bank can assist in providing technical support for the design and implementation of information and decision support systems, including insurance mechanisms for risk reduction.
Box 9: Weather Insurance Options

In the context of Uruguay, weather index insurance at the macro (sovereign) and micro (farmer) levels are two suitable options for agriculture insurance instruments, in particular for: (i) weather index (rainfall & temperature) for horticulture and citrus production; and (ii) weather index (based on Satellite images) for pastures for livestock. A concrete proposal for work with these instruments in Uruguay has been prepared and is available upon request. The proposed agriculture insurance products for Uruguay are based on experience from Mexico.

TECHNICAL ANNEXES AND REFERENCE MATERIAL

Figure 9.1: Contribution of Agriculture (without Land Use Change and Forestry) to the Economy and to Emissions in LAC Countries
(size of bubble in MtCO2 of agriculture emissions; axes cross at LAC average)

Source: Prepared by author using information from CAIT (WRI) and WDI 2008. The emission figures are presented in CO2 equivalent terms.

Note: Distribution of emissions, by source

<table>
<thead>
<tr>
<th>Energy</th>
<th>Industrial processes</th>
<th>Waste Management</th>
<th>Agriculture</th>
<th>Land Use Change and Forestry *LUCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHG emissions in CO₂ equivalent (%)</td>
<td>3.1</td>
<td>7.8</td>
<td>222.3</td>
<td>-172.5</td>
</tr>
</tbody>
</table>

9.12 The emissions from Agriculture and LUCF combined account for 50 percent of total emissions in the country (as captured in the pie chart in Figure 9.3, below). If the positive effects of LUCF (captured by the negative sign) are not considered in calculating the total, then the share of agriculture in total (actual) emissions is 82 percent, as presented in Figure 9.2.

**Figure 9.2: Intensity of Agricultural Emissions**
(emissions from agriculture in MtCO2/collector value added in 100 Millions Constant 2000 US$)

![Intensity of Agricultural Emissions](image)

*Source:* Prepared by author using information from CAIT (WRI) and WDI 2008

**Figure 9.3: Percent of GHG Emissions in CO2 Equivalent, by Sector (2000)**

![Percent of GHG Emissions](image)

*Source:* World Resources Institute [http://cait.wri.org](http://cait.wri.org)
Studies related to climate change and agriculture:

- UNDP Uruguay released complementary material to the “Informe mundial sobre desarrollo humano 2007-2008” in November 2007 titled “Uruguay: Climate change here and now” which gives a general overview on the climate situation in Uruguay and the most vulnerable sectors of the economy.

- AIACC has completed a study related to the agricultural sector, focusing on climate change impacts and vulnerability assessment in Uruguay (among other countries in the region): “Building capacity to assess the impact of climate change/variability and develop adaptive responses for the mixed crop/livestock production systems in the Argentinean and Uruguayan Pampas (LA27)”.

- A policy note on the development of institutional capacity for agricultural adaptation was developed in 2008 by MGAP.

- A regional study, financed by START-AIACC and USAID was finalized in 2006 by the national research organizations of Argentina, Brazil and Uruguay: “Development and implementation of a system for impact assessment of the variability of weather and climate change in the agricultural production systems of Argentina, Brazil and Uruguay, and the identification of potential adaptive responses”.

- INIA has recently completed a vulnerability study on pasturelands and rice fields (financed by GEF and UNDP) with the final aim of delineating adaptation measures in these specific fields. The study is titled “Determining the impact of climate change on the production of natural pastures and rice in Uruguay”.


- The World Bank published a flagship document for the entire Latin America and Caribbean Region titled “Low carbon, High Growth: Latin American Responses to Climate Change”, encompassing information on climate change impacts in the region, on the potential contribution to mitigation efforts as well as a listing of future low carbon-high growth policies.

Climate Change Action Plan for Western Littoral Region, Uruguay: Major Components

1. Information and decision support system (SISTD)

- Define agro-ecological zones through climate and land-use mapping that distinguishes different economically productive activities.

- Quantify agro-climatic risk through analysis of physical and economic factors influencing variability of production systems and causes of extreme climatic events.

- Crop modeling, incorporating agro-climatic and management factors, to enable improved modeling and reduction of risks associated with climate change.

- Permanent system of monitoring climatic and agronomic factors, to support an early alert and decision support system.

- Develop climatic and economic indicators for use in the establishment and implementation of insurance and other risk management systems.

- Implement an early alert and monitoring system to assist the government in forecasting and responding to emergencies.
2. **Improved water management**
   - Institutional strengthening for improved water management, especially at the watershed level. Also, improved institutional support for irrigation management and land-use planning.
   - Use of new technologies, tools, and information for improved and more efficient water management, including supplemental irrigation, and improved production systems.
   - Human capital development, including specialized training, for water management.
   - Improved technology transfer through private and public institutions, including “technology roundtables”.

3. **Insurance and other financial instruments for risk management**
   - Stimulate the development and use of conventional agricultural insurance for improved risk management, as well as catastrophic risk insurance based on improved measurement of agro-climatic risk, including the use of index-based mechanisms.
   - Create an emergency or contingency disaster compensation fund to supplement and help cover risks not otherwise covered by private insurance.
CHAPTER 10.

MACROECONOMIC AND FISCAL FRAMEWORK

Introduction

10.1 The Uruguayan economy has proven more resilient to the global recession than other emerging market economies. This greater resilience is linked to a generally solid macroeconomic framework, greater exchange rate flexibility, rising international reserves, and improvements in the banking system, which lessened the impact of the recent crisis and placed it into a favorable position to benefit from a global recovery.

10.2 Nevertheless, some vulnerabilities persist and should be addressed to further strengthen Uruguay’s macroeconomic policy framework and facilitate long-term growth. Despite significant progress in debt reduction, debt remains high and exposed to exchange rate fluctuations. During the current crisis, debt sustainability considerations limited scope for fiscal stimulus. Further debt reductions would create necessary space for effective counter-cyclical measures. A similar argument applies to monetary policy. Although inflation has been broadly kept within its range, it still remains relatively high and restricts monetary policy. At the beginning of the current crisis, monetary policy initially reacted pro-cyclically to counteract inflationary pressures on the wage bill. Lower levels of debt and inflation would ensure that monetary and fiscal policy can reinforce each other and act in a synchronized and counter-cyclical fashion; lower levels of dollarization would further strengthen the role of the exchange rate as a shock-absorber.

10.3 This policy note assesses Uruguay’s current macroeconomic sustainability from the perspective of internal (fiscal) and external (current account) sustainability. The note is structured as follows. Section I reviews Uruguay’s recent economic performance and provides baseline projections until 2012. Section II considers fiscal sustainability and provides projections on the likely path of net public sector debt until 2012 under different scenarios. Section III assess external sustainability and evaluates external financing needs to finance projected current account deficits for 2009-2012. Section IV concludes and provides policy implications. The appendix provides a brief introduction on fiscal rules with special reference to the Chilean case.

Recent Economic Developments

10.4 Growth and Employment. Economic performance exceeded expectations in 2008, notwithstanding the slowdown in the last quarter of the year. Uruguay benefited from a generally favorable external environment until mid-2008, with high regional growth and buoyant agricultural commodity prices, although this was partly offset by high prices for oil and natural gas. According to revised National Accounts data, real GDP grew by 8.9 percent in 2008, the highest rate in the last 20 years, and averaged 6.7 percent over the past 5 years. As a consequence, employment reached a record of 60 percent in November 2008, while unemployment declined to its lowest level in over a decade, falling from an average of 13.1 percent in 2004 to 7.9 percent in 2008. Poverty declined from a maximum of 42 percent in 2003 to 25 percent in December 2008.
Since 2004, growth was driven by a rebound in domestic demand. In 2008, investments in fixed assets rose by 18.1 percent, spending on private consumption was up by 8.8 percent and exports of goods and services expanded by 10.5 percent. Almost all economic sectors showed a faster pace of growth with respect to 2007, particularly transport and communications (27.1 percent), manufacturing industry (17.3 percent), construction (9 percent) and primary activities (5.7 percent) expanded. The only exception was electricity, gas and water, which fell by 38.4 percent in real terms, due to a severe drought that hit the country during 2008 and early-2009. From 2008Q4, the economy started to show signs of the negative impact of the world economic crisis and the economy expanded by only 0.2 percent, compared to 2.3 percent in the third quarter.

Inflation. After a sharp rise in 2008, inflation returned to the official target range of 3-7 percent. Consumer prices rose by 9.2 percent in 2008; the highest rate in the last 5 years. The steep increase created a major concern for the authorities, as CPI increases above 10 percent during a 12 months period would prompt semi-annual salary increases. To contain domestic demand and to reign in additional inflationary pressures, the Central Bank increased reserve requirements for local and foreign currency deposits. The government also introduced a series of administrative measures to contain price increases. Inflation finally slowed to 6.5 percent in June 2009. With inflationary pressures subsiding, the Central Bank cut interest rates to 8 percent in June, to support a slowing economy; this cut followed a previous reduction from 10 percent to 9 percent in March.

Current Account Deficit. The current account deficit widened from 0.9 percent of GDP to 4.7 percent of GDP in 2008, as trade flows deteriorated. This is the greatest imbalance in the country’s history and contrasts to 2004, when it was close to equilibrium. The main cause of the increased deficit was the deterioration of the trade account, which showed a US$933 million deficit by the end of the year, in contrast to the US$478 million surplus in 2004. Although real exports grew by 11.5 percent, imports rose by 31 percent, widening the country’s trade deficit in 2008.

Fiscal Accounts. In 2008, the fiscal outcome was lower than expected. The primary surplus (1.4 percent of GDP in 2008) fell short of the government’s target of 3 percent of GDP and the overall deficit (1.4 percent of GDP) exceeded the target by 1 percentage point. The lower primary surplus was mainly due to a sharp decline in the surplus of the state-owned electricity company (UTE). In 2008, Uruguay experienced one of the worst droughts on record. Energy generation costs increased as the drought reduced capacity for hydroelectric generation. Increasing oil prices implied that energy needs had to be filled with expensive energy imports. As higher energy generation costs were not passed on to consumers, resulting additional fiscal costs amounted to about US$500 million, equivalent to 1.6 percent of GDP.

Public Debt. Total gross public debt fell from 97.3 percent of GDP in 2004 to 51.4 percent in 2008. Overall public sector debt, as a share of GDP, has steadily declined over the

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97 These government measures came at an estimated fiscal cost of US$8-10 million and included delays in adjustments in electricity; water and telecoms utility tariffs; transportation subsidies (reduction in the price of urban bus transport tickets and taxi fares); a 10 percent reduction in prices of 110 basic products sold in supermarkets; subsidies on fresh milk; and exemption of fruits, vegetables and ground beef from VAT (for 120 days).
last five years; although in 2008 it increased in nominal terms by US$216 million. Strong economic growth and the peso appreciation were behind the 16 percentage point reduction in the debt ratio in 2008. Net public sector debt declined from US$9,662 million to US$8,262 million in 2008 (25.7 percent of GDP), a level similar to just before the 2001-2002 financial crisis. Despite a substantial reduction in the debt ratio, public debt continues to be a source of vulnerability as a large share (70 percent) remains denominated in foreign currency.

10.10 Risks. Despite considerable progress in terms of macroeconomic stability, certain vulnerabilities remain. The economy is still highly dollarized: for the banking sector, this implies substantial exposure to foreign currency risks due to corporate balance sheet mismatches. Public debt is sizeable and largely denominated in foreign currency. Exports and FDI have been significant drivers of growth performance; thus, as a small, open and dollarized economy, Uruguay is vulnerable to a severe deterioration in global and regional economic conditions. Despite progress in geographical diversification, exports remain highly concentrated: animal products, vegetable products, textiles and raw hides, furs and leather represented 41.9 percent of total exports of goods and services in 2008. Regional conditions are also important and a crisis in neighboring countries would have a strong impact, although not as severe as in 2002.

Outlook.

10.11 The scenario described below incorporates the preliminary impact of the crisis on the Uruguayan economy and the response of the government since January 2009. The baseline macroeconomic projections are summarized as follows:

- Growth and inflation: Although the impact of the international financial crisis has been moderate, economic activity slowed in 2009. Cumulated GDP growth during the first three quarters of 2009 was 1.7 percent, going well beyond expectations and positioning Uruguay as one of the fastest growing economies in the region. In 2009Q1, seasonally-adjusted GDP contracted by 2.9 percent (qoq) - the first contraction since 2004. The decline was mainly due to lower activity in the primary, manufacturing industry, and energy sectors, where the impact of the global slowdown was compounded by a severe drought. Growth resumed in 2009Q2, when GDP grew by 1.2 percent (qoq); the recovery was experienced by all sectors, except agriculture and energy, which posted further declines due to the drought. An exceptional expansion of activity (2.5 percent) was experienced in 2009Q3, led by the primary and energy sectors, which in seasonally adjusted terms grew by 6.8 percent and 96.3 percent, respectively. The main factors behind this performance were the improvement in climate conditions and the recovery of external markets. Uruguay is expected to grow by 1.5 percent in 2009 and by 3.5 percent in 2010. CPI inflation was 5.9 percent in 2009 and is projected to be 6.1 percent in 2010.
- Fiscal accounts: The fiscal position is likely to have deteriorated further in 2009. The fiscal deficit is expected to widen in 2009 as expenditures increased with the crisis and interest payments are projected to be higher. The projection for the primary balance in 2009 is 0.1 percent of GDP, resulting in an overall deficit of 2.5 percent of GDP. As the economy recovers, the deficit is expected to narrow again in 2010, with estimated primary and overall results of 0.7 and -2.0 percent f GDP, respectively.
- Financing gap: Amortizations, interest payments and the recapitalization of the Banco Hipotecario del Uruguay (BHU) imply gross financing needs of the central government
of US$1.3 billion and US$1.7 billion in 2009 and 2010, respectively. To close these gaps, the government has obtained multilateral financing – IADB (US$285 million), World Bank (US$400 million) and Corporación Andina de Fomento (US$200 million) – and issued public debt in the local and international markets. The Parliament approved an increase in Uruguay’s indebtedness ceiling by US$350 million, with the option of a second US$350 million increase under extraordinary conditions. Under the new ceiling, the authorities would be able to issue sovereign debt up to US$600 million to cover liquidity needs in 2010.

- External accounts: With falling import demand during the first half of 2009, the current account showed a surplus of US$240.1 million in Jan-Sept 2009, a reversion with respect to the US$1,209 million deficit registered during the same period of 2008. Results are expected to improve further in the medium-term, given economic recovery and persistent surpluses in the services account, which is largely due to high tourism receipts that even held up during the crisis. Up to now, external financing needs have been easily met with large capital inflows, which amounted to US$2.2 billion in 2008 (equivalent to 6.9 percent of GDP).

- Monetary accounts: After a substantial weakening of the Uruguayan peso between August and December 2008, the situation reverted in 2009, and the peso came under pressure to appreciate – a 19 percent fall of the UY$/US$ exchange rate during the year – while reserves steadily increasing as the Central Bank’s purchased foreign currency to moderate the appreciation trend. With CPI inflation on the decline and moderate economic growth, the Central Bank cut interest rates from 10 percent to 6.25 percent in 2009. The appreciation of the peso of 2009 is expected to revert in 2010.

**Public Debt Sustainability**

10.12 Public debt dynamics are a key determinant for a country’s macroeconomic environment and for the private investment climate. The objective of this section is to provide a better understanding of public debt dynamics in Uruguay. Our debt sustainability analysis breaks down changes in the net public debt-to-GDP ratio into components attributable to primary fiscal deficits, real GDP growth, real interest rates, the capital gain/loss on foreign currency denominated debt as a result of exchange rate changes and fiscal costs associated with contingent liabilities such as bank bailouts.

10.13 Over the last five years, public debt management policies have achieved considerable success in terms of debt reduction as well as debt composition. Total public net debt declined from 66.5 percent in 2004 to 29.8 percent in Jan-Sept 2009. In terms of debt composition, 77.5 percent of total public debt is held by private creditors, compared to 55.7 percent by end-2004, reflecting restored access to market financing. The foreign currency share of total public sector debt fell from 90.2 percent in 2004 to 69.7 percent at the end of September 2009. The government has also managed to lengthen the maturity profile. As of end-September 2009, short-term debt (less than 1 year) of the overall public sector was 1.9 percent of total debt, with long-term debt (over 5 years) representing 84.4 percent of all obligations, up from 58.6 percent in 2004. Although the government has succeeded in smoothing short-term obligations, attention should be paid to the medium-term debt calendar. Despite efforts made to repurchase debt due until 2012, there is still some concentration of payments around 2011 and 2017-2018.
10.14 Central government financing needs for 2009 and 2010 are sizeable, but manageable. As already described above, the government has secured contingent financing from multilateral institutions (US$885 million) and made significant debt issuances, totaling US$610 million for the year to date. As a result, fiscal savings of almost US$800 million are expected for 2009. Together with project-based lending from the World Bank (US$40 million) and lending commitments from IADB (US$437 million), these fiscal savings could potentially fill the financing gap for 2010. As the latest round of bond issuance (US$500mn) at the end of September was extremely well received by the international market, the gap could potentially also be covered by additional bond issuance, if market conditions remain favorable. Finally, the public sector holds over US$1 billion in public sector deposits in the domestic banking system.

Table 10.1: Central Government Financing Gap, 2009-2012

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing needs</td>
<td>1.284</td>
<td>1.665</td>
<td>1.927</td>
<td>1.559</td>
</tr>
<tr>
<td>Interest</td>
<td>851</td>
<td>880</td>
<td>809</td>
<td>774</td>
</tr>
<tr>
<td>Amortization</td>
<td>357</td>
<td>615</td>
<td>949</td>
<td>615</td>
</tr>
<tr>
<td>Loans</td>
<td>220</td>
<td>227</td>
<td>271</td>
<td>282</td>
</tr>
<tr>
<td>IDB</td>
<td>137</td>
<td>141</td>
<td>159</td>
<td>152</td>
</tr>
<tr>
<td>World Bank</td>
<td>71</td>
<td>73</td>
<td>80</td>
<td>78</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>14</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td>Securities</td>
<td>137</td>
<td>388</td>
<td>677</td>
<td>333</td>
</tr>
<tr>
<td>Foreign Currency</td>
<td>96</td>
<td>201</td>
<td>411</td>
<td>101</td>
</tr>
<tr>
<td>Local Currency</td>
<td>42</td>
<td>186</td>
<td>266</td>
<td>233</td>
</tr>
<tr>
<td>Other (BHU capitalization)</td>
<td>76</td>
<td>170</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>Financing sources</td>
<td>2.064</td>
<td>1.027</td>
<td>1.062</td>
<td>1.148</td>
</tr>
<tr>
<td>Primary surplus</td>
<td>200</td>
<td>300</td>
<td>519</td>
<td>663</td>
</tr>
<tr>
<td>Disbursements</td>
<td>1.214</td>
<td>477</td>
<td>243</td>
<td>185</td>
</tr>
<tr>
<td>Multilaterals</td>
<td>1.214</td>
<td>477</td>
<td>243</td>
<td>185</td>
</tr>
<tr>
<td>IBRD (for projects -- excl. DPLs -- after 2010)</td>
<td>449</td>
<td>40</td>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>IDB</td>
<td>485</td>
<td>437</td>
<td>168</td>
<td>115</td>
</tr>
<tr>
<td>Other</td>
<td>280</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bilaterals</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>Bond Issuances</td>
<td>610</td>
<td>250</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>International market</td>
<td>500</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Local market</td>
<td>110</td>
<td>250</td>
<td>300</td>
<td>300</td>
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<tr>
<td>Other</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Savings (pre-financing)</td>
<td>780</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Unmet financing needs</td>
<td>--</td>
<td>638</td>
<td>865</td>
<td>411</td>
</tr>
<tr>
<td>% of GDP</td>
<td>1.9%</td>
<td>2.2%</td>
<td>0.9%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ministry of Economy and Finance

10.15 The baseline for our debt sustainability analysis assumes an economic decline in 2009, followed by gradual recovery to medium-term growth of 3.9 percent. Fiscal accounts are expected to deteriorate with the economic slowdown in 2009, but to recover in the subsequent years, although not to pre-crisis levels. Under these assumptions, total public net debt is projected to decline from 25.7 percent of GDP in 2008 to 13.6 percent of GDP in 2012. The
baseline scenario is based on the assumption of an average primary surplus of 1.5 percent during 2009-2012.

10.16 Sustained fiscal adjustment, economic growth and exchange rate stability are critical for continued improvement in public debt indicators (see Table 10.2 and Appendix A10.2, Figure 1). For the baseline scenario, we find that during 2003 and 2008 exchange rate stability accounted for 33 percent of debt reduction, while fiscal adjustment (primary surplus) and continuing healthy growth also play a significant role, with a contribution of 30 percent and 28 percent, respectively.

Table 10.2: Cumulative Public Net Debt Decomposition, 2000-2012

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in public sector debt</td>
<td>-9.7</td>
<td>35.9</td>
<td>-33.5</td>
<td>-12.1</td>
</tr>
<tr>
<td>Primary deficit (- surplus)</td>
<td>-20.6</td>
<td>2.6</td>
<td>-18.5</td>
<td>-4.7</td>
</tr>
<tr>
<td>-Seignorage</td>
<td>-6.6</td>
<td>-0.2</td>
<td>-5.1</td>
<td>-1.4</td>
</tr>
<tr>
<td>Contribution from real interest rate</td>
<td>4.2</td>
<td>2.5</td>
<td>1.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Contribution from real GDP growth</td>
<td>-15.3</td>
<td>4.5</td>
<td>-17.3</td>
<td>-2.4</td>
</tr>
<tr>
<td>Contribution from real exchange rate change</td>
<td>-3.0</td>
<td>20.7</td>
<td>-20.2</td>
<td>-3.5</td>
</tr>
<tr>
<td>Residual</td>
<td>31.7</td>
<td>5.8</td>
<td>25.9</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: Central Bank of Uruguay, MEF, and World Bank staff projections.
Note: Covers net debt of the overall public sector (NFPS and Central Bank).

10.17 We consider various standard and country specific stress tests to evaluate the behavior of the public debt ratio under different scenarios (see Appendix B.10, Table B10.1). The most extreme stress test is given by a scenario that replicates the 2002-crisis.98 Here, the projected net debt reaches 36.8 percent of GDP and 29.1 percent of GDP in 2009 and 2010, respectively. The second most extreme test corresponds to a one-time 30 percent depreciation in 2009. Here, the debt-to-GDP ratio would deteriorate rapidly to 30.8 percent in 2009 and to 22.8 percent in 2010.

10.18 Stress tests show that adverse shocks could at least temporarily reverse the favorable debt trends observed under the baseline scenario. This underscores the importance of sustaining prudent macroeconomic policies. A fiscal rule could be an important instrument to help safeguard fiscal sustainability. Figure 10.1 shows the Hodrick Prescott filtered cyclical components of quarterly GDP and quarterly total government expenditures. The cyclical components are positively correlated (0.28), which seems to point to a pro-cyclical bias in fiscal policy. As pro-cyclical fiscal policy tends to amplify business cycle fluctuations and reduce the growth rate, Uruguay could benefit from a fiscal rule, which is found to lower output volatility and positively impact on growth. Appendix C.10 provides a brief overview over rule-based fiscal policy, with special reference to Chile’s fiscal rule.

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98 Fall in real GDP of 8.3 percent, real depreciation of 48.7 percent and a primary balance amounting to 0.3 percent of GDP, during the first two years of projections.
10.19 As a further robustness check, stochastic simulations are used to assess the impact of volatility and uncertainty on fiscal sustainability. Based on the historical variances of four simulated variables (real GDP growth, change in real exchange rate, real interest rates of domestic and external debt), and abstracting from any feedback of rising debt levels on fiscal policy, Monte Carlo simulations were run to obtain confidence bands around the baseline projections of the net-debt-to-GDP ratio (Figure 10.2). Our simulations indicate a 95 percent likelihood that net public debt will be below 25.9 percent of GDP and a 50 percent probability that it will be below 15.9 percent of GDP by 2012.

**Figure 10.2: Net Public Debt-to-GDP Ratio: Stochastic Simulations**

Source: Central Bank of Uruguay, MEF, and World Bank staff projections.

Note: Covers net debt of the overall public sector (NFPS and Central Bank).
External Sustainability

External Financing Needs

10.20 The external financing requirements are calculated based on: (i) the projected amortization of short-term external debt and medium and long-term debt falling due; (ii) the projected current account balance; (iii) the liquidation of foreign positions held by non-residents in local secondary bond and security markets; and (iv) potential domestic capital flight. Items (i) to (iii) are referred as ‘External drain’ (ED); potential domestic capital flights, (iv), which includes resident and non-resident deposits in the local financial system, is considered as ‘Internal drain’ (ID).

10.21 The ED for Uruguay is estimated at US$2.3 billion for 2009, lower than in 2008 (US$3.2 billion) and closer to the level of 2004 (US$3 billion). EDs are projected to rise again in 2010 to US$3 billion, although expected to decline in subsequent years (Figure 10.3).

Figure 10.3: Current Account Balance and External Financing Requirements 2004-2012 (US$ billions)

Source: World Bank staff calculations based on IMF data.

10.22 Trends in ED are mainly explained by changes in the current account balance. According to IMF projections, Uruguay is expected to post a smaller current account deficit in 2009 than in 2008 (US$507 million against US$1,485 million). Although the current account deficit is projected to widen again in 2010 (US$874 million), in absolute terms, it is projected to be smaller than in 2008.

10.23 The deposit base in 2009-2012 is projected to increase at the average rate of the previous 5 years. Inadequate supervision of foreign banks and high levels of non-resident deposits

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presented a major threat to the financial sector in the 2002 crisis. As non-resident deposits considerably decreased since, today’s banking sector is much less vulnerable. To illustrate, in December 2001, non-residents deposits accounted for 56.3 percent of total deposits compared to only 18.6 percent in November 2009.

**Adequacy Of Available Sources of Financing**

10.24 Up to now, external financing needs have been easily met with large capital inflows, particularly by foreign direct investments (FDI). Botnia has generated important flows of investment during 2005 and 2006, amounting to US$280 and US$600 million, respectively. In consequence, FDI reached a historical maximum of 7.5 percent of GDP (US$1.4 billion) in 2006. Since then, non-Botnia FDI has kept growing in absolute terms, reaching US$1.1 billion in 2007 and US$1.8 billion in 2008, equivalent to 5.5 and 5.7 percent of GDP, respectively.

10.25 However, capital flows are expected to decline and it is not likely that private capital inflows alone will be sufficient to cover the projected external financing requirements. During January-September 2009, capital inflows reached only US$1.7 billion, compared to US$2.5 billion during the same period in 2008. There has also been a shift in the composition of capital flows. In 2008, more than 75 percent of capital flows came from private sources. Since 2009, public capital inflows, in particular from multilaterals, have increased substantially, and private capital flows represent now only 25 percent of total capital inflows.

10.26 In order to assess the adequacy of external financing, EFRs of 2010-2012 are compared to corresponding levels of International Reserves\(^{100}\). International reserves increased sharply during 2007-2008 with booming commodity prices and favorable international conditions. Reserves are expected to keep growing over the projection period, albeit at a declining pace.

10.27 Our estimates assume a 50 percent roll-over of short term debt; financing of the entire current account balance; no liquidation of local bond and equity positions of non-residents; and no capital flight from the deposit base. Table A10.3 in Appendix A.10 provides estimates of the external financing gaps for 2010-2012 as well as reserves adequacy ratios. Due to the high level of reserves, external financing gaps are unlikely to rise in the near future. To avoid however a depletion of reserves in this scenario, additional financing from multilaterals or new debt issues would be needed.

10.28 Given relatively high levels of public sector indebtedness, it would seem prudent to continue working towards improving Uruguay’s investment climate in an effort to attract private capitals which would also help cover future external financing needs.

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\(^{100}\) FX Reserve Assets in the Central Bank exclude deposits of the public and the banking sectors at the Central Bank.
Conclusion

10.29 The assessment of Bank staff is that the macroeconomic framework is satisfactory relative to global circumstances, although sources of vulnerability remain that limit Uruguay’s scope to conduct counter-cyclical macro policies.

10.30 Debt sustainability continues to be a major development challenge notwithstanding the progress made in terms of debt restructuring since 2003. The large share of debt denominated in foreign currency is a source of vulnerability, as it makes debt levels very sensitive to the path of the exchange rate. Sustained fiscal adjustment, economic growth and exchange rate stability are critical for continued improvement in public debt indicators.

10.31 Lowering debt levels would also help to create the necessary space for effective counter-cyclical measures; debt sustainability considerations limited the scope for fiscal stimulus during the current crisis. As fiscal policy in Uruguay tends to be pro-cyclical, a fiscal rule could help to strengthen fiscal sustainability in the medium-term; a fiscal rule would also assist with setting aside fiscal savings to provisioning for energy-related contingencies, which in light of the recurrent droughts in recent years are becoming more of a concern.

10.32 Although inflation has been broadly kept within its target range of 3 to 7 percent, efforts to maintain inflation at the center of the range would not only benefit growth and exchange rate stability but also create more room for monetary policy. Targeting lower debt levels and a lower rate of inflation provide the necessary space to ensure that monetary and fiscal policy reinforce each other and act in a synchronized and counter-cyclical fashion. Lower debt levels and a lower inflation environment would further strengthen confidence in the local currency and assist de-
dollarization; a lower degree of dollarization would reinforce the ability of the exchange rate to act as a true shock-absorber, without endangering balance sheet.

10.33 Finally, the precedent analysis suggests that, under the baseline assumptions, Uruguay’s external financing requirements are substantial, but manageable. Up to now, external financing needs have been easily met with large capital inflows, particularly FDI. However, given the current situation, capital flows are expected to decline and it is not likely that private capital inflows alone will be sufficient to cover the projected external financing requirements. Additional resources, such as multilateral financing or new debt issues, would be necessary to avoid the depletion of international reserves as well as to cover higher than expected financing gaps, should external conditions deteriorate further.
Table 10.3: Policy Matrix

<table>
<thead>
<tr>
<th></th>
<th>SHORT-TERM</th>
<th>MEDIUM-TERM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Debt Sustainability</strong>&lt;br&gt;Despite significant progress in debt reduction, debt remains high and exposed to exchange rate fluctuations.</td>
<td>Contain expenditure growth to ensure no further deteriorate of fiscal balance in 2010.</td>
<td>Sustained fiscal adjustment, economic growth and exchange rate stability are critical for continued improvement in public debt indicators.</td>
</tr>
<tr>
<td><strong>Counter-cyclical Macro Management</strong>&lt;br&gt;Scope for counter-cyclical policies remains limited by the following factors:</td>
<td>• Contain expenditure growth to ensure no further deteriorate of fiscal balance in 2010.</td>
<td>• Further debt reductions would also help create necessary space for effective counter-cyclical measures.</td>
</tr>
<tr>
<td></td>
<td>• Fiscal sustainability</td>
<td>• Strengthening counter-cyclical policy responses also requires that monetary and fiscal policy can act in sync. To create the necessary space for monetary policy, inflation should be brought to lower inflation range bound. This would not create more room for counter-cyclical monetary policy but likely also strengthening confidence in the local currency, which would further assist in reducing continued high levels dollarization in the economy.</td>
</tr>
<tr>
<td></td>
<td>• Monetary policy is limited by inflation</td>
<td>• As fiscal policy in Uruguay tends to be pro-cyclical, a fiscal rule could also help to strengthen fiscal sustainability in the medium-term; a fiscal rule would also help to set aside fiscal savings to provisioning for energy-related contingencies, which due to recurrent droughts are becoming more of a concern.</td>
</tr>
<tr>
<td></td>
<td>• Limited role of exchange rate as shock-absorber due to high levels of dollarization</td>
<td>• Reduce the grade of dollarization in the economy.</td>
</tr>
<tr>
<td><strong>External Financing</strong>&lt;br&gt;Uruguay’s external financing requirements are substantial, but manageable.</td>
<td>Private capital inflows are an important source of external financings. Further improvements to the business climate could help attract further capital inflows.</td>
<td>Renewed deterioration on international financial environment would require additional financing from IFIs to close financing gaps beyond 2010.</td>
</tr>
</tbody>
</table>
Appendix A.10

Figure A10.1: Economic Activity and Employment

**Evolution of real GDP**

**Contribution to real GDP growth**

**CPI Inflation**

**Unemployment**
Figure A10.2: Fiscal Stance

**Domestic Investment and FDI**

- GDI/GDP
- FDI/GDP
- Gross Domestic Investment (RHS, 1999=100)

**Real Exchange and CAB & CFA Outcomes**

- Current Account (US$ million)
- Capital and Financial Account (US$ million)
- Real exchange rate (RHS, 2000=100)

**Public Sector Balance**

- PS Primary Balance
- PS Overall Balance

**Public Sector Debt**

- Total Public Debt
- International Reserves
- Debt/GDP (RHS)
Table A10.1: Uruguay: Macroeconomic Indicators

<table>
<thead>
<tr>
<th>National accounts</th>
<th></th>
<th>Actual</th>
<th>Projected</th>
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<tr>
<td></td>
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<tr>
<td>Real GDP growth (%)</td>
<td>-2.2</td>
<td>-4.1</td>
<td>-8.3</td>
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<tr>
<td>GDP (US$ billion)</td>
<td>22.8</td>
<td>26.9</td>
<td>13.6</td>
</tr>
<tr>
<td>Gross domestic investment (% of GDP)</td>
<td>17.3</td>
<td>15.1</td>
<td>14.5</td>
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<tr>
<td>External sector</td>
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<td></td>
<td></td>
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<tr>
<td>Current account balance (% of GDP)</td>
<td>-2.5</td>
<td>-2.4</td>
<td>2.8</td>
</tr>
<tr>
<td>excluding pulp mill projects 1/</td>
<td>-2.5</td>
<td>-2.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Export volume (%) 1/</td>
<td></td>
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<tr>
<td>Imports volume (%) 1/</td>
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<td>FDI (US$ billion)</td>
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<td>0.3</td>
<td>0.2</td>
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<tr>
<td>Prices</td>
<td></td>
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<tr>
<td>CPI (% change, end of period)</td>
<td>5.1</td>
<td>3.6</td>
<td>25.9</td>
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<tr>
<td>CPI (% change, period average)</td>
<td>4.8</td>
<td>4.4</td>
<td>14.0</td>
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<td>Exchange rate (average)</td>
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<td>21.3</td>
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<tr>
<td>Real effective exchange rate (2005=100, + = appreciation)</td>
<td>130.5</td>
<td>129.5</td>
<td>114.9</td>
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<td>Merchandise terms of trade (2000=100)</td>
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<td>104.0</td>
<td>102.6</td>
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<td>Labor market (%)</td>
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<td>Unemployment (INE) 2/</td>
<td>13.6</td>
<td>15.3</td>
<td>17.0</td>
</tr>
<tr>
<td>Fiscal (% of GDP)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Revenues 3/</td>
<td>26.0</td>
<td>27.2</td>
<td>26.6</td>
</tr>
<tr>
<td>Current surplus of Public Sector Enterprises</td>
<td>1.8</td>
<td>2.6</td>
<td>2.2</td>
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<tr>
<td>Current expenditures 3/</td>
<td>23.9</td>
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<td>24.0</td>
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<tr>
<td>Public investment</td>
<td>3.0</td>
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<tr>
<td>Primary balance (deficit (-)/surplus (+))</td>
<td>-1.2</td>
<td>-1.1</td>
<td>-0.3</td>
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<tr>
<td>Central Government &amp; Public Sector Enterprises</td>
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<td>-0.8</td>
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<td>BSE</td>
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<td>Local Governments</td>
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<td>Interest payments</td>
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<tr>
<td>Overall fiscal balance (deficit (-)/surplus (+))</td>
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<td>-3.4</td>
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<tr>
<td>Savings and investment (% of GDP)</td>
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<tr>
<td>Gross domestic investment</td>
<td>14.5</td>
<td>14.3</td>
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<tr>
<td>Gross national savings</td>
<td>11.0</td>
<td>11.4</td>
<td>15.4</td>
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<tr>
<td>Foreign savings</td>
<td>3.5</td>
<td>2.9</td>
<td>-2.3</td>
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<tr>
<td>Indebtedness (% of GDP)</td>
<td></td>
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<tr>
<td>Gross external debt 3/</td>
<td>39.0</td>
<td>42.8</td>
<td>77.5</td>
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<tr>
<td>Public sector gross debt 3/</td>
<td>40.0</td>
<td>48.2</td>
<td>83.7</td>
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</table>


Notes: 1/ Current account balance excluding imports related to the construction of pulp mill projects (Botnia and Ence)
2/ Covers urban population (cities and towns of more than 5000 inhabitants).
3/ Covers Central Government and BPS.

"—" refers to data that is not available; "n/a" refers to data that is not applicable.

<table>
<thead>
<tr>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Projections</th>
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<td></td>
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<td>2009</td>
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<tr>
<td>Public sector debt 1/</td>
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<td>51.5</td>
<td>45.7</td>
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<td>43.4</td>
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<td>65.8</td>
<td>52.7</td>
<td>50.4</td>
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<td>o/w net foreign assets</td>
<td>21.7</td>
<td>22.4</td>
<td>20.8</td>
<td>23.8</td>
<td>23.3</td>
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<tr>
<td>o/w domestic debt (net) 2/</td>
<td>3.6</td>
<td>8.1</td>
<td>11.0</td>
<td>13.3</td>
<td>11.6</td>
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<tr>
<td>Change in public sector debt</td>
<td>-1.8</td>
<td>-1.5</td>
<td>-1.5</td>
<td>-0.9</td>
<td>-0.4</td>
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<td>Identified debt-creating flows</td>
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<td>-15.4</td>
<td>-13.6</td>
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<td>-0.3</td>
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<tr>
<td>Primary deficit</td>
<td>-3.7</td>
<td>-3.8</td>
<td>-3.5</td>
<td>-3.4</td>
<td>-1.4</td>
</tr>
<tr>
<td>Revenue and grants</td>
<td>27.7</td>
<td>28.1</td>
<td>27.8</td>
<td>27.8</td>
<td>25.6</td>
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<tr>
<td>Primary (noninterest) expenditure</td>
<td>240.2</td>
<td>242.3</td>
<td>244.8</td>
<td>243.2</td>
<td>243.2</td>
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<td>-Seignorage</td>
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<td>-0.2</td>
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<tr>
<td>+Automatic debt dynamics:</td>
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<td>-3.2</td>
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<td>-1.3</td>
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<td>Contribution from interest rate/growth differential</td>
<td>-2.8</td>
<td>-4.6</td>
<td>-1.7</td>
<td>-2.7</td>
<td>-3.2</td>
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<tr>
<td>Of which contribution from real interest rate</td>
<td>0.6</td>
<td>0.2</td>
<td>0.6</td>
<td>0.5</td>
<td>0.1</td>
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<tr>
<td>Contribution from domestic real interest rate 3/</td>
<td>0.0</td>
<td>0.4</td>
<td>0.5</td>
<td>0.3</td>
<td>0.2</td>
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<tr>
<td>Contribution from real interest rate on foreign debt 4/</td>
<td>0.8</td>
<td>-0.4</td>
<td>0.1</td>
<td>0.4</td>
<td>1.4</td>
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<tr>
<td>minus Contribution from real interest rate on net foreign assets 5/</td>
<td>-0.2</td>
<td>0.1</td>
<td>0.0</td>
<td>-0.2</td>
<td>0.2</td>
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<tr>
<td>Of which (-) contribution from real GDP growth excl. OSF</td>
<td>-3.4</td>
<td>-4.7</td>
<td>-2.3</td>
<td>-3.2</td>
<td>-3.3</td>
</tr>
<tr>
<td>Contribution from real exchange rate depreciation 6/</td>
<td>-9.2</td>
<td>-5.8</td>
<td>-1.5</td>
<td>-5.7</td>
<td>1.9</td>
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<tr>
<td>Other identified debt-creating flows</td>
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<td>0.0</td>
<td>0.0</td>
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<td>-Privatization receipts</td>
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<td>0.0</td>
<td>0.0</td>
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<tr>
<td>-Recognition of implicit or contingent liabilities</td>
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<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>-Other (specify, e.g. bank recapitalization)</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>Residual, including asset changes</td>
<td>14.3</td>
<td>0.3</td>
<td>11.7</td>
<td>-10.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Public sector debt-to-revenue ratio 1/</td>
<td>240.4</td>
<td>183.3</td>
<td>164.5</td>
<td>143.2</td>
<td>100.2</td>
</tr>
<tr>
<td>Gross financing need 7/</td>
<td>7.8</td>
<td>6.9</td>
<td>21.6</td>
<td>1.5</td>
<td>3.9</td>
</tr>
<tr>
<td>in billions of U.S. dollars</td>
<td>1.1</td>
<td>1.2</td>
<td>4.3</td>
<td>0.4</td>
<td>1.3</td>
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</table>

Key Macroeconomic and Fiscal Assumptions

Nominal GDP (local currency) | 392.8 | 425.0 | 482.0 | 569.3 | 674.3 | 724.8 | 795.9 | 869.9 | 949.0 |
Real GDP growth (in percent) | 5.2 | 7.6 | 4.6 | 7.6 | 8.9 | 1.5 | 3.5 | 3.6 | 3.9 |
Average nominal interest rate on public debt (in percent) 8/ | 6.3 | 4.9 | 5.7 | 5.8 | 4.9 | 2.5 | 2.8 | 2.1 | 2.5 |
Average real interest rate (including exchange rate revaluation on foreign currency denominated debt) 9/ | -9.9 | -7.3 | -1.5 | -12.3 | 5.7 | -18.7 | 2.5 | -1.5 | -0.9 |
Exchange rate, end of period (LC per US dollar) | 24.6 | 24.2 | 24.5 | 24.6 | 24.3 | 19.7 | 21.5 | 22.3 | 23.0 |
Change in the real exchange rate (Local currency per US dollar) 10/ | -14.0 | -9.9 | -3.6 | -17.5 | 37.4 | -25.9 | 3.8 | -0.5 | -0.6 |
Nominal depreciation of local currency, end of period (LC per dollar) | -9.9 | -8.6 | 1.2 | -11.9 | 130.0 | -19.1 | 9.1 | 3.7 | 3.1 |
Inflation rate (GDP deflator, in percent) | 7.6 | 4.9 | 8.4 | 9.8 | 8.8 | 8.5 | 7.0 | 6.5 | 5.8 |
Growth of real primary spending (deflated by GDP deflator, in percent) | 5.0 | 4.0 | 5.0 | 8.0 | 8.3 | 7.0 | 4.9 | 0.8 | 0.4 |
Primary deficit | -3.7 | -3.8 | -3.5 | -3.4 | -1.4 | -0.1 | -0.7 | -1.5 | -2.5 |

1/ External and domestic public debt net of net foreign assets of the central bank and of central bank owned government securities.
2/ Public domestic debt of the general government net of central bank holding of government securities.
3/ The domestic real interest rate contribution is derived as \( (\pi - \pi^o)/(1+\pi^o)(1+g) \) times previous period net domestic debt ratio as defined in footnote 3/ with \( \pi^o \)=domestic interest rate, \( \pi = \)domestic inflation rate; \( g = \)real GDP growth rate.
4/ The foreign real interest rate contribution is derived as \( (1-\pi^o)/(1+\pi^o)(1+g) \) times previous period gross external debt ratio. with \( \pi^o = \)foreign interest rate, \( \pi = \)US inflation rate; \( g = \)real GDP growth rate.
5/ The contribution of interest gained on NFA is defined as \( -\epsilon\cdot(1+\epsilon^l)/(1+\epsilon^l)(1+\epsilon^l) \) times previous period net foreign assets, with \( \epsilon^l = \)Libor.
6/ The real exchange rate contribution is derived as \( \epsilon\cdot[(1+\epsilon^l)(1+\epsilon^l)(1+\epsilon^l)]/[(1+\epsilon^l)(1+\epsilon^l)(1+\epsilon^l)] \), with the change in real exchange rate \( \epsilon \) defined as in footnote 10/ and all other variables defined as in footnotes 3/ and 6/.
7/ Defined as public sector deficit, plus amortization of medium and long-term public sector debt, plus short-term debt at end of previous period.
8/ Derived as nominal interest expenditure divided by previous period gross public debt stock.
9/ The real interest rate on public debt is calculated as \( \alpha\cdot[(1+\epsilon^l)(1+\epsilon^l)(1+\epsilon^l)-1]/(1-\alpha\cdot1)\cdot[(1+\epsilon^l)(1+\epsilon^l)] \), with \( \alpha \) as the share of foreign currency denominated debt in total public debt and all the other variables defined as in footnotes 3/, 4/ and 6/.
10/ Change in the real exchange rate \( \epsilon \), is defined as \( \Delta(\epsilon^l\cdot P^l/P^l)/(\epsilon^l\cdot P^l/P^l) = (1+s_\epsilon^l)(1+\pi^o)/(1+\pi) \), in percent.
### Table A10.3: EFR and External Gap, 2004-2012

<table>
<thead>
<tr>
<th></th>
<th>External Drain</th>
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<th>Internal Drain</th>
<th>Financing Gap Calculation</th>
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<tr>
<td></td>
<td>Redemptions due in FY 08/09</td>
<td>Liquidation securities market</td>
<td></td>
<td></td>
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<td></td>
<td>Short Term External Bank Sector (US$ bn)</td>
<td>Short Term securities (US$ bn)</td>
<td>CAB (US$ bn)</td>
<td>Non-resident position in local bond and security market (US$ bn)</td>
</tr>
<tr>
<td>2004</td>
<td>2.1</td>
<td>-0.5</td>
<td>0.0</td>
<td>1.4</td>
</tr>
<tr>
<td>2005</td>
<td>1.8</td>
<td>0.5</td>
<td>0.0</td>
<td>1.5</td>
</tr>
<tr>
<td>2006</td>
<td>2.4</td>
<td>-1.7</td>
<td>-0.5</td>
<td>1.8</td>
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<tr>
<td>2007</td>
<td>2.5</td>
<td>-1.7</td>
<td>-0.1</td>
<td>1.2</td>
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<tr>
<td>2008</td>
<td>3.4</td>
<td>-2.6</td>
<td>-1.5</td>
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<tr>
<td>2009</td>
<td>3.2</td>
<td>-2.3</td>
<td>-0.5</td>
<td>0.9</td>
</tr>
<tr>
<td>2010</td>
<td>3.3</td>
<td>-2.3</td>
<td>-0.9</td>
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<tr>
<td>2011</td>
<td>3.6</td>
<td>-2.6</td>
<td>-0.6</td>
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<tr>
<td>2012</td>
<td>3.9</td>
<td>-2.8</td>
<td>-0.4</td>
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</tbody>
</table>

**Source:** World Bank staff calculations based on Deutsche Bank (2008).

* FX Reserve in the Central Bank exclude either deposits of the public sector or of the banking sector in the Central Bank.
Appendix B.10

10.34 The following equation is used to decompose changes in Uruguay’s public debt-to-GDP ratio into a number of explanatory factors. Equation (1) is the difference equation for \( d \), the public debt to GDP ratio:

\[
\Delta d_t = pd_t - \frac{g}{(1+g)} d_{t-1} + \frac{\hat{i}}{1+g} [ \hat{i} - \frac{\pi}{1+\pi} - \frac{\alpha(\pi^*-\pi)}{(1+\pi)(1+\pi^*)} ] \\
- \alpha \frac{RXR}{(1+\pi^*)(1+RXR)} \frac{d_{t-1}}{1+g} + \text{other factors}
\]

where \( d_t \) is the public debt-to-GDP ratio, \( pd_t \) is the primary deficit as a share of GDP, \( g \) is the real GDP growth rate, \( \hat{i} \) is the weighted averages of domestic and foreign interest rates\(^{101}\), \( \pi \) is domestic inflation rate (the percentage change in GDP deflator), \( \pi^* \) is the US inflation rate (the percentage change in US GDP deflator), \( \alpha \) is the share of foreign currency denominated debt in total public debt, and \( RXR \) is the change in (bilateral, US dollar per local currency unit) real exchange rate\(^{102}\).

10.35 Equation (1) forms the basis for decomposing the change in the public debt to GDP ratio into the components attributable to the four factors shown in Table A10.1: (i) the primary fiscal balance net of seignorage; (ii) real GDP growth; (iii) the implicit real interest rate; (iv) the real exchange rate; and (v) other factors. The last term, “other factors”, is obtained as the actual change in the debt–to-GDP ratio minus the sum of (i) to (iv). It includes the recognition of contingent liabilities net of privatization proceeds, the impact of debt restructuring, grants and measurement errors.

\(^{101}\) \( (1 - \alpha)I_d + \alpha i^* (1 + s_r) = \hat{i} \) is average nominal interest on public debt. Practically it is calculated as ratio of interest payments on debt divided by the previous period stock of debt.

\(^{102}\) RXR is defined as \( \frac{1}{1+RXR} = \frac{(1+s_r)(1+\pi^*)}{1+\pi} \) with RXR>0 denoting a real exchange rate appreciation.
Figure B10.1: Public Net Debt Dynamics in Uruguay, 2000-2012

Source: Central Bank of Uruguay, MEF, and World Bank staff projections.

Notes: 1/ Covers net debt of the overall public sector (NFPS and Central Bank).
2/ The interpretation of this chart is as follows: each column represents the contribution of each factor in the debt decomposition to the year on year change in the net debt-to-GDP ratio. Items above the zero line contribute to an increase in the net debt-to-GDP ratio, while items below the line contribute to a reduction in the net debt-to-GDP ratio. As an example, a negative sign for Contribution from real GDP growth in a given year indicates that positive real GDP growth during that year contributed to a reduction in the net debt-to-GDP ratio. On the same token, a positive sign for Contribution from real exchange rate change indicates that a real depreciation increased the net debt-to-GDP ratio during that year.


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<thead>
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<tr>
<td>Baseline</td>
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<td>21.3</td>
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<td>Alternative Scenarios</td>
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<tr>
<td>A1. Key variables are at their historical averages in 2009-2012</td>
<td>25.7</td>
<td>22.9</td>
<td>23.7</td>
<td>23.1</td>
<td>21.6</td>
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<tr>
<td>A2. No policy change (constant primary balance) in 2009-2012</td>
<td>25.7</td>
<td>18.0</td>
<td>16.7</td>
<td>14.2</td>
<td>11.0</td>
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<tr>
<td>A3. Real GDP growth, primary balance and real depreciation at 2002 levels in 2009 and 2010</td>
<td>25.7</td>
<td>36.8</td>
<td>29.1</td>
<td>23.0</td>
<td>16.3</td>
</tr>
<tr>
<td>Bound Tests</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>B1. Real interest rate is at historical average plus two standard deviations in 2009 and 2010</td>
<td>25.7</td>
<td>27.9</td>
<td>35.1</td>
<td>31.0</td>
<td>26.3</td>
</tr>
<tr>
<td>B2. Real GDP growth is at historical average minus two standard deviations in 2009 and 2010</td>
<td>25.7</td>
<td>24.6</td>
<td>27.0</td>
<td>23.9</td>
<td>20.1</td>
</tr>
<tr>
<td>B3. Primary balance is at historical average minus two standard deviations in 2009 and 2010</td>
<td>25.7</td>
<td>23.9</td>
<td>22.0</td>
<td>19.1</td>
<td>15.4</td>
</tr>
<tr>
<td>B4. Combination of 1-3 using one standard deviation shocks</td>
<td>25.7</td>
<td>30.1</td>
<td>40.0</td>
<td>35.6</td>
<td>30.7</td>
</tr>
<tr>
<td>B5. One time 30 percent real depreciation in 2009</td>
<td>25.7</td>
<td>30.8</td>
<td>22.8</td>
<td>18.0</td>
<td>12.7</td>
</tr>
<tr>
<td>B6. 10 percent of GDP increase in other debt-creating flows in 2009</td>
<td>25.7</td>
<td>21.3</td>
<td>19.7</td>
<td>16.9</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Source: Central Bank of Uruguay, MEF, and World Bank staff projections.
Note: Covers net debt of the overall public sector (NFPS and Central Bank).
Appendix C.10

Some considerations on Fiscal Rules and the example of Chile

10.36 The main motivation behind rule-based fiscal policy is that discretionary fiscal policy can harm macroeconomic stability. In a recent study of a cross-section of 51 countries, Fatas and Mihov (2002) provide evidence that discretionary fiscal policy amplifies business cycle fluctuations and reduces the rate of growth while rule-based fiscal policies help to lower output volatility and impact positively on growth.

10.37 The term fiscal rule is quite loosely defined. Fiscal rules in the widest sense refer to “budgetary institutions” (Alesina and Perotti, 1999), i.e. a set of rules and regulations according to which budgets are drafted, approved and implemented. Fiscal rules in a more narrow sense refer to legislated restrictions on fiscal policy that set specific limits on fiscal indicators such as the fiscal balance, debt, expenditure or taxation. Fiscal rules differ according to whether they are legislated, specify numerical targets and apply to various definitions of the public sector.

10.38 Fiscal rules have been applied to:

- ensure macroeconomic stability (post-war Japan);
- enhance the credibility of the government’s fiscal policy and help in debt consolidation (Canadian provinces);
- ensure long-term sustainability of fiscal policy (New Zealand);
- minimize negative externalities within a federation or an international arrangement (Maastricht Treaty); and
- reduce pro-cyclical bias in fiscal policy (Chile).

10.39 Fiscal rules per se are no guarantee for fiscal discipline. Milesi-Ferretti (2000) shows that if a government has a margin for “creative accounting”, the imposition of a fiscal rule may entail a trade-off between costly “window-dressing” and real fiscal adjustment. Mattina and Delorme (1996) show that fiscal discipline imposed by market mechanisms can be just as effective as fiscal rules. They based their results on estimates of non-linear credit supply curves, where the deficit is modeled as a function of the yield spread and the debt/GDP ratio.

10.40 In order for a fiscal rule to be efficient, it should therefore be:

- not too rigid, i.e. provide some flexibility to legitimate countercyclical policy when needed;
- credible, i.e. the rule should be viewed as permanent; and
- transparent, i.e. easy to monitor and difficult to manipulate.

10.41 There is an obvious conflict between flexibility and credibility. Credibility demands rigidity, however a rule that is too rigid may become nonviable, if it is perceived as unsustainable. Perry (2002) further identifies a dichotomy in objectives between fiscal policies that exclusively focus on avoiding a deficit bias and those that exclusively focus on reducing a pro-cyclical bias. A fiscal rule that place the emphasis on avoiding a deficit bias and ignores the potential effects of shocks and the economic cycle can be counterproductive, as it might accentuate the pro-cyclicality of fiscal policies. On the other hand, a rule that attempts to support
countercyclical fiscal policies but is not designed to achieve long term debt sustainability will equally be unsustainable and further non credible. A well designed rule should therefore attempt both, to facilitate the operation of automatic stabilizers (or even permit a limited active countercyclical fiscal policy) and avoid a deficit bias.

The concept of structural balance

10.42 Traditionally, fiscal policy is seen as a stabilizer of the business cycle. Fiscal policy is typically designed to be expansionary during recessions and contractionary during expansions. Two instruments are used for this purpose: (1) automatic stabilizers; and (2) discretionary fiscal policy. Automatic stabilizers are budget components that respond automatically to the business cycle without any explicit government action. Income tax revenues and unemployment benefit expenditures, for example, respond, respectively, positively and negatively to the business cycle. Discretionary fiscal policy consists of active policy measures meant to stimulate the economy during bad times.

10.43 As the actual balance reflects cyclical or transitory influences on the budget, as well as structural or permanent influences, a failure to distinguish between the two creates the risk that fiscal policy may be over- or under adjusted in response to budget developments. To overcome the limitations of traditional budget accounting, the concept of the structural balance has been proposed. It attempts to factor out cyclical components from the actual budget balance in order to provide less “noisy” indicators to guide fiscal policy. Within this concept, it is useful to think of the actual balance, $B$, as a composition of a structural, $B_s$, and a cyclical component, $B_c$:

$$ B = B_s + B_c \quad (1) $$

10.44 Generally, the construction of the structural balance follows two steps. The first step involves the construction of a reference path for real GDP to obtain a measure of potential output in the absence of cyclical fluctuations. The difference between the actual and the potential output measures the output gap in a particular year. In the second step these output gaps, together with government revenue and expenditure elasticities are used to calculate the level of public revenue and expenditure if output would have been at the reference path level. The impact of automatic stabilizers and a progressive tax system are thus accounted for. The resulting cyclically adjusted or structural budget balance corresponds to the underlying budgetary position implied by the path of potential output.

10.45 The structural balance per se is not a fiscal rule; it is more a means to an end. The structural balance can be useful in defining a medium-term fiscal target. As the economy and fiscal balances are subject to transitory shocks, reference to the structural balance can help policy makers avoid unnecessary and often procyclical policy adjustments.

10.46 Transitory shocks to fiscal balances require no adjustments to be made, as they will be reversed over the course of the business cycle, while permanent shocks need attention. The structural balance can also be interpreted as an indicator for discretionary fiscal policy. If the business cycle leads to non-discretionary changes in fiscal policy through automatic stabilizers, while the business cycle itself is partially driven by discretionary fiscal policy measures, the
structural balance should be a better indicator of shifts in the discretionary fiscal policy stance. Finally, as in the case of Chile, the structural balance can also be the basis for a fiscal rule by setting budget target levels based on the structural rather than the actual budget balance.

10.47 While the decomposition in (1) seems intuitive, one needs to keep in mind that the structural balance, unlike the actual balance, is an unobservable concept. It represents the fiscal balance that would have occurred if all temporary influences on the budget had been absent. The biggest problem in the calculation of the structural balance is related to correctly identifying cyclical and structural components, such as cyclical and potential output. Although a variety of methods exist for calculating potential output and corresponding output gaps, all of them have major shortcomings (see e.g. Deutsche Bundesbank 1997). An additional caveat is that estimates of the structural balance are usually based on the assumption of constant revenue and expenditure elasticities over time. This is a less serious problem for mature economies, however, more of a concern to emerging economies that still face substantial structural changes.

10.48 The usefulness of the structural balance in formulating fiscal targets depends crucially on correct identification of temporary and permanent shocks. Shocks that are assumed to be permanent but later turn out to be transitory might cause unnecessary tightening of the fiscal stance. On the other hand, if a transitory shock turns out to be permanent necessary adjustments will have been delayed. The appropriateness of the structural balance as an indicator of discretionary fiscal policy additionally requires a correct distinction between discretionary and nondiscretionary fiscal policy.

The case of Chile

10.49 In 2000, the government of President Ricardo Lagos introduced a fiscal rule based on a structural surplus of 1 percent of GDP to reaffirm and intensify Chile’s commitment to fiscal responsibility. The new method of preparing the budget was intended to deliver indicators for identifying the fiscal stance; to avoid a procyclical policy bias in public finances; to allow an evaluation of the macroeconomic impact of fiscal policy and to ensure fiscal discipline and sustainability. The decision to implement a new approach to fiscal policy was taken after the structural balance for 1999 showed a deficit for the first time in 10 years.

10.50 The fiscal rule in Chile does not qualify as a fiscal rule in the stricter sense, as it is not stated in law. It is a self-imposed measure by the present government which has guided fiscal policy since 2001. Despite not being legally binding, due to Chile’s good track record of fiscal discipline, it is perceived as highly credible.

103 In May 2007, President Bachelet announced a reduction in the structural surplus target from 1 percent of GDP to 0.5 percent of GDP, effective in 2008. The adjustment to the fiscal rule has been justified by the improved liability position of the public sector. Proceeds from the reduction in the structural surplus are to be used to increase social spending, particularly on education and health. A structural surplus of 0.5 percent of GDP is being retained to provision for contingent liabilities. In January 2009 the government announced a temporary suspension of the structural surplus target to finance a fiscal stimulus package aimed at mitigating the adverse impact of the global crisis. It is expected that Chile will re-instate a positive structural balance target in 2010.
10.51 The calculation of the structural balance in Chile follows the IMF and OECD methodology, which apply a production function based approach. Two adjustments have been made to capture particularities of the Chilean economy. First, only revenues and not expenditures are adjusted for the business cycle. Second, given the high importance of copper revenues for public finances, structural revenues are also adjusted for fluctuations in copper prices. Also, to better capture changes in the net-worth of the central government, some accounting adjustments are made to the actual balance, before the structural and cyclical components are calculated. Finally, the fiscal rule only covers the central government.

10.52 The structural balance reflects the amounts of revenue and expenditure that would be achieved if the economy operated at full potential and the price of copper were at the long-term price. The structural balance therefore factors out the cyclical and random effects of GDP and of the copper price.

*Chile’s recent experience with Structural Rule*

10.53 While Chile’s fiscal rule has significantly contributed to fiscal sustainability since its implementation, it strongly showed its worth in Chile’s response to the recent global financial crisis: the application of the fiscal rule during the copper boom that preceded the crisis accumulated large fiscal savings which, once the global financial crisis broke, could be deployed for large-scale, counter-cyclical fiscal stimulus without burdening public debt. The US$4 billion fiscal stimulus package, announced in January 2009, is to be financed entirely out of the Economic and Social Stabilization Fund, which rests at around US$20 billion as of the first quarter of 2009.

10.54 Between 2005 and mid-2008, the international price of copper climbed to record levels (160.6 percent between January 2005 and June 2008) which, through the application of the fiscal rule, resulted in record primary fiscal surpluses averaging 7.2 percent of GDP during that period. In 2006, Congress passed the Fiscal Responsibility Law, which complements the fiscal rule by channeling any surpluses generated into two investment funds: a Pension Reserve Fund (FRP) to meet rising pension commitments from 2016 onwards; and a Social and Economic Stabilization Fund (FEES). In May 2007, President Bachelet announced a reduction in the structural surplus target from 1 percent of GDP to 0.5 percent of GDP, effective in 2008. The adjustment to the fiscal rule has been justified by the improved liability position of the public sector. Proceeds from the reduction in the structural surplus are to be used to increase social spending, particularly on education and health. A structural surplus of 0.5 percent of GDP is being retained to provision for contingent liabilities. In January 2009 the government announced a temporary suspension of the structural surplus target to finance a fiscal stimulus package aimed at mitigating the adverse impact of the global crisis. It is expected that Chile will re-instate a positive structural balance target in 2010.
Appendix D.10

Uruguay’s response to the crisis

10.55 In December 2008, the government announced its policy stance to counter the contraction in external demand. The government stated that conditions in Uruguay do not allow for the adoption of expansionary fiscal measures that would result in a generalized spending increase and tax reduction, without threatening macroeconomic stability. However, the aim is to avoid a contractionary fiscal stance. As a middle ground, the government intends to raise public investment by 0.3 percentage points of GDP, to implement a series of measures to help exporters and facilitate access to credit, and to continue efforts to strengthen social protection. The overall surplus of the public sector enterprises is expected to improve in 2009, as the costs of electricity generation fall from the high levels of 2008 for UTE. However, in response to the worsening external conditions, an overall fiscal deficit of 3.3 percent of GDP is now expected in 2009, with the primary deficit equal to 0.6 percent of GDP.

Fiscal Policy

- Reallocation of public spending towards investment and other objectives with high impact on growth. In particular, all public entities were required to reduce operational expenditures by at least 5 percent.
- Swap of tax rebate certificates for cash through Banco de la República Oriental del Uruguay, allowing the access to additional US$100 million, thus helping to inject liquidity into the economy.
- Fiscal benefits to promote productive investment.
- Tax exemptions and improved conditions for accessing to credit for small and medium-size enterprises, particularly in the exporting sectors.
- Special assistance to exporters and industries hit by the worldwide slowdown, such as automotive parts, textile and dairy.
- New National Guarantees Fund, to facilitate access to credit, and the creation of several credit lines.

Monetary and financial policy

- Repurchase by the Central Bank of US$210 million of its own liquidity management instruments, offering the possibility to obtain liquidity either in Uruguayan pesos or US dollars (November 2008).
- Increase of the reference interest rate from 7.75 percent to 10 percent in 2008 to control inflationary pressures. Cut of the interest rate, in two stages, from 10 percent to 8 percent in 2009.

Labor and social policies

- Training subsidy (US$5 million) through the Labour Reconversion Fund of the National Employment Board (JUNAE).
CHAPTER 11.

CAPITAL MARKETS IN URUGUAY

Introduction

11.1 Despite its small size, Uruguay has good potential to develop its capital markets based on its economic and political stability and an adequate base of institutional investors, mainly pension funds. In recent years the government of Uruguay has begun implementing a series of reforms intended to capitalize on the benefits of developing its capital markets. A new Capital Markets Law was sent to Congress in November 2008 and approved in December 2009.

11.2 In the 1990s, Uruguayan capital markets remained underdeveloped in spite of numerous reforms. Following the 2002 financial crisis, the banking system has substantially recovered and now adequately serves residents and non-residents. Nonetheless, the system’s credit portfolio is limited compared to regional standards. As in other countries in the region that have suffered financial crises, new credit issuance generally takes longer to recover. The currency and maturity mismatches of Uruguayan companies, together with stronger prudential laws and regulations as a result of the crisis, have tended to limit the ability of banks to facilitate financing, especially long-term financing. Capital markets could play a key role in increasing the financing needed by the private sector to create jobs and economic growth.

11.3 The reforms of the 1990s to promote the capital markets successfully established a broad and liquid market for government bonds, but the corporate sector saw little benefit. Various laws were approved: the Social Security Law creating the pension funds in 1995, the Security Market Law of 1996, the Investment Fund Law of 1996, and the Securitization and Factoring Law of 1999. The most important piece of legislation was probably the Security Market Law, which enjoyed the support of market participants, but was focused on self-regulation by exchanges and intermediaries and limited the capacity of the supervisory authority, the Central Bank of Uruguay (Banco Central del Uruguay—BCU).

11.4 After the approval of the law in 1996, corporate bond issues reached a historic peak in 1997, with nearly US$350 million issued. However, corporate bond issues declined as a result of the bankruptcy of an important corporate issuer in 1998.

11.5 The 2002 financial crisis was a heavy blow to capital markets and revealed deficiencies in the relevant legislation. The collapse of the two largest private sector banks, both Eurobond issuers, reinforced negative investor sentiment. Activity since 2003 has been below pre-2001 levels, and the composition of instruments has moved toward shorter maturities. Currently, although the government is capable of raising funds in a liquid bond market, private companies continue to finance themselves mainly via retained earnings, bank loans or supplier credit.

11.6 The Uruguayan domestic capital market is very small (Annex Figure A11.1) and dominated by sovereign bond issues. By contrast, international debt issues are considerable as a

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104 According to the Bank for International Settlements, domestic issues are those denominated in local currency issued for local investors.
proportion of GDP compared to other countries in Latin America, although the majority are also sovereign bond issues (Annex Figure A11.2). The stock market is among the least developed in Latin America in relation to the size of the economy. Market capitalization was only 0.5 percent of GDP (March 2009), compared to 61 percent of GDP in Brazil, 46 percent in Colombia, 21 percent in Argentina (December 2008) and 51 percent in Peru.

11.7 The Uruguayan capital market is also characterized by the small size of secondary markets, especially for private sector debt issues (Annex Table A11.1). The low liquidity of secondary markets limits investor opportunities and acts as a disincentive to buy on the primary markets. By contrast, the public secondary market is large and liquid (Annex Table A11.2). Considering the small size of the Uruguayan economy, the public market could be crowding out private issues.

11.8 As a result of the limited expansion of the capital market, it has played a minimal role in providing financing to the private sector. Efforts to promote capital market development will need to focus on: (i) rectifying regulatory and supervisory deficiencies; and (ii) promoting diversification that goes beyond public sector debt to incorporate a wide range of private sector participants, including both national and international issuers.

Limitations to Capital Market Development

11.9 The limited development of private issuers in Uruguay’s capital markets has various causes:

- First, on the side of the issuers, several studies have highlighted poor corporate governance in Uruguayan companies and important currency and maturity mismatches. Independent directors are rare, and managers concentrate the majority of decision-making power, to the detriment of the board. Family businesses are common, and 80 percent of businesses have less than four employees. Currency and maturity mismatches reinforce the perception of fragility that institutional investors have of the sector: nearly 85 percent of liabilities are short term. As well, the weaknesses of the previous Bankruptcy Law (characterized by a slow corporate restructuring process) acted as a disincentive for investors to enter the capital market. A new Bankruptcy Law was approved in November 2008, which appears to adequately address the weaknesses of the previous legislation. Other studies have demonstrated that the principal criterion for the development of corporate bond markets is the asset size of issuers. In Uruguay, the largest companies are owned by the government or banks, and have little incentive to participate in the capital market.

- Second, on the side of investors, market development is limited by the absence of important institutional investors apart from pension funds, and the investment restrictions on those funds. Pension Fund Administrators (Administradores de Fondos de Pensiones—AFPs) can invest up to 25 percent of their portfolio in corporate paper. This is not a small amount, but they invest a much larger share in public paper (up to 60 percent in sovereign bonds, up to 30 percent in BCU bonds, and up to 15 percent in

international organization bonds).\textsuperscript{106} The AFPs cannot invest in foreign securities. In June 2009, corporate bonds represented less than 4 percent of total pension fund assets.

- Third, the perceived lack of professionalism by intermediaries has also limited market credibility. In particular, the stockbroker industry has been dominated by a group of family businesses characterized by a low level of committed capital, limited professionalism and weak internal oversight systems. The existence of two stock markets, the Montevideo Stock Market (Bolsa de Valores de Montevideo—BVM) with 5 percent of total trades and the Uruguay Electronic stock Exchange (Bolsa Electrónica de Valores del Uruguay—BEVSA) with 95 percent of trades, has affected transparency. The BVM appears to have serious governability problems and lacks a long-term institutional strategy. The BEVSA has better technical capacity, but appears to lack a commitment to promoting the market. Although both exchanges have improved in recent years, further reforms are necessary.

- Fourth, the underdevelopment of capital markets in recent years is also the result of regulatory and supervisory weakness by the BCU. This could be the result of a regulatory framework that has limited the ability of the BCU to adequately regulate, supervise, adapt and respond to changing market conditions. Its limited powers, resulting from weak funding and regulations, have restricted capital market development. Recently, the BCU has initiated an internal reorganization that should gradually help correct these weaknesses.

- Fifth, the regulatory framework for supervising security liquidation and custody is weak. In Uruguay, no single deposit and custody institution exists, but rather a number of different institutions offering these services. The diversity of deposit and custody services has increased financial risks, particularly for operation and custody risk.

11.10 As a result of the underdevelopment of domestic markets, institutional investors currently have limited options to diversify their portfolios, and companies have few sources of financing, most of which are only short-term. This vicious cycle is difficult to overcome without the introduction of structural reforms.

**Strategic Measures Taken by the Authorities**

11.11 In the past few years, Uruguayan authorities have taken two important measures favoring the development of capital markets: (a) drawing up a new Capital Markets Law, which was approved in December 2009, and (b) reorganizing the BCU to address capital market problems and facilitate the application of the new law.

11.12 The proposed Capital Market Law was sent to Congress in November 2008. Work on the final wording was detailed and took into account consultations with private sector participants and outside experts. The law addressed the deficiencies of the 1996 law, and contains several points to increase investor confidence in capital markets, such as corporate governance requirements, greater supervisory powers, controls of market abuse, and strong disciplinary

\textsuperscript{106} Article 123.D of Law 16.713: “Securities issued by public or private Uruguayan companies, securities or shares in Uruguayan investment funds. In all cases these must be quoted on a formal market and have the authorization of the BCU. The maximum investment permitted for this type of security shall be 25 percent.”
sanctions. The law passed in December 2009 is very similar to the original proposal, and has several important characteristics:

- The law has a pro-active regulatory focus, as opposed to the self-regulation stipulated in the 1996 law. The Financial Services Superintendent of the BCU has the power to authorize and supervise stock markets and intermediaries (in the 1996 version, exchanges were exempt from authorization and intermediaries were only regulated by the exchanges). The authorization of exchanges and intermediaries is subject, among other things, to minimum capital requirements, the constitution of guarantees, and the existence of internal controls and appropriate tests. These reforms are also intended to promote the conversion of traditional individual intermediaries into Limited Liability Companies (Sociedades Anónimas) to increase transparency. All rules adopted by the exchanges must be previously authorized by the BCU’s Financial Services Superintendent.

- The creation of a Market Promotion Committee is another key element to the law. This committee brings together a member of the executive branch with representatives of the exchanges, pension funds, and intermediaries, among others. This composition allows the committee to take up questions and propose solutions related to capital markets in a concerted manner. This committee has already been formed since the law was approved.

- The new law also addresses improvements in the custody, compensation and liquidation of securities. Entities undertaking these functions must be authorized by the Financial Services Superintendent, and in contrast to the 1996 law a series of rights and prohibitions are to be defined by BCU regulations.

- The law provides the BCU’s Financial Services Superintendent greater reach in its supervisory and regulatory authority. Under the new framework, the Superintendent regulates and supervises market participants, including investment advisors, external auditors and credit rating agencies when they are involved in securities transactions. As well, the Superintendent will have disciplinary powers. The BCU will have preventative resolution powers allowing it to take control or liquidate exchanges or intermediaries, if they pose a risk to third parties. These dispositions did not exist in the 1996 law.

- Matters related to the promotion of a fair and orderly market and the prohibition of market abuses are addressed under the new law. Exchanges must adopt norms to permit the fair and orderly management of client requests, correct execution of orders, obligations of intermediaries toward their clients and protection of investors against fraud. Abuse of market power is clearly identified as a cause for sanctions.

- The new regulatory framework promotes corporate governance standards among issuers. Exchanges must establish corporate governance requirements for issuers, including at least the timely publication of financial information and the adoption of accounting and auditing rules conforming to international standards. More strict norms regarding the disclosure of material interests, director compensation, ethical standards and protection of minority shareholders are stipulated for companies making a public offering.

- Lastly, the law deepens available fiscal exemptions with the aim of expanding the capital market. The tax on stock share dividends is eliminated (previously it was around 7 percent). Income tax on certificates of deposit issued by trusts for a minimum of three years is reduces from 7 percent to 3 percent. Repurchase agreement commissions related to private securities are exempt from the value-added tax. Previously, only repurchase agreement commissions for public securities were exempt. As well, the asset tax refund is extended to listed corporations.
The BCU is being reorganized. A new statute was approved in October 2008. The reorganization plan increases the independence of the BCU, reinforcing its supervisory functions and the regulatory framework for bank resolution:

- Law 18.401 (October 2008) created the Financial Services Superintendant within the BCU, unifying the three divisions responsible for bank, insurance and securities supervision. It is hoped that the new Superintendant will lead to important synergies, as the regulatory and supervisory functions are combined. Further, the BCU is preparing additional measures to help implement the new law.

- Regarding corporate governance, the BCU has developed norms for the presentation of consolidated and audited financial balance sheets and the information that is to be included in the annual reports of issuers, pension fund administrators and trust administrators. Efforts are also underway to educate and protect investors. In particular, the BCU is designing an investor education area within the Financial Services Superintendant.

- Other measures include the certification and professionalization of key market participants. According to the new statutes, the BCU now has the right to require certification for all market participants. A list of required certifications has already been prepared by the BCU. The BCU is also working to apply risk-based supervision to security market participants based on new technology systems, with the assistance of consultant services.

- Lastly, progress is being made on compensation and liquidation systems. The Financial Services Superintendant has designed a plan to supervise the liquidation of the two stock exchanges. Work is underway to digitalize all securities issues and thus “dematerialize” them. As well, the BCU has decided to apply a new payments system that includes a securities depository for all public and private securities.

In summary, efforts to promote the development of the capital market are headed in the right direction. The process of designing the new law took into account not only the concerns of market agents but also addressed the deficiencies of the 1996 law. The BCU is taking measures to facilitate implementation of the new law, such as reorganizing its functions to better regulate and supervise market participants.

**Recommendations**

The implementation of the new regulatory framework faces important challenges, and by itself will not be sufficient to promote private securities issuers. Correcting the structural deficiencies of the market and promoting new instruments will also be necessary. The priorities are:

**Implementing the New Law**

Successfully implementing the new Capital Market Law will require significant efforts and the support of government and society to overcome obstacles that will arise during implementation. Legal gaps and pressures from certain groups could arise, slowing the expeditious and complete implementation of the law. In India, the strategy of the Finance
Ministry, securities oversight body and related organizations has been to push the reform of the capital market. As was the case of the capital market reforms in India, the financial systems of developed and developing countries alike are vulnerable to special interests.

11.17 The approved law delegates to the BCU the power to draw up important norms, such as corporate governance principles for the exchanges and minimum capital and guarantee requirements for exchanges and intermediaries. Although the law was passed, its complete implementation depends on secondary legislation. It will be important to ensure that the BCU’s work load does not slow down the regulatory processes related to the stock market.

11.18 As well, the new regulatory framework provides the BCU/Financial Services Superintendent greater regulatory and supervisory responsibilities. Market participants have in the past noted that the supervisory capacity to apply regulations has been restricted, due to legal and capacity limitations. Difficulties have included delays in providing information and the absence of adequate sanctions or problems in their execution. An effective reform will require a plan to provide sufficient resources and strengthen the technical capacity of BCU personnel. The law sanctions insider trading and abuse of market power. These offenses are difficult to investigate and generally require more severe sanctions. Experience from a number of countries suggests that even though insider trading laws are on the books, applying them is difficult.

11.19 The concentration of supervisory powers in the Financial Supervision Superintendent and, in the last instance, the BCU strengthens synergies and improves the flow of information. Nevertheless, one cannot ignore the potential conflict of interests and struggles over limited resources that could arise in the new Superintendent, as with the BCU’s monetary policy mandate. Even in countries such as Argentina and Brazil, where the central bank oversees the banking system, the supervision of securities is undertaken by an independent agency. The independence and adequate staffing of the Financial Services Superintendent will have to be carefully considered.

11.20 The modernization of the BCM could be important. Its structure and internal procedures are considered by some market participants to be prejudicial to market transparency. In recent years the BCU has adopted initiatives to integrate the country’s two stock exchanges. As part of the efforts, the BCU has succeeded in unifying the closing price of the exchanges. Nonetheless, a process of modernization and professionalization would be an important reform.

**Addressing the Structural Weaknesses of the Market**

11.21 Evidence suggests that the underdevelopment of the corporate capital market in Uruguay is not just the result of regulatory gaps, but also structural market factors: a) weak corporate governance and the small size of private Uruguayan companies; b) absence of institutional investors apart from pension funds (which do not have a significant interest in corporate

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securities); and c) the small size of primary and secondary market issues, which limits the ability of investors to exit and increases the transaction cost of large issues.

11.22 To stimulate activity on the private securities market and overcome these deficiencies, different countries have used fiscal incentives to attract companies to the market and widen the base of investors. During the 1990s, Chile introduced a fiscal incentive to small-scale investors, which helped increase their participation in capital markets. In Argentina, tax exemptions on structured finance operations, in place until June 2008, helped promote the development of this instrument.

11.23 The Capital Market Law offers incentives (an income tax discount) to listed companies and puts the tax scheme for private securities on the same level as sovereign securities. It also reduces the tenancy tax for certificates of deposit issued by trusts. In spite of these measures, three points should be considered: a) fiscal incentives can create distortions in financial assets, and as such they should be applied for limited periods; b) incentives similar to those for certificates of deposit issued by trusts could also be put in place for private security issues; and c) individual investors do not enjoy any specific advantage. The example of Chile and the lack of appetite for corporate securities by pension funds could be an argument in favor of measures directed at these investors.

11.24 Nonetheless, as the development of the private securities market will take time, and to a certain degree will depend on reducing public sector issues, three important corporate reforms will be beneficial: strengthening the institutional framework for preparing and disclosing company financial statement, the adoption of International Financial Reporting Standards (IFRS), and the Bankruptcy Law.109

Market Expansion

11.25 Uruguay’s economic and political stability, its history as an international banking center and the growing value of assets held by pension funds create a positive environment for the trading of securities of international companies. Uruguay could convert itself into an international financial market, in which not only domestic but also international companies can trade. This strategy would generate important effects on the Uruguayan capital market, as it would increase market liquidity and reduce costs. A first step in this direction would be to reduce existing regulatory restrictions on the investment portfolio of pension funds, which currently limit their investments to international securities, and seeking out cross-listing agreements with other jurisdictions such as Argentina and Brazil. These agreements would permit companies listed in Uruguay to trade on the exchanges of Argentina and Brazil, broadening the base of investors, and allowing companies of those countries to trade in Uruguay. As well, a multi-fund

109 In terms of the regulatory framework for the presentation and publication of company financial statements, the current process aims to establish more homogenous norms in the Registry of Accounting Statements (Registro de Estados Contables—REC). The requirements have not yet been determined, but will define which type of company must present its financial statements to the REC. A recently signed decree has begun a process to adopt the most recent International Financial Reporting Standards (IFRS). The plan is that six months after a new IFRS norm is created and translated into Spanish, a new decree would be issued to introduce the norm into the regulatory framework. The new bankruptcy law was passed in November 2008 and currently is under implementation. Progress has been made in training judges and personnel on the characteristics of the new law.
scheme for pension funds could be an effective method for making the most of more flexible regulation.

11.26 Other innovative instruments that could be considered include trading public companies via agreements with neighboring countries such as Brazil, promoting structured finance, using public-private associations and an exchange specializing in small, high-growth companies.

11.27 Companies with the size needed to participate in Uruguay’s capital market are generally publicly owned. Unfortunately, their participation in the capital market is practically non-existent. These companies are restricted from participating since their debt is considered public debt and their investment plans are considered part of government expenditure. Trading these companies on the Uruguayan market could help drive the development of the capital market and act as a catalyst for private companies to trade. A strong commitment by the authorities would be necessary for this to happen.

11.28 Under adequate regulation, structured financial instruments tend to be an efficient source of financing and a safe investment alternative that could rebuild investor confidence in the capital market. Some characteristics of this type of instrument, such as the low probability of bankruptcy of the issuer, tend to provide good protection to investors if the judicial framework is well designed. In Uruguay, the legal framework for these security instruments has been improving in recent years. In 2003, the Asset-Backed Securities Law was approved, while Law 18.127, approved in 2007, includes a scheme for tax exemption for certain types of trusts. Nonetheless, no substantial development is apparent so far. The new Capital Market Law and the further improvements in fiscal legislation should be considered as a starting point to promote this type of instrument.

11.29 Public-private partnerships (PPP) could receive incentives to seek finance on the capital markets. Law 18.172 authorized public companies to form commercial alliances with other regulated private sector entities. These associations can contract private companies without the necessity of a public contracting. PPPs could be a useful tool to increase private debt issues, but this would require strong support by the authorities.

11.30 A specialized market within the stock exchange concentrating on small high-growth companies could be created to incentivizing small companies to finance themselves on the capital market. The Alternative Investment Market in London has had success in this market segment in terms of the number of companies traded, but it has also been criticized for its weak regulation.

11.31 In conclusion, the reforms underway for the development of Uruguay’s capital market are well focused and should be implemented. The reorganization of the BCU is also an important step forward. However, the development of private securities will also depend on the application of corporate reforms and important changes within companies and market intermediaries, with the support of the authorities.
### Table 11.1: Policy Options Matrix

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>POLICY ISSUE</th>
<th>SHORT-TERM OPTIONS</th>
<th>MEDIUM-TERM OPTION</th>
</tr>
</thead>
</table>
| Financial Sector | Implementation of a modern legal and regulatory framework for the capital market. | • Implement the new Capital Market Law.  
• Reorganize the BCU to address the problems of the capital market and facilitate the implementation of the new law. | • Revise by BCU the existing regulatory framework and define needed new regulations. |
|              | Promotion of market development.                                             | • Define the organizational changes required for public companies to be listed.  
• Revise the tax code to attract companies to the market and broaden the pool of investors.  
• Create a Capital Market Promotion Committee, as called for in the new law. | • Promote public-private partnerships, listing public companies and a market for structured finance.  
• Internationalize the Uruguayan capital market.  
• Cross-listing agreements with Argentina, Brazil and other countries.  
• Create a specialized market within the stock exchange for small and medium sized companies.  
• Improve the transparency and disclosure of information, adopt IFRS and implement the Bankruptcy Law. |
ANNEX

Figure A11.1: Domestic Debt Issues, % of GDP, December 2008

Figure A11.2: International Debt Issue, % of GDP, March 2009

Source: Bank for International Settlements (BIS)

Table A11.1: Capital Market Activity, Uruguay

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tr>
<td>BOLSA DE VALORES</td>
<td>7,597</td>
<td>12,067</td>
<td>14,999</td>
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<tr>
<td>MERCADO PRIMARIO</td>
<td>6,588</td>
<td>11,115</td>
<td>13,840</td>
</tr>
<tr>
<td>BVM</td>
<td>10</td>
<td>41</td>
<td>3</td>
</tr>
<tr>
<td>Sector Privado</td>
<td>10</td>
<td>41</td>
<td>3</td>
</tr>
<tr>
<td>de los cuales ONs</td>
<td>10</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>BEVSA</td>
<td>6,577</td>
<td>11,074</td>
<td>13,838</td>
</tr>
<tr>
<td>Sector Público</td>
<td>75</td>
<td>2,128</td>
<td>6,095</td>
</tr>
<tr>
<td>Sector Privado</td>
<td>6,502</td>
<td>8,946</td>
<td>7,743</td>
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<tr>
<td>de los cuales ONs</td>
<td>7</td>
<td>117</td>
<td>35</td>
</tr>
<tr>
<td>Total ONs</td>
<td>17</td>
<td>135</td>
<td>38</td>
</tr>
<tr>
<td>MERCADO SECUNDARIO (BVM+BEVSA)</td>
<td>1,010</td>
<td>952</td>
<td>1,159</td>
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<tr>
<td>Sector Público</td>
<td>942</td>
<td>858</td>
<td>1,116</td>
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<tr>
<td>Bonos del Tesoro</td>
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<td>176</td>
<td>172</td>
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<td>Emisiones Internacionales</td>
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<td>Letras del Tesoro/LRM</td>
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<td>80</td>
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<td>Acciones</td>
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<tr>
<td>Certificados de Depósito</td>
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<tr>
<td>ONs</td>
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<td>21</td>
<td>14</td>
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<tr>
<td>Fideicomiso Financiero</td>
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<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Notas Multilaterales</td>
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<td>0</td>
<td>2</td>
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Fuente: BCU, Informes Trimestrales del Mercado de Valores.

Table A11.2: Panorama of Market Capital in Uruguay, June 2009

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Brokers-Dealers</td>
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<td>Administradores de Fondos Mutuos</td>
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<tr>
<td>Administradores de Fondos de Pensiones</td>
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<tr>
<td>Bolsas de Valores</td>
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<tr>
<td>Activos de Fondos de Pensiones, % PIB</td>
<td>10.4%</td>
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<tr>
<td>Valores Negociados % PIB</td>
<td>44.6%</td>
</tr>
<tr>
<td>Valores Privados Negociados, % PIB</td>
<td>42.8%</td>
</tr>
<tr>
<td>Valores Públicos Negociados, % PIB</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Fuente: BCU, activos de los fondos de pensiones y valores negociados a Diciembre 2008.
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CHAPTER 12.
SELECTED TOPICS IN PUBLIC SECTOR ADMINISTRATION

Introduction

12.1 The importance of improving public sector management results to achieve sustainable growth and equity is a key facet of Uruguay’s development agenda. The previous administration explicitly included the transformation of the public sector in two of its government pillars, Productive Uruguay and Democratic Uruguay. The principals of improving the civil service and the efficiency and transparency of the public sector advanced notably after August 2006, when the administration put modernizing the public sector as a priority theme on its agenda, emphasizing the civil service, electronic government and better program monitoring and evaluation linked to budget management. To operationalize these proposals, a high level coordination group was formed, the State Transformation Commission (Comisión para la Transformación del Estado—CTE). Although momentum slowly dissipated and progress was not achieved in all areas, in recent years Uruguay has advanced in several areas to modernize and improve the efficiency of public sector management, including multi-annual results-based budget management, e-government, tax administration, financial regulation and supervision, and social program management, among other areas.

12.2 These and prior reform efforts have translated into improvements in most areas, with the exception of the civil service and customs, which have not shown tangible progress. As a result Uruguay is among the best-positioned countries in the region, with a low fiduciary risk ranking. Although verifiable data is not available to measure Uruguay’s public sector efficiency in different areas, perception data from surveys are available, and rank Uruguay above average compared to other countries in the region (Annex 12).110

12.3 This policy note reviews the current situation and policy options in four areas of public management where the World Bank has been involved and which have either not shown advances or are priority areas for second-generation reforms. The four themes are: (i) public sector financial management; (ii) the public procurement system; (iii) the national statistics system; and (iv) customs. The first three themes are inter-related, since a good financial management system cannot exist with a deficient procurement system. As well, results-based budgeting requires a statistical system capable of adequately classifying expenditures and tracking and evaluating budgetary execution.

12.4 In public financial management, Uruguay has advanced significantly relative to the region. Most noteworthy is the implementation of multi-annual budgeting and progress linking budget decisions to concrete results indicators in different areas of public management. Nonetheless, the financial management information system has fallen behind, lessening the effectiveness of the implementation of economic policies. In mid-2008 the Ministry of Economy and Finance backed a diagnostic of the Integrated Financial Information System (Sistema

110 A consolidated indicator does not exist. A relatively complete compilation of relevant indicators on the themes of this note can be found at www6.iadb.org-datagob-index.html. A database of verifiable efficiency indicators is under construction.
Integrado de Información Financiera—SIIF) to evaluate its strengths and weaknesses. The principal options that require a decision by the new administration are analyzed in Section B.1 of this note. Another priority theme in public finances is the system of financial oversight, which impacts financial efficiency and the rhythm of budget execution. The same section reviews the main problems with the system and offers suggestions to overcome them.

12.5 In public procurement procedures and systems, Uruguay does not have an agency responsible for issuing executive norms, promoting automation, ensuring efficiency, training public officials in charge of procurement, overseeing the completion of norms, resolving disputes and, in general, acting as the lead government agency. This would allow the Uruguayan state to have a public procurement strategy oriented to improving quality and costs as well as supporting transparency for taxpayers and competition among providers. The main options in this area are discussed in Section B.2.

12.6 Uruguay is well placed regarding the national statistics system, having developed a Master Plan for Statistics Management that is a regional model. However, the system still has deficiencies as an instrument for supporting public decisions, particularly in social and economic development issues. The greatest weakness is in statistics useful for evaluating the impact of social programs, especially automating administrative registries and institutionalizing the Integrated Social Information System (Sistema Integrado de Información Social—SIIAS). Relevant issues and policy options are considered in Section B.3.

12.7 Customs plays a key role in fiscal collections and the competitiveness of Uruguay’s international trade, which represents more than 60 percent of GDP. In spite of this, customs modernization has run up against numerous obstacles that have limited progress in reducing user cost and increasing oversight efficiency. The current situation and policy options are reviewed in Section B.4.

**Principal Issues and Policy Options**

**Public Sector Financial Administration System**

12.8 Efficient management of public finances is one of a government’s most important tasks. An efficient system contributes to fiscal discipline, allocating resources to strategic priorities and obtaining results satisfactory to the population in the provision of public goods and services. Although fiscal discipline is often the priority issue, fiscal stability by itself does not ensure that taxpayers receive services equivalent to their fiscal contributions. The three themes are interrelated and an optimal utilization of public resources is only possible when the public financial administration system is successful on all three levels.

**Regional best practices**

12.9 A recent evaluation of public finance administration systems in Latin America and the Caribbean (LAC)\(^{111}\) points to regional best practices to achieve success in the three levels (Box

12.1). Regional best practices take as a reference international progress on accounting and auditing, such as International Financial Reporting Standards (IFRS),\textsuperscript{112} the standards of the International Federation of Accountants and the International Organization of Supreme Audit Institutions, the US Generally Accepted Accounting Principles (GAAP), the financial statistics manual of the International Monetary Fund (IMF), the standards and codes initiative by the World Bank and IMF implemented under the Reports on the Observance of Standards and Codes (ROSC)\textsuperscript{113} and the criteria employed by risk rating agencies. More recently, a group of multilateral and bilateral development agencies created the Public Expenditure and Financial Accountability (PEFA) initiative with the aim of harmonizing financial management criteria, which has led to a common framework to measure government performance in this area.

\textsuperscript{112} Developed by the International Standards Accounting Board.

\textsuperscript{113} Report undertaken by the IMF and World Bank.
Box 12.1: Regional Best Practices in Financial Administration

An efficient public financial management system brings together the following characteristics:

- A solid legal and institutional framework with specific legislation on the budget process and institutional responsibilities within it. The majority of countries in the region have adopted satisfactory legal and institutional arrangements. Notable among recent advances, due to their integrated treatment of the issues, are the legal accounting frameworks of Colombia and Mexico, and the financial administration system legal framework in the Dominican Republic. Some countries—including Brazil, Chile, Colombia and Panama—have also adopted fiscal responsibility laws.

- The budget is comprehensive, including all operational and capital spending of all public entities, such that all public resources—including in public companies, autonomous entities, and sub-national governments—are subject to the scrutiny of the legislature, audit institutions and the public. Brazil and Chile are the best examples. When exceptions exist to this rule, the respective institutions should provide detailed reports on their financial management. An example is Chile, which excludes the Ministry of Defense and the public copper company from the budget, with both sending financial reports to Congress.

- Spending limits are rigid and based on realistic projections of cash income. Again, Chile is the best regional example.

- Strategic priorities are clearly defined. The extended earmarking of income works against achieving priorities. Both Brazil and Chile are examples of regional best practices.

- While agencies in charge of budget preparation and the legislative branch play a central role in defining policies and programs, inter-agency collaboration and citizen participation is encouraged in budget formulation. Several regional countries have made significant progress in this area—Brazil, Chile, Mexico and Paraguay make budget execution information public, although the systems do not permit specific consultations and do not present information in an easily understandable format.

- Multi-annual budget frameworks are approved, and refined in each annual budget. This ensures allocating resources to medium-term priorities, including spending on investments and operations needed to achieve the expected impact of government programs.

- Budgetary management is guided by results; that is, the central level allocates resources in a predictable way to budgetary units, which then have flexibility in the use of these resources, but they must in turn be accountable for spending and results. Chile has developed the concept—which requires a balance between spending oversight and flexibility—the most in the region. Colombia, Costa Rica and Panama also have good systems.

- Budget execution reports utilize spending classifications that: (i) show amounts spent for specific purposes; (ii) integrate capital with related current spending costs over the long term; (iii) have budget classifications written into the accounting plan; and (iv) show how resources are spent by sub-national governments.

- Internal oversight processes exist that ensure reliable information, efficient and effective operations and compliance with the law. Further, these processes are continually tracked and remedial action applied. These developments are still in their initial stages in the Latin America region.

- Independent oversight processes exist by external audit institutions, the legislature and the public. External auditors have functional independence, constitutional procedures to name and remove members, and financial autonomy. Ex ante oversight is avoided, since this reduces objectivity. Auditing programs are based on risk criteria. In LAC, Chile and Colombia stay closest to these principals for internal auditing, while Jamaica is a good example of legislative oversight.

Current situation in Uruguay

12.10 In 2003 the World Bank and Inter American Development Bank (IADB) conducted a joint evaluation of Uruguay’s financial administration system. The report was discussed with authorities in 2004 and then with the incoming administration in 2005, and it was published in
June 2005. The report considered some of the main strengths of the Uruguayan financial administration system:

- The legal framework created with the TOCAF is adequate because it: (i) mandates the use of SIIF for all central administration entities; (ii) clearly divides the financial administration functions of the executive and legislative branches; and (iii) requires the adoption of public sector standards generally accepted internationally.
- Budget classifications for resources and expenditures are comprehensive and systematized.
- Budget execution is undertaken via a highly decentralized mechanism.
- Important progress has been made to transmit information and resources captured by the banking system to the government promptly and reliably.
- The National Comptroller General (Contaduría General de la Nación) has implemented strong internal controls over financial administration via the central accountants and the implementation of SIIF.
- The legal framework for contracting debt is adequate.
- The Accountability Law is sent each year to the legislative branch, and after approval it is made public.

12.11 The report also noted some deficiencies in the system, although they may have been addressed since the study was undertaken. Among the main weaknesses are:

- A large share of budget decisions are guided by financial considerations such as cuts to the general budget; however the long-term consequences of these decisions on program objectives are not adequately considered.
- Changes in the economic situation cannot easily be reflected in the budget under execution.
- Budget coverage of fiscal activity excludes certain public entities that undertake non-commercial activities, although these are financed by donations or earmarked taxes.
- Financial reports are based on budget accounting and do not include a complete list of assets (financial and physical), liabilities (accrued, contingent and direct) or capital.
- Coordination between the Accounts Tribunal and the National Auditor needs to be strengthened to improve efficiency in their activities and achieve more effective oversight.
- Complex operational procedures for debt management impede the timely exchange of information among authorities about current liquidity and future needs.
- Contingent liabilities (possible financial claims against the government) are not registered in any of the public systems.
- Investigation systems are inadequate; the capacity actually exercised by the legislative branch is limited in relation to its powers and civil society does not have an important role.

12.12 Considering the time passed, it would be useful to update the 2005 study, preferably utilizing PEFA standards.

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12.13 A recent diagnostic does exist of the SIIF system,\textsuperscript{115} which provides information on the current state of this critical area of public financial administration. The SIIF evaluation revealed the following problems:

- The SIIF does not comply with the basic principal of integrated financial management of registering all transactions once, and registering them in the place where they occur.
- Timely financial information is not available for some public income and expense categories, such as collections, debt service payments and intra-sector financial assistance. No public debt registry is linked to the SIIF.
- Asset accounting does not occur, since the corresponding module was not completely implemented into the integrated accounting system, which impedes the automatic linkage of accounting and budgetary accounts.
- There is no link between financial planning and execution, which is registered on one system, and information on activity progress, which is registered on another system.
- System modules are excessively fragmented. Modules for distinct purposes (formulation, execution, monitoring and evaluation of spending, accounting, treasury, income, procurement and contracting, human resources, public debt) are not integrated.

12.14 Another area that could be improved is the oversight system. The most recent diagnostic\textsuperscript{116} found the following problems: (i) internal and external controls focus on following regulations, not on effective and efficient operations; (ii) the ex ante oversight function of the Accounts Tribunal (Tribunal de Cuentas de la República—TCR) does not conform to regional best practices and could weaken objectivity of later reviews; (iii) overlaps exist in the roles of the National Auditor, TCR, delegate accountants and the Comptroller General, which could be revised to avoid duplicating efforts and to promote efficiency; and (iv) although the TCR sends its audit reports to Congress, its findings are not followed up, which weakens effective oversight. The second of these points has led some public entities to sub-contract procurement execution to international organizations, to accelerate project implementation.

12.15 The greatest challenge facing other countries in the region is using information produced by systems like SIIF for auditing. As well, the content and form of public accounts has changed radically in recent years and Uruguay could update its practices in this area.

\textit{Principal options for the new administration}

12.16 A consensus exists on the need to better integrate the financial management system based on a comprehensive re-thinking of the business of the state and the Uruguayan legal and regulatory framework, and from this derive information needs and in particular establish an information link between material and financial resources and budgetary and accounting registries. The start of the five-year 2010-2014 budget process offers an excellent opportunity to start these actions. The SIIF evaluation identifies four options:

\textsuperscript{115} “Diagnóstico del Sistema Integrado de Información Financiera (SIIF),” CPA Ferrere Consultores, December 2008.
• Re-engineer SIIF, maintaining its current conceptual model. In this case the system will respond only with difficulty to the needs of the existing legal framework and efficient financial management. Although no cost estimate has been made, it is reasonable to expect that the cost of re-engineering will be well below the added value, considering the architectural limitations of the SIIF system to respond to the information needs of taking financial decisions and the expectations of results-based budgeting currently embedded in the legal framework for public financial management.

• Design a new conceptual model and develop a new version of SIIF. In the medium term Uruguay would have a system congruent with the vision of public spending efficiency called for in the legal framework. The cost would be greater than simple re-engineering SIIF, and similar to the third option. Nonetheless, it would not take advantage of opportunities to make short-term improvements while the new system is being developed.

• Design a new conceptual model and at the same time optimize the existing SIIF. In the medium term Uruguay would have a system congruent with the vision of public spending efficiency called for in the legal framework. Meanwhile, the system could improve rapidly, helping authorities take more informed decisions. The experiences of other countries suggest that the cost would be fully justified. Improvements to the existing SIIF, for example in its exit reports, would have only a marginal cost.

• Make no changes. In this case, the weaknesses noted above would continue. Authorities and the population would not have timely, relevant and reliable information on public expenditure management, making it difficult for Uruguay to efficiently manage public financial resources. The opportunity costs could translate into a slow decline in public sector efficiency.

12.17 Regarding the oversight system, institutional relations and the legal framework should be thoroughly reviewed. This review should generate policy options to modernize, give agility and increase the efficiency and effectiveness of the system.

A. PUBLIC SECTOR PROCUREMENT SYSTEM

12.18 A good system of public sector procurement allows for: (i) fiscal savings; (ii) faster actions by public entities, contributing to achieving their objectives in less time; (iii) improved allocation of public resources; (iv) greater transparency in the use of public resources; and (v) greater competition among companies providing goods and services to the state, helping improve country competitiveness. However, Uruguay does not have a regulatory agency for public procurement or a procurement strategy to help achieve these objectives. This situation constitutes an opportunity not available in other countries, and one that Uruguay should take advantage of quickly.

Regional best practices

12.19 Uruguay can emulate and improve upon best practices from around the region. The same study cited in the previous section 117 contains an evaluation of public procurement systems in LAC, and explains that the best systems have evolved from purely administrative functions to a

117 “Accountability ....” op. cit.
strategic function, recognizing that public procurement can play an important role in public finances, governance quality and economic development. The modern conception of public procurement is central to good government and achieving a government’s social and economic objectives. Good procurement plans are aligned with and support overall government plans.

12.20 Some international instruments can help Uruguay achieve these objectives, such as the GATT’s Agreement on Government Procurement, the model procurement law published by UNCITRAL, and the OECD’s use of standardized diagnostic systems. These instruments and the experiences of other countries suggest that a procurement system appropriate for the country’s development objectives would have characteristics such as those described in Box 12.2.

<table>
<thead>
<tr>
<th>Box 12.2: Regional Best Practices in Public Procurement</th>
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<tbody>
<tr>
<td>• System focus is not supervision and the rigid application of procedures, but the systematic analysis of risks, costs and times; that is, economy and efficiency.</td>
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<tr>
<td>• The system makes maximum use of available technology tools, minimizing personal interaction between buyers and sellers. Brazil, Chile and Mexico have been pioneers in this area.</td>
</tr>
<tr>
<td>• Preference for local providers is based on a cost-benefit analysis of prices, technology, and possible incentives to market monopoly. To minimize or avoid these costs, some legal frameworks offer a reasonable preference to local providers, without prohibiting competition from foreign providers.</td>
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<tr>
<td>• Multiple regulatory regimes for public procurement are avoided (for example, for certain agencies such as public companies or national defense, or for sub-national governments), as these lead to providers specializing in rules applicable to only a few procuring entities, which fragments the market and leads to high public costs.</td>
</tr>
<tr>
<td>• Excessively formal procedures are avoided. In many countries, these excesses lead some agencies to find their own ways of avoiding the norms, such as recurring to international organizations to undertake their purchases.</td>
</tr>
<tr>
<td>• High-level norms do not have excessive detail difficult to adapt to changing market conditions, technology advances or new procurement techniques.</td>
</tr>
<tr>
<td>• The institutional hierarchy ensures inter-agency coordination from planning to execution and ex post evaluation. Many countries, such as Peru, Mexico, Paraguay and Jamaica, have created agencies to supervise state procurement efficiency, analyze markets, develop strategies, issue regulations, provide training and resolve disputes.</td>
</tr>
<tr>
<td>• Close coordination exists between budgetary planning and execution on the one hand, and procurement planning and execution on the other.</td>
</tr>
<tr>
<td>• Alternative dispute resolution mechanisms are utilized as much as possible, considering that the slow processes to resolve disputes in the courts leads to a lack of competition and increased costs. Some countries, such as Chile, Mexico, Paraguay, Panama and Peru, have established special mechanisms to resolve pre-contractual disputes.</td>
</tr>
<tr>
<td>• The best procurement systems are those that make information related to their activities public and provide incentives for independent oversight by civil society.</td>
</tr>
</tbody>
</table>
Current situation in Uruguay

12.21 The World Bank and the IADB undertook the most recent thorough diagnostic of Uruguay’s procurement system in 2000.118 It would be useful to update this work in light of new methodologies, particularly those introduced by the OECD.

12.22 Uruguay has an unsurpassed opportunity to adopt international best practices in this area. The 2009 Accountability Law created the State Contracting and Purchasing Agency (Agencia de Contrataciones y Compras del Estado—ACCE) as the lead regulatory agency for procurement. The law: (i) gives the Electronic Government Agency (Agencia de Gobierno Electrónico—AGESIC) the mandate to promote the creation of ACCE; (ii) stipulates the creation of a directive council with an executive director; and (iii) mandates that this council will propose to the executive a strategic plan within 180 days after the council is created. The directive council has not yet been named, and will be designated by the new administration.

12.23 Regarding the legal framework, a proposed Public Sector Acquisition Process Law has been drawn up. However, it has not yet been sent to Congress, nor does it address the recently created ACCE.

12.24 Regarding procurement information systems, an evaluation of the SICE procurement system was just completed. In general terms the evaluation found the system to be good, but it is under-utilized and could be improved. As well, the evaluation highlighted weaknesses in the regulatory, institutional, and training frameworks, which inhibit the information system from working to its full potential to improve the state procurement system.

12.25 As well, the Centralized Procurement Unit (Unidad Centralizada de Compras—UCA), which undertakes consolidated purchases of food and medicines for various public institutions, has concluded that SICE does not respond to its operational needs and is contracting the design of software to undertake these purchases automatically and on line. The government is also modernizing the Unified Registry of State Provisioners (Registro Único de Proveedores del Estado—RUPE).

12.26 The probability of success of a new government agency charged with regulating, training and promoting good procurement practices would increase by implementing actions leading to quick gains that demonstrate concrete results in public savings, and thus gain the interest and support of authorities, officials, suppliers and taxpayers.

Principal options for the new administration

12.27 Policy options and expected results are discussed below:
• In the short term, name the directing council and executive director of ACCE. In the medium term, develop a national public procurement strategy based on the standardized OECD evaluation methodology and improve the functioning of SICE. This is a very fast policy

118 “Diagnóstico de los Procedimientos de Adquisiciones de la República Oriental del Uruguay,” World Bank, January 2000, Report No. 32017. The conclusions of this study are not reviewed in this policy note, as the evaluation was undertaken more than ten years ago.
option, since Congress has already approved the legislation. Initial costs would appear to be low, while medium-term costs will depend on the national strategy chosen. International institutions are willing to provide financing and technical assistance, and provide information on the best practices of other countries.

- Approve new legal dispositions to create a new public agency for public procurement, or other new legislation on the matter. This option could take more time to execute, depending on whether the new legal framework is politically controversial. Short-term costs would be minimal, while medium-term costs would depend on the national strategy chosen for public procurement.
- Maintaining the status quo implies greater opportunity costs.

**B. National Statistics System and Evaluation System**

12.28 Uruguay is the midst of discussing, designing and implementing a series of reforms to critical aspects of the country’s development. At the same time, the government is moving towards results-based public management. These processes impose new demands on both the national statistics system—due to demands for information not always available or not disaggregated geographically or by sector—as well as the evaluation system for social programs.

*Current situation in Uruguay*

12.29 Although Uruguay has a generally high statistical capacity, more work is needed to promote and facilitate using statistics for evidence-based policy making and to strengthen the use of statistics for tracking and evaluation (in this Mexico and Colombia are regional leaders).

12.30 One activity important for economic and social sectors is the automation of registry data. Uruguay has an abundance of administrative registries and they are not used to their potential because many are still paper-based, for example registries for the education system, municipal registries for construction permits, and others. In the region, Chile is the best example of progress in this area. The implementation of the National E-Government Strategy in Uruguay would help considerably in this. Also important is to continue the Unified Information Network Management Project (*Proyecto Gestión Unificada de Redes de Información*—GURI) for primary school and birth certificate information.

12.31 A key concern of successive governments is achieving a sustained growth path for the country. During the last 30 years, Uruguay has experienced periods of moderate growth interrupted by economic crises. The “Productive Uruguay” project was designed with the aim of articulating programs to promote productive activity, to the end goal of exploiting comparative and competitive advantages to improve the country’s insertion in the international economy. However, policies to promote investment and innovation without the parallel development of statistics to monitor these variables runs the risk of failure due to not being able to clearly detect obstacles and find solutions. To inform decision makers on the design of incentives or monitoring of results, the national statistics system should provide accurate and up-to-date information on the dynamics of the economy at the sectoral and regional level. Three areas require progress to achieve this: (i) improve information on investment, particularly gross capital formation by sector; (ii) continue with recent improvements in economic statistics (permanent
business registry generated with data from the social security administration and tax office); and (iii) gather information on private sector innovation.

12.32 In social policy, notable developments include the creation of the Social Development Ministry (Ministerio de Desarrollo Social—MIDES) and the subsequent Equity Plan. This plan and other social policies oriented toward reducing social exclusion do not have the ideal statistical instruments to undertake impact evaluations. The Continual Household Survey (Encuesta Continua de Hogares—ECH) has shown itself to be a reliable means of tracking the aggregate well-being—in its multiple dimensions—of the population. However, the design of the ECH is not ideal for studying social exclusion and its determinants, or changes in well-being resulting from social programs. In 2009, the IADB approved a loan (2109/OC-UR) to be executed by the BPS with the objective of strengthening the capacity to formulate and execute social security policies in Uruguay. The specific objective is to build quality statistical information needed to evaluate the system and undertake analytic studies on coverage, efficiency and sustainability to permit proposals for revenue. Information is to be generated via a periodic longitudinal survey to be called the Social Protection Survey (Encuesta de Protección Social—EPS).

12.33 While these efforts are in the right direction, new statistical activities are needed to obtain information that measures the longitudinal evolution from administrative registries and, in particular, beneficiary registries from the country’s various social programs. Progress is being made to create a Integrated Social Information System (Sistema Integrado de Información del Área Social—SIIAS) with the support of the IBTAL project. Priorities are: (i) institutionalize SIIAS; (ii) include the education sector and Plan Ceibal; and (iii) strengthen program impact evaluation capacity using information supplied by SIIAS.

12.34 The system should also include education statistics currently not available, such as school attendance. The education statistics system is highly fragmented and various reforms have been attempted that have not culminated in an information system useful for decision-making or the execution of social and education policies. No system exists with information from the school secretariats, which are the basis of any policy in the sector. Having up-to-date and disaggregated information on the activities of the different institutions involved in education is a central input for this process. The administrative registries of the Plan Ceibal should also be utilized.

12.35 Recent reforms in the health system to ensure coverage for the entire population did not include generating complete information on health service providers and sickness rates for different age groups and genders, essential to decide what the system transfers to institutions as a function of the population they attend. New functional statistics in these areas are needed to transition to the new health regimen and ensure continuity. Sustaining the new Live Birth Electronic System is also critical.

**Principal options for the new administration**

12.36 The principal policy options for the new administration regarding statistics and potential results from each are reviewed below. With the exception of the last one, these options are not mutually exclusive:
• In the short term, SIIAS could be institutionalized, including within it the education sector and Plan Ceibal. The expected result is improved public sector efficiency via better control of the resources needed to provide subsidized services to low-income individuals.
• In the longer term, but beginning as soon as possible, Uruguay can improve the targeting and effectiveness of its social programs by institutionalizing evaluation systems that feed back into public policy decisions and budget processes.
• In the medium term, administrative registries can be automated, and institutional mechanisms and statistics developed to evaluate the impact of social programs, in particular in education and health. This would lead to a better utilization and even a reduction of public spending through budget management that makes greater use of results evaluations, even though it does require an initial investment in registry automation. The amount of investment depends on an evaluation of priorities.
• The status quo can be maintained, which would likely mean no change in the weaknesses discussed above. Authorities and the population would not have timely, relevant and reliable information on the evolution of the economy and the impact of social programs. This would imply opportunity costs that would translate into a sub-optimal use of public resources on programs with little social impact, as well as a lack of information to support the country’s economic development.

C. Customs

12.37 Uruguay’s external trade has grown to represent 60.3 percent of GDP.\textsuperscript{119} Trans-shipments to other countries have also increased, particularly via the port of Montevideo. Customs plays an important role in this activity, since part of import and export costs depend upon the efficiency of customs administration and coordination between customs and other border and port agencies. Improvements in the time needed for customs—for imports, exports and trans-shipments—can have an important impact on country competitiveness. As well, income collection by the National Customs Service (Dirección Nacional de Aduanas—DNA) represents an important percentage of total fiscal revenue, meaning better collection oversight and efficiency can have a major impact on fiscal income.

Regional best practices and international standards

12.38 Considerable experience exists at the international level on customs best practices, and in several areas Uruguay can reach or even surpass international standards. The World Customs Organization has published many documents describing best practices in customs administration. The revised Kyoto Convention also establishes a series of best practices.\textsuperscript{120} As well, the World Trade Organization in the Doha Round reached a consensus to advance in various customs issues to preserve control and facilitate trade.\textsuperscript{121} These recommendations are summarized in Box 12.3.

\textsuperscript{119} Calculated by the authors using official information from the Central Bank of Uruguay, for 2008.
\textsuperscript{120} Taken from the World Customs Organization web page, www.wcoomd.org.
\textsuperscript{121} Available on the WTO website, www.wto.org.
Box 12.3: Best Practices in Customs

Revised Kyoto Convention
- Transparency and predictability in customs actions
- Standardization and simplification of documents for merchandise clearance
- Simplified procedures for authorized people or entities
- Maximum use of information technologies for customs transactions
- Minimum customs control needed to ensure compliance with obligations
- Control based on risk management and post-clearance auditing
- Coordination with border agencies and application of joint control measures
- Ongoing association and dialogue with those involved with external trade

WTO Doha Round
- Prior resolution issuance
- Elimination of inspections prior to shipment
- Progressive elimination of the obligatory use of customs agents for customs procedures
- Clearance processes prior to arrival
- Accelerated procedures for urgent shipments
- Risk-based analysis and administration for inspections
- Use of authorized traders (direct customs processing for authorized companies)
- Post-clearance auditing
- Separate collection and clearance procedures
- Establishment and publication of times for collection and clearance
- Objective criteria for tariff classification
- Customs cooperation (interchange of information with customs in other countries)
- Coordination of border agencies and a “single window” for external trade

Box 12.4: Latin American Best Practices in Customs

- **Massive use of information technologies:** Practically all customs services in the region use information technologies to process declarations and payments. The recent redesign of DIAN in Colombia is notable for permitting users to track processing and for the electronic reception of all manifests. It also offers the efficient use of electronic forms and on-line connections with tax registry and single taxpayer account. The Chilean system processes various types of customs forms without any paper. The customs information system of SUNAT in Peru allows officials to have all needed information for customs clearance on a single computer screen. Guatemala has recently put into practice a new system based on procedures used in Peru and Uruguay, to manage electronic forms and connections to the tax system.

- **Customs codes and laws allow for simple procedures, pre-clearance processes, post-clearance inspections and information interchange among customs services:** Several customs codes and legal frameworks have these characteristics, notably the Central American Customs Code (Código Aduanero de Unión Centro Americana—CAUCA), the recent customs code of Peru and the Chilean customs code and law.

- **Control based on risk management, auditing after clearance, and coordination with tax service for verifying international trade charges:** The Callao customs service in Peru has successfully implemented a risk-based system, as has the Salvadoran customs service, which works together with Guatemala on risk management. Regarding ex-post inspections and coordination with tax services, Chile has several regional and one national commission for verifying and charging fees in conjunction with officials from customs, taxation and treasury. Several countries are implementing joint verification units within the tax and customs administrations, including Colombia, Guatemala, Mexico and Peru.
Cont. Box 12.4

- **Gradual elimination of the obligatory use of customs agents, and increased use of authorized trader service:** Few legislations contemplate these developments. Some countries (Mexico and Peru) are experimenting with authorized operator services.

- **Clearance processing prior to arrival:** Most legislations permit prior procedures, however few countries utilize this in any significant level. In Chile, more than 80 percent of imports are completely processed electronically prior to arrival.

- **Coordination with other border agencies and use of single window for international trade:** Peru has recently put into practice a single window bringing together five agencies and allowing on-line declarations. As well, physical inspections are only for clearance, with the participation of interested agencies.

- **Modernization of customs management:** Several countries in the region have modernized customs management, based on strategic plans, management indicators, redesigned processes, intensive use of information technology, modernized human resource management, strategies to strengthen control and verification, and coordination with other verification entities. Peru, Guatemala and Chile are particularly notable for progress in these areas.

- **Coordination with the private sector and international trade operators:** Following the signature of free trade agreements by several countries, coordination mechanisms and agendas have been systematically set up with private agents and other state agencies involved in customs processes. Some countries have established permanent communication and training mechanisms with the private sector. In Guatemala, apart from issues related to customs operations, matters of integrity have been included to help design a joint strategy to combat corruption.

**Current situation in Uruguay**

12.40 Since 1995 the DNA experienced significant modernization, particularly through the implementation of the LUCIA system that allows electronic processing of customs clearances and management of required forms. However, since 2000 no further advances have been made in customs management, and several cases of corruption have arisen. During 2008 21 officials in the Carrasco customs office were detained for receiving payments by users to not effect controls. The officials were fired and are currently facing legal proceedings.

12.41 International indicators of customs management rank the DNA relatively poorly. In the World Bank’s Logistics Performance Index, Uruguay ranks 86 out of 150 countries in customs performance, below Argentina, Brazil and Chile and well below the average for medium-high income countries such as Uruguay (Figure 12.1).

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122 During 2008 21 officials in the Carrasco customs office were detained for receiving payments by users to not effect controls. The officials were fired and are currently facing legal proceedings.

123 Source: Logistics Performance Index, the World Bank International Trade Department. Available at: www.worldbank.org/lpi.
12.42 DNA efficiency levels are also low. The World Bank’s Doing Business studies find high transaction costs for trade with Uruguay, attributable to customs performance (Table 12.1).

**Table 12.1: International Trade Procedures, Uruguay (2006)**

<table>
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<tr>
<th>Export Procedure</th>
<th>Duration</th>
<th>Cost in US$</th>
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<td>Document preparation</td>
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<td>152</td>
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<tr>
<td>Transport and handling</td>
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<td>134</td>
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<tr>
<td>Technical control and customs approval</td>
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<td>114</td>
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<tr>
<td>Port logistics and terminal handling</td>
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<td>152</td>
</tr>
</tbody>
</table>

**Totals**

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<th>Export Procedure</th>
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<tr>
<th>Import Procedure</th>
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<td>Document Preparation</td>
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<th>Import Procedure</th>
<th>Duration</th>
<th>Cost in US$</th>
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<tr>
<td><strong>25</strong></td>
<td></td>
<td><strong>666</strong></td>
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</tbody>
</table>

*Source: Logistics Performance Index, World Bank, 2007*
12.43 While most customs clearances in Uruguay are done electronically, presenting all forms by paper to the customs office is still required. Several procedures impede merchandise collection, even when clearance has been processed and taxes paid, due to revisions for minor inconsistencies. Uruguay still uses some customs procedures that have been discontinued in most customs agencies due to their high cost and low effectiveness. Notable among these are: a) physical inspections for a high percentage of international transit cargo (over 70 percent according to customs estimates); and b) international land transit cargo custody by customs officers.124

12.44 Regarding human resources, the customs staff has not been renewed for quite a while. The average age of customs officers is 57 years and the rate of absenteeism due to sickness is high, over 37 percent.125 Modern, transparent and competitive selection, evaluation and retirement procedures are not in use, nor do plans exist for systematic training.

12.45 Control and audit procedures have also not evolved toward best practices. While the LUCIA system does utilize risk management, a high percentage of physical inspections (over 70 percent) make its use inefficient. Joint verification procedures with DNA and the tax office are not in place, which is a high priority to improve effective control. Nor do systematic plans exist for ex post audits. DNA has little coordination with other border agencies, particularly plant and animal health officials who undertake their own control procedures. Electronic certification information exchange is not in use, and no plans are in place to develop a single window for external trade, where customs should play a key role. Authorities have no coordination agenda with the private sector and external trade operators, which makes it even more difficult to make progress on procedure simplification and controlling corruption. Nonetheless in April 2009, as part of the WTO negotiations, a self-evaluation workshop was held on facilitating trade that resulted in a consensus on priority actions and the need for technical assistance to make progress both within the public sector and with the private sector.

Policy options for the new administration

12.46 Uruguay essentially has three policy options: (i) undertaken an integral customs reform; (ii) undertake partial reforms; and (iii) maintaining the status quo. These options are reviewed below:

- Integral customs reform would include at minimum: renovating staff, redesigning the labor cycle and career path, redesigning and simplifying procedures, updating information systems for process automation, implementing a single registration and minimizing use of paper, focusing verification more on audits, managing risks and coordinating with the tax authorities, incorporating modern management techniques (strategic planning, management indicators, management by projects and processes, etc.), improving coordination with other border agencies under the leadership of customs, and improved coordination with the private sector. Although one can expect high conflict under this option with “losing” groups, particularly intermediaries and officials accustomed to irregular activities, the experiences of other countries and in Uruguay’s tax

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124 Customs control land transit now with electronic means, such as GPS.
125 Data obtained directly from the DNA in a study done by E. Fanta, J. Rennie and A. Santoros in 2006.
authority reform indicate that improvements in revenues and competitiveness amply justify the effort.

- Partial reforms to the system would lead to less conflict, with the risk of backsliding and less improvements than in the previous option, but this could be more viable from a political economy point of view and establish a basis to build the consensus needed for further reforms.

- Maintaining the status quo would be increasingly complicated as the international crisis abates and Uruguay’s international trade resumes the growth rhythm of the early part of the last decade. The failure to renew and train personnel, to modernize information systems and to simplify procedures could lead to a gradual erosion of country competitiveness. Problems of fraud encountered in recent years could multiply, with a high fiscal and political cost. As well, the high average age of customs staff could have an impact on the incoming administration in the form of retirement costs.

Conclusions

12.47 Annex 12 summarizes the policy options and expected results in the four areas discussed in this policy note. In public financial administration, reforms are mainly technical, imply relatively low financial costs that can be covered by international organizations, and do not appear to face significant political obstacles. Time of execution fits within a single administration and, based on the experiences of other countries, the benefits in efficiency, transparency and decision-making capacity amply justify the costs. In public procurement, tangible benefits in fiscal savings and reduced project execution times could materialize very quickly if a procurement agency is created and authorities pursue institutional strengthening in line with the legal framework already in place. Regarding the national statistic system, the institutionalization of the SIIAS is the most urgent issue, and will provide strong support to improve the targeting and coverage of social programs.

12.48 The analysis presented here indicates that customs could be a bottleneck for the growth of Uruguay’s international trade, suggesting that the customs system urgently requires reforms.
## ANNEX

### Table A12.1: Perception Indicators Related to Public Sector Management

<table>
<thead>
<tr>
<th>Uruguay - Procurement</th>
<th>Indicator</th>
<th>Country Score</th>
<th>Regional Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract and law subindex</td>
<td>4.86</td>
<td>3.47</td>
</tr>
<tr>
<td></td>
<td>Favoritism in decisions of government officials</td>
<td>4.1</td>
<td>2.67</td>
</tr>
<tr>
<td></td>
<td>Government procurement of advanced technology products</td>
<td>3.4</td>
<td>3.16</td>
</tr>
<tr>
<td></td>
<td>Public Institutions Index</td>
<td>5.27</td>
<td>4.16</td>
</tr>
<tr>
<td></td>
<td>Unofficial payments to secure government contract</td>
<td>0.36</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Source: http://www6.iadb.org/datagob/index.html

<table>
<thead>
<tr>
<th>Uruguay - Customs</th>
<th>Indicator</th>
<th>Country-Score</th>
<th>Regional Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average time to claim imports from Customs (days)</td>
<td>5.59</td>
<td>5.33</td>
</tr>
<tr>
<td></td>
<td>Average time to clear exports through Customs (days)</td>
<td>2.13</td>
<td>5.26</td>
</tr>
<tr>
<td></td>
<td>Burden of customs procedures (in.)</td>
<td>3.7</td>
<td>3.36</td>
</tr>
<tr>
<td></td>
<td>Business impact of customs procedures</td>
<td>3.4</td>
<td>3.35</td>
</tr>
<tr>
<td></td>
<td>Efficiency of customs procedures</td>
<td>3.1</td>
<td>2.89</td>
</tr>
<tr>
<td></td>
<td>Longest time to claim imports from customs (days)</td>
<td>12.71</td>
<td>10.64</td>
</tr>
<tr>
<td></td>
<td>Longest time to clear direct exports through customs</td>
<td>3.4</td>
<td>9.68</td>
</tr>
</tbody>
</table>

Source: Logistics Performance Index, World Bank, 2008
<table>
<thead>
<tr>
<th>THEME</th>
<th>PRINCIPAL PROBLEM</th>
<th>POLICY OPTIONS</th>
<th>EXPECTED RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Administration</td>
<td>SIIF obsolescence and lack of conceptual coherence with existing legislation</td>
<td>In the short term: Define a new conceptual model and introduce certain improvements to the current SIIF system. In the medium term: Develop a new system that responds to the new conceptual model.</td>
<td>Modernized system coherent with the vision of efficiency and transparency in the legal framework. Improved financial reports allowing for better informed budget decisions.</td>
</tr>
<tr>
<td>Public Sector Procurement</td>
<td>Lack of a regulatory agency</td>
<td>Name a directing council and executive director for ACCE, design a national procurement strategy and improve the electronic purchasing system.</td>
<td>Time and public resource savings, better allocation of fiscal expenditures, improved transparency and more competition among providers.</td>
</tr>
<tr>
<td>National Statistics System</td>
<td>Lack of statistics useful to evaluate the impact of social programs</td>
<td>Institutionalize the SIAS, including the education sector and Plan Ceibal. Automate administrative registries, develop statistics useful to evaluate the impact of social programs, and introduce an impact evaluation system for social programs.</td>
<td>Better targeting and effectiveness of social programs. Public resource savings.</td>
</tr>
<tr>
<td>Customs</td>
<td>Obsolete customs system and lack of transparency</td>
<td>Begin gradual reforms to the system, starting with human resources, modernizing technology systems and verification procedures, and promote transparency and coordination with other public and private institutions.</td>
<td>Easier procedures for external trade, improved fiscal collections and less irregular activities.</td>
</tr>
</tbody>
</table>
CHAPTER 13.

LESSONS AND OPEN QUESTIONS IN TWO SUCCESSFUL URUGUAYAN INDUSTRIES: FORESTRY AND SOFTWARE

13.1 This Policy Note aims to identify aspects of the institutional and investment climate frameworks that have successfully contributed to the country’s economic development. While the spectrum is limited to the forestry and software sectors, these involve most aspects of a sectoral development policy. As well, focusing on these two sectors will highlight bottlenecks and pending policy actions related to their continued development.

13.2 These two sectors were selected because behind each is a successful history of growth and increasing participation in the export sector and national labor market. In 1999 forestry and software exports represented 3.9 percent and 2.2 percent, respectively, of total exports, and by 2008 they represented 6.9 percent and 2.3 percent. Neither sector is based on traditional economic activity. In both cases, the general country investment climate and appropriate horizontal policies played an important role, but vertical policies also had an impact, with varying results: successful, not relevant, or failures.

13.3 Following 1987 legislation on the sector, land planted forestry grew strongly (Figure 13.1). This growth and the maturation of production have generated a critical mass of raw material sufficient to attract industrial investment in the sector, and new investments are expected to complete a large-scale productive chain. In recent years, apart from the cellulose and construction materials projects, many provider companies have developed, from nurseries to final logistics for industrialized products. Exports surpassed US$400 million in 2008 and are diversified to more than 25 countries.

13.4 Within the information technology and communications technology (ICT) sector, the software industry has shown important development. Sectoral leaders estimate that nearly 10,000 people work in the sector. Participation as a share of total exports has remained relatively stable over the past decade, despite growing in value from US$76 million in 1999 to US$219 million in 2008 (Figure 13.2).

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126 The authors thank Ing. Marcel Mordezki, Ing. Julio Fernandez, Sr. Alvaro Lamé, Cr. Pablo Balério, Ec. Pedro Aramendia and Ing. Agr. Edgardo Cardozo for their time discussing various aspects of this note.
127 Share of exports in low value-added primary products, which in 2007 was over 70 percent, declines yearly as a function of the maturation and industrialization of the country’s production systems.
128 Annex Table A.2.2 presents official data from the Uruguay Information Technology Chamber (Cámara Uruguaya de las Tecnologías de la Información—CUTI). In 2005, the country had approximately 300 IT companies and more than 4,500 employees, not counting 1,600 independent professionals.
The note proceeds as follows. Section 2 presents a summary description of the two sectors, including salient characteristics and key factors in their success. Section 3 reports the principal policies applied. Section 4 discusses the main lessons, while Section 5 lays out policy options.

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Background: Forestry sector development

13.6 Artificially planted forests cover between 750,000 and 800,000 hectares (5.3 percent of land suitable for cultivation in the country), planted predominantly with pine and eucalyptus. As forested area increases, technology in genetics, production, planting and harvesting is also advancing. Many of the plantations are certified according to the norms and principals of sustainable forestry management.

13.7 Increased production encouraged the vertical integration of primary and industrial sectors. Among the main investors in the industrial sector are the Finnish company Botnia (cellulose), and Weyerhauser and Urupanel (laminates). No projects are currently underway for the next phase of added value, such as furniture, manufacturing or chemical products.

13.8 The successful development of the sector is based on various issues. First, Uruguay has very good natural conditions, with a combination of soils and climate that lead to high growth rates by international standards. As well, the distance from major consumption centers is offset by the need for geographic diversity of primary material and industrial product supply due to environmental, political and regulatory factors.

13.9 The development of a critical mass of production was built on major investments by multinational companies, for which the institutional framework for foreign investment in Uruguay was an attractive factor when deciding where to invest. Uruguay has free circulation and convertibility of its currency and free capital movement. Private property is respected and the financial and political situation is stable. All of these attributes were reaffirmed in the 1998 investment law, which guaranteed equal treatment to national and foreign investors. Also notable is the acceptance of limited liability companies in forestry investment according to the 1987 sectoral law. This modality helped attract institutional investors (international and local) and international publicly traded companies.

13.10 The period of strong forestry development coincided with low land prices. After 2003 the agricultural sector registered strong growth with an increase in planted area, with a consequent impact on land prices, which rose to US$1,786 per hectare in 2008. However, in relative terms land costs have not become a barrier to continued development in the sector.

13.11 Transportation and production exit logistics are not major obstacles for sectoral development. Although the country’s infrastructure is insufficient, the distances between the plantation zones and ports are short.

13.12 Beyond the explanatory factors of forestry’s success, certain factors characteristic to the sector should be taken into account to achieve optimal conditions for development and stand out internationally. First, development requires a long-term process and commitment of capital. The maturation cycle of plantations is longer than ten years. Second, the natural characteristics of the species allows for multi-product primary production with relatively fixed coefficients. Thus it is possible to make long-term projections of primary and sub-products as well as energy produced by waste-product biomass. Third, value added industrial projects require a secure supply of raw
materials for long time horizons. The capital commitment for a cellulose factory demands ownership of an important percentage of raw material and long-term supply contracts.

**Software sector development**

13.13 The sector’s development is characterized by the lack of connection between explicit public policies and achievements in terms of growth, employment and exports. Unlike the forestry sector, software development appears to have been driven primarily by private efforts without any explicit development agenda. Subsequently the government has become interested in sector development and has implemented public policies, the effects of which are still not clear.

13.14 Low entry costs facilitated the development of the internal market based on private companies and independent producers exploiting opportunities. This process was supported by the existence of adequately trained human capital following the creation of the Instituto de Computación (INCO) by the Universidad de la República in 1967 and by non-university training programs (Instituto ORT), as well as an adequate telecommunications infrastructure supplied by the state company ANTEL. These factors together created a propitious environment to take advantage of opportunities that were not of interest to international companies due to the small size of the domestic market.

13.15 Following this incipient development, local entrepreneurs began to generate their own resources, allowing them to finance businesses in other Latin American countries, which were lagging in terms of adequate human capital and also were not attractive to large international firms.

13.16 This process of regionalization was followed by the internationalization of the sector, which developed without the explicit support of the state apart from the provision of the public goods described above. Factors facilitating this development were relatively competitive salaries (in relation to the quality of labor) in Uruguay, dwindling relevance of transport costs due to the Internet and the consolidation of strategic alliances by some leading companies. The establishment of offices in 52 international markets is a sign of the sector’s development between the mid-1990s and the present.

13.17 According to analysts and business people, the growth of the industry after 2003 was due principally to the links that companies had structured to help take advantage of business opportunities in other countries. None of those interviewed attributed the industry’s rebound after the 2002 crisis to any public policy.

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130 These two elements, important initially, appear to be evolving into one of the most important bottlenecks facing the sector today.
POLICIES APPLIED

**Horizontal policies: investment climate, duty free zones and the investment promotion law**

13.18 The main ingredients of a propitious investment climate are social and political stability, respect for property rights and stable rules of the game guaranteed by law. As noted above, the 1998 investment law strengthened the investment climate by ensuring equal treatment for foreign and domestic investors.

13.19 The other legal mechanism used to attract large investments is the Duty Free Zone Law. This has provided large industrial investors in the forestry sector a more stable judicial framework and a stronger long-term guarantee of exonerations. Within the software sector, it has created a development pole in Zonamérica with low communications costs due to the lack of an ANTEL monopoly or taxation. Recently a new duty free zone was authorized in the center of Montevideo, which is expected to become the location of many technology start-ups.

**Forestry**

13.20 One notable characteristic of forestry policy is that since its beginnings it has been a state policy. The 1987 forestry law had support from all political sectors and has not been affected by any substantial changes since its passage, despite four changes of government and a changing parliamentary majority. Several policy adjustments since 2005, discussed in sub-section b, below, have placed a greater emphasis on diversification.

**Principal forestry sector policy instruments**

13.21 The policy of promoting forestry production began with the 1987 law, which included the following instruments:

- The legal framework permitted limited liability companies in forestry investment. This modality proved attractive for institutional investors (international and local) and for publicly traded international companies.
- The subsidy was initially fixed at between 30 percent and 50 percent of plantation costs. In 2002 this subsidy was gradually reduced, and it was eliminated at the start of 2007.
- Forestry activity was to be permitted only in certain regions and types of land. These policies have been modified over time, but only very gradually. The concept is to promote and subsidize the use of land that only indirectly competes with traditional uses.
- The Banco de la República was authorized to grant credit lines to stimulate the development of plantations by medium-sized domestic producers.
- Exemptions for income, asset and rural property taxes, as well as machinery and equipment import tariffs.
- Indirect export tax refunds according to WTO rules.

13.22 Public participation continues in sanitation and fire prevention issues. Regarding labor and forestry practices, the 2004 National Code of Good Forestry Practices (Código Nacional de Buenas Prácticas Forestales) establishes minimum quality standards in plantation management.
The policy shift toward diversification

13.23 The previous administration maintained overall sectoral policy and placed a greater emphasis on increasing diversification.

13.24 This diversification has various dimensions:
- Avoid over-production and the specialization of certain types of eucalyptus, and incorporate quality woods to promote greater value-added industrial activities, such as furniture manufacturing.
- Diversify geographic production toward the east of the country and control growth in the west.  
- Integrate forestry production with other activities such as ranching and milk production to resolve incipient conflicts over land use.

13.25 Several policies were modified to promote diversification:
- Lands considered appropriate for forestry and the authorization process were changed, becoming more discretionnal and as a result more uncertain for investors.
- Two additional measures impacted the promotion of large plantations. The rule on adjacent lands was changed, by which owners that had less than 40 percent of land not used for forestry could now extend their plantations to those lands as long as more than 90 percent of appropriate land was forested. Also, the Prior Environmental Authorization exemption was eliminated for plantations of more than 100 hectares.
- Regarding tax stimulus, a distinction was made in favor of high quality wood projects, reinstating taxation for all other projects.
- A subsidy for small cattle producers was implemented to diversify their production schemes with forestry.

Software

13.26 Unlike the forestry sector, the initial development of the software industry was not promoted by specific policies. Since the end of the 1990s, however, the sector has been granted important tax benefits (exemption from income tax). Recently specific policies have been introduced to promote the sector, but considering the short time transpired it is not possible to evaluate their impact. Nor is there a consensus among actors in the sector on the significance of the new policies.

13.27 The most relevant institutional changes since 2007 include:
- The Industrial Promotion Law explicitly establishes that software sector will receive fiscal incentives to stimulate its development.
- The National Innovation and Research Agency (Agencia Nacional de Innovación e Investigación) was created to promote programs articulating academia and the private sector.

131 The more that vertical policies aim for specific and detailed objectives, the more they lose effectiveness or fall into discretionality or lack of transparency. The current forestry land use policy is an example of this. In attempting to promote geographic diversity, a prior authorization mechanism was created that interferes with private negotiations about land and, due to its slow process, does not respect the biological cycle of nursery plants.
• The Cluster Competitiveness Support Program (*Programa de Apoyo a la Competitividad de Conglomerados*—PACC) was implemented to strengthen cluster projects.

• An agreement between the *Banco de la República* and CUTI seeks to improve financing for the sector, with a credit line of US$4 million to finance projects and US$2 million for guarantees.

**Main Lessons**

13.28 The first lesson learned is that both sectors benefited from a regulatory framework favorable for private investment.

13.29 The two cases analyzed are based on a comparative advantage—natural resources in the forestry sector and human resources in software. While the first is obviously natural, the second was created through the efforts of the public sector and private education institutions. Official support is dissimilar in the two cases: while it is clear and significant in the forestry sector, it is more diffuse and less directly important for software.

13.30 In both cases, the state sought to create a legal framework best adapted to the investment conditions of the sectors. In the case of forestry, limited liability companies were allowed to launch businesses in the sector. The duty free zone also played an important role in major investments such as the cellulose plants and in developing international services in the software industry.

13.31 Another lesson is the strong and visible participation of the state accompanying a sector until it achieves the scale to continue developing on its own. In forestry production, once critical mass in raw materials was achieved, it attracted industrial investment. With sufficient investment, forward and backward linkages begin to develop, with greater social impact. Support is weaker in the software sector, with a number of projects addressing isolated problems. A further push is needed to help the country become established as a regional development pole for the sector, suggesting that space still exists for explicit public sector support.

**Specific issues in the forestry sector**

13.32 Apart from the general lessons learned described above, aspects of public policy were significant in helping generate an international reputation for the sector. Further issues include:

• **Infrastructure** – The multi-modal transportation system is key for a sector that must move considerable volumes and weights compared to other productive activities. Considering the weight of loads, railroad appears to be the best option. However, Uruguay’s railroad infrastructure is deficient as a result of decades of low usage and inadequate maintenance. Further, the public company in charge of railroad service (AFE) is institutionally weak and does not have the resources to take up the task (see Transport Policy Note). As a consequence, most wood is transported by road, leading to a deterioration of the highway infrastructure and over-investment in trucks.

• **Conflict over natural resource use. Water** – The large-scale development of primary production and its subsequent industrialization requires resources that were previously
under-exploited. The Uruguay River and the bi-national conflict with Argentina about the location of the Botnia cellulose plant is a clear example of this.

- **Land** – Conflict over land use have become more relevant due to agricultural development\(^{132}\) in recent years, and not from the forestry expansion in the 1990s. However, the presence of foreign actors in the industry has made this a visible issue.

- **Energy** – One of the sector’s potential benefits as it progresses vertically toward industrial production is the capacity to generate excess energy. Its exploitation depends on long-term investments that require market conditions to sell this excess in an energy market dominated by a state monopoly. The development of an energy market more open to private participation in generation as well as regional integration and the possibility to export extra energy would encourage complementary energy activities in the large forestry investment projects.

- **Qualified labor** – The most frequently mentioned restriction is a lack of human resources specialized in different phases of forestry production. The country’s human resource base is good, but training needs to be channeled to new areas of demand, which requires coordination between the education sector and private enterprise.

- **Public goods and externalities** – The current state of the sector and efforts to increase forested areas and vertically develop the industry require addressing some market failures related to sanitation. The concentration of production in one species increases the risk of disease and infestation. Preventing and combating forest fires is another area of intervention where the state has made progress but can still improve in conjunction with the private sector.

- Bringing new investment into the sector will require greater development of the capital market or access to bank credit. This restriction could also limit the ability of companies to move beyond primary production and start adding more value.

**Specific issues in the software sector**

13.33 The following bottlenecks could affect the sector’s development:

- **Human resources.** The supply and demand for labor are not well aligned. According to CUTI,\(^{133}\) 2,500 new employees need to be hired each year, well above the 700 who graduate annually from public and private institutions. The demand for intermediate qualified employees could also be higher, considering that only two of each ten employees in the sector are engineers.

- **Tertiary public education** programs on information technology are not well developed and the private supply is relatively low also, possibly due to costs. The drop out rate from these programs is relatively high due to multiple factors (work opportunities at the start of a career, deficient secondary mathematics teaching,\(^ {134}\) public education infrastructure problems, etc.). Post-graduate programs are under-developed and complementary training on management and languages is weak. As well, local technicians receive incentives to emigrate to developed countries. Lastly, constant advances within the sector imply the need for education institutions to continually update their study programs.

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\(^{132}\) Especially transgenic soya.

\(^{133}\) CUTI has proposed to increase exports to US$500 million per year in 2010.

• **Communications infrastructure.** According to estimates done by those using the Internet for work in the local market and internationally, Uruguay has a considerable bandwidth deficit. Broadband above 3 megabytes per second does not exist, while in Argentina a 20 megabyte connection is considered residential and in the US 50 megabyte connections are increasingly common. In Europe connections are normally 100 megabytes, and Japan and Korea are installing 1000-megabyte connections. The sector’s growth and global technological advances make communications central for providing services and the efficiency of data transmission will become a limiting factor. New modalities of distance working and telecommuting make it essential to increase available bandwidth.

• **Access to credit.** The software sector is for the most part involved in producing intangible goods, which are not useful for acting as collateral for a loan. Financing for most projects has come from the business owners themselves. Currently, few investors channel venture capital or offer links to international business networks. Only one local organization offers venture capital but it does not appear to be successful, precisely because it does not offer international business opportunities. The private sector and the Banco de la República have established a credit line of US$4 million to finance projects and US$2 million to guarantee investments. The majority of that credit has gone to leading companies, and its impact cannot yet be evaluated.

**Policy Options**

13.34 The development of these two sectors depends in the first place on maintaining the overall investment climate and continuity in state policies. In particular, guarantees should be provided that legal stipulations and pre-announced taxation status to promote investment will remain in place in the long term. Once initial sectoral development has been consolidated, the state will need to adjust its participation to the new needs for infrastructure and the provision of public goods and externalities, which are detailed below.

13.35 Two points should be made before moving on. First, the effectiveness of development policies declines as policies try to achieve very specific objectives. When the promotion activity is generic and the private sector is given space to take decisions, few distortions occur, but when public policies are designed for very specific outcomes, the margin for error increases. Second, vertical policies have the potential to eliminate bottlenecks but at the same time run the risk of rent seeking by interest groups. Mechanisms to evaluate these issues should be incorporated into policy design from the start.

**Forestry**

13.36 Multi-modal transport infrastructure. Transport between plantations and the port is a bottleneck for sector development. In the short term, the infrastructure improvement plan should move ahead under the management of the CFU. This by itself is not sufficient, and authorities should pay attention to the institutional framework for commercial development and transport service management to avoid the experiences of the AFE. Also in the short term, rail and machinery infrastructure should be complemented with inter-phase infrastructure between modes.
of transport. In the medium term, greater private sector participation would help achieve efficiency gains (see Transport Policy Note for more details).

13.37 Capital market and access to long-term funding. Uruguay’s pension savings could help with the sector’s financial needs. Taxation obstacles limit the development of investment funds in the sector. One recommendation is to study the feasibility of arbitration tribunals, which could be more attractive to vertical integration for a limited liability enterprise. In the medium term efficiency gains could be achieved using forestry investment instruments with a greater level of liquidity that ensure a continual flow of funds to a sustainable activity that will certainly become an important component in the export sector.

13.38 Marketing excess electricity. The industrialization of raw materials is energy-intensive, but it can also generate electricity from its own raw material and waste products. Industrialization has the potential to generate and sell excess electric energy. For this, the energy market needs to be improved, with a more propitious climate for private participation. In the short term, projects such as bidding for sales contracts by UTE and the interconnection with Brazil are moving in the right direction. Authorities should attempt to generate the conditions necessary to create contracts directly between private generators and to export excess generation in the medium term, to offer more alternatives and negotiating power to investors in the sector.

13.39 The role of the state in providing public goods and resolving externalities is central for the sector’s economic efficiency. On issues of sanitation and forest fire prevention, legal norms, codes of good conduct and active coordination with the private sector are in place. As the sector grows, protecting against potential sanitary problems becomes more important. The concentration of species and cloning of more productive varieties increases the sensitivity of this issue.

13.40 The sector’s growth has led to disputes over the use of natural resources. Many of these cases can be resolved by providing objective information to the public. In other cases, solutions are needed to address controversies. The National Office for Water and Sanitation (Dirección Nacional de Aguas y Saneamiento), which tends to focus on urban problems, could be strengthened to address these problems, as can the public hearings held by the National Environment Office (Dirección Nacional de Medio Ambiente).

13.41 One area of conflict has been with cattle ranchers and milk producers over land use. Excessive intervention by the state can lead to discretionary actions that inhibit long-term investment. A better strategy would be to encourage joint work among private parties, create spaces for negotiations and facilitate conditions to allow small forestry producers to competitively market their products, as a complement to ranching and milk production.

13.42 To improve qualified human resources, appropriate actions would strengthen coordination between future sectoral demand and preparation in the education system.
13.43 Human resource formation. The availability of qualified workers is insufficient. In the short term, making information available about market conditions to secondary students would be positive. In the medium term, basic science and particularly mathematics preparation in secondary school should be strengthened, to improve access of more students to tertiary school and reduce drop outs at that level. To achieve this, the state should be involved in designing study plans and teaching methods, and increase the number of teachers in these areas.

13.44 Tertiary education institutions should coordinate efforts to provide post-graduate training. The “Promoting Innovation to Enhance Competitiveness” program, supported by the World Bank, could be useful in this effort. Among other things it provides financing to strengthen post-graduate technology programs. General business administration training is widespread in Uruguay and does not require public policy actions.

13.45 Infrastructure. Increasing bandwidth is a priority to improve sectoral productivity. Some important Internet indicators (www.nationmaster.com) show unfavorable results in Uruguay in recent years. 135 Strengthening private sector participation in the sector is highly recommended.

13.46 Financing. The risks implicit in the sector and the lack of tangible assets create problems in accessing external financing. A system of guarantees is helpful, but longer-term financing would be improved through the development of a venture capital industry. However, the size of the sector could be a limitation. As an intermediate step, Uruguay could try to attract venture capital already operating in the region (for example in Brazil, where the industry is more developed). To do so, the legal code should provide the necessary flexibility, as with the forestry sector.

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135 For example, Uruguay had more broadband per capita than Brazil, Chile and Argentina in 1998, but by 2004 both Argentina and Chile had surpassed it. All three countries surpassed Uruguay in the number of Internet subscribers per million people by 2004.
Table 13.1: Policy Options Matrix: Forestry Sector

<table>
<thead>
<tr>
<th>PENDING ISSUE</th>
<th>SHORT TERM</th>
<th>MEDIUM TERM</th>
<th>MILESTONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railway infrastructure</td>
<td>See Transport Policy Note</td>
<td>See Transport Policy Note</td>
<td>See Transport Policy Note</td>
</tr>
<tr>
<td>Developing a market to sell excess energy</td>
<td>See Energy Policy Note</td>
<td>See Energy Policy Note</td>
<td></td>
</tr>
</tbody>
</table>
| Channeling national savings to forestry            | Improved taxation of trusts and investment funds to avoid arbitrage with limited liability companies | Depth and liquidity for financial instruments issued by the sector | • Revised tax treatment for portfolio investments in the sector equivalent to the treatment of IRAE for third party investments  
• Modification of tax legislation in accord with this revision  
• Joint work with issuers, AFPs and brokers to generate liquidity for the instruments |
| Conflict over natural resources (water and land)    | Greater agility in processing prior environmental authorizations to avoid halting project execution due to permit delays  
Publicizing information on the benefits and externalities of joint cattle ranching-forestry production | Improve the institutional framework for public hearings  
Define general criteria for conflict resolution that provide security to investment projects  
Stimulate mechanisms to market the production of small producers | • Improved prior environmental authorization procedures, simultaneously with or before the DGF  
• Strengthened DINASA  
• Introduction into the MGAP’s Cattle Ranching Program of indicators on the profitability of joint cattle-forestry production  
• Creation of institutions in the medium term for public hearings and conflict resolution |
Table 13.2: Policy Options Matrix: Software Sector

<table>
<thead>
<tr>
<th>Pending Issue</th>
<th>Short Term</th>
<th>Medium Term</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>Develop a strategic plan for the sector Improve sectoral labor information</td>
<td>Improve mathematics teaching in secondary school Increase the number of teachers in this area Promote coordination between education institutions to develop post-graduate programs</td>
<td>• Strategic plan • Construction and publication of labor supply and demand surveys • Creation of a system to measure the gaps between needs and resources • Increased number of engineering graduates • Strengthened business administration and language skills of engineers • Implementation of plans to help labor insertion without abandoning studies • Implementation of distant learning courses • Establishment of standards for the sector</td>
</tr>
<tr>
<td></td>
<td>Develop programs to facilitate insertion into the labor market without abandoning studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productive Finance</td>
<td>Deepen programs to finance innovative companies</td>
<td>Improve access to long-term financing Provide incentives to create venture capital funds</td>
<td>• Creation of a system of guarantees • Incentives to attract venture capital with access to international networks • Creation of a business information system in line with international standards • Promotion of internal and external association activities</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Improve the information transmission system</td>
<td>Improve the information transmission system</td>
<td>• Increased bandwidth in line with international standards • Strengthened state procurement system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEX

Forestry

Figure A13.1: Forested Area (Hectares)

Source: DGF, MGAP

Figure A13.2: Log Wood Extraction (1000 m3)

Source: DGF, MGAP

Figure A13.3: Exports in Physical Volume (1000 m3)

Source: DGF, MGAP

Figure A13.4: Wood Exports (Thousands US$)

Source: DGF, MGAP

Figure A13.5: Land Prices in Uruguay (Thousands US$ per hectare)

Source: MGAP
Software

Figure A13.6: Total Sales — Local and External Markets

Source: CUTI

Figure A13.7: Export Growth — Total and Software Sector (1990 = 100)

Source: González and Pitaluga (2007)

Figure A13.8: Software Sector Employment (Number of Jobs)

Source: González and Pitaluga (2007)

Figure A13.9: Average Monthly Salaries, Software Sector (Current US$)

Source: González and Pitaluga (2007)