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Uruguay
Public Expenditure Review

Mitigating Fiscal Risks

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THE ORIENTAL REPUBLIC OF URUGUAY

Currency Equivalents
Exchange Rate Effective as of March 31, 2013

Currency Unit	**Uruguayan Peso (UR$)**
US$ 1.00	UR$ 18.95

Government Fiscal Year
January 1 – December 31

Weights and Measures
Metric System

Abbreviations and Acronyms

AFAP	*Administradoras de Fondos de Pensión* (Pension Funds Administrators)
AFE	*Administración de Ferrocarriles del Estado* (State Railways Administration)
ANCAP	*Administración Nacional de Combustibles, Alcoholes y Portland* (National Administration of Fuels, Alcohol and Portland)
ANEP	*Administración Nacional de Educación Pública* (National Agency for Primary Education)
ASSE	*Administración de los Servicios de Salud del Estado* (State Health Services Administration)
ATyR	*Asesoría Tributaria y Recaudación* (Tax and Collections Assistance Office)
bbl	barrel
BCU	*Banco Central del Uruguay* (Central Bank of Uruguay)
BPS	*Banco de Prevision Social* (Social Security Bank)
BSE	*Banco de Seguros del Estado* (State Insurance Bank)
CCG	Consolidated Central Government
CELADE	*Centro Latinoamericano y Caribeño de Demografía* (Latin American and Caribbean Demographic Center)
CG	Central Government
COFIS	*Contribución al Financiamiento de la Seguridad Social* (Contribution to Social Security Financing)
DGI	*Dirección General Impositiva* (General Directorate of Taxation)
DISSE	*Dirección de Seguros Sociales por Enfermedad* (Directorate of Social Insurance for Sickness)
ECH	*Encuesta Continua de Hogares* (Continuous Household Survey)
ENHA	*Encuesta Nacional de Hogares Ampliada* (Expanded National Household Survey)
EU	European Union
FONASA	*Fondo Nacional de Salud* (National Health Fund)
GDP	Gross Domestic Product
GWh	Giga Watt hour
HP	Hodrick-Prescott
IASS	*Impuesto a la Asistencia de la Seguridad Social* (Social Security Assistance Tax)
IMESI	*Impuesto Especifico Interno* (Excise Tax)
IMESSA	*Impuesto Especifico a los Servicios de Salud* (Tax on Health Services)
ILO	International Labor Organization
IMF	International Monetary Fund
INAU	*Instituto del Nino y Adolescente del Uruguay* (Uruguayan Institute for Children and Youth)
INE	*Instituto Nacional de Estadística* (National Bureau of Statistics)
IP	*Impuesto al Patrimonio* (Wealth Tax)
IRAE	*Impuesto a las Rentas de la Actividades Económicas* (Income Tax on Economic Activities)
IRIC	*Impuesto a las Rentas de la Industria y Comercio* (Corporate Income Tax)

IRNR	*Impuesto a la Renta de Non-Residentes* (Non-Resident Income Tax)
IRP	*Impuesto a las Retribuciones Personales* (Tax on Salaries)
IRPF	*Impuesto a la Renta de las Personas Físicas* (Personal Income Tax)
IVS	*Invalidez, Vejez y Sobrevivencia* (Disability, Old Age and Survivors)
LAC	Latin America and Caribbean
MEF	*Ministerio de Economía y Finanzas* (Ministry of Economy and Finance)
MIDES	*Ministerio de Desarrollo Social* (Ministry of Social Development)
MTOP	*Ministerio de Transporte y Obras Publicas* (Ministry of Transport and Public Works)
MTSS	*Ministerio de Trabajo y Seguridad Social* (Ministry of Labor and Social Security)
MVOTMA	*Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente* (Ministry of Housing, Regional Planning and Environment)
MW	Mega Watt
MWh	Mega Watt hour
NFPS	Non-Financial Public Sector
OECD	Organization for Economic Cooperation and Development
OPP	*Oficina de Planeamiento y Presupuesto* (Office of Planning and Budget)
OSE	*Obras Sanitarias del Estado*
PANES	*Plan de Asistencia Nacional a la Emergencia Social* (Social Emergency Program)
PER	Public Expenditure Review
PIAS	*Plan Integral de Atención de la Salud*
PPP	Purchasing Power Parity
RFF	Rules-based Fiscal Framework
SNIS	*Sistema Nacional Integrado de Salud* (Integrated National Health Care System)
SOE	State-Owned Enterprise
TE	Tax Expenditure
TFP	Total Factor Productivity
UdelaR	*Universidad de la Republica* (University of the Republic)
UTE	*Administración Nacional de Usinas y Transmisiones Eléctricas* (Electric Transmission of Uruguay)
VAT	Value Added Tax

Vice President:	Hasan A. Tuluy
Country Director:	Penelope J. Brook
Sector Director:	Rodrigo A. Chaves
Sector Manager	Auguste Tano Kouame
Sector Leader:	Zafer Mustafaoglu
Task Team Leaders:	Norbert Fiess and Hannah Nielsen

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Executive Summary

1. **Uruguay recorded a strong macroeconomic performance in the past years.** In 2011, Uruguay saw the ninth consecutive year of economic expansion since its 2002 crisis. This marked one of the longest growth periods in the country's history. Debt levels, which had more than tripled between 1999 and 2002 (from some 30 percent to over 100 percent of GDP), declined significantly to its current level of about 50 percent of GDP following a debt rescheduling exercise and a successful adjustment program. Prudent macroeconomic policies, improvements in structural areas, along with favorable external economic conditions, such as buoyant demand for Uruguay's main export products and a booming regional economy, have contributed to the strong economic performance and helped Uruguay to re-gain its investment grade in April 2012.

2. **Social indicators continue to improve and the unemployment rate is historically low.** Economic growth and well targeted social programs led to a substantial decrease in poverty levels, with moderate poverty declining from 34.4 percent in 2006 to 13.7 percent in 2011 and extreme poverty falling to 0.5 percent in 2011. On the back of sustained high economic growth, unemployment reached a new record low of 6 percent in 2011.

3. **Fiscal policies have contributed to the strong macroeconomic performance and improvements in social indicators.** Continued prudent fiscal policies coupled with the debt restructuring and significantly improved debt management following the 2002 crisis contributed to the macroeconomic stability of the country. This has also helped open up fiscal space that was used to strengthen social programs. During the 2008/09 crisis, this even enabled countercyclical policies that prevented vulnerable groups from falling back into poverty. This area continues to be a priority for investment in Uruguay with social protection representing 26 percent of central government spending in 2010.

4. **Uruguay has therefore successfully addressed a number of challenges faced in the past.** A previous World Bank report on Uruguay's sources of growth (World Bank 2005b) identified several challenges for long-term growth, including high debt levels, financial fragility, high unemployment and poverty and an explosive trend in social security expenses. As will be outlined in this PER, in most, if not all, of these areas, substantial progress has been made and as a result the Uruguayan economy today is considerably less exposed to short-term risks.

5. **There are however a number of policy-driven and exogenous factors that will affect fiscal space over the longer term.** In addition to the effect of climate variability on fiscal costs of energy policies, significant changes in the social protection and health sectors are a critical factor to consider in fiscal planning. Uruguay is currently going through an advanced demographic transition. The combination of an ageing population with recent increases in pension eligibility presents an increasing fiscal challenge. However, Uruguay has been trying to address this emerging problem, while also protecting those who are vulnerable. In the late 1990s, Uruguay implemented a pension reform that introduced a private savings component in addition to the traditional mandatory social insurance pillar. The most recent social protection reform in 2008-2009 facilitated access to pension benefits for old-age low-income households. In addition,

in 2007 the Parliament approved a comprehensive health reform program to create a more harmonized health care system and to improve equity in access to health services.

A. Fiscal Trends and Fiscal Incidence

6. **Expenditure levels in Uruguay are higher than the Latin American and Caribbean (LAC) average, but comparable to the global average. The share of rigid expenditure has decreased.** Total expenditure exceeds 30 percent of GDP compared to a LAC average of just below 25 percent. The overall increase in expenditure was mostly driven by the economic recovery from the 2002 crisis, but more recent increases also reflect counter-cyclical measures to mitigate the global financial crisis in 2008 and a strengthening of social programs to protect the vulnerable. The rigid part of public expenditure (wages, pensions and interest payments) has decreased considerably since 2000, but has remained high at 56 percent of total expenditure in 2011. Transfers nearly doubled in real terms between 2000 and 2011, largely due to the structural reforms in health and social protection. Central government expenditures are aligned with Government priorities and are largely concentrated in social protection and security; education and culture; and defense and national security.

7. **Tax revenue has increased substantially over the past decade and is relatively high, when compared to LAC, but remains well below the OECD average.** In 2009, Uruguay, with 22.5 percent, had the third highest tax-to-GDP ratio in the region, only exceeded by Brazil and Argentina. Uruguay is making progress in increasing tax compliance, but the tax collection could be significantly increased given high tax expenditures when compared to the region. Although the 2007 tax reform strengthened the importance of direct taxes, indirect taxes still account for the largest share of tax revenues, with VAT and IMESI (*Impuesto Específico Interno*, excise tax), accounting for 9.9 percent and 2.1 percent of GDP in 2011, respectively. Although a relatively small portion of total revenue, the primary current balance of SOEs represents a major source of volatility for public revenue.

8. **The current fiscal system is effective in terms of fiscal redistribution and supports the creation of equal opportunities for all.** Uruguay achieves a nontrivial reduction in inequality and poverty when all taxes and transfers are combined. In comparison with five other countries in Latin America, Uruguay's fiscal system ranks second in terms of inequality reduction, first in terms of poverty reduction and comes out on top in terms of effectiveness in poverty reduction. The high rating on effectiveness indicates that, relative to its economic size, Uruguay gets the most mileage out of public spending and taxation in terms of reducing extreme and moderate poverty.

9. **Social spending on education and health is progressive except for tertiary education, which is a neutral in relative terms.** Contributory pensions are neutral in absolute terms, i.e. they are equalizing, but 5 percent of the extreme and moderate poor do not to benefit from the existing safety net system, which warrants that further steps are necessary to eradicate extreme poverty.

10. **To protect Uruguay's inclusive growth agenda, it is important to safeguarding fiscal sustainability in the long-run.** While fiscal performance has improved significantly over the

last decade and is not of short-term concern, Uruguay faces important challenges mainly related to population aging, which could threaten current levels of fiscal redistribution and social assistance in the longer-term. Section B in Chapter 2 identifies the main fiscal risks at the sector level and Section C presents options to help safeguard long-term fiscal sustainability.

B. Assessment of Fiscal Risks in Health, Social Protection and Energy

11. **Population aging and variable energy supply are risk factors for fiscal sustainability in Uruguay.** While population aging is expected to increase public expenditures in the health sector and the pension system in the long term (World Bank, 2011), existing linkages between rainfall and energy generation, may increase fiscal vulnerability in the short term due to greater rainfall volatility and growing energy demand.

12. **The analysis of fiscal risks in health, social protection and energy is also of interest from a more generic perspective, as it illustrates fiscal challenges along different dimensions:** For the health sector, fiscal risks are largely concentrated on the expenditure side. Social protection faces long-term challenges on both the expenditure and the revenue side, thorough social security contributions. The link between energy production and the government balance highlights important challenges for government revenue through the primary balance of the electricity company, but also bears potential for the accumulation of contingent liabilities by the potential of debt accumulation by UTE to finance shortfalls.

Health

13. **Uruguay launched a health sector reform in 2005 that included institutional and financial changes as well as changes in the delivery of health services.** The reform of the health system has been a key priority of the *Frente Amplio* Government. Important reforms that have accompanied these institutional changes are: i) the creation of a common set of rules for health insurance coverage, including the unification of insurance rates across the various sub-systems and an adjustment of age and gender risk premiums; ii) a gradual increase in population coverage; iii) a substantial shift in the epidemiological focus towards preventive intervention; iv) a change in the health care model towards an integrated approach. The reform also aims to improve the efficiency of health service delivery.

14. **The government's priority for health has been reflected in a greater public resource allocation to the health sector** since 2005. In 2011, public health expenditures stood at over UR$43,800 million, equivalent to 4.9 percent of GDP. Between 2005 and 2011, the public budget and social security funds (payments and contributions) for the health sector increased in 2010 constant value terms at an annual average rate of 13.4 percent.

15. **The coverage of the national health insurance system has increased significantly.** In 2007, 23.7 percent of the population was insured under benefit plans that differed widely in terms of the health services provided. In contrast, in 2010, 47.4 percent of the population was covered by a universal benefit plan, which is financed by a single contributory scheme. Coverage has increased as the Government has incorporated previously excluded segments of the

population. As a result, health insurance coverage has become near universal, with about 95 percent of Uruguay's 3.4 million population covered.

16. **The fiscal cost of the reform has been so far moderate.** The biggest challenge facing the National Health System is the containment of health care costs given Uruguay's demographic and epidemiological transition. This requires a radical shift in the current health care model towards a greater focus on efforts to address the country's current and future epidemiological profile by promoting health and preventive care and by diagnosing and controlling chronic non-communicable disease risk factors. Addressing these challenges will lead to significant improvements in health outcomes and, in consequence, reduce the financial burden of health services.

17. **The evolution of the health reform in Uruguay has reached a point where new policy instruments are needed for economic regulation of the sector.** A key concern for Uruguay's health sector is that the health care coverage under the current universal benefit plan is not explicitly defined. Controlling the expansion of the benefits plan, which determines the set of services for the beneficiaries, will be crucial to contain the pressure for expanded and improved health care services. **The establishment of the benefit plan is therefore a central topic for health regulation**, and its concrete definition and detailed explanation linking (through illness and specific health conditions) health programs with specific care services covered, have significant consequences in terms of efficiency, institutional quality and fiscal sustainability, especially because this linkage is critical for the quality and capability of the information system.

18. Regulation will also need to address short-comings in the current **health information systems to establish a framework for monitoring and evaluating the benefit plan**.

Social Protection

19. **Uruguay is one of the most advanced countries in Latin America with regards to the coverage of its pension system, both among active workers and the elderly.** More than 70 percent of the occupied labor force is enrolled and contribute to a pension system. Furthermore, a large proportion of the elderly (between 86 and 98 percent, depending on the source) receive a monthly benefit.

20. **The system seems to be financially sustainable both in the short and long term.** Pension expenditures by BPS, at around 6.6 percent of GDP in 2010 and 7.5 percent of GDP in 2011, will reach 8.3 percent by 2060. Revenues will continue to be relevant and the total deficit by 2060 is projected at less than 2 percent of GDP. While this seems to be a manageable trend, it is important to monitor the evolution of these figures over time and introduce corrections when and if necessary.

21. **An ageing population presents some challenges, but down-sizing the public pay-as-you-go (PAYG) component is expected to partly offset the impact on the public budget.** While the number of contributors increased by 40 percent from 2000 to 2010, in the longer term, the number of retirees is expected to increase due to the law easing access to retirement pensions, the maturity of the system and the population aging. This would bring down the ratio of

contributors to retirees, making the system more expensive; the contributor to recipient ratio is expected to decline from 2.7 in 2010 to 1.7 in 2060. The effect of aging on the public budget will however be partly offset by the downsizing of the PAYG component, which has substantially reduced pension liabilities under the public PAYG component, as parts of the contributions and future benefits have been transferred to the individual accounts pillar.

22. **There are a few important challenges for authorities in the short and medium term, which will require actions and adjustments to regulations and parameters.** The most relevant areas include:

- Develop a set of key indicators to facilitate monitoring of the entire social security system in the long term.
- Replacement rates paid by the PAYG scheme to pensioners are now at 50-70 percent of average wages. However, as the transition resulting from the 1996 reform advances, the role of the funded scheme will become more important, and it will be critical to assess whether total benefits continue to be adequate.
- While projections indicate no critical financial issues in the medium term, if mortality continues to decline in the long term some parametric adjustments may be necessary. Defining these changes well in advance would reduce the political conflicts that such reforms could generate, hence facilitating the discussion and reaching a society wide consensus.

Energy

23. **Fiscal performance and planning is also affected by the impact of climate variability on the fiscal costs of energy policies.** This is especially the case as electricity demand is assumed to grow in line with projected real GDP growth. The main transmission channel is the state-owned electricity company UTE, as volatility in UTE's balance of accounts is a leading factor in the volatility of the overall government balance.

24. **Hydropower generation is the main source of electricity in Uruguay and rainfall determines its capacity.** Therefore, with rainfall volatility increasing there has been an increase in electricity volatility. In the short run, any shortfalls need to be covered by either electricity imports or alternative energy source, consisting mainly of thermal electricity generation. Limited availability of electricity imports from Argentina and increasing oil prices have made electricity generation in times of droughts very costly. Different scenarios show that the cost for electricity generation in a combined event of low rainfall and high oil prices can reach over 2 percent of GDP.

25. **Effective mitigation against the impact of droughts on energy spending can help reduce volatility and preserve fiscal space.** While the recently established stabilization fund helps smooth UTE's costs, given increasing rainfall volatility and oil prices, the Government of Uruguay needs to invest in alternative means for generating electricity, improve energy efficiency and reduce losses. The fact that half of the fund's resources have already been used up in the first half of 2012 due to low rainfall underscores this point. Without a change in strategy, the cost of assuring electricity supply will remain a main source of volatility for government

revenue as well as a possible liability as debt will have to be issued on a continuous basis to cover UTE's possible budget shortfalls. Regarding the diversification of energy sources, progress is being made with the installation of wind farms. Given the limited electricity import potential from Argentina, increased connectivity with Brazil, which has more surplus potential in the future than Argentina, is another possibility to diversify electricity supply. Alternative financing options should also be considered, including the transfer of extreme weather risks to international financial markets, as weather risks have the potential to lead to substantial debt accumulation. Another option is the establishment of contingent credit or debit lines at concessional terms, which could offer financing at lower costs.

C. Towards a Rules-based Fiscal Framework (RFF) for Enhanced Fiscal Sustainability

26. **There is no single best practice for a RFF and different combinations of policy rules, procedural rules, transparency standards and a monitoring and enforcement mechanism are possible.** Even if Uruguay's objective was not to adopt a RFF, fiscal policy could benefit from improvements in some of the prerequisites of an RFF, such as greater fiscal transparency and stronger incentives for fiscal discipline.

Enhancing Fiscal Transparency

27. **Above all, there is scope for increased fiscal transparency.** Even though substantial progress has been made in this area (e.g. the annual publication of macroeconomic assumptions for the fiscal projections in the *Rendición de Cuentas*), there is a case for a more timely access to reliable and comprehensive data on fiscal developments, as well as long-term scenarios capturing the fiscal impact of population dynamics and contingent liabilities in energy. The call for more thorough and timely data also applies to the main sectors, such as health and social protection, which impact the government balance. Given Uruguay's vulnerability to various types of fiscal risk—stemming from exchange rate, interest rate, and terms of trade fluctuations—it would also be useful to periodically conduct stress tests and risk assessments on the public sector balance sheet.

Improving the Budgetary Process and Medium-Term Planning

28. **The adoption of medium-term programming is also recognized as a prerequisite for informed policymaking**. A rolling multiyear macro-fiscal program is an essential component of a fiscal framework to anticipate necessary reforms and to permit compliance with a debt target. Also, it further ensures that policymakers are accountable for adhering to budget targets.

29. **Uruguay could also benefit from a pay-go procedural rule.** In view of a common pool problem due to collegial budgetary decision-making and the openness to amendments during the budget debate, Uruguay would benefit from the introduction of a pay-go procedural rule, which requires that any budget proposal that involves a revenue loss or expenditure increase needs to specify an appropriate offset of the budgetary costs.

Independent Fiscal Watchdog

30. **An independent fiscal council can play a crucial role in strengthening incentives for fiscal discipline, whether as a complement to a fiscal rule or as a free-standing set-up.** As

part of good governance in a democratic society, and more immediately, to enhance the credibility of the government in financial markets, an independent fiscal watchdog could be established who can vouch for the reliability of government accounts and, if adopted, compliance with fiscal rules. In line with good practices being developed in some advanced and emerging-market economies, such an institution can be most useful in real-time costing of legislative proposals and in preparing realistic macro-fiscal forecasts. Preferably under the collective leadership of a council or a group of experts and supported by competent technical staff, this institution can be instrumental in breaking down the deficit bias - with or without adherence to more formal fiscal rules.

Design Options for a Fiscal Rule

31. **Should Uruguay choose to adopt a fiscal rule, several design options are possible.** Among the various types of rules that have been implemented elsewhere, it seems there is a strong case for Uruguay to consider a rule intended to reduce public indebtedness even further. This would help prevent future financial crises, reduce debt to a level consistent with higher sustained economic growth and free up fiscal space for public investment by reducing interest expenditures. Design options include a debt ratio rule with a structural primary surplus target, along the lines of Brazil's main policy rule, or a real debt rule with a nominal target for the primary balance as envisaged in Hungary.

Key Policy Implications for Uruguay

Health Sector	Develop health sector-specific economic regulation, to: • Accelerate the standardization and protocolization of PIAS benefit plan; establish normative links between priority disease programs and benefits through specific illness and health conditions; strengthen the mechanisms for auditing benefits in the field. • Develop new policy instruments for determination of insurance premium, involving: (i) a move towards microcosting of services; (ii) conducting regular reviews of competition conditions among insurers; and (iii) conducting more in-depth analysis of significant cost differentials between the different regions of the country. • Develop and improve health information systems to better evaluate and monitor benefit plan; present the recent financial evolution together with medium and long-term projections; disseminate more detailed data and composite indicators.
Social Security System	• Enhance the redistributive and anti-poverty capacity through identifying the causes behind remaining exclusion from the existing social safety net program, especially of the elderly population. • Develop a set of key indicators to facilitate monitoring of the entire social security system in the long term. • Identify parametric adjustments that might be necessary due to a further decline in mortality well in advance to reduce possible political conflicts of such a reform and facilitate the discussion to reach a society wide consensus.
Energy policies	• Diversify energy sources as the main mitigation measure, as well as increase connectivity with Brazil. • Consider alternative financing options for possible shortfalls, including the transfer of weather risk to international financial markets and contingent credit lines at concessional terms.
Rules-based fiscal framework	• Enhance fiscal transparency through timely access to (i) reliable and comprehensive data on fiscal developments and (ii) information on methodology and macroeconomic assumptions underlying short- to medium-term fiscal forecasts, and (iii) long-term scenarios, including the potential fiscal pressures of population aging. • Improve the budgetary process and medium-term planning by considering a rolling multiyear macro-fiscal program and the introduction of a pay-go procedural rule as an essential component of a fiscal framework. • Establish an independent 'fiscal watchdog' which can play a crucial role in strengthening incentives for fiscal discipline, whether as complement to a fiscal rule or as free-standing set-up by mitigating excessive debt accumulation and procyclicality. • Consider a permanent fiscal framework to consolidate the gains from the successful fiscal adjustment and to fully restore credibility in financial markets. Options include a *debt ratio rule* or a *real debt rule*.

Part 1

Country Context, Fiscal Trends and Fiscal Incidence

Chapter 1. Country Context and Fiscal Trends in Uruguay

A. COUNTRY CONTEXT AND ECONOMIC BACKGROUND

1.1. This chapter looks at the current economic context in Uruguay and the country's fiscal structure and trends. A number of interesting points stand out, starting with the strength of the economy in Uruguay. Part of this strength could be as a result of lessons learned from the 2002 crisis the country went through. While hit by the 2008/09 global financial crisis, Uruguay quickly rebounded to pre-crisis growth. Though problems such as inflation remain, the economic prospects in Uruguay are strong due to its solid macroeconomic framework and policies. This is supported by the improvements in the fiscal balance. Uruguay's debt profile has improved due to sound debt management, an appreciating peso and its GDP growth. This has placed Uruguay in a better position to cope with external shocks. Evidence for these improvements is the re-attainment of its investment grade in April 2012.

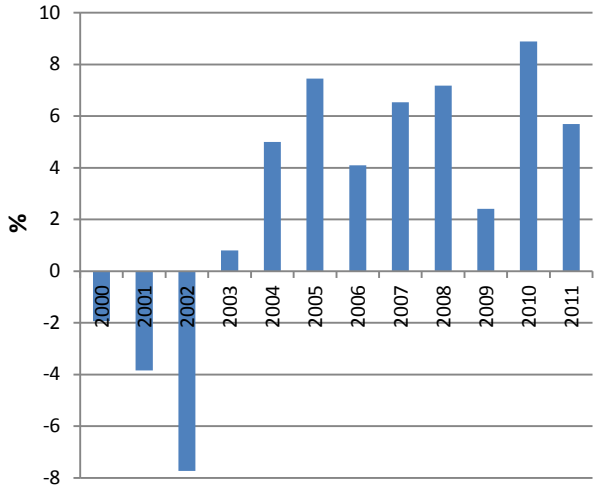
1.2. At the same time, Uruguay continues to face certain challenges that could undermine progress made to date. Spending initiatives are not always connected to well-defined revenue sources, possible affecting fiscal discipline. Revenue sources have been steadily increasing since 2002, with taxes accounting for the main source of this revenue. This should continue to increase as Uruguay is tackling tax compliance. At the same time, indirect taxes, which tend to be a more regressive form of tax, still represent the biggest share of tax resources. Furthermore, highly volatile primary current balance of state-owned enterprises introduces increased volatility in the overall non-financial public sector balance.

A.1. ECONOMIC DEVELOPMENTS

1.3. **Uruguay's growth and poverty reduction has been remarkable in the last decade.** In 2011 Uruguay saw the ninth consecutive year of economic expansion since its 2002 crisis. This marked one of the longest growth periods in the country's history. Alongside this, there has been a significant reduction in moderate poverty, from 34.4 percent in 2006 to 13.7 percent in 2011. Furthermore, unemployment rates continued to decline, reaching a historical low of 6.0 percent in 2011. Prudent macroeconomic policies, improvements in structural areas, along with favorable external economic conditions, such as buoyant demand for Uruguay's main export products and a booming regional economy, have contributed to the strong economic performance.

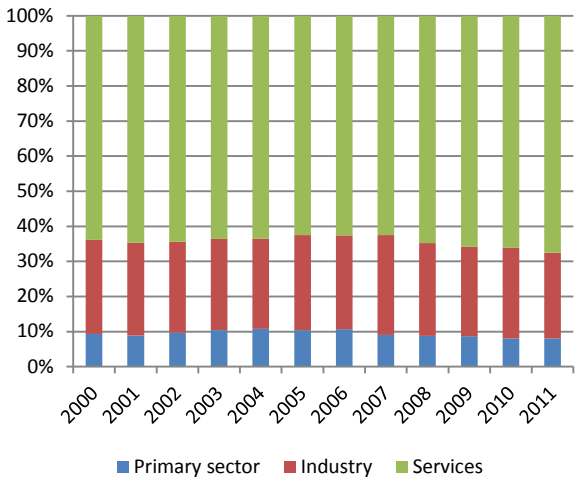
1.4. **The impact of the 2008/09 crisis was significant but short-lived.** The 2008/09 global financial crisis affected Uruguay significantly by reducing economic growth in 2009 to 2.4 percent, down from 7.2 percent in 2008. However, the economy picked up its previous momentum quickly, with GDP growing by 8.9 percent again in 2010 and by 5.7 percent in 2011. The impact of the crisis did not lead to deterioration in social indicators, as unemployment remained low and existing social programs contributed to protecting the vulnerable.

Figure 1.1: GDP growth rate, 2000-2011



Source: Central Bank of Uruguay

Figure 1.2: GDP by economic sector (percent), 2000-2011



Source: WB staff calculations based on data from Central Bank of Uruguay
(*) Note: Ratios are calculated in real terms on GDP excluding taxes less subsidies on products.

1.5. **Inflationary pressures continue to be a recurring problem for the economy.** Although prices have successfully been stabilized in the 1990s, strong inflationary pressures, including rising international prices, a strong internal demand and supply restrictions for certain goods, led to an increase in the annual average CPI inflation from 6.9 percent in 2010 to 8.6 percent in 2011. In 2011, the Central Bank increased the monetary policy rate three times (from 6.5 percent in March to 8.75 percent in December) to curb inflation and to help realign inflation expectations with the official inflation target range (4 to 6 percent). However, the appreciating trend of the local currency reduces the margin for contractive monetary policies without further appreciating the nominal exchange rate.

1.6. **Looking forward, the economic outlook for Uruguay is generally positive.** Provided the current solid macroeconomic framework stays in place, the economy is expected to keep growing in the medium term, though at a slower pace. It is also expected to converge to a long-term growth rate of about 4 percent. Internal demand is projected to remain the key driver of economic growth, as consumption, favored by higher salaries and low unemployment, is expected to increase and investment, supported by large FDI inflows, is expected to remain strong.

1.7. **A Debt Sustainability Analysis indicates that the trajectory of public debt is stable and declining.** Under conservative assumptions, the public debt-to-GDP ratio (in gross terms) is projected to decline to 37 percent by 2016. The impact of simulated negative shocks is consistent with Uruguay's public debt profile: while an increase in the real interest rate has a limited effect on public debt, an exchange rate shock would lead to a high, but declining, debt ratio. Public debt sustainability is therefore not a major concern in the short and medium term.

Table 1-1: Selected Macroeconomic Indicators (in percent, unless otherwise indicated)

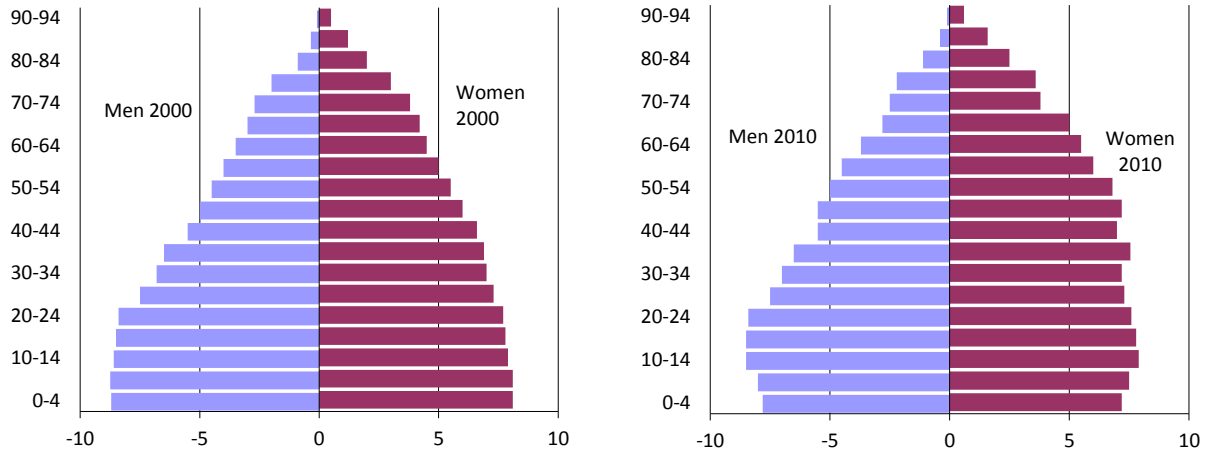
	2006	2007	2008	2009	2010	2011
National accounts						
Real GDP growth (%)	4.1	6.5	7.2	2.4	8.9	5.7
GDP (US$ billions)	19.6	23.4	30.4	30.5	39.4	46.7
External sector						
Current account balance (% of GDP)	-2.0	-0.9	-5.7	--1.5	-2.2	-3.1
Exports of goods and services (volume, % change)	5.6	4.8	8.5	5.7	6.0	5.8
Imports of goods and services (volume, % change)	15.7	5.9	24.4	-6.8	14.4	11.2
Trade balance (% of GDP, incl. services)	-0.5	0.7	-3.2	1.4	1.3	0.0
Prices						
CPI (% change, end of period)	6.4	8.5	9.2	5.9	6.9	8.6
Exchange rate (average)	24.1	23.5	20.9	22.6	20.1	19.3
Real effective exchange rate (2005=100, + = depr.)	127.7	126.0	114.5	110.1	100.0	96.1
Labor market (%)						
Unemployment (INE) 1/	10.9	9.2	7.7	7.3	6.8	6.0
Fiscal (% of GDP)						
Primary balance (deficit (-)/surplus (+))	3.7	3.6	1.4	1.2	1.9	2.0
Revenues 2/	27.0	26.2	26.0	27.3	27.5	27.8
Current primary surplus of public enterprises	1.4	2.4	0.9	1.5	2.3	1.1
Current expenditures 2/	22.3	22.4	22.4	24.4	24.5	24.3
Public investment	2.6	2.9	3.3	3.5	3.6	2.7
Current Primary Surplus BSE	0.0	0.2	0.2	0.2	0.4	0.2
Current Primary Surplus Local Governments	0.4	0.2	0.1	0.3	0.0	0.1
Current Primary Surplus CBU	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
Interest payments	4.2	3.6	2.9	2.9	3.0	2.9
Overall fiscal balance (deficit (-)/surplus (+))	-0.5	0.0	-1.6	-1.7	-1.1	-0.9
Savings and investment (% of GDP)						
Gross domestic investment	19.5	19.5	23.2	19.5	18.6	19.4
Gross national savings	17.5	18.6	17.5	19.2	17.4	17.5
Foreign savings	2.0	0.9	5.7	0.3	1.1	1.9
Indebtedness						
Public sector gross debt (% of GDP) 3/	70.1	69.7	54.5	71.8	58.2	55.9
o/w foreign-currency denominated (% of total public sector gross debt)	81.6	69.4	69.8	65.3	56.3	48.2

1/includes small cities (less than 5,000 inhabitants). Period average.
2/Covers Central Government and BPS
3/Debt-to-GDP ratio calculated using eop exchange rate

A.2. DEMOGRAPHIC DEVELOPMENTS

1.8. **The demographic structure of Uruguay has changed significantly in the past decade** (Figure 1.3). Uruguay's population in 2010 is estimated at 3,356,584, 51.7 percent of the population is female and 48.3 percent male. A comparison between 2000 and 2010 shows that the demographic pyramid has narrowed in the infant population segment (under age 10) and widened significantly in the population segment corresponding to age 30 and up. Uruguay's population is aging, with a high percentage in the middle population segment.

Figure 1.3 Demographic structure of Uruguay, 2000 and 2010

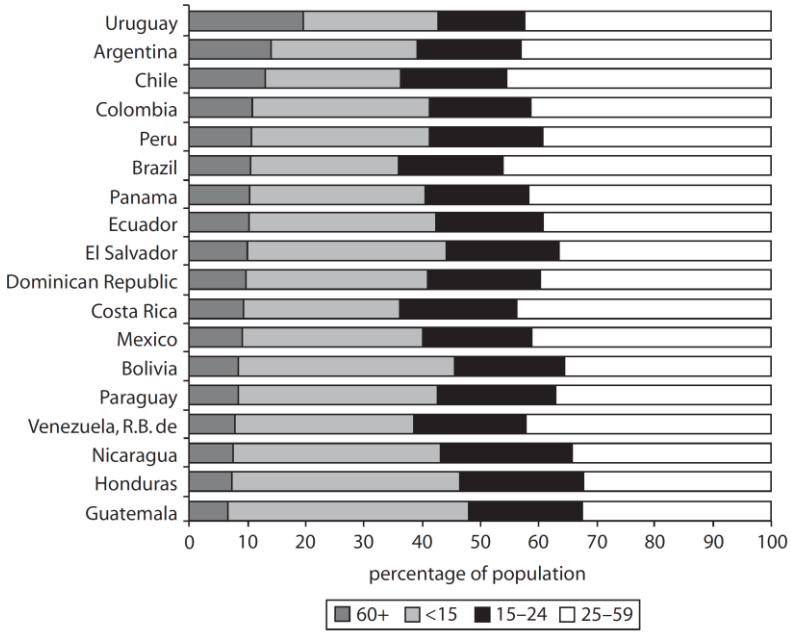


Source: INE

1.9. **Uruguay's aging process is the most advanced in the LAC region.** Figure 1.4 shows that Uruguay has the oldest population in LAC, followed by Argentina and Chile. Uruguay also has a low fertility rate, which with 2.1 children is just at the replacement rate.

1.10. **Population aging has a considerable impact on the Uruguay's social security system.** In particular, health system will be affected as an older population will require and demand more expensive health services (see Chapter 3). This impact will also extend to other sectors, especially pension payments, which are discussed in Chapter 4. See also Box 1-1 for an overview of the impact on population aging on public expenditure in LAC.

Figure 1.4: Population structure by age



Source: Cotlear (2011)

Box 1-1: The impact of population aging on public expenditures

Population aging is a global issue that affects a growing number of countries around the world. According to a recent World Bank report on 'Population Aging: Is Latin America Ready?', economic growth in Latin America will be more challenging in countries with large numbers of elderly people. Furthermore, meeting health care, pension, and other needs will be especially difficult for low- and middle-income countries.

The study finds that while demography will play an important role in driving public expenditure growth, policy choices will have an even greater effect. For LAC as a whole, an aging-only scenario (where policy remains frozen) suggests a modest increase in social expenditures of 1 to 2 percent of GDP over the next 40 years—since the reduced pressure to spend on education can finance a significant part of the expected increase in the cost of pensions (albeit there may also be increased demand for educational spending related to life-long learning or other new educational programs)—at least in countries that have moved away from the pay-as-you-go (PAYG) system. The impact of demographics on health care is also relatively small.

A more likely policy path is one of convergence toward the existing OECD model. In this scenario, the greatest challenge turns out to be health care. In part, this is because many countries have already reformed their pension systems in ways that shift future costs away from government budgets. The projections for the increase in pension costs for Latin American and the Caribbean (LAC) are similar to those faced by the European Union—a mean increase of about 2.4 percent of GDP over the next 40 years. The projection for the increase in health care costs for LAC (4.3 percent of GDP), is even larger than for the European Union (3.2 percent of GDP).

While, on average, the fiscal pressures associated with population aging are likely to be substantial, this average obscures the significant heterogeneity in Latin America. This is due in part to demographic differences among the countries but also to substantial differences due to pension reforms undertaken in many of the countries. For countries that reformed their pension system toward higher participation in a defined-contribution system, as in the case of Uruguay, the effect of aging on the public budget will be partly offset by a reduction in the obligations of the PAYG system (unless of course new public programs develop in response to the lack of improvement in pension coverage).

Most LAC countries still need to develop sustainable health care systems that respond to the new epidemiological needs of the population. The technical, institutional and political complexities of the health sector have made it hard for economic policy makers in most of LAC to engage with this sector and this new challenge of aging it faces. A common reaction has been to attempt to cap explicit financial commitments to the sector while allowing the sectoral politics to define how any increase in resources is allocated. In the future, governments will find it harder to ignore the dynamics inside this sector. There is a high likelihood that there will be growing pressure for expanded and improved health care services. This pressure is a likely effect of the combination of population aging, the greater weight of non-communicable diseases (NCDs), and the high income elasticity of the demand for health care which is likely to accompany economic growth during the next several decades.

According to the report, establishing appropriate policies and institutions to accommodate the region's demographic shifts will therefore be vital to safeguard Latin America's social and economic future.

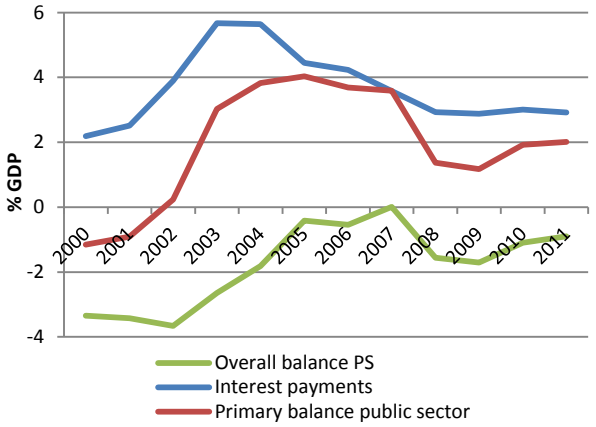
Source: Cotlear (2011)

B. FISCAL DEVELOPMENTS

1.11. **In the wake of the Argentine crisis, Uruguay experienced a debt crisis of its own**, as public indebtedness more than tripled during 1999 and 2002 (from some 30 percent to over 100 percent) as a proportion of GDP. Following a debt rescheduling exercise, the Uruguayan

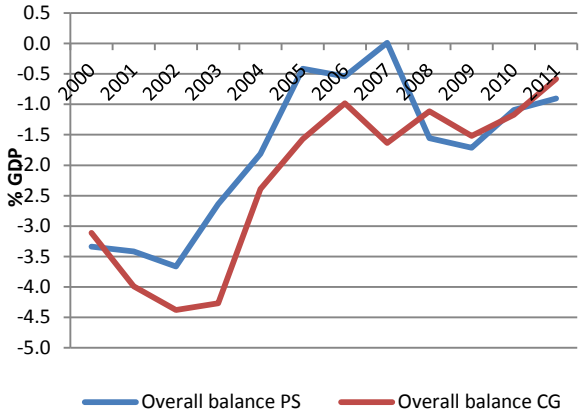
authorities embarked on a successful adjustment program that helped partially reverse the previous debt buildup back, to about 50 percent of GDP.

Figure 1.5: Fiscal balance overall public sector (% GDP), 2000-2011



Source: staff calculations based on data from Ministry of Economy and Finance and Central Bank of Uruguay

Figure 1.6: Overall balance CG and PS (% of GDP), 2000-2011



Source: staff calculations based on data from Ministry of Economy and Finance and Central Bank of Uruguay

1.12. **Directly following the 2002 crisis, primary expenditure (in constant prices) declined substantially, leading to a marked improvement in the primary and overall fiscal balance.** This trend was reversed after 2007 with a primary surplus reduction of about 2 percent of GDP in 2011. However, the initial improvement in the primary balance was countered by a substantial increase in interest payments that led to an overall public deficit of 3.7 percent of GDP in 2002. As the burden of interest payments started to cede, the overall fiscal balance recovered considerably after 2004, averaging a deficit of 0.9 percent of GDP between 2005 and 2011.

1.13. **SOEs have introduced more volatility in the overall public sector balance.** The consolidated central government balance has recorded a trend similar to the overall public sector balance, although with a less volatile pattern during 2006 to 2011. This can mainly be explained by the higher volatility of the state-owned enterprises (SOE) balances which are included in the overall public sector balance. Chapter 5 illustrates this link through looking at one of the main SOE's in greater detail. Social sector reforms also had a significant effect on public expenditure in recent years, particularly the 2007 health sector reform[1] and changes in the pension system,[2] which will be outlined in more detail in Chapter 3 and 4.

1.14. **Through the following sections, this chapter analyses the evolution of public finances and their main components during the last decade.** It first looks at expenditure and then at the revenue side of this framework. The different levels of government that will be referred to are defined as follows.

[1] Law No. 18.131 May 2007 and Law No. 18.211 December 2007.
[2] Law No 18.395 October 2008.

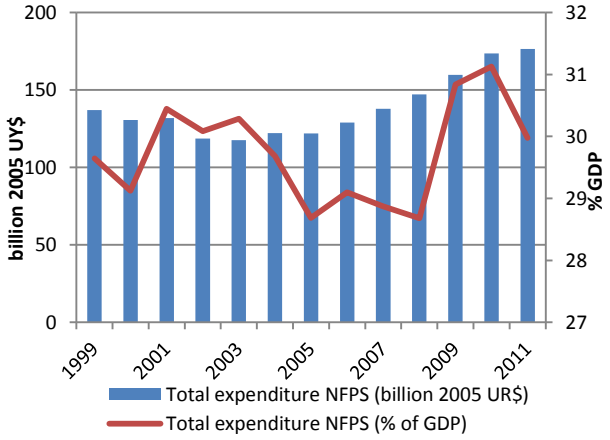
Table 1.2 Government definitions

Central Government (CG)	Executive Branch (Presidency and Ministries), Judicial Branch, Legislative Branch, Electoral Court (CE), Court of Accounts (TC), Contentious Administrative Tribunal (TCA), National Agency for Primary Education (ANEP), Uruguayan Institute for Children and Youth (INAU), University of the Republic of Uruguay (UdelaR) and Public Health Services Administration (ASSE)
Consolidated Central Government (CCG)	Central Government and the Social Security Agency (BPS)
Non-Financial Public Sector (NFPS)	Consolidated Central Government, State Owned Enterprises (SOEs) and local governments
Overall Public Sector	Non-Financial Public Sector and Central Bank of Uruguay

B.1. MAIN EXPENDITURE DEVELOPMENTS

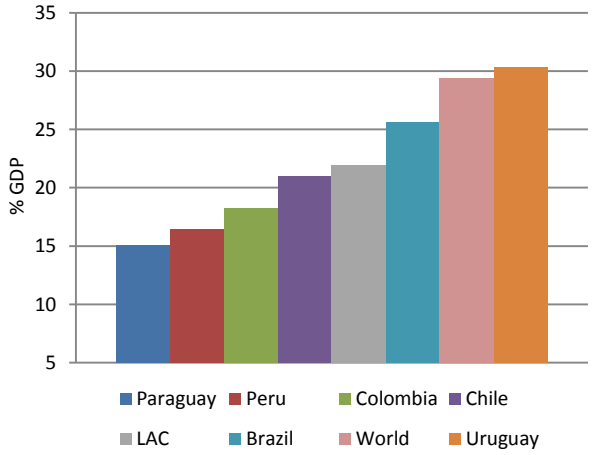
1.15. **Expenditure levels in Uruguay are higher than the average of the LAC region, but comparable to the global average.** In 2010, the latest year for which comparable data is available, expenditure in Uruguay exceeded 30 percent of GDP, comparable to the world average of 29 percent, but above the LAC average (22 percent). The overall upward trend of expenditure was mostly due to the economic recovery and regulatory reforms. Recent increases, however, were also caused by counter-cyclical measures used to mitigate the effects of the global financial crisis and to strengthen social programs to protect the vulnerable. Current primary expenditure accounted for 81.2 percent of the Non-Financial Public Sector (NFPS) expenditure (24.3 percent of GDP) in 2011. Public investment fluctuated around 2.7 percent of GDP during the last decade while interest payments peaked at 5.7 percent of GDP after the 2002 crisis, but thereafter declined gradually.

Figure 1.7: Total expenditure NFPS (constant 2005 UR$ and % GDP), 1999-2011



Source: Staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

Figure 1.8: Total public expenditure (% GDP), 2010

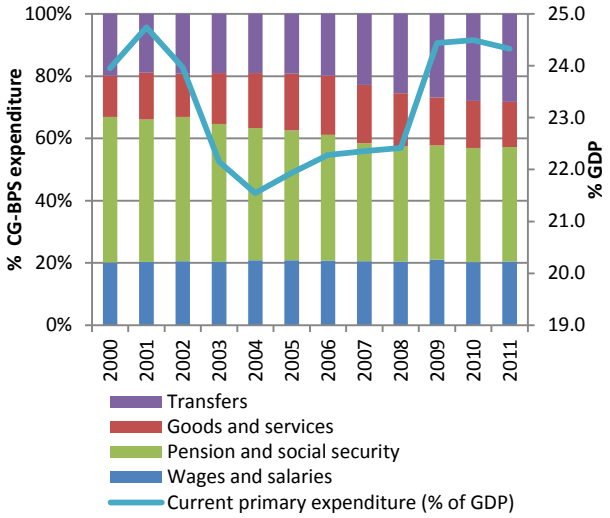


Source: World Development Indicators, World Bank; Data for Brazil for 2009; LAC average only for countries for which data was available in 2010.

1.16. **The rigid part of public expenditure has decreased considerably since 2000.** Rigid expenditure, composed of wages, pensions and interest payments, is still high, representing 56.2 percent of total expenditure in 2011, however, decreased significantly from 62.5 percent in 2000. The reduction in the rigid expenditure share between 2000 and 2011 was exclusively explained

by a decrease in the share of pensions and social security. The development of the different components of rigid expenditure is detailed in the following.

Figure 1.9: Economic classification of public expenditure
(% of Consolidated Government and BPS current primary expenditure), 2000-2011



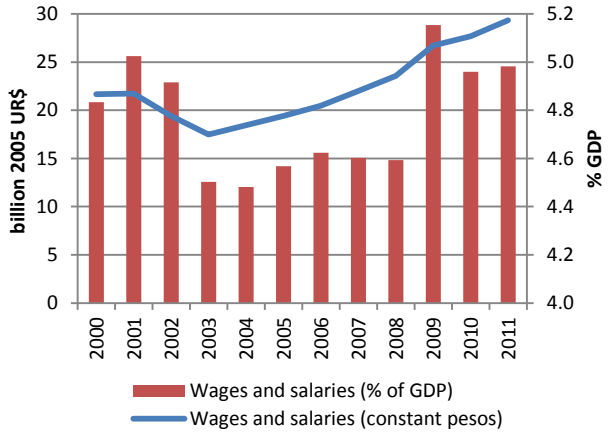
Source: Staff calculations based on data from Ministry of Economy and Finance and Central Bank of Uruguay

- **Considering total Central Government employees' compensation inclusive of social security contributions[3], Uruguay's spending on public sector workers as percent of GDP is relatively high from a regional perspective.** In 2010, the employee compensation of the Central Government was 6.9 percent of GDP, higher than in Peru (3.0 percent of GDP), Chile (4.2 percent of GDP) and Brazil (4.4 percent of GDP), but lower than in Paraguay (9.7 percent of GDP).[4] Higher real spending on wages and salaries in Uruguay is explained by an increase in both, real public sector wages and the number of workers in the public sector (public and non-public employees).[5] Real public sector wages recovered steadily after the 2002-2003 decline and recorded a real growth rate of 8.3 percent between 2000 and 2011. The number of workers grew at a faster pace, with a growth rate of 11.2 percent during 2000-2010.[6] The number of workers in the public sector had started declining prior to the 2002 crisis due to a set of policies implemented in the 1990s that restricted the entry of new public employees (ONSC 2011). Restrictions to the entry of new public employees were eliminated in 2005, contributing to a net increase in public sector workers during the last decade, leading to similar levels as those seen during the mid 1990s.
- **After a decline following the 2002 crisis, pensions and social security payments increased gradually reaching pre-crisis levels (in real terms) by 2010.** As the value of pensions is linked to the wage index, pension payments tend to behave pro-cyclically.

[3] Based on gross compensation, which includes social security contributions, to ensure comparability with other countries in the region. Data in previous paragraphs refers to net terms.
[4] Data from the IMF.
[5] This classification depends on the type of labor contract with the public sector. Non-public employees include scholars, interns, contracts for work and services, term contracts and others. See ONSC (2011) for more details.
[6] 2010 is the latest year for which data on public employees are available.

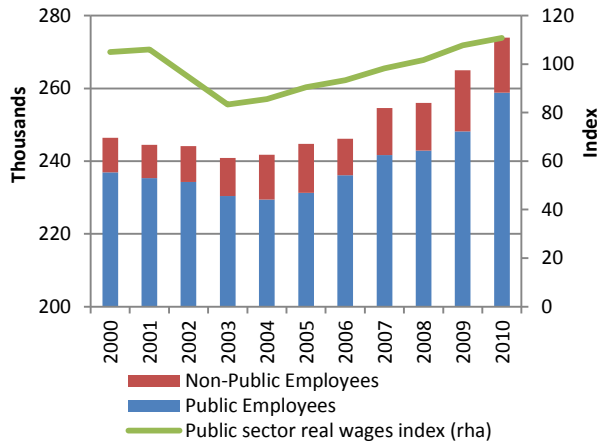
The increased flexibility to qualify for old age pensions in 2008 increased the total number of pension beneficiaries; more details are given in Chapter 4.

Figure 1.10 CCG expenditure in wages and salaries (constant 2005 UR$ and % GDP), 2000-2011



Source: staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

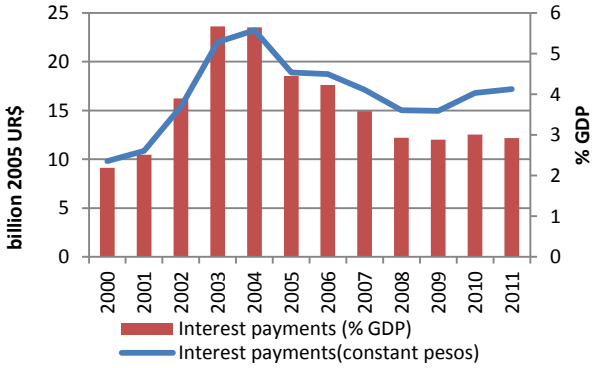
Figure 1.11 Number of workers in the public sector and public sector real wages index



Source: ONSC (2011) and National Bureau of Statistics

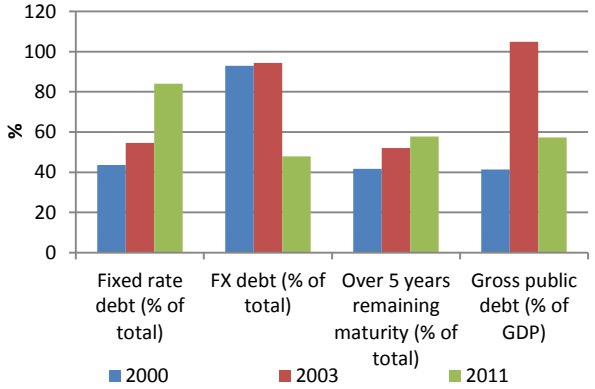
- **Interest payments increased significantly in the aftermath of 2002 crisis, both in real terms and as a share of GDP.** This was mainly due to the higher burden of dollar denominated debt obligations after the devaluation, coupled with an increase in total debt and a drop in GDP levels. Since 2004, strong GDP growth, an appreciating peso and sound debt management have contributed to a substantial reduction of interest payments. As a result, Uruguay's debt profile improved considerably, making debt more sustainable and resilient to external shocks. Main improvements include a reduction in the share of the fixed interest rate and dollar denominated debt, as well as an extension of the average maturity, while reducing the debt-to-GDP ratios.

Figure 1.12: Interest payments (constant 2005 UR$ and % GDP), 2000-2011



Source: staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

Figure 1.13: Public sector debt profile, 2000, 2003 and 2011



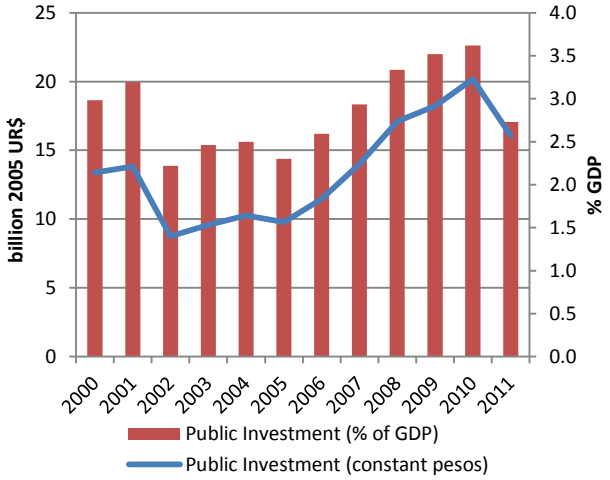
Source: staff calculations based on data from Central Bank of Uruguay and National Bureau of Statistics; Note: debt-to-GDP ratios were calculated using eop exchange rate.

1.17. **Transfers nearly doubled in real terms between 2000 and 2011**, largely explained by structural regulatory reforms. Especially the health sector reform (see Chapter 3), and a strengthening of social programs following the 2008/09 crisis have contributed to this increase. In addition, lower unemployment, together with an increase in the formality of enterprises, has led to an increase in the beneficiaries of the Social Security Bank (*Banco de Previsión Social* - BPS), as well as greater government transfers to private pension funds as part of social security contributions (see Chapter 4).

1.18. **Public investments tend to follow a pro-cyclical pattern**. Investments contracted significantly during the 2002 crisis, both in real terms and as a share of GDP, when public finances were under greater pressure due to higher interest payments. In 2007 the surpassed pre-crisis levels. As stated in its accompanying document ("*Exposición de motivos*"), one of the objectives of the 2004-2009 Budget Law was to adjust the ratio investments-to-current primary expenditure, which was reflected in investment figures during that period.

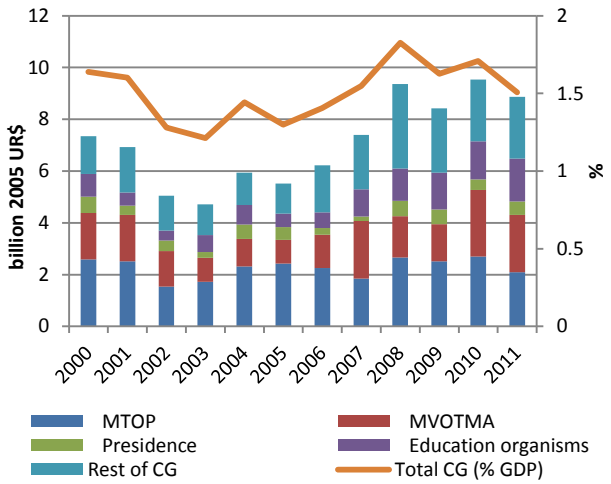
1.19. **Public works accounted for the largest share of CG investment.** Central Government investments represent more than half of the total NFPS investments. During the last decade, public works accounted for the largest share, although public housing increased its relative importance in the recent past. Investments in education have been quite volatile but have gained ground over the past five years. This has been due to a greater emphasis on public education during the last two administrations.

Figure 1.14: Public investment (constant 2005 UR$ and % GDP), 2000-2011



Source: staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

Figure 1.15: CG investments by administrative classification (constant 2005 UR$ and % GDP), 2000-2011



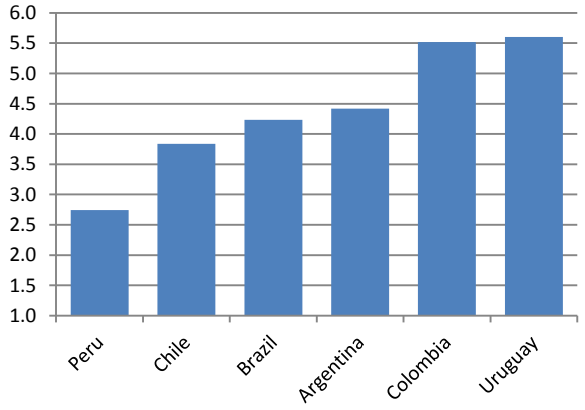
Source: Staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

1.20. **The rest of public investments is explained by SOEs**. Investments by SOEs are largely dominated by UTE (electricity), ANTEL (telecommunications), OSE (water and sanitation) and ANCAP (oil refinery). Similar to the Central Government investment, total investment of SOEs declined considerably after the 2002 crisis, though in recent years they have surpassed pre-crisis levels, both in real terms and as a percentage of GDP. The recent increase of SOE investment was mainly explained by UTE and ANCAP. Chapter 5 explores this role of UTE further.

1.21. **Central government expenditures by function[7] are largely concentrated in social protection and security, education and culture, and defense and national security**. This represented 26.0 percent, 16.1 percent and 10.1 percent of total expenditure in 2010, respectively. The current shares and the recent increases are in line with the government priorities of education, housing, public infrastructure, health, national security and social protection as stated in the 2005-2009 and the 2010-2014 Budget Laws.

1.22. **Government spending on health is high compared to other countries in the region with a similar population structure**. According to the WHO, the share of general government spending on health of overall general government spending surpassed those of a number of countries in Latin America in 2010, confirming that health is one the government's priority sectors (Figure 1.16). The General Government definition by the WHO also considers health expenditure of other government bodies, such as local governments, BPS and the public University.

Figure 1.16: General government expenditure on health (% GDP) in different LAC countries, 2010

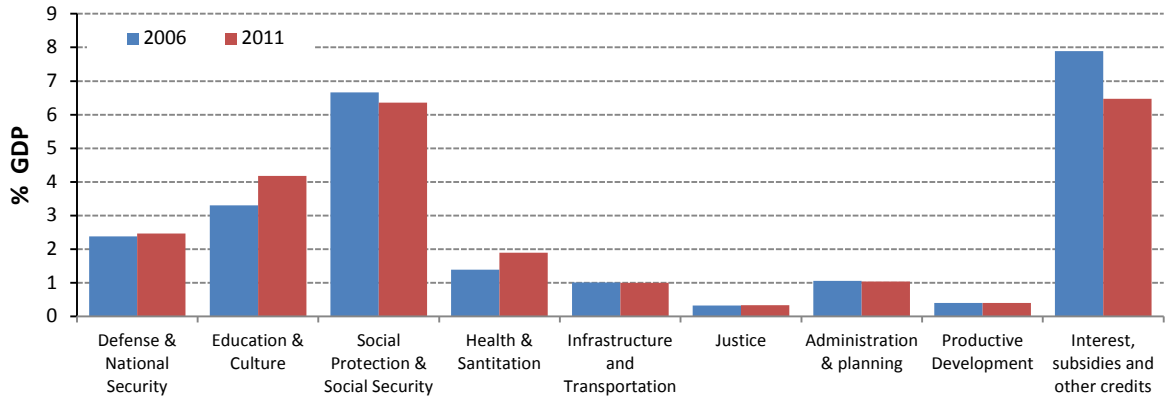


Source: WHO

1.23. **Increased spending on education is in line with the government priorities.** High spending growth rates on education and culture were mainly explained by the increase in the National Agency for Primary Education (ANEP) and the University of the Republic (UDELAR), which grew by 69.6 percent and 72.6 percent in real terms during the period 2006-2011. This actual increase is in line with the government's commitment to raise public expenditure in education to 4.5 percent of GDP in 2009.

[7] The information is shown by "inciso" in *Rendición de Cuentas* and was reclassified as follows (components in brackets): Defense and National Security (*Ministerio de Defensa Nacional and Ministerio del Interior*); Education & Culture (*Ministerio de Educación y Cultura, Administración Nacional de Educación Pública* and *Universidad de la República*); Social Protection & Social Security (*Ministerio de Trabajo y Seguridad Social, Ministerio de Desarrollo Social, Transferencias Financieras al Sector Seguridad Social and Instituto del Niño y Adolescente del Uruguay*); Health & Sanitation (*Ministerio de Salud Pública and Administración de Servicios de Salud del Estado*); Infrastructure and Transportation (*Ministerio de Transporte y Obras Pública and Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente*); Justice (*Poder Judicial*); Administration & Planning (*Presidencia de la República, Ministerio de Economía y Finanzas, Ministerio de Relaciones Exteriores, Poder Legislativo, Tribunal de Cuentas, Corte Electoral y Tribunal de lo Contencioso-Administrativo*); Productive Development (*Ministerio de Turismo y Deporte, Ministerio de Ganadería, Agricultura y Pesca y Ministerio de Industria, Energía y Minería*); Interest Payments and Other Credits (*Intereses y Otros Gastos de la Deuda, Subsidios y Subvenciones, Partidas a Reaplicar and Diversos Créditos*) The reclassification has been carried out by WB staff based on available data and information and may differ from the official reclassification.

Figure 1.17: Functional classification of public expenditure (% GDP, executed budget), 2006 and 2011



Source: Staff calculations based on own reclassification of budget updates (Rendición de Cuentas), National Bureau of Statistics and Central Bank of Uruguay. Information comprises entities included in the national budget only.

B.2. DEVELOPMENT OF MAIN REVENUE COMPONENTS

1.24. **As in most countries in the region, tax revenue in Uruguay increased during the past 20 years as percentage of GDP.** In 2009, Uruguay, with 22.5 percent, had the third highest tax-to-GDP ratio of the regional sample only exceeded by Brazil and Argentina (see Table 1.3).[8] Latin American and Caribbean (LAC) countries, however, remain below the average tax-to-GDP ratios of OECD countries, which were around 34 percent during the same period. See Table A.1 in the Annex for details of the developments of the different revenue components in Uruguay.

Table 1.3 Total tax revenue as % of GDP (*)

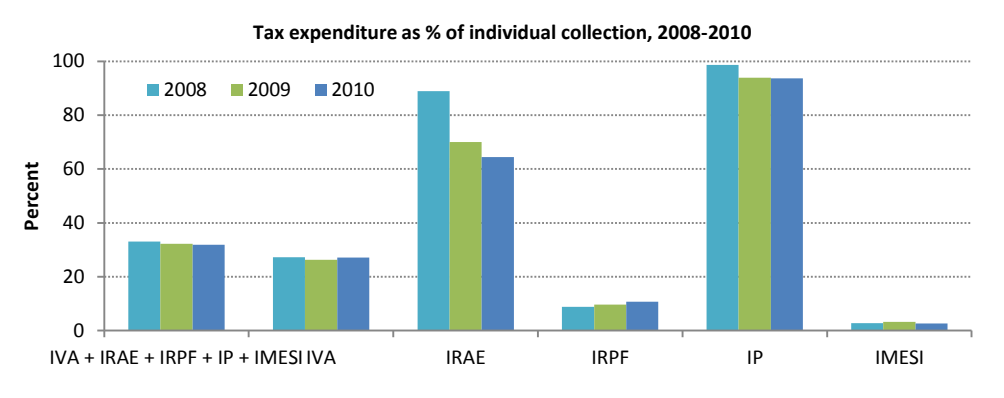
	1990	1995	2000	2005	2006	2007	2008	2009
Argentina	16.1	20.3	21.5	26.9	27.4	29.1	30.7	31.4
Brazil	28.1	26.8	30.0	32.9	32.8	33.4	33.6	32.6
Chile	17.5	19.0	19.4	21.3	23.2	24.0	22.5	18.4
Colombia	9.0	13.2	14.1	17.3	18.2	18.3	17.9	17.4
Costa Rica	16.1	16.3	18.2	19.8	20.3	21.7	22.4	20.9
Dominican Republic	8.3	10.6	12.4	14.7	15.0	16.0	15.0	13.1
El Salvador	10.5	13.0	12.2	14.1	15.1	15.2	15.1	14.4
Guatemala	9.0	13.0	12.2	14.1	15.1	15.2	15.1	14.4
Mexico (i)	15.8	15.2	16.9	18.1	18.2	17.7	20.9	17.4
Peru	11.8	15.4	13.9	15.8	17.1	17.8	17.8	15.9
Uruguay	**17.8**	**19.7**	**20.0**	**22.0**	**23.3**	**22.7**	**22.0**	**22.5**
Venezuela	18.7	13.3	13.6	15.9	16.3	17.1	14.3	14.4
Unweighted average:								
Selected LAC (ii)	14.9	16.1	17.1	19.3	20.1	20.6	20.4	19.2
OECD (34) (iii)	33.1	34.6	35.3	35.0	35.1	35.2	34.6	33.7

Source: OECD, ECLAC and CIAT (2011)
(*) The figures exclude local government revenues for Argentina, Costa Rica (up to 1997), Dominican Republic, El Salvador, Peru (up to 2004), Uruguay and Venezuela as the data are not available.
(i) In ECLAC and CIAT data, fees levied on hydrocarbon production are treated as non tax revenues.
(ii) Represents a selected group of Latin American countries. Chile and Mexico are also part of the OECD (34) group.
(iii) Represents the unweighted average for OECD member countries.

[8] Data for Uruguay presented here differs from that presented in the rest of the chapter due methodological differences. As detailed in OECD, ECLAC and CIAT (2011), the term "taxes" in the table refers to "compulsory unrequited payments to general government. Taxes are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments." As an example, this definition includes social security contributions.

Box 1-2 Tax expenditure

Although difficult to quantify precisely, tax expenditures (TE) represent a significant share of tax revenues. The *Dirección General Impositiva* (DGI) defines TE as the loss in tax collection due to tax benefits that have been granted by government.[9] DGI estimates that the total TE for the five main taxes in Uruguay represented about 5.7 percent of GDP in 2010. This amounted to 31.9 percent of the total collection through these taxes, down from 33.1 percent in 2008. The taxes analyzed are the VAT, IRAE (*Impuesto a la Renta de la Actividad Empresarial*, profit tax), IRPF (*Impuesto a la Renta de las Personas Físicas*, income tax), IP (*Impuesto al Patrimonio*, net worth tax) and IMESI (*Impuesto Específico Interno*, excise tax), which together accounted for more than 90 percent of DGI's collection in 2010. The main findings on TE for these taxes in the period 2008-2010 are summarized below.[10]



Source: General Tax Directorate (DGI)

VAT: VAT remains the most important tax in the Uruguayan tax system. Not surprisingly, VAT also accounts for the largest share of TE among the main taxes (48.0 percent in 2010). However, VAT tax expenditures remained at moderate levels as a share of total VAT collection (27.1 percent in 2010). Goods taxed at the minimum VAT rate explained 21.9 percent of total VAT TE, followed by property rent (10.3 percent), teaching (9.5 percent), fuel and oil derivatives (9.3 percent), gambling (8.0 percent) and health services (4.6 percent).

IRAE: IRAE TE represented about 64.5 percent of IRAE collection in 2010 (down from 88.9 percent in 2008). IRAE TE was mainly driven by Free Zones (37.9 percent), investment promotion (26.9 percent) and exemptions for investments[11] (8.3 percent). The manufacturing industry benefitted the most from IRAE TE (34.7 percent of the total).

IRPF: IRPF reached only 3.9 percent and 10.8 percent of total TE and IRPF tax collection, respectively. The main component of IRPF TE was the 30 percent deduction for workers outside the employee-employer relationship (42.4 percent), the reduced rate for income from dividends (20.3 percent) and exemptions for some types of property rents (19.7 percent).

IP: The IP represented 17.1 percent of total TE in 2010, but it is the highest TE relative to its individual collection (93.7 percent). IP TE was mainly explained by exempted assets (59.4 percent), assets in Free Zones (15.2 percent) and agricultural assets (12.0 percent). On a sectoral analysis, the agriculture, forestry and fishing sector accounted for the highest share of IP TE (21.8 percent), followed by financial and insurance activities (18.2 percent).

IMESI: IMESI tax expenditure represented only 0.9 percent of total TE and 3.3 percent of IMESI collection. IMESI TE was mainly explained by imports exceptions (74.9 percent), of which 76.7 percent correspond to automobiles.

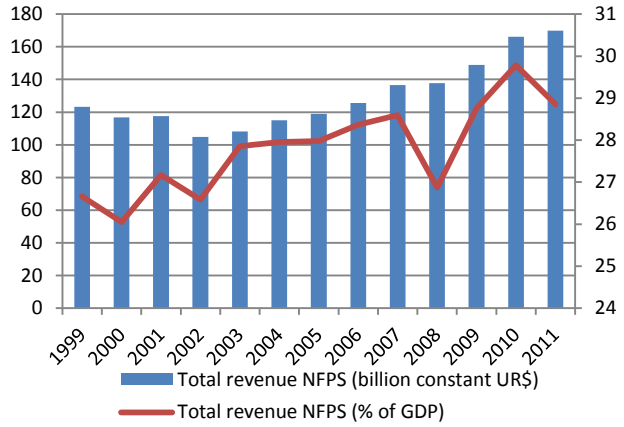
1.25. **Significant tax expenditures partly explain the lower tax effort.** Without these tax exemptions, potential tax collection could be significantly higher (see Box 1-2). Uruguay's tax expenditure of about 5.7 percent of GDP in 2010 is slightly higher than that of other Latin American countries, such as Peru (1.8 percent), Argentina (2.1 percent), Brazil (3.2 percent) or

[9] Tax expenditure estimates account for tax evasion and can therefore be seen as "effective" tax expenditure. See DGI (2011) for more details on the methodology, as well as the list of all categories identified as tax expenditure.
[10] Changes in data availability since 2008, particularly for the IRAE, reduce the comparability of data (DGI 2010).
[11] This benefit allows firms to deduct a portion of investments on certain goods from taxable profits.

Chile (4.0 percent).[12] However, these tax expenditure estimates do not correct for enterprises that would not have been created if the tax exemptions did not exist. Uruguay is increasing tax compliance further, partly due to DGI's management, as suggested by DGI's efficiency index.[13] DGI's efficiency index continued to grow after the tax reform, though it stagnated and even slightly decreased since mid 2009.

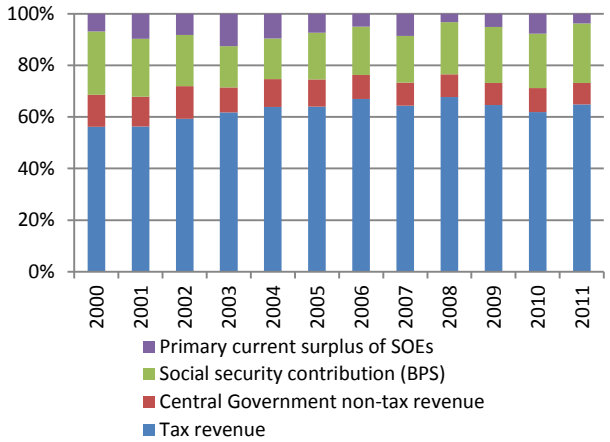
1.26. **As can be expected, taxes remain the most important revenue component.** Revenue sources of the non-financial public sector consist of central government tax and non-tax revenue, BPS revenue and the primary current surpluses of SOEs. NFPS revenue in real terms has steadily increased since 2002. Taxes are the most important revenue component, accounting on average for about 62.7 percent of total revenue between 2000 and 2011. Social security contributions account for 20.0 percent of total revenue and non-tax revenue, while the SOE current primary balances account for 10.1 percent and 7.3 percent of total revenue, respectively.

Figure 1.18: Total revenue NFPS (constant 2005 UR$ and % GDP), 1999-2011



Source: Staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

Figure 1.19: Classification of revenues by source (% of NFPS revenues), 2000-2011



Source: Staff calculations based on data from Ministry of Economy and Finance

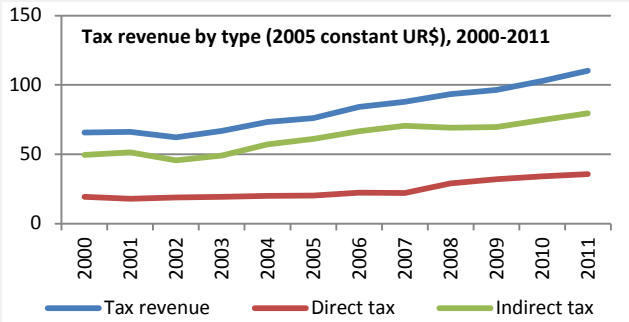
1.27. **Although the 2007 tax reform strengthened the importance of direct taxes, indirect taxes still account for the largest share of tax revenues** (see also Box 1-3)**.** The most important indirect taxes are VAT and IMESI (*Impuesto Específico Interno*, excise tax). They both tax goods and services. VAT represented 9.9 percent and IMESI represented 2.1 percent of GDP in 2011. Despite a slight reduction in VAT (as a percent of GDP) after the tax reform, it remains the main source of tax revenue. However, the relative importance of indirect taxes was further reduced by the elimination of the COFIS, another key component of the tax reform. Along the same lines, the weight of income and wealth taxes increased during the considered period.

[12] See Villela et al. (2010); data for 2009.

[13] This is a series of indices that measure the incidence of DGI's management on VAT collection (the "DGI effect"), which is obtained as a residual after controlling for other determinants of VAT collection, such as economic activity, tax policy and factors determining tax evasion (e.g. taxpayers' risk aversion). For more details on the methodology see Asesoría Económica – DGI (July 2006).

Box 1-3 The 2007 tax reform

The 2007 tax reform introduced many changes to the composition of fiscal revenues in Uruguay. The main objectives of the reform were to create a more progressive tax system, to increase efficiency and transparency by removing many taxes that were distortive or had low collection rates and to promote investment and employment (see also Barreix and Roca 2007). Through fiscal incidence analysis, Chapter 2 takes an initial look at whether this objective is being met. Direct taxes have shown higher real growth rates than indirect taxes, which led to an increase in their relative weight, but indirect taxes continue to represent the largest share of tax revenue. The main aspects of the reform are summarized below.



Source: Staff calculations based on data from Ministry of Economy and Finance and National Bureau of Statistics

Indirect taxes

- The basic VAT rate was cut from 23 percent to 22 percent and the minimum VAT rate, applicable to a list of selected goods,[14] was reduced from 14 percent to 10 percent.
- Most VAT exemptions were eliminated and taxed either at the minimum or at the basic rate.
- The IMESSA, a 5 percent tax on health services, was removed.
- The COFIS, a 3 percent tax on intermediate goods that was aimed at covering the social security deficit, was removed.[15]

Income and profit taxes

- The IRP (a tax on wages and pensions) was substituted by the IRPF, which taxes both capital and labor income, but at different rates.
- The IRPF for labor income is structured by income bands and the marginal rates increase with income, ranging from 10 percent to 25 percent. Different from the IRP, the IRPF also taxes labor income without a relationship of dependence.
- The IRPF for capital income ranges from 3 percent to 12 percent, depending on the source.
- The pre-reform benefits taxes, mainly the IRIC and the IRA, were substituted by the IRAE. This involved a reduction of the tax rate from 30 to 25 percent, as well as its generalization to all sectors.

Simplification and transparency

- Employer social security contributions were unified to reduce sectoral asymmetries.
- 14 taxes were eliminated[16] and the Executive Branch was authorized to eliminate 3 other taxes.[17]

Upcoming changes in the tax system

A draft law authorizing the Executive Branch to reduce the VAT rate by two percentage points (to be implemented for debit card payments only) and introduce a higher marginal IRPF of 30 percent for the highest income brackets was approved by the Parliament in May 15, 2012.

[14] These include basic goods and services such as bread, sugar, vegetables, fish, meat rice and health services.

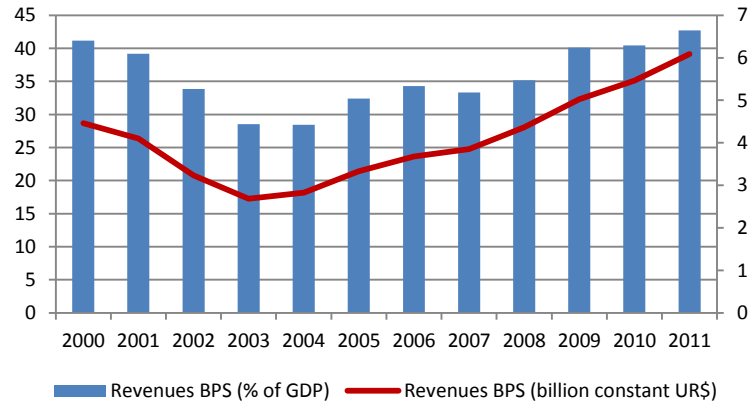
[15] The elimination of this tax involved an additional reduction in VAT, since the VAT tax was calculated on the prices including COFIS.

[16] As indicated by Romano (2008), these taxes represented approximately 7.8 percent of DGI's collection in 2006.

[17] One of such taxes was the ICOME (*Impuesto a la Compra de Moneda Extranjera*), which was eliminated in September 2007.

1.28. **Social security contributions increased continuously since the end of the 2002 crisis.** Social security contributions grew from 4.4 percent of GDP in 2003 to 6.6 percent of GDP in 2011. The improvement in the macroeconomic conditions combined with lower unemployment rates, as well as a reduction in labor informality contributed to this increase. Uruguay is one of the countries in the Latin American region with the largest coverage of social security benefits, reaching over 80 percent of all wage-earning workers in 2010 (see Chapter 4). Furthermore, Uruguay has performed better than the regional average during the past 20 years. Part of the increase in BPS' revenues is also explained by the previously mentioned 2007 health sector reform, including an increase in the contribution rate as well as by progressively expanding coverage.[18] Chapters 3 and 4 look in more detail at this increase and the impact of these sectors on public expenditure.

Figure 1.20: BPS revenues (2005 constant UR$ and % GDP), 2000-2011



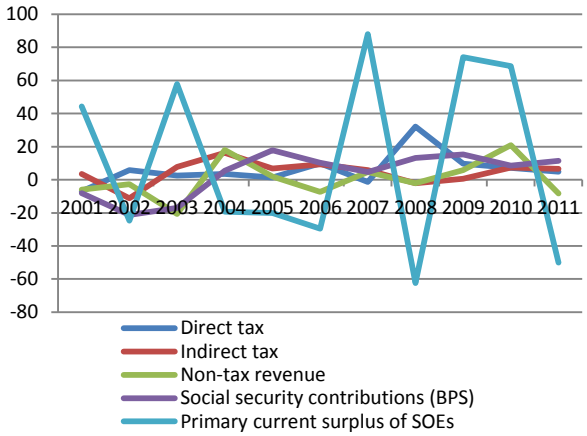
Source: staff calculations based on data from Ministry of Economy and Finance, National Bureau of Statistics and Central Bank of Uruguay

1.29. **Although only a relatively small portion of NFPS revenue, the primary current balance of SOEs is a key component of public revenue.** The primary current balance of SOEs represented 7.3 percent of public revenue on average during the period 2000-2011, but its fluctuations account for a significant share of revenue volatility (Figure 1.21). Figure 1.22 shows the current primary balance of the main SOEs in Uruguay.[19]

1.30. **The main source of volatility is the balance of the public electricity company UTE** (see Figure 1.21). To illustrate, the large decline in revenue over GDP in 2008 was largely due to a drop in SOE balances, which was caused by a severe drought that affected the balance of UTE. The vulnerability of the budget to low rainfall through UTE's balance is discussed in more detail in Chapter 5. A similar decline occurred in 2011, which was caused not only by low rainfall but also by the temporary closing of the state owned refinery for maintenance, leading to a lower primary balance of the national oil company (ANCAP).

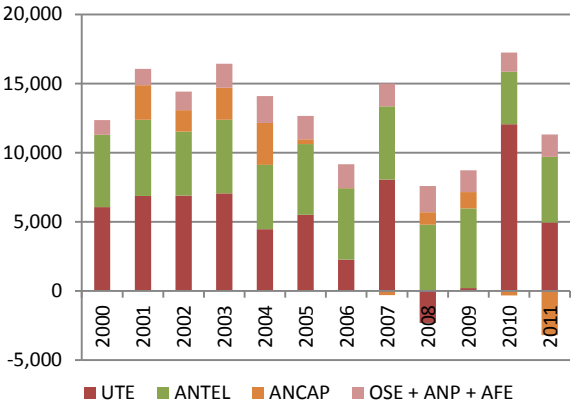
[18] See PAHO/WHO and MSP (2010) and Lagomarsino (2009)
[19] The SOEs for which the balances are reported are UTE, ANTEL, ANCAP, OSE, ANP and AFE.

Figure 1.21: Revenue components (% annual growth), 2001-2011



Source: Staff calculations based on data from Ministry of Economy and Finance and National Bureau of Statistics

Figure 1.22 Primary current balance of SOEs (constant 2005 UR$), 2000-2011



Source: Staff calculations based on data from Ministry of Economy and Finance and National Bureau of Statistics

Chapter 2. Fiscal Incidence in Uruguay[20]

A. SOCIAL SPENDING, TAXES AND INCOME REDISTRIBUTION IN URUGUAY

2.1. In understanding the public expenditure system in a country, it is critical to evaluate how fiscal policy affects the different social strands in the relevant country. Therefore, this chapter addresses three questions. How much redistribution does Uruguay accomplish through social spending and taxes? How progressive are revenue collection and social spending? What could be done to further increase redistribution and improve re-distributional effectiveness? Through an in-depth fiscal incidence analysis for Uruguay this chapter attempts to address these questions.

2.2. **Fiscal incidence analysis is concerned with assessing how fiscal policy (taxation and public expenditures) affects different groups of people (such as rich versus poor).** Assessing the incidence of taxes is important because who actually bears the burden of taxes (economic incidence) is usually quite different from who is legally liable to make payments to tax authorities (statutory incidence). Establishing the incidence of government expenditures is equally important as not all expenditures benefit households of different income levels to the same extent. This could be due to differing needs (for instance, poorer households typically have more children and therefore make greater use of education) but also poor targeting of or difficulties in accessing public services. While both tax and incidence analysis provides many important insights in their own right, combining them within fiscal incidence analysis determines the overall progressivity of a fiscal system and allows us to identify who the net receivers/ net payers of the entire fiscal system are.

2.3. In this PER, for the fiscal incidence analysis the *Encuesta Continua de Hogares* (2009) is used. Through this, a standard incidence analysis is applied to estimate the impact on inequality and poverty of direct taxes, indirect taxes, and social spending, which is defined here to include cash and food transfers and in-kind transfers in education and health in our benchmark scenario (and contributory pensions in the sensitivity analysis). Some caveats are in order. This exercise does not incorporate behavioral, life-cycle or general equilibrium effects. The analysis does not look into the macroeconomic sustainability of taxation and social spending patterns either. Nonetheless, this study is one of the most detailed incidence analyses for Uruguay to date. Fiscal incidence in Uruguay is also compared to that in Argentina, Bolivia, Brazil, Mexico and Peru.

A.1. IMPACT OF SOCIAL SPENDING AND TAXES ON INEQUALITY AND POVERTY

2.4. **As in other countries in the region, fiscal policy in Uruguay helps to reduce income inequality.** Figure 2.1 compares Uruguay with five other countries in the region (Argentina, Bolivia, Brazil, Mexico and Peru). Uruguay has the lowest Gini coefficients in terms of disposable income, and the second lowest Gini in terms of market and final incomes (see Box 2-2 for alternative income definitions). Direct taxes and direct transfers lower the market income Gini of 49.2 percent by 3.5 percentage points to 45.7 percent, which is less than in Argentina (3.8 percentage points). Total taxes and social spending (direct and in-kind transfers in education and health) lower the final income Gini by 10 percentage points to 39.3 percent, less when compared to Argentina and Brazil (11.5 percentage points).

[20] For more details see Bucheli et al. (2012).

2.5. **Uruguay's redistributive performance remains however below that of European countries.** Goni, Lopez and Serven (2011), using a methodology which is not strictly comparable to the analysis presented here, show that for the average European country the Gini coefficient declines from 47 percent for market income to 27 percent for final income. Goni et al. (2011) report that the average LAC country only achieves a 5 percentage point reduction in income inequality through fiscal redistribution, from 52 percent for market income to 47 percent for final income.

Box 2-1: Coverage of social spending and taxes in Uruguay's fiscal incidence analysis

Uruguay has a long tradition of providing public services and social benefits. In 2009, public social spending was equivalent to 21.6 percent of GDP. The three largest components are the social security system, health, and education (see Table Box 2.1) and all of them are included in Uruguayan statistics for estimating social spending. Government revenues are comprised of taxes, social security contributions the surplus revenues of public enterprises. Municipal tax revenues are not included.

The public programs, including contributory programs and their financing, as well as taxes are presented in more detail in Annex 4.

Table Box 2.1. Social Spending and government revenue composition in Uruguay, 2009

Social Spending, by component, as a percentage of GDP: 2009

Social security	11.1
Contributory pensions	8.7
Other direct transfers	1.0
Non-contributory pensions	0.5
Operational expenses	0.9
Family allowances	0.4
Health	4.7
Education	3.7
Food	0.3
Housing and community services	1.4
Total	21.6

Source: BPS, MEF, JUNASA, MIDES, OPP.

Government revenues by component, as a percentage of GDP: 2009

Taxes	21.4
Indirect taxes	12.1
Income taxes on individuals	4.7
Other taxes	4.6
Social security contributions	5.6
Employees	3.2
Employers	2.4
Other revenues	1.7
Total	28.7

Source: MEF, BPS

As there is no conventional approach to whether contributory pensions should be treated as market income or government transfers for the purpose of fiscal incidence, two alternative scenarios are presented throughout this chapter: (1) a benchmark scenario where contributory pensions are considered as part of market income and (2) an alternative scenario where contributory pensions are treated as government transfers (sensitivity analysis).

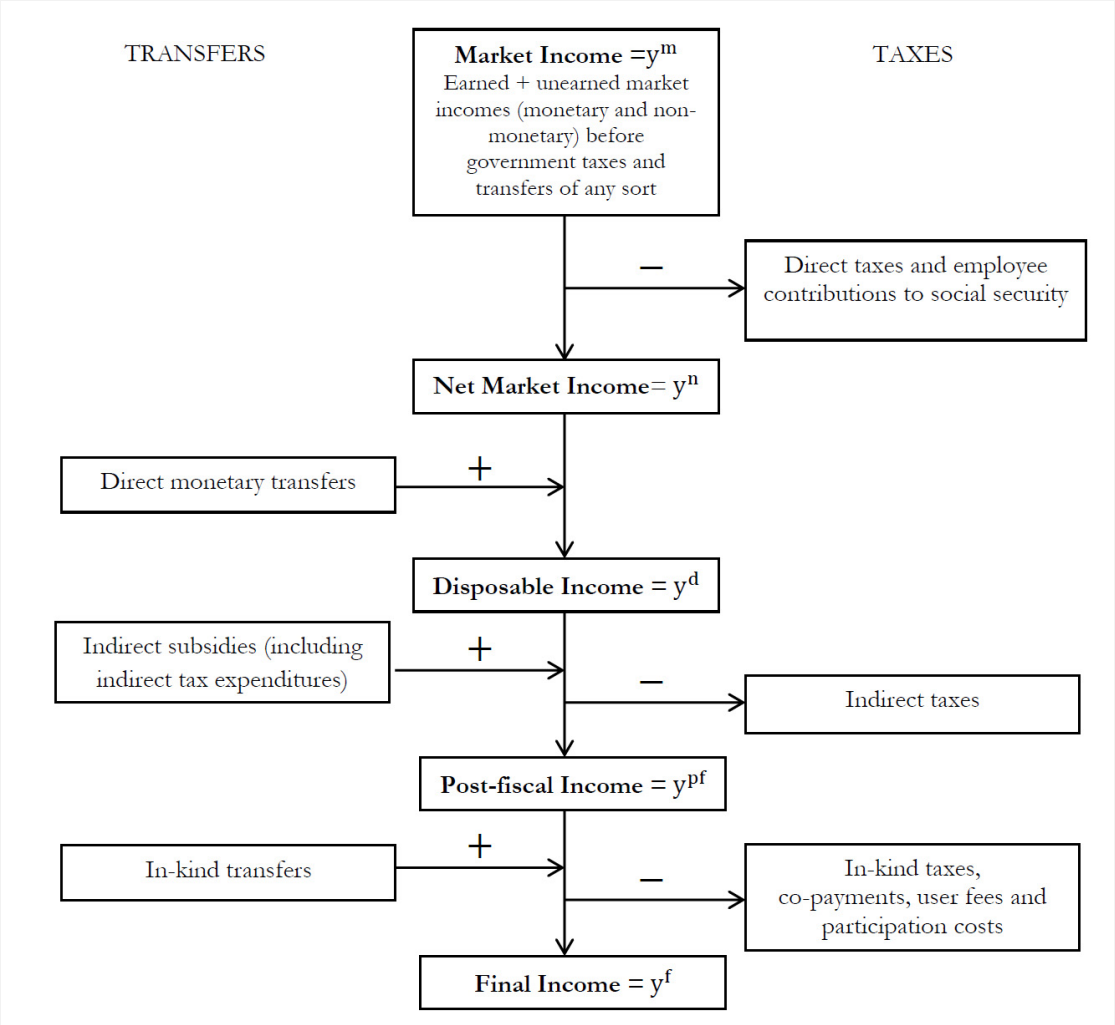
Housing and community services' were not considered as it was not possible to identify the specific benefits allocated to each household. Operational expenditures for social security were also not included for the same reason.

2.6. **While direct taxes and transfers together lower inequality and poverty, indirect taxes however increase inequality and poverty.** As mentioned in Chapter 1, indirect taxes still represents the largest share of tax revenue in Uruguay. In-kind transfers in education and health have the largest impact on reducing inequality in Uruguay. It is interesting to note that both the Gini and poverty count are lower when pensions are considered part of market income (our benchmark scenario) rather than as government transfers (our sensitivity analysis). This implies that contributory pensions play an important equalizing role. This is important, given that pension coverage has been increasing, as detailed in Chapter 4. Table 2.1 and Figures 2.2 and 2.3 show the impact of social spending and taxes on the Gini coefficient and the poverty headcount ratio for different poverty lines, including the international poverty lines of 2.50 and 4.00 PPP USD per day as well as the national moderate and extreme poverty lines.

Box 2-2 Definitions of Income Concepts: A Stylized Presentation

Household surveys seldom include the full range of information to generate each income concept needed for incidence analysis. Uruguay is no exception. That is why some of the items in the tax and social spending space had to be inferred, simulated or taken from secondary sources. The alternative income concepts used throughout this analysis are summarized in Diagram 1 below. Further details are available in Lustig and Higgins (2012). In addition, a brief description of how each income concept was constructed is in Annex 2.

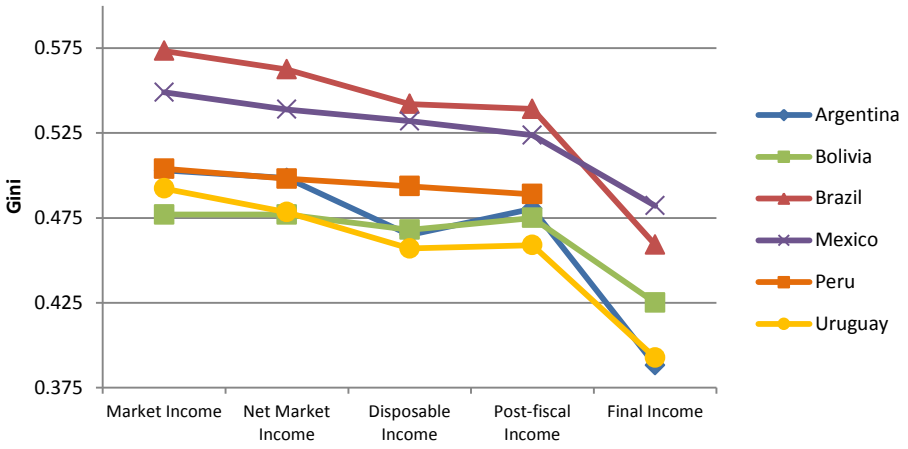
For the purposes of this exercise, social spending includes direct transfers plus government spending on education and health in the benchmark scenario and government spending on contributory pensions in the sensitivity analysis. Direct taxes include taxes on wages and capital plus contributions to social security excluding (including) the contribution to pension fund in benchmark scenario (sensitivity analysis). Indirect taxes include consumption taxes (assuming no evasion).



Note: in some cases the results for "final income*" are also presented, which is defined as disposable income plus in-kind transfers minus co-payments and user fees.

Source: Lustig and Higgins (2012)

Figure 2.1 Gini Coefficients for each Income Concept: Argentina, Bolivia, Brazil, Peru and Uruguay



Source: Lustig et al. (2012); for Uruguay authors' calculations based on *Encuesta Continua de Hogares* (2009) and Nat. Accts.
Note: For definition of income concepts see text.

Table 2.1. Taxes, Transfers, Inequality and Poverty. Benchmark and Sensitivity Analysis

Benchmark: Contributory pensions as part of Market Income					
Indicator	Market Income	Net Market	Disposable Income	Post-fiscal Income	Final Income
Gini	0.492	0.478	0.457	0.459	0.393
Headcount Index (Pov. Line US$2.5 PPP/day)	5.1%	5.1%	1.5%	2.3%	
Headcount Index (Pov. Line US$4 PPP/day)	11.6%	11.7%	6.7%	8.9%	
Headcount Index (National Extreme Pov. Line)	5.5%	5.5%	1.8%	2.7%	
Headcount Index (National Moderate Pov. Line)	25.8%	26.3%	22.7%	26.3%	

Sensitivity Analysis: Pensions are treated as a Government Transfer					
Indicator	Market Income	Net Market	Disposable Income	Post-fiscal Income	Final Income
Gini	0.527	0.510	0.454	0.456	0.385
Headcount Index (Pov. Line US$2.5 PPP/day)	8.5%	9.0%	1.5%	2.6%	
Headcount Index (Pov. Line US$4 PPP/day)	17.6%	19.0%	7.4%	9.8%	
Headcount Index (National Extreme Pov. Line)	9.2%	9.7%	1.9%	3.0%	
Headcount Index (National Moderate Pov. Line)	36.2%	39.7%	24.9%	29.3%	

Source: Lustig (coordinator), 2012; calculations based on *Encuesta Permanente de Hogares* (2009) and National Accounts.
Note: For definition of income concepts see text.

Figure 2.2. Gini: Benchmark vs. Sensitivity Analysis

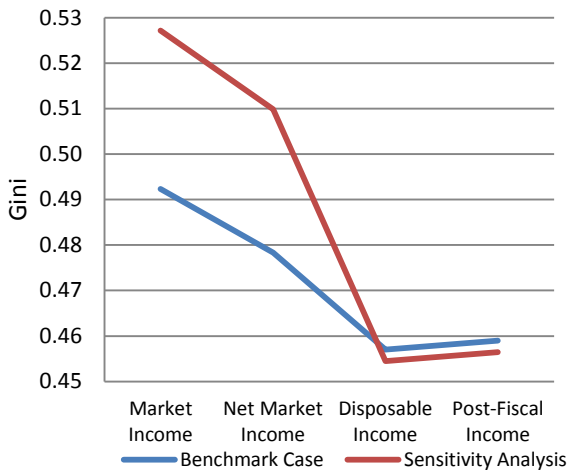
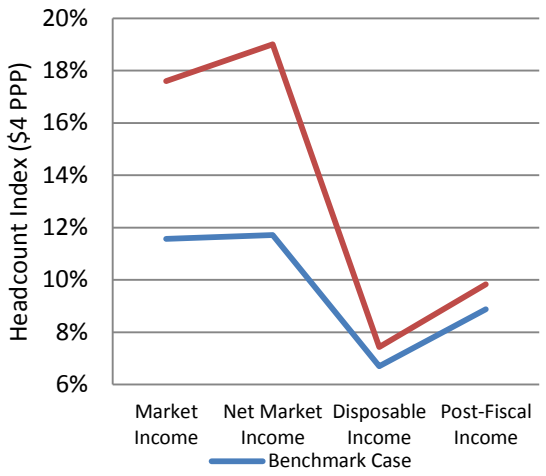


Figure 2.3. Headcount: Benchmark vs. Sensitivity Analysis



Source: Lustig et al. (2012); for Uruguay authors' calculations based on *Encuesta Continua de Hogares* (2009) and Nat. Accts.
Note: For definition of income concepts see text. All changes are measured with respect to Net Market Income. For the benchmark, contributory pensions are included as market income, for the sensitivity analysis, contributory pensions are treated as government transfers.

A.2. REDISTRIBUTIVE EFFECTIVENESS

2.7. Redistributive effectiveness of budget policies can be evaluated via the effectiveness indicator. The effectiveness indicator measures the impact on inequality or poverty of a given transfer.[21] As an example, to evaluate the redistributive effectiveness of direct transfers in terms of income inequality, the indicator measures the change in net market and disposable income Ginis (expressed as a percent share of the net market income Gini) and scales it by the size of direct transfers as a percentage of GDP. To evaluate the redistributive effectiveness of direct and in-kind transfers, the indicator is calculated with respect to changes in net market and final income Ginis.

2.8. **Uruguay is effective in terms of redistribution.** Figure 2.4 compares the redistributive effectiveness of government policies in Uruguay and the other five Latin American countries. Uruguay ranks second and first in terms of inequality and poverty reduction, but ranks fourth and second in effectiveness in inequality and comes out on top in terms of effectiveness in poverty reduction. As such, relative to its economic size, Uruguay gets the most mileage out of public spending and taxation in terms of reducing extreme and moderate poverty.

[21] The effectiveness indicator is defined as follows for the Gini, (and would be similarly defined for any other inequality or poverty measure by replacing the word Gini with the appropriate measure): For direct transfers, the effectiveness indicator measures the fall between the net market income and disposable income Ginis as a percent of the net market income Gini, divided by the size of direct transfers as a percent of GDP. Although the size of direct transfers is measured by budget size according to national accounts, only direct transfer programs that are captured by the survey (or otherwise estimated by the authors) are included, since they are the only programs that can lead to an observed change in income. For direct and in-kind transfers, the effectiveness indicator is the fall between the net market income and final income Ginis as a percent of the net market income Gini, divided by the size of the sum of direct transfers, education spending, health spending, and (where it was included in the analysis) housing and urban spending, as a percent of GDP. The formulas are in the Annex.

Figure 2.4. Decline in Gini, Headcount Ratio and Redistributive Effectiveness: Argentina, Bolivia, Brazil, Mexico, Peru and Uruguay

Source: Lustig et al. (2012); for Uruguay authors' calculations based on *Encuesta Continua de Hogares* (2009) and Nat. Accts.
Note: For definition of income concepts see text. For the headcount ratio, the changes are measured from disposable to net market income.

A.3. THE INCIDENCE OF TAXES AND SOCIAL SPENDING

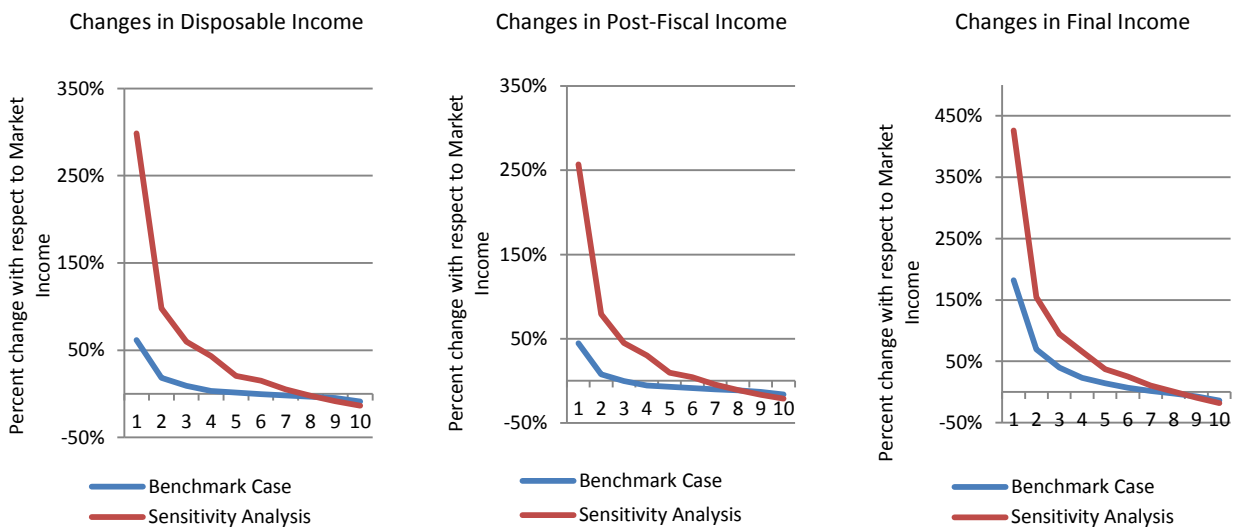
2.9. **Direct taxes and social spending improve fiscal incidence, but indirect taxes reduce it.** In Uruguay, the incidence of direct taxes and social spending follows the desired pattern: it rises and declines with income, respectively. We can see this in table 2.2, which displays the incidence of taxes and transfers by income deciles. In contrast, from this same table, we see that indirect taxes show the opposite: the two poorest deciles get hit the hardest. When contributory pensions are however treated as a government transfer (sensitivity analysis), the picture changes: the incidence of social spending is now much higher for the bottom deciles (see Figure 2.5). This is because contributory pensions go to households with very low or negligible market incomes.

Table 2.2. Incidence of Taxes and Transfers (Benchmark)

Deciles	Direct Taxes	Net Market Income	Non-contributory Pensions	Flagship CCT	Other Direct Transfers	All Direct Transfers	Disposable Income	Indirect Taxes	Post-Fiscal Income	In-Kind Education	In-Kind Health	In-Kind Transfers	Final Income
1	-0.4%	-0.4%	21.6%	14.3%	26.0%	61.9%	61.5%	-16.8%	44.7%	67.5%	70.2%	137.6%	182.4%
2	-0.9%	-0.9%	6.2%	4.9%	8.3%	19.3%	18.4%	-10.8%	7.7%	28.7%	33.1%	61.8%	69.5%
3	-1.3%	-1.3%	3.4%	1.9%	5.2%	10.4%	9.1%	-9.5%	-0.3%	17.6%	22.3%	39.9%	39.6%
4	-1.7%	-1.7%	1.6%	0.9%	2.6%	5.0%	3.4%	-8.8%	-5.4%	12.5%	16.2%	28.7%	23.3%
5	-2.0%	-2.0%	1.0%	0.4%	1.8%	3.2%	1.3%	-8.5%	-7.2%	9.3%	12.2%	21.5%	14.3%
6	-2.4%	-2.4%	0.6%	0.2%	1.3%	2.0%	-0.4%	-8.2%	-8.6%	6.7%	9.1%	15.7%	7.1%
7	-3.0%	-3.1%	0.3%	0.1%	0.7%	1.1%	-1.9%	-8.0%	-10.0%	5.1%	6.7%	11.8%	1.8%
8	-3.9%	-3.9%	0.1%	0.1%	0.4%	0.6%	-3.3%	-8.0%	-11.3%	4.2%	4.7%	8.9%	-2.4%
9	-5.3%	-5.3%	0.1%	0.0%	0.3%	0.3%	-5.0%	-8.1%	-13.0%	3.0%	3.1%	6.2%	-6.9%
10	-9.0%	-9.0%	0.0%	0.0%	0.1%	0.1%	-8.9%	-7.5%	-16.4%	1.0%	1.3%	2.3%	-14.1%
Total population	-5.4%	-5.4%	0.8%	0.5%	1.2%	2.4%	-3.0%	-8.1%	-11.1%	5.6%	6.7%	12.4%	1.3%

Source: Lustig et al. (2012); calculations for Uruguay based on *Encuesta Continua de Hogares* (2009). Note: The shaded columns are calculated as the sum of the previous columns.

Figure 2.5. Changes in Income by Decile



Source: Lustig et al. (2012); calculations for Uruguay based on *Encuesta Continua de Hogares* (2009) and National Accounts.
Note: For definition of income concepts see text. For the benchmark, contributory pensions are included as market income, for the sensitivity analysis, contributory pensions are treated as government transfers.

A.4. Progressivity of Taxes and Social Spending

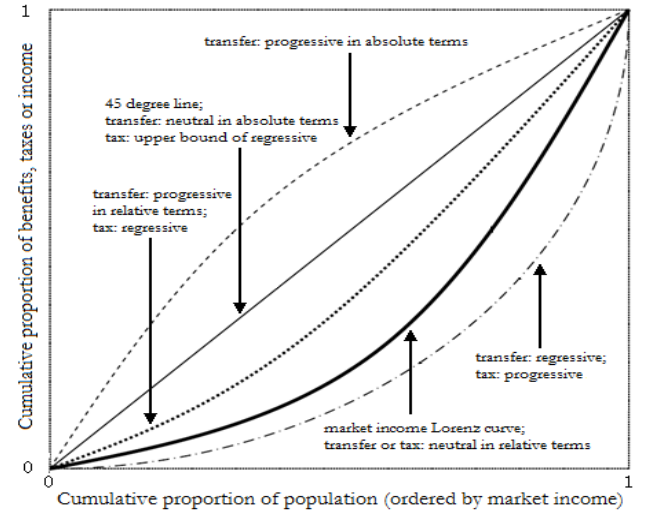
2.10. This section evaluates the progressivity of taxes and social spending in Uruguay. As there is no convention for defining progressivity, for the purpose of this study any transfer or tax that increases inequality is considered regressive while any transfer or tax that decreases inequality is considered progressive (see Box 2-3 for further details).

2.11. **Uruguay's overall tax system is progressive, although indirect taxes are slightly regressive.** Figure 2.7 shows that direct taxes in Uruguay are progressive, as direct taxation increases proportionally with market income. While indirect taxes are somewhat regressive, total taxes are progressive. As direct transfers are clearly progressive and spending on education and health is slightly progressive, total social spending is progressive in absolute terms.

Box 2-3 Defining Progressivity

In the literature, there is no convention for defining progressivity, especially for government transfers. For example, some authors consider transfers that are progressive in relative terms, regressive in absolute terms. For the purpose of this study, a very simple rule is applied: any transfer or tax that increases (decreases) inequality is called regressive (progressive). For a more detailed discussion see Lustig and Higgins (2012). Chart 2 presents concentration curves that correspond to progressive, neutral and regressive taxes and transfers as defined here.

Figure Box 2.1 Concentration Curves for Progressive and Regressive Transfers and Taxes

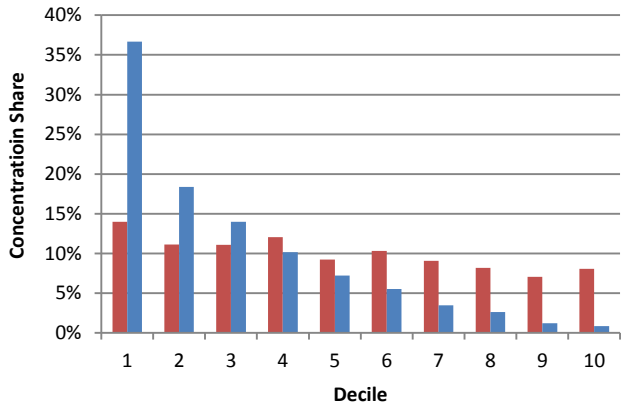


Source: Lustig and Higgins (2012)

In terms of concentration shares by decile, taxes are progressive (regressive) if the proportion paid is lower (higher) than the share of income for the poor and the opposite happens at the top of the income scale. A transfer is progressive in absolute terms if the proportion received is higher than both the share of income and the population share for the poorest decile; this relationship declines as one moves up to higher deciles.

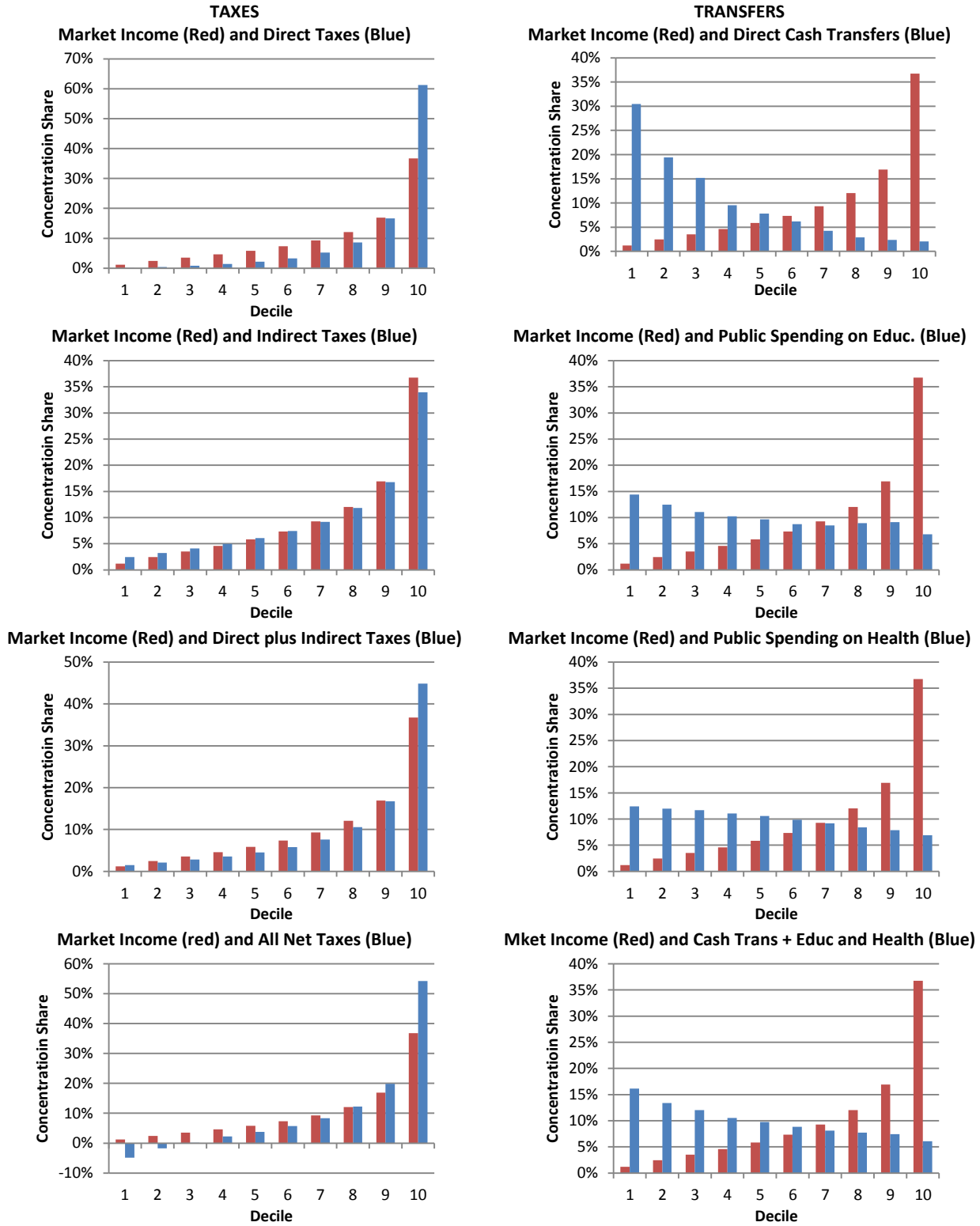
2.12. As expected, **non-contributory pensions are progressive in absolute terms** (Figure 2.6). In Uruguay, contributory pensions are found to be almost neutral in absolute terms, indicating that all deciles receive very similar per capita benefits; it should be remembered that such transfers still reduce inequality significantly. In addition, it is important to keep these points in mind for Chapter 4, which looks at pensions in greater detail.

Figure 2.6. Non-contributory Pensions (blue) and contributory pensions (red)



Source: Lustig et al. (2012); calculations based on *Encuesta Continua de Hogares* (2009).

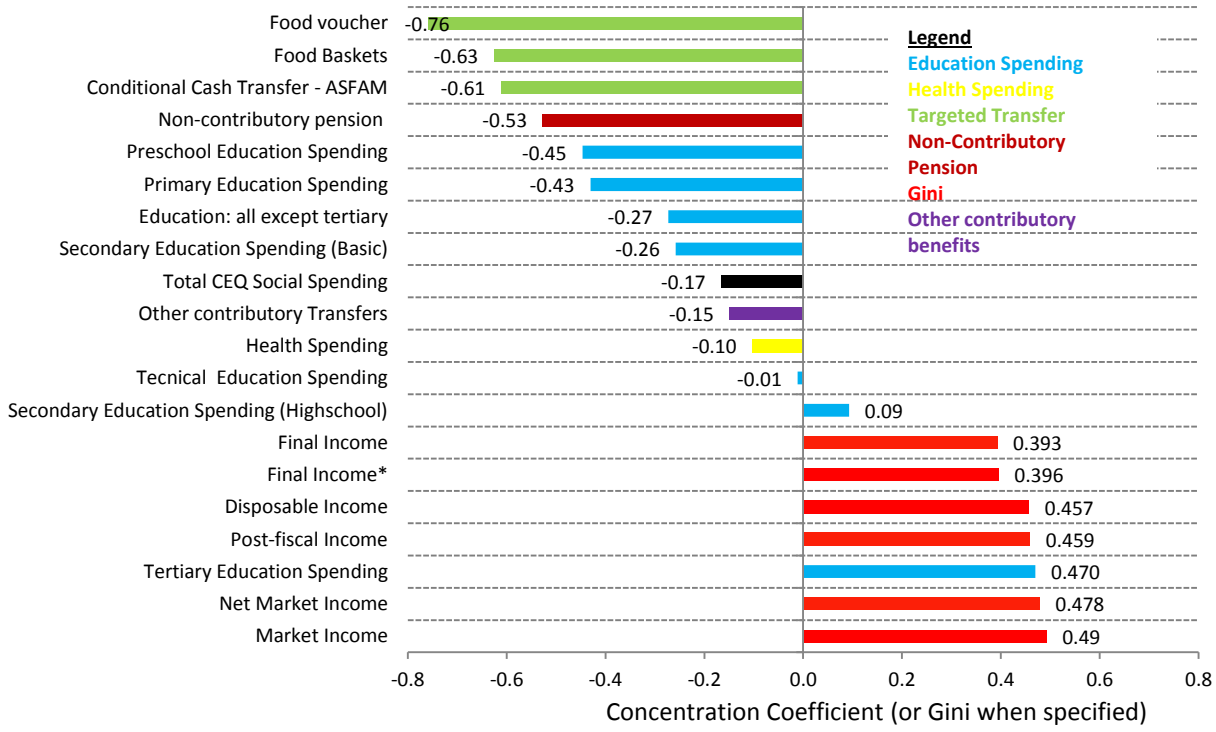
Figure 2.7. Concentration Shares of Taxes and Transfers



Source: Lustig et al. (2012); for Uruguay authors' calculations based on *Encuesta Continua de Hogares* (2009) and Nat. Accts.

2.13. **When contributory pensions are considered as part of market income, Uruguay's fiscal system is one of the second most progressive in the region.** Under the benchmark assumption, where contributory pensions are considered as part of market income, Uruguay's concentration coefficient for social spending is equal to -0.17 (Figure 2.8). This makes Uruguay's fiscal system, and in particular its cash transfer programs the second most progressive in absolute terms among the six countries considered here. The only component of social spending which is regressive (unequalizing) is spending on high school and tertiary education. However, even in this case one should keep in mind that findings presented here refer to average incidence; the marginal incidence of tertiary education could be different (and equalizing).

Figure 2.8. Concentration Coefficients by Spending Category and for Total Social Spending



Source: Lustig et al. (2012); calculations based on Encuesta Continua de Hogares (2009).
Note: CEQ (from Commitment to Equity, the name of the multi-country project) Social Spending includes all cash transfers (except for contributory pensions) and other direct transfers plus public spending on education and health. Any spending which reduces inequality shows a negative coefficient, while a positive coefficient indicates an increase in inequality.

B. ENHANCING URUGUAY'S REDISTRIBUTIVE CAPACITY: WHERE NEXT?

2.14. As the findings presented here reflect standard incidence analysis and thus do not account for behavioral or inter-temporal effects, marginal effects or concerns about macroeconomic sustainability, policy implications need to be drawn with care. With this caveat in mind, there are still some areas where the government may be able to further enhance its redistributive and anti-poverty capacity.

2.15. **About five percent of the extreme and moderate poor do not benefit from the existing safety net system.** Table 2.3 tabulates the average transfer for different "income lines", where extreme and moderate poverty are defined according to international poverty lines of US$2.50 and US$4 per day. The average transfer received by the extreme and moderate poor

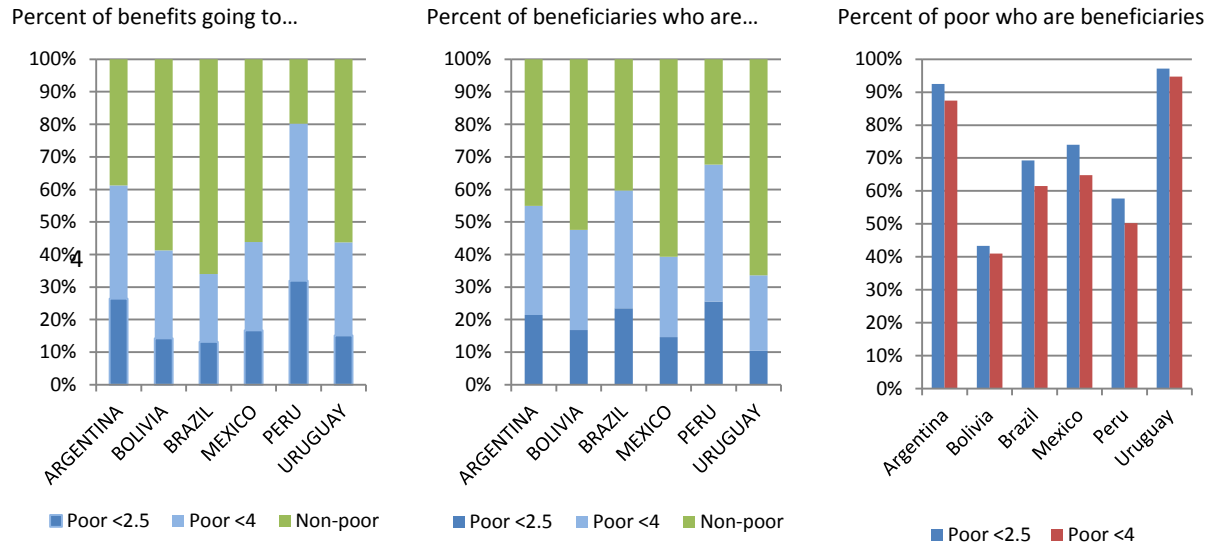
(among beneficiary households) appears to be sufficient to move them out of extreme and moderate poverty. However, Figure 2.9 shows that close to 5 percent of Uruguay's poor do not receive any direct transfers. As such, because of errors of exclusion and/or by design, the safety net system leaves a large portion of the poor unprotected.

Table 2.3 Per Capita Transfer to the Poor and Non-Poor

SPENDING CATEGORY	PER CAPITA IN DAILY US$ PPP DOLLARS (PPP 2005)									
Groups:	y < 1.25	1.25 < y < 2.5	**y < 2.5**	2.5 < y < 4	**y < 4**	4 < y < 10	10 < y < 50	y > 50	**y > 4**	Total
Conditional Cash Transfer ("Asignaciones Familiares")	$0.54	$0.52	**$0.53**	$0.52	**$0.52**	$0.50	$0.49	$0.68	**$0.50**	$0.51
Non-contributory pensions	$2.27	$2.31	**$2.30**	$2.20	**$2.25**	$2.38	$2.35	$2.08	**$2.37**	$2.33
Food baskets	$0.62	$0.53	**$0.55**	$0.48	**$0.52**	$0.39	$0.36	$0.41	**$0.38**	$0.43
Food vouchers	$0.30	$0.29	**$0.29**	$0.30	**$0.29**	$0.29	$0.29	$0.24	**$0.29**	$0.29
Other direct transfers	$1.64	$1.17	**$1.27**	$0.84	**$1.00**	$0.67	$0.86	$3.16	**$0.78**	$0.80
Above (all above for benefits, at least one for beneficiaries)	$1.93	$1.54	**$1.64**	$1.22	**$1.41**	$0.97	$0.94	$2.47	**$0.96**	$1.08
Education: child care	$0.86	$0.86	**$0.86**	$0.91	**$0.89**	$1.05	$1.14	$1.09	**$1.08**	$1.02
Education: primary	$1.83	$1.69	**$1.73**	$1.53	**$1.62**	$1.38	$1.27	$1.06	**$1.33**	$1.41
Education: secondary (ciclo básico)	$1.05	$1.12	**$1.10**	$1.15	**$1.13**	$1.31	$1.42	$1.43	**$1.36**	$1.32
Education: secondary (bachillerato)	$0.83	$1.02	**$0.98**	$1.19	**$1.11**	$1.32	$1.57	$1.58	**$1.50**	$1.47
Education: secondary technical	$1.72	$2.09	**$2.02**	$2.15	**$2.09**	$2.36	$2.96	$4.54	**$2.75**	$2.68
Education: all except tertiary	$2.24	$2.16	**$2.18**	$2.02	**$2.10**	$1.95	$1.92	$1.93	**$1.93**	$1.97
Education: tertiary				$2.63	**$2.63**	$2.90	$4.03	$4.23	**$3.95**	$3.94
Health	$1.96	$1.93	**$1.93**	$1.91	**$1.92**	$1.81	$1.55	$1.31	**$1.62**	$1.66
Contributory pensions after taxes	$9.93	$5.89	**$7.68**	$7.25	**$7.47**	$7.90	$9.35	$13.92	**$8.84**	$8.52
Income	$0.76	$1.90	**$1.61**	$3.29	**$2.55**	$6.99	$21.53	$83.63	**$21.75**	$19.53
Population by group	1.3%	3.8%	**5.1%**	6.5%	**11.6%**	27.8%	53.8%	6.8%	**88.4%**	100.0%

Source: Lustig et al. (2012); calculations based on *Encuesta Continua de Hogares*, 2009.

Figure 2.9. Leakages and coverage of direct transfers. Benchmark.



Source: Lustig et al. (2012); for Uruguay authors' calculations based on *Encuesta Continua de Hogares* (2009) and Nat. Accts.
Note: For the purpose of this analysis, a 'beneficiary' is someone who received at least one of the covered direct transfers.

2.16. **According to a first assessment, poor households with children and poor households in Montevideo face a greater likelihood of exclusion from direct transfers.** A preliminary glimpse at the characteristics of the 'excluded' can be found in Table 2.4 which displays the results of two *probit* regressions. The first regression estimates the probability of being poor before government transfers. The second regression evaluates the probability of remaining poor after government transfers, conditional on being poor before transfers.

Table 2.4. Probability of being and remaining extremely poor after direct transfers

Dependent dummy variable (right):	**Poor[a] before transfers**			**Poor after transfers, conditional on poor before**		
Independent dummy variables (below):	Coefficient	Std Error	Significant[b]	Coefficient	Std Error	Significant[b]
Intercept	-1.6543	0.1010	***	-0.2006	0.2530	
Children (omitted: no children)						
Household has children	0.9240	0.0360	***	0.6224	0.1290	***
Region (omitted: Interior urbano)						
Montevideo	-0.1366	0.0360	***	0.2648	0.0930	***
Interior Rural	0.3364	0.0460	***	0.1572	0.1050	
Gender of household head (omitted: female)						
Male	-0.0582	0.0340	*	0.0280	0.0930	
Age of household head (omitted: less than 25 years old)						
25-40 years old	0.2095	0.0800	***	-0.4158	0.1850	**
41-64 years old	-0.1581	0.0840	*	-0.5813	0.1920	***
65 years old or over	-0.4677	0.0940	***	-1.5081	0.2360	***
Maximum education level of household head (omitted: never attended school)						
Primary complete	-0.2523	0.0380	***	0.2173	0.0930	**
Secondary incomplete	-0.6358	0.0480	***	0.1190	0.1150	
Secondary complete	-1.4281	0.1480	***	-0.5393	0.4830	
Tertiary incomplete	-1.3035	0.1820	***	0.7997	0.6930	
Tertiary complete	-1.5891	0.2410	***			
Marital Status (omitted: divorced/widowed)						
Married	0.3599	0.0430	***	0.0446	0.1060	
Single	0.3683	0.0420	***	0.0093	0.0990	
Labor Market State						
Informal	-0.2425	0.0430	***	0.1090	0.1050	
Formal	-1.2219	0.0570	***	-0.2073	0.1520	
Unemployed	0.0209	0.0740		0.5466	0.1580	***
Race						
Afro	0.3651	0.0450	***	0.1390	0.0970	

Source: Lustig et al. (2012); calculations based on *Encuesta Continua de Hogares*, 2009.
Notes:
[a]: Using US$2.50 PPP per day,
[b]: a * indicates statistical significance at the 10% level, ** at the 5% level and * at the 1% level.
[c]: Dummy variable equal to 1 if the household contains one or more members below the age of 18.
Green (dark) indicates cases in which that group is less likely to be poor than the omitted group before taxes and transfers, but, conditional on being poor before transfers, is more likely than the omitted group to remain in poverty (with statistically significant coefficients in both probits); green (light) the same but the second probit was not significant; orange means that the probability is positive and significant in both cases.
Omitted variables: no children, urban interior, divorced/widowed, inactive, non-afro, household head: female, less than 25 years old, never attended school.

2.17. Two results stand out: first, households with children show a positive probability of remaining poor even after transfers. Second, while household heads that live in Montevideo and have completed only primary education or work in the formal sector have a lower likelihood of being poor, poor household heads with the same characteristics face a greater likelihood of remaining poor even after government transfers. This finding is reversed for household heads in

the age group of 25 to 40. As such, there appear to be certain groups of households whose characteristics keep them out of the existing safety net system (direct transfers). This warrants further analysis.

C. CONCLUDING REMARKS

2.18. **Uruguay's fiscal system achieves a significant reduction in inequality and poverty.** The results from the standard incidence analysis of taxes and social spending in Uruguay using the *Encuesta Continua de Hogares* (2009) show that Uruguay achieves a nontrivial reduction in inequality and poverty when all taxes and transfers are combined. In comparison with five other countries in Latin America, Uruguay's fiscal system ranks first in terms of poverty reduction, second in terms of inequality reduction, first in terms of poverty reduction effectiveness and second in terms of overall redistributive effectiveness. As the effectiveness indicator measures the impact on inequality or poverty of a given transfer, the high rating here indicates that, relative to its economic size, Uruguay gets the most mileage out of public spending and taxation in terms of reducing extreme and moderate poverty.

2.19. **In Uruguay, similar to other countries, direct taxes are progressive and indirect taxes are regressive.** Social spending is quite progressive in absolute terms and the only regressive item is spending on tertiary education. Contributory pensions are neutral in absolute terms; i.e., equalizing.

2.20. **Social spending on education and health is progressive except for tertiary education, which is neutral in relative terms.** The neutrality can be associated with high drop-out rates in secondary education. However, this is only a snapshot. It would be useful to conduct a marginal incidence analysis for tertiary education to track trends over time. Nevertheless, the fact that tertiary education is not progressive in absolute terms warrants further analysis to better understand its causes. Understanding the dynamics behind this phenomenon and introducing corrective measures are also likely to affect the incidence of tertiary education.

2.21. **Although extreme poverty by international standards is low and direct net transfers contribute to this outcome significantly, extreme poverty is not eradicated.** An assessment of whether this is a consequence of the size of the transfer in some of the programs or other factors may shed light on how cash transfer programs need to change so that extreme poverty can be eradicated**.**

Part 2

Fiscal Analysis at the Sectoral Level: Health, Social Protection and Energy

Chapter 3. Public Expenditure in the Health Sector

A. INTRODUCTION

3.1. **This chapter examines various aspects related to the efficiency of public expenditure on health in Uruguay.** To this end, **the first section** discusses the recent trends in public health expenditure and the main changes in its financing structure. Based on the most recent public budget accounting data (2005-2010) prepared by the General Accounting Office of Uruguay as well as Ministry of Public Health data, this first section presents the consolidated information on public expenditure on health for 2004-2010, its execution by providers and financing institutions, and sources of financing. In particular, it discusses the fundamental changes in the health system resulting from the implementation of the Integrated National Health System (*Sistema Nacional Integrado de Salud* – SNIS).

3.2. **The second section** addresses factors related to the quality, efficiency and equity of public expenditure on health by providing information on the epidemiological profile and health indicators in an effort to contextualize the outcomes of the ongoing health reform. Section 2 presents findings of a user satisfaction survey conducted in 2009, compiling the views of the beneficiaries of Uruguay's health system. Although the health impacts of the reform will only be apparent in the medium term, a number of preliminary outcomes are already beginning to emerge, specifically with respect to the financing scheme and greater equity in the health system.

3.3. **The third section** briefly reviews the cost and sustainability of the reform process, and **the fourth and final section** provides a brief overview of the Latin American experience with health insurance, with emphasis on the calculation methods of insurance premiums. This final section draws out what implications, if any, these experiences may have for Uruguay.

3.4. **From these sections some interesting points stand out that will help in understanding how this sector impacts the public expenditure framework in Uruguay.** While the fiscal cost of the health sector reform has been less than initially projected, resources allocated to the health sector has increased significantly and for some of the actors in the sector resources have doubled. Yet, this reform has facilitated an important transition from a budget allocation system mostly independent of production levels to one directly financed by the purchase of services. At the same time the health care system in Uruguay has become more equitable as increasingly it is publically funded and decreasingly by direct contributions. Though the main challenge to the country is the need to control and prevent non-communicable diseases, which generate significant costs to the system. Addressing this issue will help reduce the financial burden of the health system and therefore increase the sustainability of the reform.

B. PUBLIC EXPENDITURE AND FINANCING OF THE HEALTH SECTOR

3.5. **Uruguay launched a health sector reform in 2005 that included institutional and financial changes as well as changes in the delivery of health services.** The reform of the health system has been a key priority of the *Frente Amplio* Government which has been in office since 2005. The most important milestones of the reform were (a) enactment of Law 18,211 in December 2007, which created two institutes, the Integrated National Health System (SNIS) and the National Social Security (SNS), including the National Board of Health (JUNASA) to administer the SNS; and (b) decentralization of the State Health Services Administration (ASSE)

(Law 18,161 of July 2007), which, among other things, was granted autonomy and given new management tools, in an effort to create a separation between the Ministry of Health's policy and regulatory role and health services *per se*.

3.6. Important reforms that have accompanied these institutional changes are: i) the creation of a common set of rules for health insurance coverage, including the unification of insurance rates across the various sub-systems and an adjustment of age- and gender-risk premia; ii) a gradual increase in population coverage; iii) a substantial shift in the epidemiological focus towards preventive intervention; iv) a change in the health care model towards an integrated approach. The reform also aims to improve the efficiency of health service delivery.[22]

Table 3.1 Trend in public expenditure on health

	2004	2005	2006	2007	2008	2009	2010	2011
in millions of current UR$	12,005	13,280	16,282	18,613	26,726	32,202	37,735	43,874
in millions of 2010 constant UR$	17,473	18,656	20,850	22,994	31,186	34,374	37,735	41,391
% change in 2010 constant UR$		6.8	11.8	10.3	35.6	10.2	9.8	9.7
as a % of GDP	3.1	3.1	3.5	3.4	4.2	4.7	4.8	4.9
as a % of total expenditure (1)	12.3	13.2	14.2	14.2	17.6	18.5	19.6	20.1

Notes (1) Includes the Central Administration, entities under Article 220, interest payment on debt, and social security transfers.
Source: Prepared by the author, based on 2011 budget accounting and balancing data.

3.7. **The government's priority for health is reflected in a greater public resource allocation to the health sector since 2005**, as shown in Table 3.1. In 2011, public health expenditures stood at over UR$43,800 million, equivalent to 4.9 percent of GDP and equal to about 20 percent of the Central Administration and decentralized entities budget. Between 2005 and 2011, the budget and social security funds (payments and contributions) for the health sector increased in 2010 constant value terms at an annual average rate of 13.4 percent.

3.8. **Two main reasons account for this increase in public health expenditures.** First, the creation of a National Health Service (*Seguro Nacional de Salud* - SNS) and higher payments by the National Health Fund (*Fondo Nacional de Salud* - FONASA) to private and public providers in the Integrated National Health System (*Sistema Nacional Integrado de Salud* - SNIS) as a result of the inclusion of new SNS beneficiaries. Second, the budget increase of the State Health Services Administration (*Administración de Servicios de Salud del Estado* - ASSE).

3.9. Users of the entities in the SNIS network have the right to receive health coverage through twelve integrated health programs, as well as the preventive, diagnostic, and therapeutic benefits listed in the SNIS catalog of benefits, which includes the National Therapeutic Formulary. These elements together constitute the SNIS benefit plan, known as the PIAS (*Plan Integral de Atención de la Salud*).

3.10. **The SNIS has been established as an "umbrella" legal framework for compulsory health coverage**. SNIS has made it possible to offer the same benefit plan to approximately 95

[22] The main problems that prompted the health reform were: (i) serious fragmentation of the insurance systems, coupled with increasing inequity in the financing thereof; (ii) loss of linkage between the system's health care practices and prevailing epidemiology (NCDs); and (iii) poor MPH leadership of the health system as a result of its focus on managing the delivery of public health services under the ASSE. Once the reform was backed by the necessary legislation, a process of change got under way that continues to this day, thanks to which the Uruguayan Government has regained its leadership of the sector. For more details on the different institutions and the problems they were facing prior to the reform see World Bank (2005).

percent of the population.[23] This has been achieved by linking different insurers and insurer-providers[24] to their respective beneficiary-user populations and establishing a care model based on the PHC strategy, with integrated services and emphasis on the most common health problems.

3.11. The SNIS has determined that this care model should be made available to beneficiaries through a group of health care providers specifically identified as Integrated Private Providers, many of whom are also private insurers, who are authorized to provide care to SNS beneficiaries as well as voluntary subscribers. Depending on their commercial strategies, the insurers offer services to varying degrees in their role as providers. The integrated providers include public service providers such as the ASSE, private providers such as the collective medical care institutions (IAMC)[25], and integrated health insurers.

Table 3.2 Basic Architecture of the SNIS

	Integrated National Health System	
	Health Public Provision	***National Health Insurance***
Regulation	MPH-DIGESA-DIGESNIS	JUNASA-DIGESA-DIGESNIS
Financing source	Public budget	Personal contributions of workers and employer contributions. Government subsidies, if needed.
Financing agent	MEF	BPS (Contributions)
Service delivery	Public network: ASSE, university hospital, BSE, BPS-health	Integrated public and private providers: ASSE (9.6%), IAMCs (88.4%), integrated insurers (2%)
Benefit plan	PIAS	PIAS

Source: World Bank (2012a).

3.12. The populations under the SNIS that do not contribute to FONASA receive care from the public health provider, especially the ASSE network, and this care is financed by the public budget.

3.13. Users of the SNIS network have the right to receive health coverage through twelve integrated health programs, as well as the preventive, diagnostic, and therapeutic benefits listed

[23] In 2007, 23.7 percent of the population was insured under benefit plans that differed widely in terms of the health services provided. In contrast, in 2010, 47.4 percent of the population was covered by a universal benefit plan, which is financed by a single contributory scheme. Coverage has increased as the Government has incorporated previously excluded segments of the population under the SNS, regardless of whether they belonged to collectives that already offered coverage with an insurer or whether they were ASSE users without insurance. As a result, today, most (about 95 percent) of Uruguay's 3.4 million population is now under some kind of coverage scheme.

[24] Insurers can be public (ASSE) or private (IAMCs and private integrated insurance). The concept of "integrated" refers to the capacity to provide integrated care to beneficiaries. It is tied to the possibility of being able to provide the benefits under the PIAS, either alone or supplemented by a third party. Under 'integrated insurance' referred to in Art. 265 of Law 7,930, 19-12-2005, services may be provided to users through a free-contracting regime, as long as authorized by MPH and they remain subject to public health control. (Law 18,211, Art. 22).

[25] The private collective medical care institutions (IAMCs) may be any of the following: (a) health care associations, inspired by the principles of mutualism, which provide their members with medical care through mutual insurance, and their resources are dedicated exclusively to this purpose; (b) cooperatives of professionals, in which medical care is provided to their members and the social capital is contributed by the professionals who work in them; (c) health care services created and financed by private or mixed companies to provide nonprofit medical care for their employees and sometimes their family members; (d) other private professional medical care institutions that provide nonprofit medical care to their members and the social capital is contributed by the professionals, who are required to work in them. (Decree Law 18.151, Art. 6 as amended).

in the SNIS catalog of benefits, which includes the National Therapeutic Formulary. These elements together constitute the SNIS benefit plan, known as the PIAS (*Plan Integral de Atención de la Salud*).

3.14. **For SNIS providers within the SNS, the benefits received under this benefit plan are financed by premiums** (adjusted for risk and health outcomes), moderating rates and copayments, and the public budget. Premiums and copayments are financed directly or indirectly by individuals. Since the FONASA premium is guaranteed by the Government, in case of a short-fall in worker and employer contributions, public funds make up the difference; the need for public financing has however been minimal in recent years. The table below outlines the FONASA financing scheme.

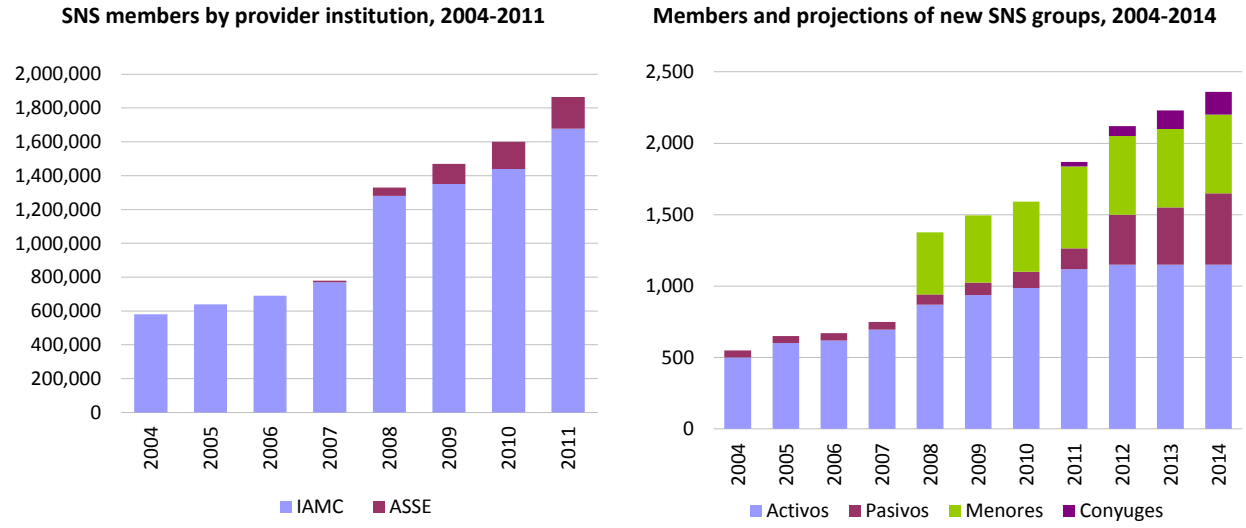
Table 3.3 Financing of SNS-FONASA

Contributors to FONASA: Public and Private Workers and Retirees	Income-based contributions	Employer contributions
Minors or dependents with disabilities	6.0%	5% of total remuneration subject to *montepío* plus quota supplements
No minors or dependents with disabilities	4.5%	
Income that does not exceed 2.5 times the base unit for benefits and withholding (BPC) (whether or not minors or dependents have a disability)	3.0%	

Source: Staff calculation

3.15. As indicated in Table 3.4, **health quota payments (DISSE/FONASA) virtually tripled in real terms, rising from UR$6,456 million in 2004 to UR$19,759 million in 2011**. By the end of 2011, the number of DISSE/FONASA beneficiaries climbed to over 1.8 million (*Instituciones de Asistencia Médica Colectiva* - IAMC and ASSE members combined), an increase of 1.2 million relative to 2004 (see Figure 3.1).

Figure 3.1 SNS members



Source: Staff calculation based on MPH database

3.16. **Figure 3.1 provides a breakdown of beneficiaries by the active population, minors under age 18, retirees and spouses.** Between 2012 and 2014, health insurance coverage will be extended to all spouses and domestic partners in four phases, starting with families with a high number of children and ending with those who have no children and recipients of special

assistance funds and, beginning this year, retirees and pensioners, based on a schedule set forth in Law 18,731 of January 2011, for which the implementing regulations were recently prepared.

3.17. **The other factor that contributed to greater public expenditure on health has been the increase in resources allocated to ASSE.** ASSE provides health care to individuals who do not receive social security benefits or who have chosen ASSE as insurance provider under the SNIS. The funds executed by ASSE increased from UR$6,474 million to UR$15,251 million between 2004 and 2011 (see Table 3.4). The creation of the National Health Service and the additional funds allocated to ASSE accounted for 87 percent of the increase in public expenditure on health during this period.

3.18. **However, within the context of the comprehensive reform of the health system, budget resources allocated to the Ministry of Public Health (MPH) also increased significantly.** Between 2004 and 2011, this allocation doubled the MPH's budget in real terms from UR$472 million to about UR$900 million. Additional resources were largely channeled toward strengthening regulatory activities and oversight of the health system, and expanding health prevention and health promotion activities. Funding for the military and police health programs as well as the university hospital also increased (see Table 3.4).

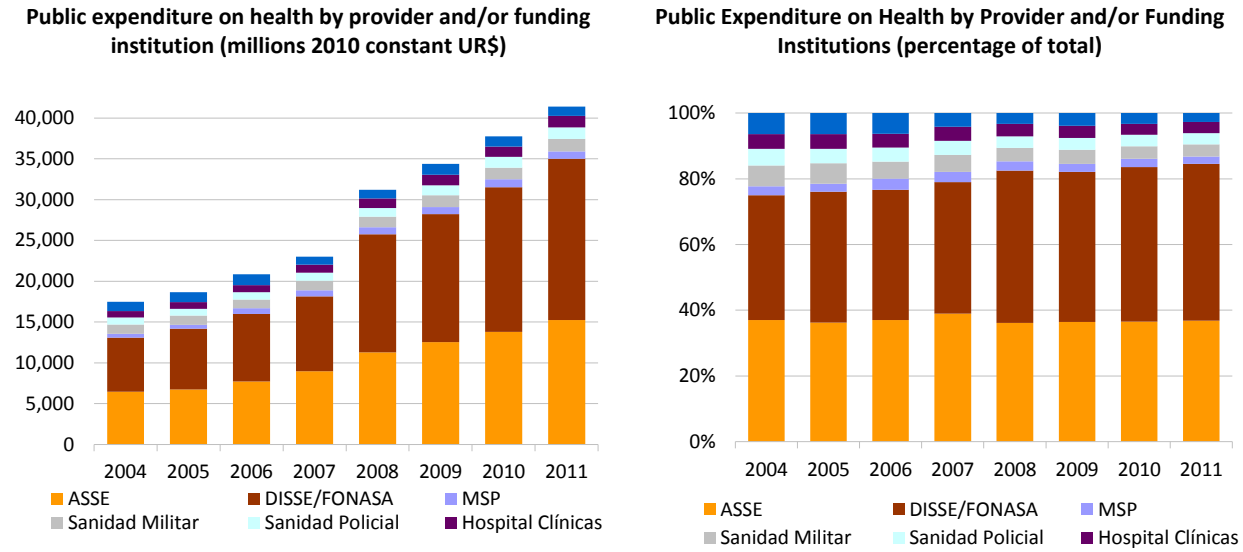
Table 3.4 Public Expenditure on Health by Provider and/or Funding Institutions (millions of 2010 constant UR$)

	2004	2005	2006	2007	2008	2009	2010	2011
MPH	472	451	703	713	866	849	958	901
ASSE	6,474	6,753	7,710	8,968	11,277	12,532	13,800	15,251
Military Health Program	1,112	1,158	1,076	1,182	1,288	1,467	1,419	1,539
Police Health Program	886	822	891	999	1,088	1,217	1,342	1,408
Hospital Clinics	780	830	885	976	1,175	1,285	1,261	1,411
DISSE/FONASA	6,628	7,439	8,273	9,195	14,460	15,690	17,728	19,750
FNR	1,121	1,205	1,313	961	1,033	1,334	1,228	1,130
Total	17,473	18,658	20,850	22,994	31,186	34,374	37,736	41,391

Source: Database of the General Accounting Office of Uruguay (GCN)
Excludes health expenditure by the BPS and government departments

3.19. **Figure 3.2 shows the trends in public resources allocated to the health sector based on institutions that execute and/or administer public health funds.** This figure indicates the increase in funds executed by ASSE and the allocation of resources from FONASA. DISSE/FONASA and the National Resource Fund (FNR) are the insurance institutions that buy health services from private providers (IAMC/ *Institutos de Medicina Altamente Especializada* - IMAEs) and, since the creation of the SNIS, from public health providers (ASSE). FONASA funding accounts for 48 percent of all public resources allocated to the sector.

Figure 3.2 Trend in Public Health Expenditure



Source: Staff calculation based on the database of the General Accounting Office of Uruguay

3.20. **Tables 3.5 and 3.6 show the executed budget of the MPH and ASSE, respectively, in 2010 constant prices based on the main expenditure items of these entities: wages, operating expenses, and investment.** A big portion of the higher expenditure by both entities is attributable to increases in the personnel category. In the case of the MPH, wage increases accounts for more than 60 percent of the budget increase. For ASSE, higher personnel expenses account for 44 percent of the budget increase; ASSE also channeled a significant amount of funding toward investment. According to most recent accounting records, ASSE invested more than US$115 million in the equipment and infrastructure of the public health network between 2005 and 2010.

Table 3.5 MPH Budget Execution - 2004-2011 (in millions of 2010 constant UR$)

	2004	2005	2006	2007	2008	2009	2010	2011
Wages	127	129	141	169	205	252	316	349
Operating expenses	313	291	508	497	653	584	617	515
Investment	3	3	23	11	7	14	27	38
Total	**442**	**423**	**672**	**677**	**866**	**850**	**960**	**902**

Source: Staff calculation based on the CGN database

Table 3-6 ASSE Budget Execution 2004-2011 (in millions of 2010 constant UR$)

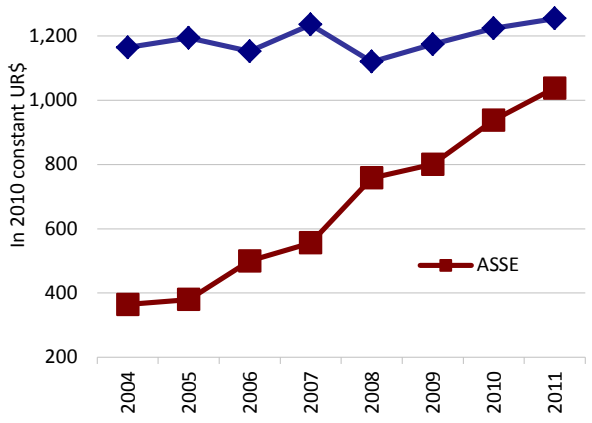
	2004	2005	2006	2007	2008	2009	2010	2011
Wages	2,084	2,246	2,807	3,386	4,027	4,973	5,453	6,142
Operating expenses	4,344	4,396	4,647	5,229	6,189	6,918	7,874	8,461
Investment	119	110	260	352	1,064	639	471	649
Total	**6,548**	**6,752**	**7,714**	**8,968**	**11,280**	**12,531**	**13,798**	**15,252**

Source: Staff calculation based on the CGN database

3.21. **The increase in ASSE's budget significantly reduced the gap in per user expenditures between the IAMCs and ASSE** (Figure 3.3). The *Frente Amplio* government identified the alignment of ASSE's per capita budget with that of the other SNIS providers as

one of the main goals of the health reform, as it marks a step towards equalizing benefits provided by different health service providers.

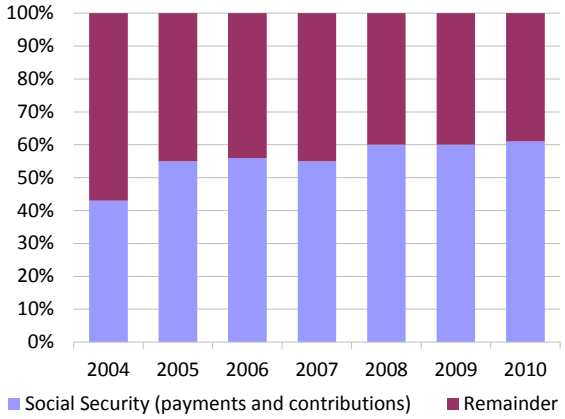
Figure 3.3 Per user expenditure of IAMCs and ASSE (in 2010 constant UR$)



Source: Source: Staff calculation based on the SINADI and MPH database

3.22. **In 2010, social security contributions accounted for more than 60 percent of health funding** (see Figure 3.4), with the remainder largely accounted for by general revenue. In the future, as new beneficiary groups will join the SNS (retirees and pensioners, recipients of special assistance funds, etc.), the share of social security contribution will increase even further.

Figure 3.4 Financing Composition of Public Expenditure on Health



Source: Source: Staff calculation based on the CGN database

3.23. **The change in the health care financing model has been one of the key objectives of the new health system introduced in 2005.** According to National Health Accounts estimates (*Cuentas Nacionales de Salud* - CNS), in 2004 half of funding came from public sources (taxes, social security contributions, and public enterprise payments). Private funding from households through prepayment contributions and out-of-pocket expenses made up the other half. The reform increased the share of public funding, while direct contributions from users through pre-payments, copayments and direct medication purchases declined (see Table 3.7). As a result, Uruguay's health care system has become more equitable.

Table 3.7 Sources of Health Care Financing in Uruguay for selected years, in percent

	2000	2004	2008
General taxes	25.5	29.6	33.5
Parastatal entities and public entities	2.3	2.3	1.0
Social Security	14.2	17.7	29.2
Employer contributions	9.6	11.9	14.7
Employee contributions/liabilities	4.6	5.8	14.5
Privately funded expenditure on health	53.4	49.6	36.4
Debt	4.6	0.8	0.0
Grand total	**100.0**	**100.0**	**100.0**

Source: National Health Care Accounts (2004) and National Expenditure and Financing Accounts 1999–2000

C. ANALYSIS OF QUALITY, EFFICIENCY, AND EQUITY IN HEALTH CARE

3.24. **This section assesses the impact of the introduction of National Health Insurance system on health outcomes.** This section analyzes the impact on changes in infant and maternal mortality, the main causes of death, morbidity, and trends in communicable and non-communicable diseases. In addition, it presents preliminary reform achievements with respect to quality, efficiency and equity of the overall health care system.

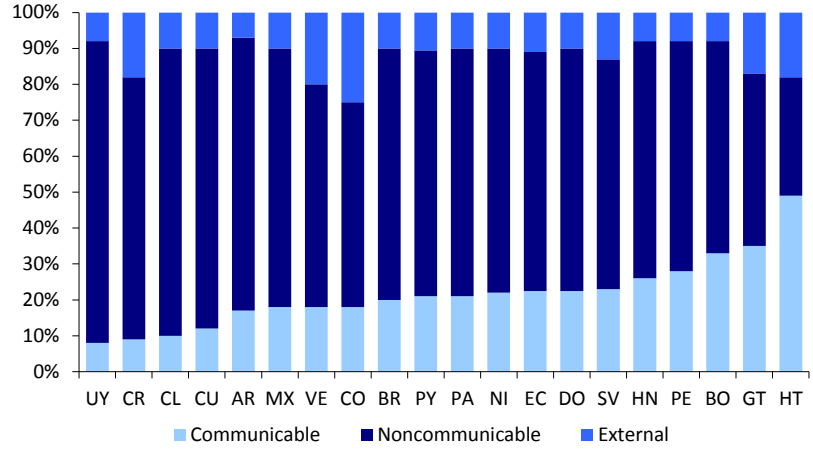
3.25. **Uruguay's gross mortality rate rose to 9.5 per 1,000 inhabitants in 2011.** Mortality linked to diseases of the circulatory system is the main cause of death in Uruguay, accounting for 29.5 percent of deaths in 2010. Although high, this rate has fallen in recent years as share of cardiovascular diseases. The second leading cause of death are malignant tumors, accounting for 23.8 percent of deaths in 2010, followed by respiratory diseases, which account for 10.6 percent of deaths in 2010.

3.26. **Uruguay has the lowest incidence of communicable diseases in LAC, but non-communicable diseases present a challenge.** While communicable diseases cause fewer than 10 percent of deaths, Uruguay's main challenge is reducing deaths caused by non-communicable diseases.

3.27. **Cuba, Chile, and Uruguay are in a very advanced stage of demographic transition** (ECLAC 2011), which is marked by a shift from the presence and lethality of acute infectious diseases to the prevalence of chronic degenerative diseases (see Figure 3.6). As gross mortality declines, chronic degenerative diseases assume greater relative importance.

3.28. **The control and prevention of non-communicable diseases are expensive for the public health system.** They require universal health prevention and promotion strategies, together with health policies that aimed at modifying lifestyles and encouraging healthier habits among the population. Such policies will only achieve the desired outcomes if they are sustained over time.

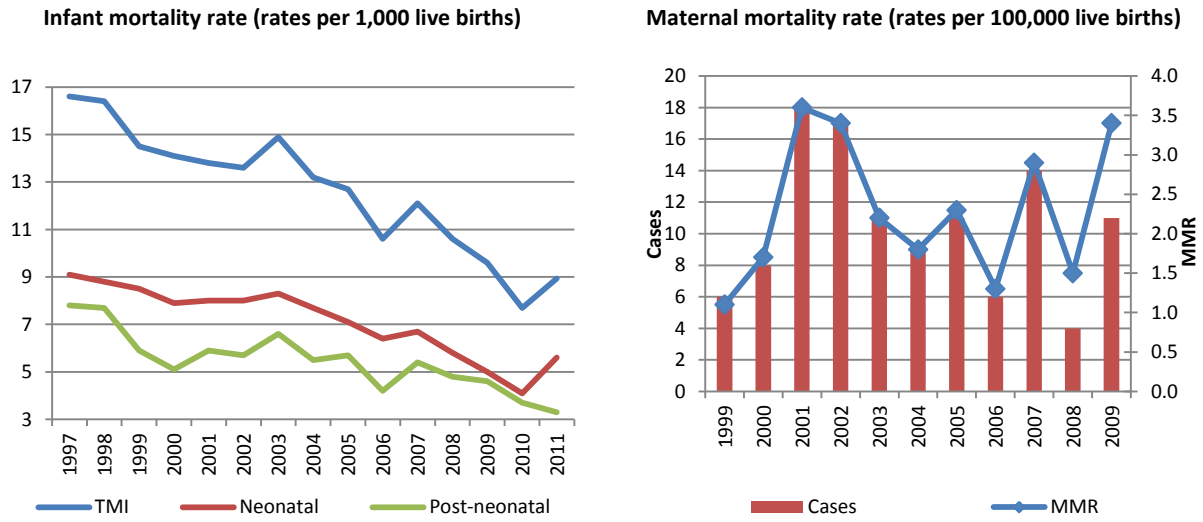
Figure 3.5 Breakdown of causes of death and life expectancy at birth in Latin American and Caribbean countries



Source: WHO 2009

3.29. **Infant mortality has been on the decline for more than 20 years.** In 2010, the infant mortality rate (IMR) stood at 7.7 deaths per 1,000 live births, one of the lowest rates in LAC.

Figure 3.6 Trend in the infant mortality rate and maternal mortality rate



Source: Vital Statistics (INE)

3.30. **Trends in maternal mortality have been more uneven.** Maternal mortality increased significantly in 2001with the economic and social crisis, and has declined since, although there have been wide fluctuations. Such an outcome is unexpected given the fact that virtually all births are institutional births and, without exception, cared for by professional staff. A study conducted by the Division of Health Economics (MPH, 2010) indicates that this finding may be caused by a relatively high number of unwanted or adolescent pregnancies. These outcomes can only be reversed by stepping up preventive and health promotion activities in this age group.

3.31. **Vaccine-preventable communicable diseases subject to mandatory reporting have sharply declined in recent years** (Table 3.8). This has been the case for chicken pox, mumps, and whooping cough. The absence of reported cases of rubella and measles between 2005 and 2010 demonstrates the effectiveness of Uruguay's annual vaccination plan.

3.32. **Emerging diseases such as dengue and malaria should be noted, although cases of malaria have declined sharply.** The number of HIV/AIDS cases reported has also fallen and the number of cases of vertical transmission (mother to child) of HIV/AIDS has declined substantially. The lower incidence of vertical transmission reflects the improved effectiveness of prenatal checks and care during delivery.

Table 3.8 Morbidity Associated with Communicable Diseases, 2005 - 2010

		2005	2006	2007	2008	2009	2010
Number of confirmed cases of vaccine-preventable diseases	Chickenpox	1,622	191	162	101	40	27
	Rubella	0	0	0	0	0	0
	Measles	0	0	0	0	0	0
	Mumps	2,144	171	234	41	17	14
	Whooping cough	17	3	32	2	5	6
Number of confirmed cases of dengue		5	3	6	1	8	6
Number of confirmed cases of malaria		27	15	11	11	3	4
Number of HIV/AIDS cases		876	130	178	58	298	36
Number of cases of vertical transmission of HIV/AIDS		9	9	7	6	4	4

Source: Staff calculation based on the Mandatory Disease Reporting Newsletter, MPH

C.1. HEALTH CARE INDICATORS —EFFICIENCY, QUALITY, AND ACCESS TO HEALTH

3.33. **The implementation of the national health insurance has already brought about several changes in Uruguay's health care production system:**

3.34. **The number of annual consultations by ASSE members has increased.** According to ASSE, the number of annual consultations increased by over one million between 2005 and 2010. This increase was accompanied by a decline in the number of public health system users, which led to greater balance in the number of member-based consultations between the public system and collective health care institutions. However, with respect to the number of annual consultations, in 2010 there still remained a significant gap of 6.4 between integrated insurers, and the collective health care system and ASSE (Table 3.9).

Table 3.9 Health Care Production Indicators

		2005	2006	2007	2008	2009	2010	2011
Number of annual consultations per member								
IAMC	Non-emergency	5.6	5.6	5.7	5.7	5.7	5.8	n.a.
	Emergency	0.9	0.9	1	1	1	1.1	n.a.
Integrated Insurance System	Non-emergency	n/d	n/d	6.1	6.2	6.5	6.4	n.a.
	Emergency	n/d	n/d	1.3	1.3	1.3	1.2	n.a.
ASSE	Total	4.1	4.2	4.7	5	5.6	5.8	6.4
Annual discharges per 1,000 members								
IAMC		138.4	136.5	136.9	127.5	111.5	118.4	n.a.
Integrated Insurance System		s/d	s/d	115.2	115.5	111.9	112.5	n.a.
ASSE		s/d	s/d	126.6	133.6	125.4	131.4	134.1
Annual surgical interventions per 1,000 members								
IAMC		69.5	69	67.5	65.9	65.1	67.3	n.a.
Integrated Insurance System		s/d	s/d	76.8	75.3	84.4	86.6	n.a.
ASSE		s/d	s/d	31.8	40.2	42.6	43	44.5

Source: Staff calculation based on the SINADI and ASSE databases

3.35. **For hospital discharges, health care indicators point to a decline in the number of hospital stays per 1,000 members**. The collective health care system went from 138.4 discharges per 1,000 members in 2005 to 118.4 per 1,000 members in 2010. The same trend occurred with discharges from the integrated insurance system. The main reason for the decline in hospital stays is related to progress with the home health care model, which has become more popular, in particular within the collective health care system in the interior (*Medical Federation of the Interior* - FEMI). For ASSE, the number of discharges per 1,000 members increased between 2007 and 2010, albeit with some fluctuations.

3.36. **However, surgical interventions per 1,000 members increased both in the integrated insurance system and ASSE**. Though this is likely caused by a decline in the member numbers in both subsystems.

3.37. **One of the objectives of health system reform was to optimize the supply of health services to ensure the financial sustainability of the insurance scheme.** Sector studies indicate that the system provides an excessive amount of services, particularly in the area of intensive care. Table 3.10 shows the percentage of occupancy of beds for moderate and intensive care during 2005 and 2010. While the percentage of occupancy did not change significantly for the system as a whole, a regional disaggregation reveals an increase in the percentage of occupancy with respect to moderate care in Montevideo and a significant reduction in the percentage of occupancy in the interior of the country. The same trend applies to the occupancy of beds in intensive care units. Taken together, these points to greater usage of health resources in Montevideo and to a lower usage in the interior. As ASSE does not publish such indicators, it was not possible to conduct an overall analysis of the use and efficiency of health resources.

Table 3.10 Efficiency Indicators

	2005	2006	2007	2008	2009	2010
Percentage of occupancy for moderate care patients						
IAMC	74.2	70.1	64.5	69.4	72.6	71.3
IAMC Montevideo	73.6	72.8	74	75.8	80.0	78.8
IAMC Interior	74.6	65.6	60.5	58.4	61.4	60.0
Percentage of occupancy in intensive/intermediate care						
IAMC	49.5	46.1	41.5	47.3	52.3	50.7
IAMC Montevideo	50.8	49.8	45.7	48.3	55	55.3
IAMC Interior	45.8	36.7	39.4	44.6	46.7	41.2

Source: SINAD

3.38. **Although an assessment of health reform outcomes remains premature, Table 3.11 presents several indicators that can offer some preliminary indications.** One preliminary but solid indicator is the percentage of children with low birth weight. As shown in Table 3.10, the rate of premature births and full-term, low-birth weight babies stands at over 8 percent, a figure that has increased relative to the 1993 (7.6 percent). This outcome may however be explained by the fact that care for adolescent pregnancies remains a challenge, as previously mentioned.

3.39. **Poor outcomes in the area of low birth weight are consistent with the information on pregnancy care by gestation period.** Based on the information provided by the MPH's General Directorate of Health for 2008, only 43.3 percent of pregnant women in the entire country received care during their first trimester of pregnancy. This country-wide data is however not aligned with the reported outcomes of the collective health care institutions and the integrated insurance system. According to SINADI, in 2008, 70 percent of pregnant women received care

during the first month of pregnancy. In the case of the integrated insurance system, early care for pregnant women climbed to 98.3 percent**. These figures point to significant differences in quality between the public health system, the collective health care institutions, and the integrated insurance system.** SINADI data also revealed an increase in the percentage of cesareans, with Uruguay having a high rate of this type of surgical intervention.

Table 3.11 Health Outcomes

	2005	2006	2007	2008	2009	2010
Percentage of low birth weight children						
Entire country	8.6	8.4	8.3	8.3	8.7	n/d
Breakdown of pregnancy care by gestation period						
1st consultation in 1st trimester	44.0	45.0	41.4	43.3	n/d	n/d
1st consultation in 2nd trimester	44.0	44.0	44.9	43.9	n/d	n/d
1st consultation in 3rd trimester	12.0	11.0	8.3	7.4	n/d	n/d
Caesarean Rate						
IAMC	43.2	44.1	45.8	45.9	46.4	48.9
Integrated insurance	n/d	n/d	52.6	54.0	51.5	52.9
ASSE	n/d	n/d	n/d	n/d	n/d	n/d
Pregnancy rate – care provided in first month						
IAMC	n/d	72.5	68.8	70.0	76.0	82.0
Integrated insurance system	n/d	n/d	98.2	98.3	96.1	98.5
ASSE	n/d	n/d	n/d	n/d	n/d	n/d
Rate of repeat consultations in centralized emergency care						
IAMC	4.2	4.2	4.5	5.6	5.7	5.5
Integrated Insurance system	n/d	n/d	5.1	5.5	5.5	5.5
ASSE	n/d	n/d	n/d	n/d	n/d	n/d
Reason for non-emergency/emergency consultations						
IAMC	n/d	6.1	5.9	5.6	5.5	5.3
Integrated Insurance system	n/d	n/d	4.9	4.7	5.2	5.2
ASSE	n/d	n/d	n/d	n/d	n/d	n/d

Source: Prepared by the author using the database of the Ministry of Public Health – General Directorate for Health – SINADI

3.40. **Based on the survey of a broad range of health care indicators, health information systems are very advanced in the private health care institutions** (IAMCs and the integrated insurance system). However, this is not the case for ASSE, which needs to bring its information system up to the level of the other institutions.

3.41. **An analysis of the programmatic structure of the Ministry of Health's budget is unfortunately not possible, which implies that changes in the expenditure allocation for different health functions cannot be assessed.** In particular, the available information does not reveal if the health system has effectively moved towards a new model of care which places greater priority to prevention and primary health care and away from an essentially curative and care-based system.

C.2. USER SATISFACTION INDICATORS

3.42. **In 2009, the National Board of Health (*Junta Nacional de Salud* - JUNASA) carried out its first user satisfaction survey to gauge the level of user satisfaction with first-level care provision within the Integrated National Health System.** The survey covered the following areas: personal care by different providers, access to services, availability of specialists and medications, wait times, complexity of procedures and comfort and amenities in the physical environment of providers. The main results of the survey are the following:

- **Satisfaction**. **The vast majority of the health system users are satisfied with the institution they use.** While users where satisfied in general, satisfaction was particularly high among users of health insurance companies (more than half indicate that they were very satisfied) and ASSE, and moderate among collective health care institutions, especially in Montevideo. Users indicated a strong desire to remain with their current institution and very few expressed a desire to change in coming months. Despite general satisfaction and a desire to remain with the current institutions, many users were nevertheless reluctant to recommend their institution to other potential users. This trend was more pronounced among residents of Montevideo.
- **Access**. **While the majority of users (60 percent) considered visiting hours adequate and managed to see a doctor at a time convenient to them, there is also some dissatisfaction in this area.** Almost one in five users regarded the visiting hours of doctors and/or specialists as inconvenient. This is appears to be a more of a concern for collective health care institutions than for insurance companies or ASSE. Furthermore, almost one-third of users did not manage to see a doctor at a time convenient to them and more than 25 percent felt that they had to spend a long time in the waiting room before being attended (after the appointment time had passed).
- **Facilities and personal treatment**. **Facilities were assessed as positive across the board.** Private insurers received the highest scores, followed by collective health care institutions in the interior. Doctors received very positive user assessments, possibly because of good performance, personal contact to users and the fact that doctors are generally held in very high regard by society. The main areas were improvement in medical care was suggested were: better knowledge of the clinical history and better explanations by doctors on treatments and recommended procedures. Users of collective health care institutions in Montevideo expressed the greater dissatisfaction in this regard.
- **Rights and Obligations. The level of information and awareness of information channels related to rights, obligations, and complaints was rated as poor.** Health insurance companies fared better in this area. The vast majority of collective health insurance companies and ASSE users expressed that they had not received sufficient information on their rights vis-à-vis the institution. While health insurance companies fared slightly better, only one-third of users recalled ever having received information on their rights.

Figure 3.7 Overall Satisfaction: User Views of the System

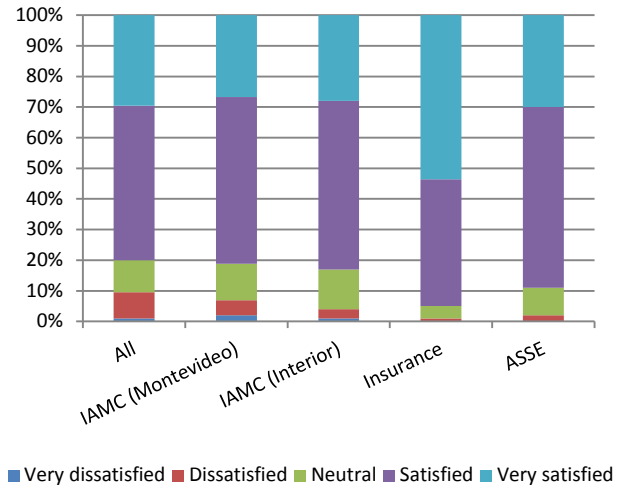
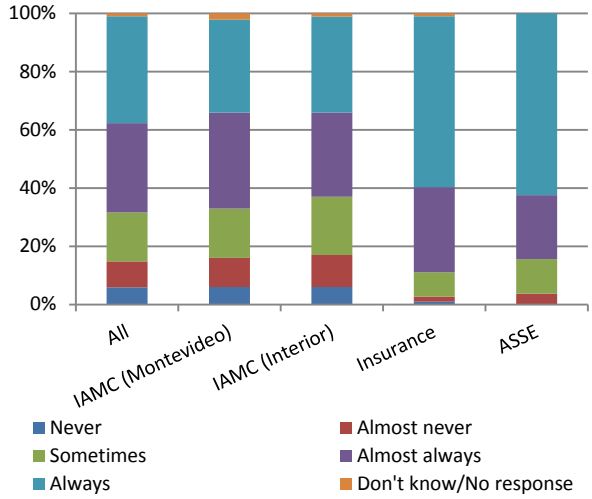


Figure 3.8 Availability of appointments at a convenient time



D. FINANCIAL COST AND SUSTAINABILITY OF THE REFORM

3.43. **The fiscal cost of the reform has been moderate or even less than initially projected.** Based on the most recent accounting records from JUNASA, in 2010 the National Health Fund (FONASA) had an operating deficit of roughly US$26.4 million (Table 3.12). The cumulative operating deficit stands at US$100 million.

Table 3.12 FONASA - Inflows, Outflows, and Financial Performance Structure (in millions of current UR$)

	2008	2009	2010
Inflows			
BPS contributions	11,451.6	13,510.1	16,508.2
Central Government contributions	1,669.9	3,168.1	3,372.1
Integrated insurance commissions	10.8	13.1	17.1
Pre-paid commissions		7.2	3.8
Total inflows	**13,132.3**	**16,698.5**	**19,901.2**
Outflows			
Payment of collective health insurance premiums	12,210.9	14,478.1	16,915.0
Payment of ASSE premiums	689.0	1,144.1	1,507.3
Payment of integrated insurance premiums	180.7	220.8	282.4
Payment of FNR	1,071.5	1,421.1	1,710.0
Target repayments			-5.8
Accounting adjustments		4.4	
Total outflows	**14,152.1**	**17,268.5**	**20,408.9**
Operating balance	***-1,019.8***	***-570.0***	***-507.7***
Operating balance (in millions of dollars)	***-41.9***	***-28.9***	***-26.4***

Source: Staff calculation based on the JUNASA database

3.44. **Economic and social conditions have been conducive to advancing with the much-needed reform of the sector that, historically, has been resistant to change.** Higher household income and the reduction in out-of-pocket expenditure on health certainly generated the support and consensus needed for the reform effort. In addition, higher levels of formal employment and wage increases lowered the fiscal cost of the reform. Finally, medical and non-medical staff supported the reform effort.

3.45. **The biggest challenge facing the National Health System is the containment of health care costs given Uruguay's demographic and epidemiological transition.** This

requires a radical shift in the current health care model towards a greater focus on efforts to address the country's current and future epidemiological profile by promoting health and preventive care and by diagnosing and controlling chronic non-communicable disease risk factors. Addressing these challenges will lead to significant improvements in health outcomes and, in consequence, reduce the financial burden of health services or, at least, stabilize it.

3.46. Uruguay, as well as many other LAC countries, in the future will need to develop sustainable health care systems that respond to the population's new epidemiological needs. While the technical, institutional, and political complexities of the health sector have made it hard for economic policy makers in most of LAC to engage with this sector, in the future, governments will have to address the dynamics inside this sector. **There is a high likelihood that there will be growing pressure for expanded and improved health care services.** This pressure is a likely effect of the combination of population aging, the greater weight of non-communicable diseases, and a high income elasticity of the demand for health care likely to accompany economic growth during the next several decades.

3.47. While Cotlear (2011) estimates that the median LAC country will be likely to see an increase in health care costs of 4.3 percent of GDP by 2050, the impact for Uruguay is predicted to be milder at about 2 percent of GDP over the same time period. **Controlling the contents of the benefits plan, which determines the set of services for the beneficiaries, will be crucial to avoid unnecessary expansion with not cost effective care and to maintain improved health care services.**

E. RECOMMENDATIONS[26]

3.48. The evolution of the health reform in Uruguay has reached a point where new policy instruments are needed for economic regulation of the sector.

3.49. **A key concern for Uruguay's health sector is that the health care coverage under the current PIAS benefit plan is not totally explicitly defined.** The establishment of the benefit plan is therefore a central topic for health regulation, and its concrete definition and detailed explanation have significant consequences in terms of efficiency, governance and institutional quality.

3.50. As under the current system all insurers are required to provide the same benefit plan and the premium set by the Government determines the financing received by the insurers, the **insurance premium is thus directly linked to the price of the benefit plan**. It is therefore also crucial for regulation to refine the methodology for determining the insurance premium, as it has an increasing relevance for the sector and implications for fiscal sustainability.[27] The relationship

[26]This section was prepared based on World Bank (2012a). Please refer to this report for further analysis and recommendations. As well as example of how other countries in the region are determining insurance premiums.

[27] Income for the insurers (except for the ASSE, which is mainly financed by the public budget) comes from an SNS capitation scheme (with both a health quota and a target quota, which is affected by outcomes), premiums from non-SNS beneficiaries, copayments in the form of service orders and vouchers, and the sale of services. During the reform, the importance of SNS income has been increasing for the IAMCs because of growing affiliates. In 2010, the health quota represented 52 percent of the income, and the target quota, 4.3 percent, compared to 36 percent and 0.3 percent in 2007, respectively.

between the level of definition in the PIAS and in the health information system to monitor how the PIAS is used and how it would affect the cost of the insurance premium.

3.51. The current PIAS health coverage is broad and covers benefits of all levels of complexity.[28] However, much of the coverage is not precisely enough defined to establish explicit operational connections between the defined programs and the list of available health care benefits; the PIAS currently does not specify the disease entities or the physiological events covered under each program.

3.52. A regulatory framework consisting of legal norms, procedures, protocols, and explicit, detailed agreements for the use of the PIAS is required to clearly define the operational linkages between programs and disease entities as well as health conditions and benefits.[29] Definition of these e linkages is critical to allow improvements in the current health information system and subsequently, to get more accurate and updated actuarial cost in the NHIS.

3.53. An important point that needs to be considered is the following: the more precisely a benefits plan is defined, the better it is possible to: (i) perform a cost analysis justifying the premium; (ii) audit the quality of services and limit litigation; and (iii) disseminate the results of these analyses to allow beneficiaries to take ownership of their right to access to health care by selecting an adequate policy.

3.54. Regulation will also need to address short-comings in the current **health information systems to establish a framework for monitoring and evaluating the benefit plan**.

3.55. Within this context, World Bank (2012a) proposes the following lines of action:

PIAS Benefits Plan

3.56. Accelerate the standardization and protocolization of PIAS; establish normative links between priority disease programs, health conditions and benefits, ensuring preventive care; strengthen the mechanisms for auditing benefits in the field.

Insurance Premium

3.57. In line with international practice, **move toward microcosting**, as a basis to determine a fair price for the insurance premium. This could be done even partially, based on: (i) improvements in the definition of the benefit plan that require health care costs to be backed up with detailed information on the delivery of care from providers in the health system, both public and private, or (ii) agreements to install cost centers by processes in some of the insurance companies for certain groups of pathologies, such as observatories to trace the cost of processes.

3.58. Regular review of the conditions for **competition among insurers**, in an effort to keep health care costs under control.

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[28] The PIAS also covers a list of high-complexity and/or high-cost diagnoses and treatments and high-cost medicines that are offered by the Highly Specialized Medicine Institutes [*Institutos de Medicina Altamente Especializada* IMAEs]. They are financed through the National Resource Fund *[Fondo Nacional de Recursos* FNR]. Taken together, they amount to insurance for universal coverage in the event of catastrophic events.

[29] Uruguay has a commendable history of this type of linkage with the FNR in which the events covered are precisely defined. The FNR covers a defined list of high-complexity, mostly high-cost diagnostic and therapeutic procedures and medicines, all of which have been fully studied and standardized and are clearly linked to disease entities. Recently there has been a similar experience with the PIAS for the Mental Health Program.

3.59. In-depth analysis of significant cost differentials between different regions of the country that might justify **premium differentials or adjustments based on place of residence**.

Health Information System

3.60. **The current health information system is highly fragmented and lacks integration.** The Health Information System, establish in 2008, consists of several subsystems that are highly fragmented and poorly integrated. Information generated is not sufficiently disaggregated or cross-referenced, which prevents in-depth analyses. As an example, the current system does not allow for a health evaluation of uses of PIAS services or comprehensive actuarial analysis, required for microcosting.

3.61. **Furthermore, deficiencies in information systems lead to problems with the supervision of the SNS and of the entities that provide health care** on two accounts: first, an effective information system contributes to ongoing improvements in policy formulation and system regulation through integrated feedback loops. Second, an effective information system can help generate the necessary incentives for insurers.

Chapter 4. Analysis of Uruguay's Social Security System

A. INTRODUCTION

4.1. In Uruguay, the first contribution-based social security system was created at the end of the nineteenth century for workers in specific sectors. During the twentieth century, coverage was extended to all workers, including dependents. While the majority of contributors are administered by a public agency called "*Banco de Previsión Social*" (BPS), there are also a subsystem for professionals and a subsystem for financial sector employees, which are both administered by their unions.

4.2. **This chapter looks to review the social security system in Uruguay, laying out its direction, progress and challenges.** It does this by firstly looking at the eligibility criteria and the benefits that can be accessed from the system. It then situates this information in the institutional structure of the system, while also reviewing recent reforms and the legal and financing mechanisms that support the system. It then provides an assessment of the current situation facing the system, including coverage, adequacy and impacts of benefits and financial sustainability. Next, it focuses on what the medium to long term prospects are for the system as currently structured. It ends by laying out some of the methodological and political aspects facing the system.

4.3. **From this thorough review of the social security system, certain findings stand out that could have financial and policy implications for the system but also for the public budget.** Active and passive coverage from the system has increased and is relatively high compared to other Latin American countries. Increased coverage is a good thing as pension income is quite important for households with a senior citizen, accounting for an average share of 66 percent of the total income. Currently the financing gap of the system is closing due to an increasing income trend along with a decreasing expenditure trend.

4.4. **In addition, the status of the pension system in terms of its financing is viewed as reasonable.** Yet, in the longer term horizon this could change with the system becoming more expensive due to the decreasing contributors to retirees ratio as a result of the law easing access to retirement pensions, the maturity of the system and the population aging. In the projections carried out, the system never achieved a balanced budget based on its own resources, if current structures remained.

A.1. ELIGIBILITY TO AND BENEFITS FROM THE SOCIAL SECURITY SYSTEM

4.5. In 1996, the public system was re-organized into a pay-as-you-go (PAYG) pillar and a second individual capitalization fund pillar administered by a private company selected by the contributor. The main benefit for contributors is a retirement pension. **The eligibility requirement for receiving a pension is to be at least 60 years of age and have worked a minimum number of years.** The pension is a proportion of the base salary and, in the case of workers participating in the funded pillar, an additional benefit resulting from his or her accumulated contributions, which increases with the contributor's age and the number of years he or she has made contributions. In all cases, the base salary is calculated as the highest value of either the average salary over the last ten years of work plus 5 percent, or of the twenty best

years. The pension schedule is updated based on the average salary index. Upon the contributor's death, a survivors' pension may be generated.

4.6. **In addition to the system of contributory benefits, there are cash transfer assistance programs equivalent to 0.5 percent of GDP per year in 2009(see Chapter 2).** The old-age assistance programs are available to older adults (over 70 years of age prior to July 2009, and over 65, as of July 2009), and to low-income disabled individuals, who are not eligible for benefits from the contributory system. The main reason for accessing this program is if one has not made contributions over the minimum required period of time. The assistance pension program provides monetary transfers of less value than the contributory system. Such programs are important since non-contributory pensions are progressive in absolute terms, as mentioned in Chapter 2.

4.7. **In addition to these benefits upon retirement, there are also five types of benefits that are available while the contributor is still active**: unemployment insurance, maternity allowance, disability coverage, sickness allowance and family allowance. These are described in Annex 4.

A.2. THE INSTITUTIONAL FRAMEWORK

4.8. Uruguay's Social Security System consists of a complex network of public and private institutions. **While there has never been a ministry or agency responsible for supervising the entire income transfer system (WB, 2007), the *Banco de Previsión Social* (BPS) is the biggest actor from these institutions.** BPS employs more than 4,000 employees and has a budget equal to 13 percent of GDP. BPS administers all income transfer programs, as well as the health insurance system for private workers. BPS operates as an autonomous public agency, headed by a board of directors that includes representatives of the government and the social sectors (workers, employers and retirees).[30]

4.9. The Pension Fund Administrators (AFAPs) are private companies that administer the assets and accounts of the second pillar of the national pension system, which is supervised by the Central Bank of Uruguay (BCU). Finally, three occupation-based retirement and pension funds for bank employees, notaries and independent professionals are administered by independent agencies, where boards are member-appointed.

4.10. **The responsibility for policy and program design of the social security system lies with the Ministry of Social Development (MIDES) and the Ministry of Labor and Social Security (MTSS),** though they also deal with some degree of the system's implementation. While MTSS leads on the policy discussions of contributory plans, MIDES is responsible for the

[30] In accordance with the amendments of the Constitution in 1966, the board of directors of BPS is made up of four directors appointed by the Executive Branch and three directors representing the members: one for the retirees and recipients of other social security benefits, another for the workers, and the third for the employers. A change to the make-up of the board requires a constitutional amendment; it cannot be changed by a government law or decree. PIT-CNT (the federation of labor unions) has always defended this make-up, in which the majority of the directors are appointed by the Executive Branch, on the understanding that social security is a government issue and that therefore responsibility for managing it lies with the government and not with the members. In 1999, the union movement opposed a constitutional reform proposed by other social organizations to change the make-up of the board of directors, which was to decrease from seven to four members to ensure that the social sectors had the majority. This proposal was made in the context of a petition collecting signatures against Law 16,713, which reformed the pension system and introduced a mixed public-private system starting in 1996 (ERT/PIT-CNT 2011).

implementation of social inclusion programs as well as the more general supervision, evaluation and coordination of social policies. Until 2008, MIDES was also responsible for the design and implementation of PANES (the social emergency program) that was replaced by the Plan for Social Equity, which includes the non-contributory family allowances (Law 18,227).

4.11. While the Ministry of Economy and Finance (MEF) and the Planning and Budget Office (OPP) are primarily responsible for the national budget and the transfer of resources for program financing, they are also involved in policy analysis. In addition, OPP coordinates a Sectoral Commission on Social Security that brings together representatives of all the previously mentioned public institutions.

4.12. **The complex nature of the social security institutional framework not only reflects the large number of actors involved, which in itself is a potential risk to the system, but also significant human and financial asymmetries between the different institutions, especially their respective administrative autonomies**. For instance, the ministries and OPP are part of the Central Government and are politically dependent on the President, the BCU has a significant degree of autonomy and BPS is governed by a board made up of both political representatives (from the government and opposition) and delegates elected by the workers, employers, and beneficiaries. The AFAPs, in contrast, are commercial companies.

4.13. **The National Dialogue on Social Security was initiated on July 1, 2007** by President Tabaré Vázquez and then acting Minister of Labor and Social Security, Jorge Bruni, in an effort to promote coordination and broad participation of all actors involved in social security in Uruguay. This new social dialogue, charged with informing future reforms efforts and strengthening democratic governance, marked a continuation of broad-based consultations initiated in 2006, such as the National Dialogue on Defense or the National Dialogue on Education, to reach a national consensus on the social security system.[31]

A.3. INITIATIVES

4.14. **The National Dialogue has identified three priority areas for reform:** (a) revision of the benefit access parameters to make access to retirement more flexible; (b) a clear definition of the contributory and non-contributory components within the social security system; and (c) the definition of policies that help decrease the existing gender gap in access to social security.[32]

4.15. **The conditions for accessing a retirement pension plan were made more flexible** based on the assessment that a substantial proportion of workers would have problems accessing retirement benefits in the future (Forteza et al., 2010). This change was also a mechanism used to ensure that senior citizens with insufficient contributions could access social security benefits. This was done through reducing the number of years of service required to qualify for a pension from 35 years to 30 years effective July 2009, while the retirement age remained unchanged. The

[31] In contrast to efforts under previous governments, all of the organizations connected with this issue were involved from the outset. According to Jorge Bruni, "forty-five meetings were held over a period of one and a half years, resulting in documents reflecting a consensus among workers, employers and government that formed the basis for various laws subsequently passed. The first *Frente Amplio* government enacted dozens of laws on social security and labor. Most resulted from the National Dialogue" (ERT/PIT-CNT 2011, p. 121).

[32] Information on this experience is found on the BPS website and in the statement by Ernesto Murro, its President, on the new social security legislation: http://www.bps.gub.uy/Documentos/ProcesosReforma/SeguridadSocial/Nuevas%20leyes%202009%20version%2020-011.doc.

replacement rate applicable for a worker who retires with 30 years of service at 60 years of age is 45 percent, but it increases with the retirement age and years of service.

4.16. **It should be noted that the conditions for access to disability benefits were also eased,** which eliminated the six month waiting period prior to registration and the two year waiting period after employment was terminated. Furthermore, a special calculation based on the recognition of women's services was introduced, which added one year to the running total of years worked for each child, up to a maximum of five years. For unemployed workers who were 58 years of age with 28 years of contributions, a special unemployment subsidy was established (as of February 2009) with a replacement rate of 40 percent for a maximum period of two years. At the end of this period, these workers may access retirement benefits given that during the period in which they receive the subsidy they continue to make pension contributions.

4.17. **In addition, in 2008 a non-contributory benefit called old age assistance was established, expanding coverage for the most vulnerable social groups.** This benefit was part of the Plan for Social Equity that resulted from the assessment that in the event seniors did not have 35 years of service, they should still be able to access a source of income at 70 years of age. Thus a benefit was established for persons between 65 and 70 years of age living in poverty**.** Since then, BPS has continued to implement the changes made by Law 18,395, which has eased access to pensions and provided information to the public on these changes.

4.18. **On November 23, 2010, the government launched the second phase of the National Dialogue on Social Security.** One of the main issues to be further discussed in this phase is the need to incorporate women into the labor market with full rights (ERT/PIT-CNT 2011).

A.4. LEGAL FRAMEWORK AND EXISTING FINANCING MECHANISMS[33]

4.19. **The current social security scheme (established by Law 16,713) is still in a transitional phase.** It creates a system of individually funded accounts based on a substantial reform of the traditional system, reducing the size of the pay-as-you-go scheme by reassigning a portion of members' individual contributions to the new, funded scheme.

4.20. **The contributory pension system consists of two pillars: a public PAYG system and a funded pillar with individual accounts**. Under this mixed system, there are three levels of coverage, depending on the contributor's pensionable income: a pure PAYG scheme, a mixed (PAYG and funded) scheme, and a voluntary savings scheme.

4.21. **The amount that is allocated to each pillar depends on the salary level.** As a general rule, contributors with salaries below a basic level contribute only to the public PAYG pillar, and only receive pensions from it. They have the option of having half of their personal contributions allocated to the funded scheme and, if they choose this option, they will receive benefits from both pillars. Contributors whose salaries exceed the first level must contribute to both pillars. They contribute to the public PAYG pillar for up to the first salary level and to the funded scheme for the remaining of their salary. There is a maximum taxable income and workers are not required to contribute for wages above this limit.

4.22. **In addition to individual contributions, the PAYG pillar is financed from employer contributions, earmarked taxes and government contributions.** Employers' contributions

[33] This section is based on BPS (2011).

exclusively finance the PAYG pillar, while taxes earmarked for social security include the Value Added Tax (VAT) and the Social Security Assistance Tax (IASS). From 1993 onwards, 7 percentage points of the basic VAT rate have been earmarked for BPS. The regulation did not stipulate which program managed by BPS would be financed by these resources. In practice about 57 percent of VAT revenue received by BPS was used to fund contributory disability, old age and survivor benefits in 2010. IASS was introduced by Law 18,314 and has been in effect since July 2008. This is a direct individual income tax paid annually on pension and other social security benefits, and similar payments. The entire IASS collection has been earmarked for BPS's IVS program.

4.23. The system has three alternative contribution schemes: general, rural and construction:

- The ***general plan*** applies to industry and commerce, domestic service, and civil servants, in the latter case with some specific characteristics as regards the employer contribution rates. Retirement pension contributions include the individual contribution (*montepío*) at 15 percent and the employer contribution (since 7/1/07) at 7.5 percent.[34]. Other benefits (i.e., food supplements, medical benefits, insurance, and transportation expenses) are subject to employer pension contributions only.
- The ***rural plan*** applies to the activities of rural enterprises as well as contractors in the sector and service providers. The rural contribution plan establishes a rural employer contribution that covers the individual contributions payable on the activity of the owners as well as the employer contribution for their workers. For rural enterprises, contribution is linked to the number of hectares farmed and for rural contractors it is calculated as the total of the individual contributions (*montepíos*) of their employees.
- The ***construction plan*** covers workers in the construction industry who work directly on construction projects, carrying out construction (masonry, plumbing, electrical, painting, insulation), repair, renovation or demolition work. The unified construction contribution (employer contribution) by type and rate consists of: employer special contributions to social security (8.9 percent), individual special contributions to social security (17.8 percent), payroll taxes (28.3 percent), national health insurance (9 percent), and BSE (state insurance bank) (6 percent), for a total unified construction contribution of 70 percent.

B. ASSESSMENT OF THE CURRENT SITUATION

B.1. COVERAGE

4.24. **The levels of coverage in Uruguay have changed over the last 14 years.** Between 1996 and 2010, the increase in active coverage exceeded the increase in passive coverage, as the share of contributors in the active workforce increased from 52 percent to 67 percent. At the same time the share of senior citizens accessing a retirement benefit increased from 72 percent to 77 percent. The gap between active and passive coverage has thus decreased significantly, from 20 percentage points in 1996 to now just 10 percentage points. The size of these gaps reflects the

[34] Small start-up companies benefit from the gradual employer pension contribution (Law 18,568 – 9/13/09).

high degree of compliance of active workers and the existence of a generous system that, in the past, gave access to benefits for individuals with relatively short contribution histories.

Active workers

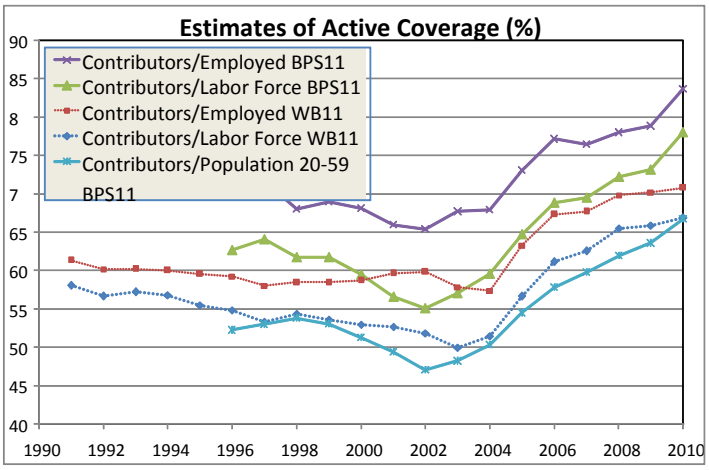
4.25. **Active coverage has increased by more than 15 percentage points since 2003, as suggested by several indicators.** These trends are confirmed by several alternative measures.

4.26. **The number of BPS contributions ("contributing positions") has increased by 46 percent over the past decade, from 0.9 million in 2000 to 1.4 million in 2010.** This expansion was due to a substantial increase of employees in the private sector (68 percent) and the public sector (13 percent) (AGSS, 2011). During the past five years, this increase was also explained by the rise in the number of contributing companies in the private sector (21 percent); particularly small and medium-sized companies (increase in excess of 40 percent).

4.27. Since individuals can make contributions from more than one job, the number of recorded contributions exceeds the total number of contributors.[35] **Correcting for multiple-contribution adjustments, BPS estimates that the number of contributors increased by 40 percent between 2000 and 2010 from 0.9 million to 1.3 million** (Pereira, 2011). More specifically, the share of the labor force contributing to Social Security increased from 59 percent to 78 percent, the share of the employed workers contributing rose from 68 percent to 84 percent and the share of the population in active ages (between 20 and 59 years) rose from 51 percent to 67 percent.

4.28. A recent World Bank report by Rofman and Oliveri (2011) presents alternative estimates from household surveys that corroborate these trends, albeit at slightly different levels.

Figure 4.1 Estimates of coverage



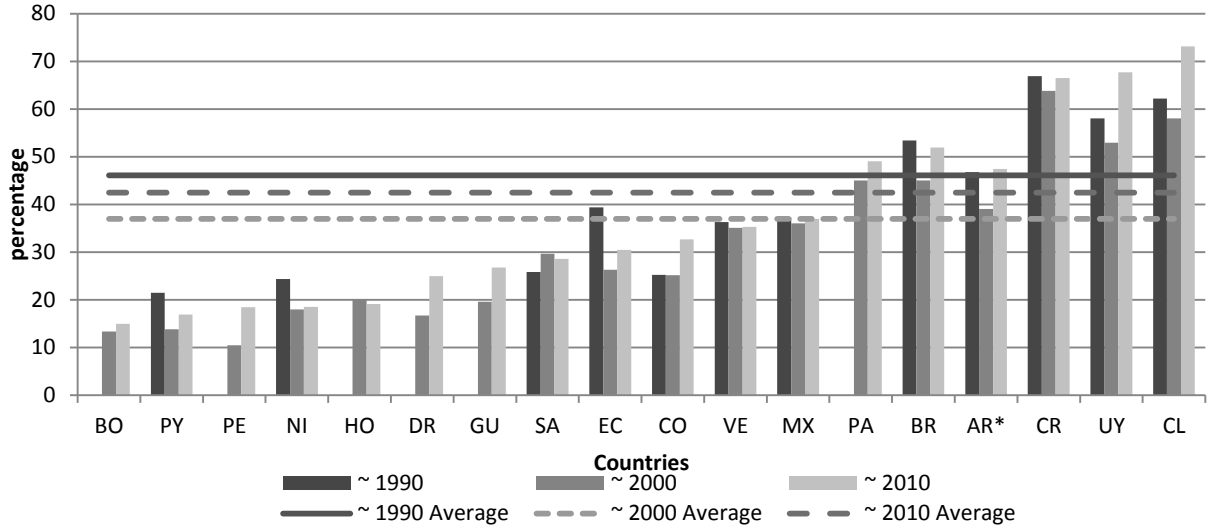
Source: Based on Pereira (2011) and Rofman and Oliveri (2011).

4.29. Interestingly, **Uruguay's level of active coverage is high and rising when compared to other Latin America countries** (Figure 4.2). These high coverage figures, which place Uruguay

[35] To adjust for multiple-contributions, BPS estimates the actual number of contributors by combining consolidated payments data from ATyR (the BPS tax and collections assistance office), reports submitted by the occupational pension funds (*cajas paraestatales*) and the Military and Police Pension Fund and then applies multi-job coefficients from INE's Continuous Household Surveys (ENHA 2006, ECH 2007 to 2010).

among the top countries in the region, can be explained in part by Uruguay's relatively high per capita GDP and also by a long tradition of compliance with the labor market regulations.

Figure 4.2 Coverage of the Labor Force (% that contributes to the social security systems)



Source: Rofman and Oliveri (2011).

Old age coverage

4.30. **Elderly coverage in Uruguay is also high when compared to other LAC countries.** This trend is once again corroborated by several alternative measures.

4.31. In December 2010, BPS paid a total of 744,000 individual benefits (*pasividades*)[36] across four different types of benefits.[37] **BPS's total individual benefits increased by 3 percent between 2000 and 2010**, **primarily from 2005 on** (+3.3 percent for retirement pensions, –3 percent for other social security benefits). On the other hand, there has been a substantial increase in non-contributory benefits (+28 percent), although the total number is still relatively small.

4.32. **After declining by 2 percent between 2000 and 2004, total benefits increased by 5 percent until 2010** (Pereira, 2011; Scardino, 2011b). The recent increase can be attributed to the 2008 reform, which reduced the number of years of contributions required to retire. Also, a small decline in survivor pensions was observed in the period, probably because of restrictions introduced in the 1996 reform (Colombo, 2011).

Alternative Coverage Indicators

4.33. **All indicators display a similar trend.** Regardless of which coverage indicator used to estimate how well individuals aged 65 years and above have access to social security mechanisms, the general trend has been relatively stable over the past decade, with declines in 2007 and 2008 and increases during the past two years. Yet, there are big differences in the coverage estimations depending on the indicator. The coverage level for senior citizens protected

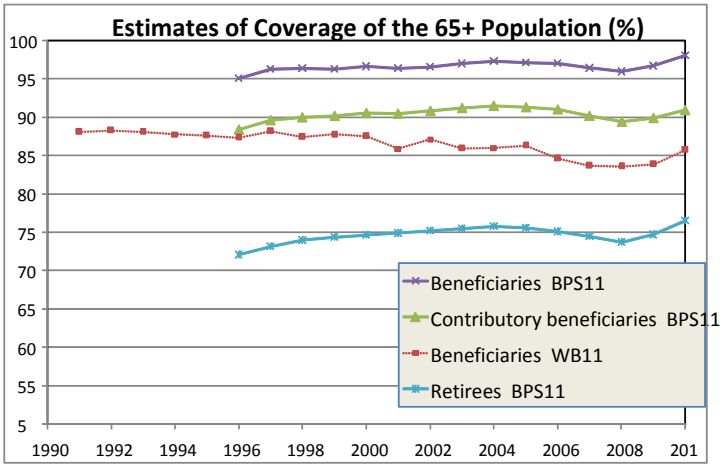
[36] A single pensioner can receive more than one benefit (concept similar to that of the "contributing position").

[37] 391,000 retirement pensions (53 percent), 268,000 survivor pensions (36 percent), 83,000 old age and disability pensions (non-contributory, 11 percent) and 2,000 temporary subsidies (less than 1 percent).

by total coverage, i.e. contributory and non-contributory benefits[38] is 98 percent (a total of 448,000, of which 92 percent are with BPS; Pereira, 2011).[39] An alternative indicator based only on contributory benefits, i.e. it excludes non-contributory pensions, puts coverage at a lower rate of 91 percent of senior citizens (a total of 415,000). According to this measure, the resulting coverage of non-contributory benefits represented 7 percent in 2010. Finally, a BPS indicator, which only considers the number of retirees aged 65 years or older, estimated the coverage at 77 percent of the population in this age bracket, which in 2010 totaled 349,000 (90 percent of whom were, with BPS).

4.34. Rofman and Oliveri report (2011) presents alternative estimates based on data from household surveys. **They identify similar trends, although as mentioned earlier, at differing levels.** According to their findings, 86 percent of senior citizens reported receiving a retirement pension or some other form of social security benefit in 2010. This rate of coverage is about 12 percentage points lower than the estimates of total coverage and about 5 percentage points below the reported level for contributory coverage.

Figure 4.3 Estimates of coverage of the 65+ population (%)



Source: Based on BPS (2011) and Rofman and Oliveri (2011).

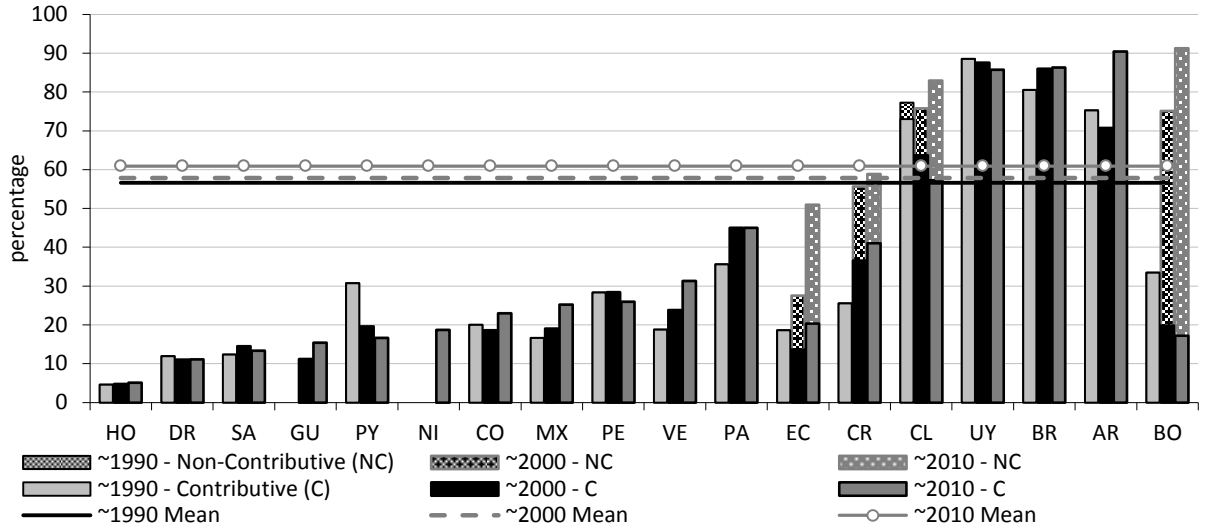
4.35. According to Rofman and Oliveri (2011), **coverage of senior citizens (65 or older) is similar for men and women (86 percent) and increases with age (from 71 percent for those aged 65 to 69 to 95 percent for those over 80).** Based on per capita family income, coverage varies, 81 percent for the first quintile, between 88 percent and 89 percent for the next two quintiles and between 85 percent and 86 percent for the fourth and fifth quintiles. Similarly, by education level, coverage of senior citizens is 86 percent for those with primary school education, 82 percent for secondary education and 84 percent for those with higher education.

4.36. **In comparison with the rest of Latin America, the high levels of elderly coverage in Uruguay have been consistent over time**, but the gap between Uruguay and other countries indicators has declined in recent years.

[38] Individuals are considered to be covered by the social security system if they receive at least an old age, disability or survivor benefit regardless of whether they are receiving some work-related benefit.

[39] It should be clarified that the BPS estimate of the number of senior citizens in Uruguay (456,000, based on INE population projections) differs from other available estimates: 464,000 (United Nations, 2011) or 468,000 (CEPAL/CELADE, 2008), which would make coverage somewhat lower: 97% or 96%, respectively.

Figure 4.4 Coverage of the Senior Citizen Population (% of population over 65 that receives a social security benefit)



Note: As the legend indicates, the lighter bars show recipients of non-contributory pensions only, in those countries where it is possible to differentiate them on the basis of the household surveys. "C" refers to contributory pensions and "NC" to non-contributory pensions.
Source: Rofman and Oliveri (2011).

B.2. ADEQUACY AND IMPACT OF BENEFITS

4.37. **The vertical coverage of the pension system is important as well.** The assessment of a pension system should not only be based on the number of beneficiaries, horizontal coverage, but also on the level of benefits received, vertical coverage. Vertical coverage depends also on the poverty and re-distributional impact of pensions system.

4.38. The level of benefits (i.e. the replacement rate in terms of the wage previously earned) depends on the contribution history as well as the actual age at retirement. **While the required number of years of service has been reduced by recent regulatory changes, the average number of recognized years of service (by age and gender) has remained relatively constant for disability and old age pensions (higher for men than for women)**. Although it did rise for the advanced age retirement pensions (from 21 to 25 years of service), as it was made easier to retire earlier (from 70 to 65 years of age) from a compensation point of view, with an average retirement age for men that was two years younger (from 71 to 69 years of age) in 2010.[40]

4.39. **During these years, the average replacement rates by age of retirement did not change significantly**, with 65 percent for defined benefits in all cases of disability, 50 percent to 70 percent for old age pensions (slightly higher for men than for women) and around 54 percent for advanced age retirement pensions (showing a slight downward trend).

4.40. **In terms of the importance of pension income, its share in the total income of households with at least one senior citizen averages 66 percent**, varying according to the make-up of the family: from 81 percent when the household consists only of seniors to 48 percent when young people and seniors live together (Rofman and Oliveri, 2011).

[40] All of the data shown were provided by BPS in consultations in early 2012.

B.3. FINANCIAL SUSTAINABILITY

4.41. **This section assesses the current financial position as well as the medium-term fiscal sustainability of Uruguay's social security system**. The focus of the discussion is the financial situation and trends of BPS as it is, by far, the largest institution in charge of managing the system. BPS collects contributions for all social security programs and also receives earmarked taxes and government transfers. On the other hand, it pays contributory and non contributory benefits, transfers funds to pension funds and health insurance providers. The following paragraphs discuss the financial situation of BPS considering alternative definitions regarding what items are included or excluded of the analysis.

Total BPS balance and own net balance

4.42. **Considering all reported income and expenses**, nearly UY$117 billion were collected and paid out by BPS in 2010, representing almost 15 percent of GDP. The finances were balanced (i.e. total income was identical to total expenditures), with approximately 53 percent of income coming from contributions and other recurrent sources.

4.43. Given that some components of BPS finances are beyond its control and operate mostly to compensate possible deficits, **focusing the analysis on BPS's own income and expenditures**, and excluding non recurrent transfers received from the Government and made to other institutions (such as health insurance) could be a reasonable approach. In this case, income consisted primarily of IVS contributions (59 percent of total own income) and earmarked taxes (30 percent of total own income), while expenditure consisted primarily of IVS benefits (71 percent of total own expenditures), followed by transfers to the AFAPs (13 percent of total own expenditures). Administrative expenses amounted to almost 5 percent of total expenditure, 6 percent of IVS benefits or 8 percent of IVS income. In 2010 a net loss of UY$2 billion was recorded, covered by the net transfers from the government (UY$1.75 billion) and the gap between third-party transfers and benefits (UY$244 million, primarily old age assistance, Law 18,241).[41]

Net operational balance

4.44. **Another more refined approach assesses net operational balance of BPS,** looking only at benefits granted by BPS (distinguishing contributory and non-contributory benefits), administrative expenses and the corresponding sources of financing, excluding family allowances under Law 18,227, old age assistance under Law 18,241 and the reparatory pension under Law 18,033, which have specific sources of financing,. The VAT, lottery tax and administrative expense are distributed according to the expenditure on benefits.

4.45. **A net operating loss of UR$1.8 billion (0.2 percent of GDP) was recorded in 2010, in contrast to the previous two years** (when the result had been positive)**,** with UR$1.7 billion corresponding to the contributory IVS and UR$67 million to non-contributory benefits. The deterioration with respect to 2009 (in real terms, adjusted by wage increases) can be attributed to various factors, but primarily to the fact that real IVS expenditure increased by 3.7 percent while real IVS income increased by only 1.2 percent (number of contributors increased by 5.2 percent—but with below-average wages—and wages increased by 10.8 percent).

[41] The respective income statement is given in Annex 5.

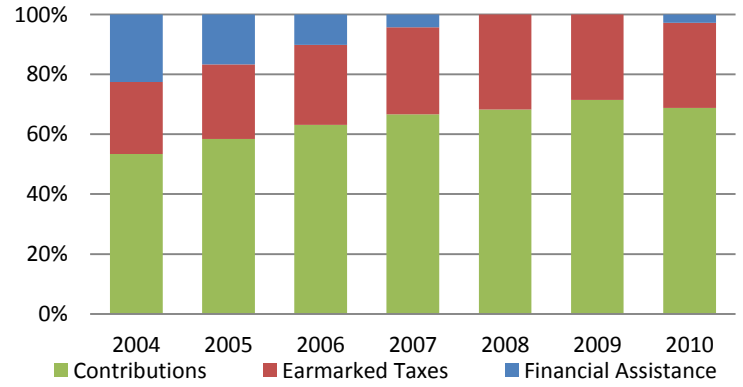
Table 4-1 BPS Operating Income and Expenditure by Type of Benefit

	2009	2010	Change
Contributory benefits (IVS)			
IVS – Operating income	*68,440*	*69,253*	*1.2%*
IVS contributions	48,392	49,094	1.5%
Fines and charges	426	474	11.5%
COFIS – Art. 109	4,342	3,985	-8.8%
Earmarked taxes – VAT and lottery	12,702	12,925	1.8%
Earmarked taxes – IASS	2,122	2,512	18.4%
Miscellaneous	456	290	-36.4%
IVS – Operating expenditure	*68,437*	*70,974*	*3.7%*
IVA benefits	54,406	56,740	4.3%
AFAP transfer	10,262	10,947	6.7%
Other transfers and pending payments	324	32	-90.1%
Administrative expenses	3,445	3,254	-5.5%
IVS – Net operating income	*3*	*-1,721*	
Non-contributory benefits (NCB)			
NCB – operating income	*11,355*	*11,625*	*2.4%*
Workers contributions	1,648	1,747	6.0%
Earmarked taxes – VAT and lottery	9,707	9,877	1.8%
NCB – Operating expenditure	*11,355*	*11,691*	*3.0%*
Benefits to NV beneficiaries	3,708	3,915	5.6%
Workers benefits (excl. Law 18,227)	6,971	7,143	2.5%
Administrative expenses	676	634	-6.2%
NCB – Net operating income	*0*	*-67*	
Total operating income	**79,795**	**80,878**	**1.4%**
Total operating expenditure	**79,792**	**82,665**	**3.6%**
BPS – Net operating income	**3**	**-1,787**	

Source: Staff calculations based on Scardino (2011a).

4.46. Brovia (2011) also analyzes the financing structure of BPS and shows that in 2010 69 percent of the income needed to achieve equilibrium comes from contributions by workers (63 percent employee contribution and 37 percent employer contribution) and 31 percent consists of government contributions (91 percent through earmarked taxes and 9 percent as financial assistance). **Brovia (2011) shows that the income trend since 2004 has been upward (increasing by 1.0 percent of GDP), while the expenditure trend has been downward (declining by 0.5 percent of GDP), closing the financing gap (Brovia, 2011).** The overall change in the financing structure in the period 2004-2010 can be seen in the following chart.

Figure 4.5 Financing structure



Source: Brovia (2011).

4.47. **Although there was a sustained increase in contributions and earmarked taxes during the period, expenditures in 2010 rose more than income.** The implementation of Law 18,395, which eased pension access, resulted in retirements almost doubling from 15,000 per year to 30,000 from 2008 to 2009 and 2010. In terms of revenue sources, recent years show a sustained increase in contributions and a decline in government transfers (earmarked taxes and financial assistance) until 2009, a trend that was reversed in 2010.

Table 4-2 Financial Structure as % of the Wage Bill

Year	Equilibrium Rate	Average Contribution	Earmarked Taxes	Government Assistance
2004	47.1	25.2	11.4	10.6
2005	43.3	25.3	10.8	7.3
2006	39.4	24.9	10.5	4.0
2007	34.7	23.1	10.1	1.5
2008	34.5	23.5	11.0	0.0
2009	33.7	24.1	9.6	0.0
2010	34.8	23.9	9.9	1.0

Source: Staff calculation based on Brovia (2011).

4.48. The improvement in financial results of recent years can be explained by a combination of an improvement in the population ratio (that is, the number of contributors per beneficiary in the pension system), as well as the economic ratio (that is, the relation between average benefit to average wage):

- The **population ratio**, expressed as contributors/pensioners, has been rising, from 1.9 workers making contributions for every person that receives a pension in 2004 to 2.7 in 2010, hence increasing the system' sustainability. This results essentially from the unprecedented increase in contributors (47.5 percent or 435,000 new contributing positions during the period).
- The **economic ratio**, expressed as the average pension benefits/wages, declined slightly, also contributing to improve sustainability. Brovia (2011) attributes this to a lag in the adjustment of pension benefits (that follow wages with one year delay), but could also be the result of a change in the composition of beneficiaries if benefits to new pensioners are lower than current benefits.
- As a result of these trends, the **equilibrium rate**, which is defined as the contribution rate that would bring the annual income and expenditure of the system into balance, has been declining, from 47 percent in 2004 to 35 percent in 2010 (or from 42 percent to 29 percent if transfers to AFAPs are not taken into account).

C. MEDIUM- AND LONG-TERM OUTLOOK FOR THE CURRENT SYSTEM

4.49. **The projections by BPS are credible.** The general methodology and results presented by BPS on the medium- and long-term outlook, both in the baseline scenario (with detailed data for 2010) and in the alternatives considered (base 2008), are reasonable and show a clear understanding of the strengths and challenges of the current pension system and its outlook. BPS projections follow the methodology recommended by the ILO (1998a, 1998b, 2001; Plamondon et al., 2002), based on criteria in line with international practices (Coppini, 2000; Thullen, 1995), with some variations adapted to the specific characteristics of the Uruguayan system, as in the case of Argentina (Grushka, 2002; SSS, 2005) and Paraguay (Grushka and Altieri, 2003). It should be noted that BPS's financial projection includes details on the main physical variables

but does not assess the impact on the general population or the existing multi-pillar system. To the extent possible, it is recommended that additional details (numerical and/or conceptual) be provided on the proposed changes in coverage and the adequacy and integration of the benefits for which the AFAPs are responsible.

C.1. POPULATION TRENDS

4.50. **The model used is based on a very moderate increase in the contributor population (0.3 percent annually) through 2060, which would bring it to 1.7 million.** Though this would have a much older age structure (the participation of those under 40 would decline from 51 percent to 35 percent, which is in line with the population trends discussed in Chapter 1), given the steady decline in fertility and mortality rates and the assumptions adopted regarding late insertion into the labor force. Also, the maturation of the multi pillar scheme introduced in 1996 will result in a decline in the financial relevance of the PAYG scheme, since the proportion of active workers contributing only to this scheme will slowly decline from 30 percent in 2010 to 6 percent in 2060 and the proportion of benefits paid by the funded scheme to the remaining workers will slowly grow over time.

4.51. **At the same time, the number of retirees would increase, from 391,000 in 2010 to 817,000 in 2060 (1.5 percent annually).** There are two main determinants for this increase: greater longevity of beneficiaries and the aging of contributors. Also, law 18,395, which eased access for workers with 30 to 35 years of contributions to the system will also have an impact, although much smaller in the long term. The number of recipients of other social security benefits, which will grow more slowly, would increase from 268,000 to 327,000 (0.4 percent annually) (see Colombo, 2011 and Scardino, 2011b).

4.52. **Consequently, the sustainability ratio** (contributors/recipients) estimated by BPS on the basis of contributing jobs in comparison to equivalent beneficiaries,[42] **shows a clear downward trend** (from 2.7 in 2010 to 1.7 in 2060). What this implies is growing funding difficulties.

4.53. **The estimates of active workers and beneficiaries in absolute terms are not accompanied by indicators projecting pension coverage**, most likely because of the difficulties in projecting the situation of programs not managed by BPS and the impact of possible duplications. Nevertheless, it would appear sensible to attempt to estimate the coverage of, at least, those included in the BPS' target population.

C.2. FINANCIAL SUSTAINABILITY

4.54. The **projection of income** consolidates income from contributions, agreements and earmarked taxes. Income from contributions depends on the average contribution rate (23.9 percent in 2010), the number of contributors (which tracks changes in the employed population) and wage changes, both vertical (by age) and horizontal (average real wage growth, determined as the growth differential between GDP and the labor force). Government transfers are estimated as a constant proportion of contributions collected; while earmarked taxes and the total wage bill are estimated to grow at the same rate as GDP.

[42] There are more *contributing jobs* than contributors, as one contributor may have more than one job, and *equivalent beneficiaries* are estimated correcting the number of surviving pension beneficiaries by their lower average benefit.

4.55. The **projection of expenditure** combines expenditure on retirement benefits and other social security benefits with other payments (subsidies for funeral expenses, temporary subsidies, etc.) and operating expenditure. Retirement benefits were projected only for the PAYG scheme, based on the initial stock, new benefits projected by age and cause ("normal" retirement, disability and old age) according to specific rates, and mortality rates. The amounts of new benefits are based on the regulations (considering replacement rates and basic retirement and other pension benefits, which vary by level of income, gender and type of beneficiary) and all are updated based on real wage trends. Expenditure on administration and other benefits was projected as a (variable) proportion of expenditure on retirement and other pensions.

4.56. The results are as follows:

- Between 2010 and 2060, in terms of GDP, income from contributions and total income of the solidarity pillar would decline very gradually, from 4.5 percent to 4.2 percent and from 6.7 percent and 6.4 percent, respectively.
- Expenditure on retirement and survivor benefits in terms of GDP would also decline initially (from 6.6 percent in 2010 and 7.5 percent in 2011 to 6.1 percent in 2030) and then grow to 7.8 percent by 2060. Similarly, total expenditure (in terms of GDP) would decline from 7.1 percent in 2010 to 6.5 percent in 2030 and then rise to 8.3 percent in 2060.
- The difference between total annual income and expenditure gives a net surplus or deficit, which, in the case of a deficit, must be covered by financial assistance from the government. Hence, government contributions, which totaled 0.2 percent of GDP in 2010 (Brovia 2011), would reach 0.5 percent in 2040, and then increase significantly to 1.9 percent in 2060 (BPS, 2011).

Table 4.3 Income and Expenditure of the Contributory IVS System: 2020 – 2060 (% of GDP)

	2020	2030	2040	2050	2060
Contributions	4.4	4.3	4.3	4.2	4.2
Taxes (VAT + IASS)	1.9	1.9	1.9	1.9	1.9
Agreements and other	0.3	0.3	0.2	0.2	0.2
Total income	**6.6**	**6.5**	**6.4**	**6.4**	**6.4**
Retirement benefits	4.4	4.4	4.9	5.6	6.2
Other social security benefits	1.8	1.7	1.6	1.6	1.6
Total expenditure	**6.7**	**6.5**	**6.9**	**7.7**	**8.3**
IVS net income	**-0.1**	**-0.1**	**-0.5**	**-1.3**	**-1.9**

Source: Staff calculation based on BPS (2011).

4.57. **In short, as indicated by BPS (2011), the 1996 pension reform will result in a downsizing of the pay-as-you-go scheme**, reducing both income and expenditures, because part of the contributions and future benefits will be transferred to the individual accounts pillar.

4.58. **The slow downsizing of the pay-as-you-go scheme in Uruguay allowed for a low transition cost**, more manageable than in other countries in the region. In the medium and long term, the number of retirees will increase due to the law easing access to retirement pensions, the maturity of the system, and population aging, which would bring down the ratio of contributors to retirees, making the system more expensive. As BPS indicates, "*These trends can be expected to continue to worsen, requiring a reform of at least some benefits parameters…*" in the medium term (BPS, 2011).

4.59. **In none of the periods for which projections were done would the system achieve a balanced budget out of its own sources.** This is due to the impact of minimum benefits and, in the long term, the rising longevity. It is interesting to note that the financial result of an alternative scenario, in which the general national revenue contribution created by Art 109 of Law 18,083 (replacing COFIS) is included as system income (in addition to IVS contributions, earmarked taxes (VAT and IASS) and agreement amounts), would mean that government contributions would not be necessary until 2040.

4.60. **It is important to remember that the financial outlook must always be assessed together with social and political sustainability.** Then it will be possible to achieve the necessary consensus for the introduction of gradual parametric changes to tackle the multiple objectives and restrictions of any pension system.

D. REMAINING CHALLENGES AND IMPLICATIONS FOR THE FUTURE

D.1. METHODOLOGICAL ASPECTS

4.61. While the results of the long term projections seem reasonable and consistent, there are a few aspects that could be considered to better assess the long term trends of social security in Uruguay. There are three specific points that do not significantly affect the overall results, but might generate new alternative scenarios:

- **Mortality rates:** BPS uses mortality rates to project the number of beneficiaries from a prior study (Lazo, 2010), which are higher than those for the general population (current and projected) prepared by INE and CELADE. However, there is no discussion about these differences or its causes. The composite indicator of life expectancy at age 60 (e_{60}) for retirees in 2015 is 22.8 years for women and 18.1 years for men according to BPS (2011), while according to CEPAL (2009), for the period 2010/15, it would be 24.3 and 19.1 years, respectively. Also, the projection technique using abbreviated life tables (Camacho, 2009) is recommended by CELADE, but only used through 2050, as questions about its obsolescence arise, especially for longer periods. In short, it would be useful to ensure consistency in the projections to estimate mortality rates of beneficiaries in other institutions and non-retired population.
- **Female labor market participation**: The participation of women in the labor market (employment rate) is considered almost constant in the projections based on the (assumed) recent trend shown by household surveys, but the trend does not coincide with CELADE estimates or with the rising trends in most Latin American countries, so it is recommended that the data and assumptions be reviewed.
- **Labor force participation at older ages**: The assumption of including increases in new workers at advanced ages (to compensate for cohorts that include many retirees starting in 2035) generates exaggerated changes in the age structure of contributors, which is hardly consistent with expected rates of participation in the labor market and with the distribution of the population that would access benefits.

4.62. **In all three cases, the overall results would not change significantly if assumptions were to be revised, given various compensating effects**: increased longevity would extend the period of payment of retirement pensions but will reduce that of surviving benefits; higher female participation rates would result in higher contributions first, and higher benefits later; if

those increases in the number of contributors were to occur at younger ages, expenditures increases would be postponed slightly, but trends would not change significantly.

4.63. **Looking at more general aspects, it would be important to present the recent financial evolution together with medium and long term projections**. By showing these data together, the consistency of projections would be clearer and the relevance of alternative scenarios would be easier to assess for those reading the projection reports. In particular, it is recommended that more detailed data and composite indicators be disseminated (by including them in periodic publications) on trends in:

- BPS active coverage by gender and age group;
- Average wages (national and of BPS contributors);
- Actual aggregate contribution rates (average and by plan (BPS/AFAP));
- Actual retirement ages (average by gender);
- Contribution histories by retiring cohort (average of years of contributions);
- Estimated coverage of the BPS contributory system for seniors (65 years and older) with a breakdown by type of benefit, gender and age group;
- Disaggregated estimates of duplication coefficients (old age benefits and death benefits; benefits from BPS and another pension system);
- Average amounts of benefits paid by BPS and by the AFAPs (as annuities), by type of benefit, gender and age group;
- Corresponding substitution rates.

D.2. POLITICAL ASPECTS

4.64. **In terms of its finances, horizontal and vertical coverage, the status of Uruguay's pension system is very good from a historical standpoint and also in comparison with other countries in the region**. That being said, policymakers still face a number of relevant challenges to advance with their main goals: expanding coverage, increasing equity and maintaining sustainability. Some of these challenges involve reaching out to include a small group of elderly still excluded from the system, ensure that there are no unfair differences between those enrolled in BPS and those in other occupational schemes and reviewing the complementarily of the PAYG scheme with the funded scheme, to ensure adequacy of benefits and sustainability in the medium and long term.

4.65. **The discussions being held as part of the National Dialogue on Social Security (DNSS) should generate sufficient data to revise the assessments of the current system**.[43] Future assessments could include alternative scenarios that cover the impact of some of the measures recommended, promoting a comprehensive vision of BPS, its financing and its integration with other institutions that supplement social security and the protection of senior citizens.

[43] The First Thematic Round Table (MTD1) of the DNSS was entitled "Options and Agreements on the Table: Political Parties and Social Actors," while MTD2 was meeting at the time of this report on "The Pension Savings System and the Role of Insurers."

E. SUMMARY AND POLICY RECOMMENDATIONS

4.66. Uruguay is one of the most advanced countries in Latin America with regards to the coverage of its pension system, both among active workers and the elderly. More than 70 percent of the occupied labor force is enrolled and contribute to a pension system and a large proportion of the elderly (between 86 and 98 percent, depending on the source) receive a monthly benefit.

4.67. This situation was achieved thanks to a long history of a strong social security system, and important improvements in the system in recent years. In the last ten years, the number of contributing jobs to the pension system in Uruguay grew by 40 percent, thanks to the combination of improving macroeconomic and labor market conditions, and better regulation and enforcement. The proportion of the elderly with benefits was mostly stable since the mid 1990s, until a reform introduced in 2008 resulted in an increase of a few percentage points in coverage.

4.68. The system seems to be financially sustainable both in the short and long term. Pension expenditures are now at around 6.6 percent of GDP, and will reach 8.3% by 2060. Revenues will continue to be relevant and the total deficit by 2060 is projected at less than 2 percent of GDP. While this seems to be a manageable trend, it is important to monitor the evolution of these figures over time and introduce corrections when and if necessary.

4.69. There are a few important challenges for authorities in the short and medium term, which will require actions and adjustments to regulations and parameters. The most relevant areas include:

(i) **Methodological issues:** Integration of short, medium and long term projections and development of a set of key indicators would facilitate monitoring of system's trends. Also, the focus of BPS' projections has been, justifiably, on BPS programs, but it would be important to integrate other components (such as AFAPs and insurance providers) as well as other schemes (such as the occupational programs) to have a more complete view of the social security system in the long term.

(ii) **Coverage:** Coverage of the social security in Uruguay is very high but there is still an elderly population not protected by this program. Reaching out and including them is an important challenge in the short term.

(iii) **Benefit adequacy:** Replacement rates paid by the PAYG scheme to pensioners are now at 50-70 percent of average wages. However, as the transition resulting from the 1996 reform advances, the role of the funded scheme will become more important and it will be critical to assess whether the total benefits continue to be adequate.

(iv) **Parametric adjustment:** While results indicate no critical financial issues in the medium term, if mortality continues to decline in the long term, some parametric adjustments may be necessary. Defining these changes well in advance would reduce the political conflicts that such reforms could generate, hence facilitating the discussion and reaching a society wide consensus.

Chapter 5. Energy - Rainfall, oil prices and the fiscal balance

5.1. **As outlined in Chapter 1, the volatility of the balance of SOEs is one of the main underlying causes for the volatility of the overall fiscal balance.** The SOE displaying the highest variability of its balance is the national electricity company UTE. This chapter explores the reasons behind UTE's cost volatility and the possible impact this has on the overall government balance. This relationship is further assessed by developing different scenarios that evaluate the impact of low rainfall and high oil prices on UTE's finances and therefore on the government's balance.

5.2. **Hydropower generation is the main source of electricity in Uruguay and rainfall is the key determinant for how much electricity can be generated through this mechanism.** However, in recent years average rainfall has become more volatile, implying that the supply of hydropower has also become more uncertain. While Uruguay could rely in the past on its neighbors, mainly Argentina, to meet gaps in energy supply, the shortfall of electricity in Argentina currently limits this option. Furthermore, with oil as the main cost for thermal electricity production, in the absence of long-term oil contracts, UTE often has to buy oil at volatile spot prices.

5.3. **Uruguay needs to diversity its sources for power generation and improve energy efficiency; UTE needs to reduce losses and consider alternative financing options.** While the recently established stabilization fund helps smooth UTE's costs, faced with greater rainfall volatility and higher oil prices, diversification of UTE's electricity generation sources is critical. Without such a change in strategy, UTE will remain an important source of volatility for government revenue as well as a possible liability by the need to continuously issue debt instruments to cover UTE's budget shortfalls. Another critical element, given increasing electricity demand, is that user fees should be designed to ensure the long-term sustainability of the system. In addition, besides greater diversification of energy sources and increased energy efficiency, alternative financing options should be considered, such as transferring weather risk to international financial markets or contingent credit lines at concessional terms.

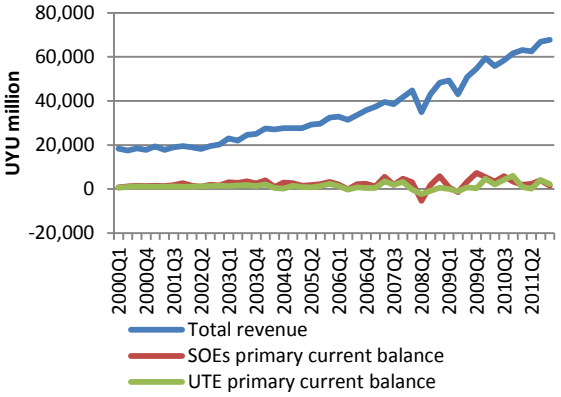
A. THE LINK BETWEEN RAINFALL, ELECTRICITY GENERATION AND THE GOVERNMENT BALANCE

5.4. **There is a direct link between the national electricity company's (*Administración Nacional de Usinas y Terminales Elétricas* - UTE) operating balance and the overall government budget.** As can be seen in Table 5.1 (also outlined in Chapter 1), the primary surplus of SOEs is one of the revenue components of the NFPS. Therefore, a low operating surplus, or even worse a deficit of SOEs, UTE being one of them, leads to lower primary NFPS revenue, because no transfer are made from UTE to government revenue. This link has been quite visible during the period of low rain and high energy generation and import costs in the years 2008 and 2009 (see Figure 5.1). During 2008, UTE's primary current deficit amounted to 0.5 percent of GDP. As pointed out in Chapter 1, UTE's operating balance displays the highest volatilities of the SOEs.

Table 5.1: Components of the non-financial public sector balance

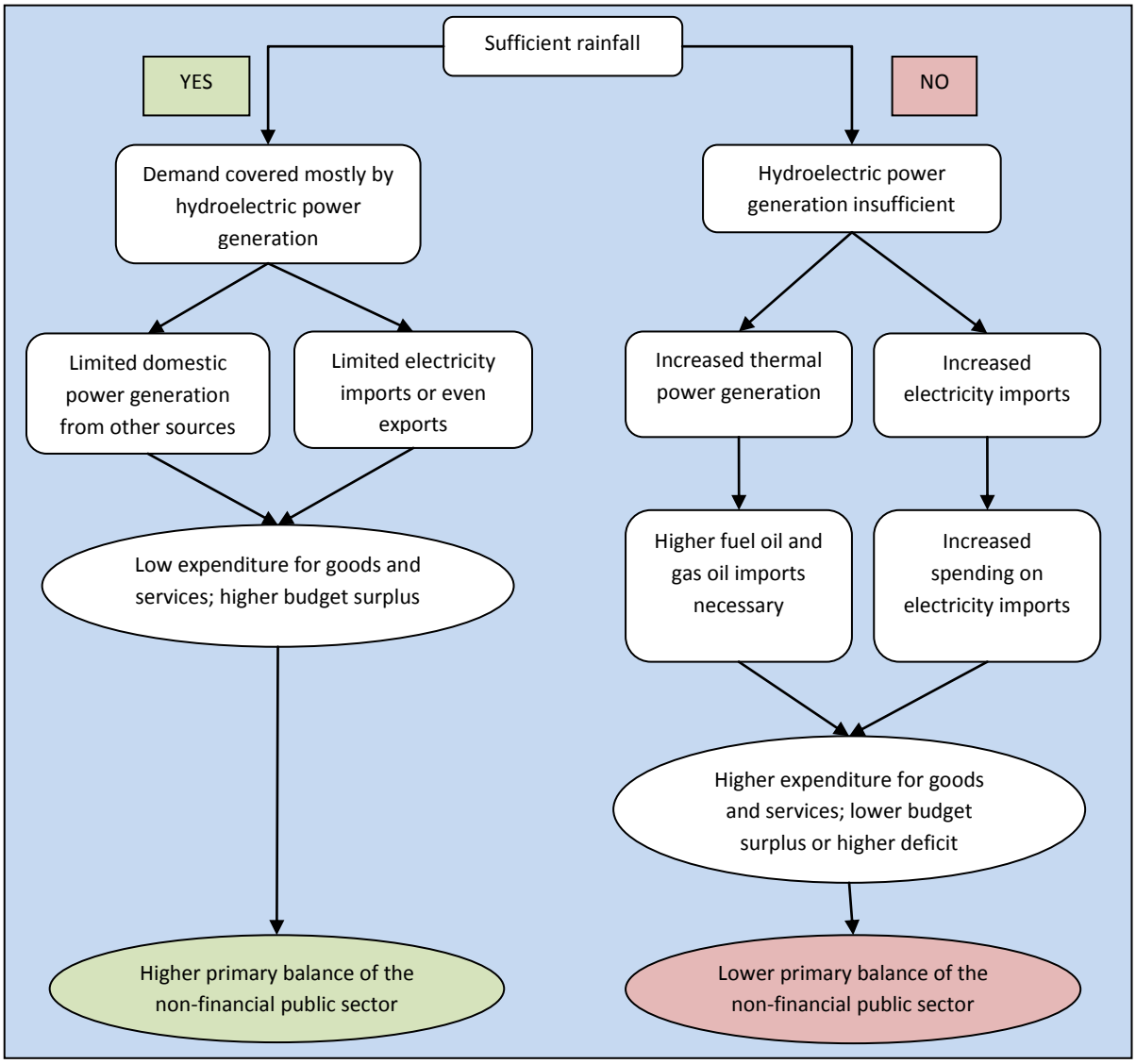
NFPS revenue
Central government revenue
BPS revenue
Primary current balance of SOEs
+ Primary NFPS expenditure
Current central government expenditure
Current expenditure of BPS
Investment from central government and SOEs
+ Primary balance of Intendencias and BSE
Primary NFPS balance
+ Primary balance BCU
Primary balance of the public sector
+ Interest
Overall balance of the public sector

Figure 5.1: Government revenue and UTE's primary current balance



Source: Staff calculation based on data from OPP

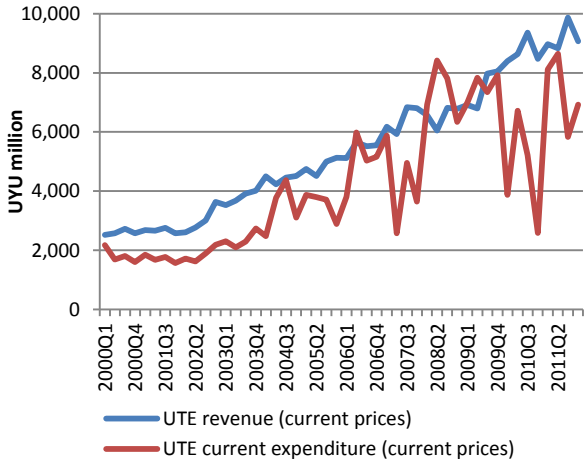
Figure 5.2: Link between rainfall, UTE's balance the government balance



5.5. **Rainfall is the most important factor affecting UTE's balance.** Figure 5.2 illustrates the relationship between rainfall, electricity generation, UTE's balance and the consolidated public sector balance. In years of low rainfall and, thus, insufficient generation of hydroelectric power to meet the domestic electricity demand, expensive thermal electricity has to be generated and additional electricity imported. This leads to the need to generate electricity by UTE at higher costs and therefore to higher expenditure for goods and services, a lower current balance of UTE, which translates into to lower or no transfers to government revenue and a resulting lower consolidated public sector balance.

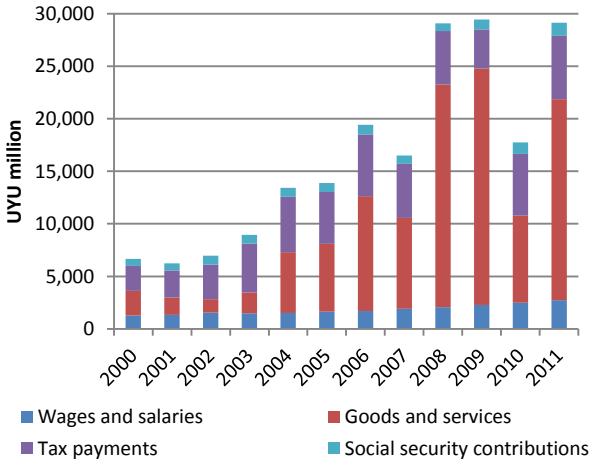
5.6. **Lower rainfall and the resulting higher generation and import costs are reflected in UTE's expenditure on goods and services.** As will be explained in more detail in the following sections, insufficient generation of hydropower leads to higher costs for UTE in the form of higher oil imports to run thermal power plants and increased electricity imports to cover the shortfall in electricity demand. The other expenditure components display considerably less variation (Figure 5.4). In fact, the average annual percentage change of UTE's total current expenditure amounted to 18.3 percent to which expenditure on goods and services contributed 13.6 percent followed by tax payments (3.8 percent) and the remaining expenditure items (0.9 percent). The changes in expenditure, however, are not directly reflected in revenue because tariffs are not adjusted to the same extent that expenditure varies (Figure 5.3). The higher costs therefore result in a lower surplus or even in a deficit for UTE.

Figure 5.3: UTE monthly revenue and current expenditure



Source: Staff calculation based on data from OPP

Figure 5.4: UTE annual current expenditure components



Source: Staff calculation based on data from OPP

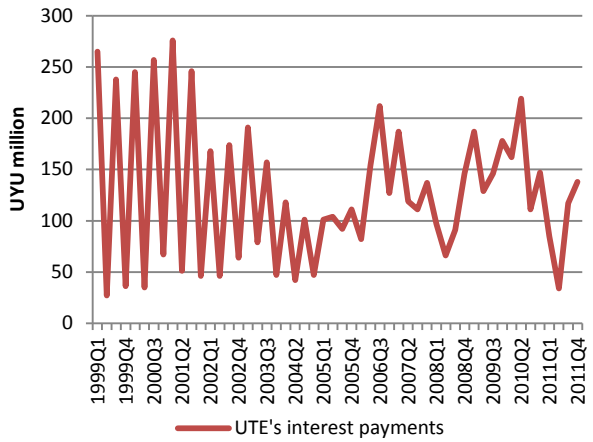
A.1. UTE'S FINANCING MECHANISM

5.7. **UTE finances itself mainly through user tariffs while transfers only contribute marginally.** On average between 2000 and 2011, 96 percent of UTE's revenue came from sales of goods and services. Tariffs decreased during the 2002 crisis, but increased continuously thereafter in nominal terms while remaining fairly constant in real terms. Transfers from the federal government have only contributed marginally to UTE's financing, averaging 3 percent of total revenue between 2000 and 2005, and came to a halt in 2006.

5.8. **In the absence of transfers, UTE has also issued bonds.** At the end of February 2012, UTE had issued about US$160 million in bonds (inflation indexed or US$), maturing between

2014 and 2020 with an interest rate between 3.375 percent and 5.25 percent.[44] With the shift from transfers to bond issues, the pattern of interest payments also changed as seen in Figure 5.5. While the financing of UTE does not directly affect the government balance, it does represent a liability for the government as the issued debt is guaranteed by the government.

Figure 5.5: Interest payments by UTE



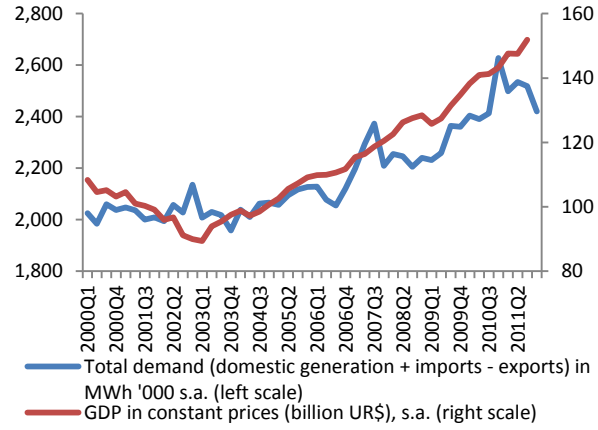
Source: Staff calculation based on data from OPP

B. ELECTRICITY GENERATION AND RELATED COSTS

B.1. CAPACITY AND DEMAND

5.9. **Electricity demand is highly correlated with real GDP.** In general, electricity demand depends on economic activity, which is proxied by real GDP. In Uruguay, the correlation coefficient of seasonally adjusted total electricity demand and seasonally adjusted real GDP is as high as 0.93 for the period 2000 to 2011. Figure 5.6 shows how both real GDP and electricity demand decreased during the 2001/02 crisis and have increased since then. Future demand can therefore be assumed to grow in line with projected real GDP growth.

Figure 5.6: Total electricity demand and real GDP growth, 2000-2011



Source: Staff calculation based on data from UTE and OPP

[44] Information available from the BCU.

5.10. **The installed electricity generation capacity in Uruguay has increased in the last years.** While the capacity of the three domestic hydropower plants (Gabriel Terra, Constitución and Baygorria – see Figure A.1 in Annex 6) and the Salto Grande hydropower plant, shared with Argentina, is already at the maximum potential, additional capacity has been added in the form of thermal power plants. However, Uruguay is reducing its dependency on thermal electricity production and oil imports through the promotion renewable energy, especially wind energy and biomass. With the Sierra de los Caracoles wind farm, the generation of energy from wind has already increased significantly, a trend that is likely to continue.

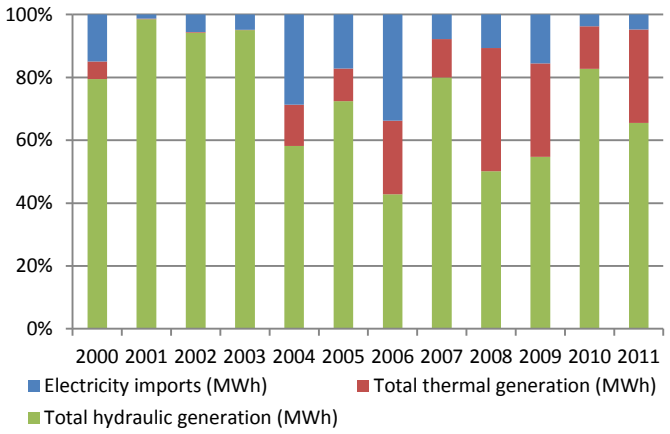
Table 5.2: Installed electricity generation capacity

Type of electricity generation	2005	2011
Thermal power plants	506 MW	1,030 MW
Hydropower plants	1,538 MW	1,538 MW
Domestic production	593 MW	593 MW
Shared with Argentina (Salto Grande)	945 MW	945 MW
Wind power	0 MW	43 MW
Other	4 MW	84 MW
Total	**2,029 MW**	**2,695 MW**

Source: Staff calculation based on data from UTE

5.11. **Rainfall levels, oil prices and electricity import prices jointly determine the sources of energy generation.** Figure 5.7 shows that electricity generated through hydropower generation in high rainfall years is sufficient to cover domestic demand, whereas in other years electricity imports and thermal power generation dominate the supply of electricity. This is particularly evident in 2006 and 2008/09.

Figure 5.7: Electricity generation and imports in Uruguay (share of total electricity), 2000-2011



Source: Staff calculation based on data from UTE and Salto Grande

5.12. **Energy efficiency has improved, leading to energy savings.** Energy efficiency is an integral component of the power sector's strategy which has been developed by the Ministry of Industry, Energy and Mining (MIEM) since 2005. Components of the strategy include energy efficiency investment projects; (ii) adoption of more efficient appliances and equipment resulting from testing, certification, and labeling activities; (iii) the use of renewable technologies in rural areas; and (iv) a conscious saving of energy associated with media and educational campaigns. These efforts have led, among others, to cumulative energy savings of the equivalent of 559,000

tons of petroleum (World Bank, 2012b). However, it is clear that further progress is needed as improved energy efficiency can be seen as additional source of energy. Energy efficiency is also one of four strategic guidelines of the Energy Policy that was approved in 2008/2010.

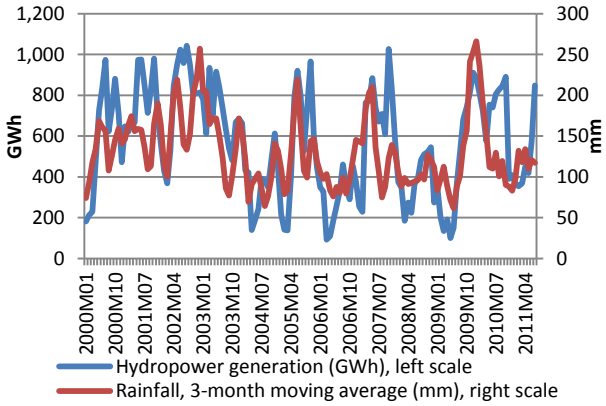
5.13. **Electricity losses remain high.** According to World Bank (2010a), losses have declined after 2002-2003, when UTE implemented a series of measures aimed at their reduction, but remain high with a total value of losses of about 18.2 percent in 2011, 10 percent of which due to technical causes and the remaining 8 percent due to non-technical causes. This is comparable to similar systems and markets in the region.

B.2. HYDROPOWER GENERATION

5.14. **Hydropower is the main source of electricity in Uruguay and rainfall is its key determinant.** This relationship became very clear in 2008, when during several weeks of low rainfall hydroelectric power plants could only operate at 3 percent of their capacity (Center for International Finance and Development, 2011). Figure 5.8 shows the close link between the 3-month moving average of rainfall and hydropower generation.[45] Estimation results show that the elasticity of hydropower generation to a change in rainfall, based on quarterly data from 2000 to 2011, is 0.83, implying that an increase (decrease) in rainfall by 1 unit causes an increase (decline) of hydropower generation by 0.83 units.[46] This elasticity will be used in the calculation of the impact of reduced rainfall over a certain period of time on the generation of hydropower.

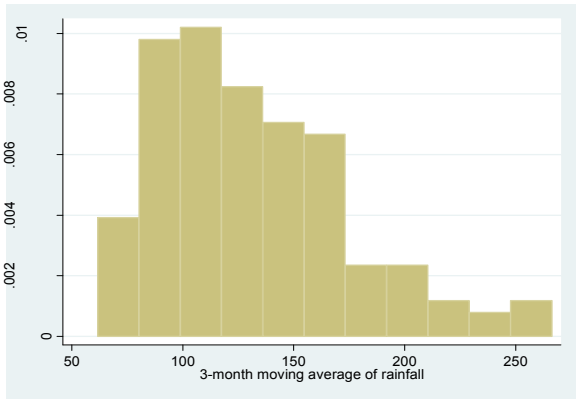
5.15. **The distribution of rainfall is skewed toward low rainfall.** The density function of the 3-month moving average reveals that the distribution of rainfall is heavily skewed with more weight on rainfall at or below the average of about 130 mm per month (Figure 5.9). It is, however, difficult to determine the cutoff for the level of rainfall that leads to insufficient generation of hydropower. Considering those months where non-hydropower generation (thermal, wind and imports) exceeded hydropower generation yields an average rainfall of about 100 mm per month.

Figure 5.8: Hydropower generation and 3-month moving average of rainfall, 2000-2011



Source: Staff calculation based on data from UTE and Dirección Nacional de Meterología

Figure 5.9: Density function of 3-month moving average of rainfall, 2000-2011 (monthly data)

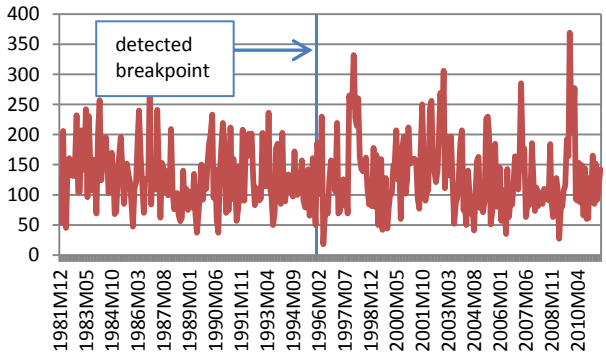


Source: Staff calculation based on data from UTE and Dirección Nacional de Meterología

[45] According to the regression analysis used to determine the best fit, hydropower generation can be best explained by a 3-month moving average of rainfall. This can be linked to the water levels necessary to run the generators, which depend not only on current but also on past rainfall.
[46] Unit root tests confirm that both variables are stationary.

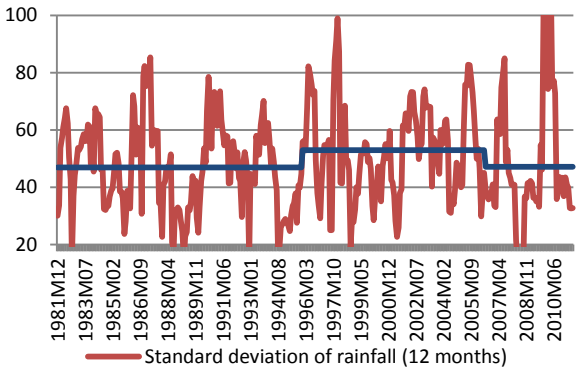
5.16. **Rainfall in Uruguay has become more volatile over time, leading to more volatility in hydropower generation.** The volatility of rainfall has increased since the mid-1990s. Available daily rainfall data since 1981 show that rainfall has remained relatively stable, on average, but its volatility increased.[47] The Inclan Tiao test, which tests for breaks in volatility (Inclan and Tiao 1994), indeed confirms such a shift in volatility at the end of 1995 (Figure 5.10 and Figure 5.11). This increase in volatility needs to be taken into account when evaluating the impact of rainfall on hydropower generation and UTE's expenditure. The higher volatility of rainfall since 1990 is further confirmed by an analysis of the cyclical behavior of rainfall in Uruguay (see Annex 7 for more details).

Figure 5.10: Monthly rainfall, 1981-2011



Source: Staff calculations based on data from Dirección Nacional de Meterología

Figure 5.11: Volatility of rainfall, 1981-2011



Source: Staff calculations based on data from Dirección Nacional de Meterología

Box 5-1 Climate change and rainfall in Uruguay

Hydro-energy output is highly related to river flows. River flows are the result of rainfall, evapotranspiration and other components of the hydrologic cycle. In recent years, changes in precipitation patterns have been observed in relationship with climate change.

Due to its geographical position, Uruguay is exposed to both El Niño and La Niña phenomena, which have an impact on ocean temperatures, affecting rainfall and consequently, hydropower production. Research has shown that during the El Niño period, rainfall increases. The opposite occurs during La Niña events. La Niña is associated with reduced rainfalls and droughts (Center for International Development and Finance, 2011).

El Niño or La Niña occur once in 2 to 7 years and last approximately 9 to 12 months. However, the outcome of each event is never exactly the same. Uruguay is currently suffering a drought, as a consequence of La Niña, which is expected to last until June 2012.

Table Box 5.1 El Niño and La Niña episodes in Uruguay, Argentina and Brazil

El Nino:	1972, 1977/78, 1986/87, 1990/91, 1997/98, 2002/03, 2004/05
La Nina:	1962, 1988/89, 2007/08, 2011/12

Source: Eleftheratos et al. (2011)

Model simulations of past and future temperature and precipitation changes run using climate model GFDL[48] show an upward temperature trend in the greater region of Uruguay. Future simulations indicate an increase in temperature of two degrees Celsius by the end of the 21st century and increased precipitations in the summer months, and longer periods of drought and floods (see Eleftheratos et al., 2011). According to scenarios prepared by the Intergovernmental Panel on Climate Change (IPCC), the main consequences of climate change in Uruguay will be greater frequency and intensity of extreme events and a rise in average sea levels (ECLAC, 2010). The extent of these predictions will depend mostly on the extent of measures of adaptation and mitigation of climate change.

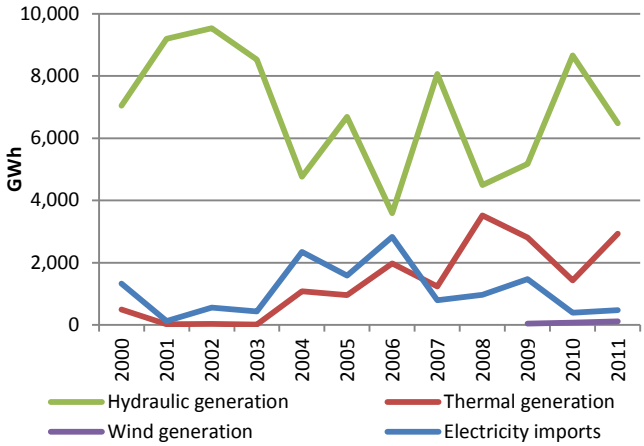
[47] The data on rainfall has been obtained thanks to Hector Ibarra and Luis de la Plaza Bringas (BDM) from the *Dirección Nacional de Meterología*.

[48] The Geophysical Fluid Dynamics Laboratory Coupled Model (GFDL) is a coupled atmosphere-ocean general circulation model (AOGCM) developed at the NOAA Geophysical Fluid Dynamics Laboratory in the United States. It is one of the leading climate models used in the Fourth Assessment Report of the IPCC.

B.3. THERMAL POWER GENERATION AND ELECTRICITY IMPORTS AND EXPORTS

5.17. **In times of insufficient rainfall to cover demand, electricity needs to be either imported or generated from alternative sources.** The decision between importing electricity or importing fuel and gas oil to run the thermal power plants depends on the oil price, the thermal power generation capacity, the availability of electricity imports and the import price. If and how much electricity can be imported is a function of electricity generation primarily in Argentina, from which the bulk of electricity has been imported in the past, and to a lesser extent in Brazil. Given Argentina's increasing shortfall in the coverage of domestic electricity demand, electricity in Uruguay will have to be supplied mostly by thermal power plants and alternative sources of energy in the future. In addition to higher domestic demand in its neighboring countries, these countries could also be affected by similar weather conditions to Uruguay.

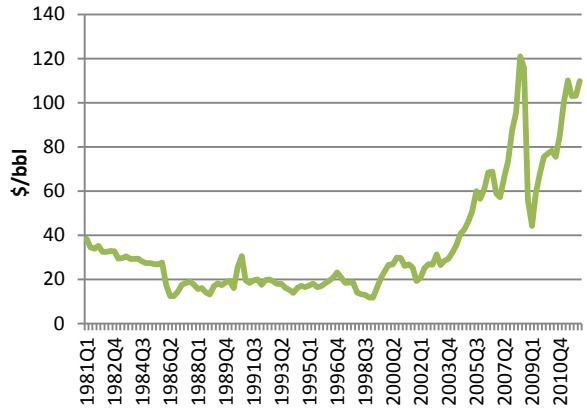
Figure 5.12: Electricity generation by method, 2000-2011



Source: Staff calculations based on data from UTE and Salto Grande

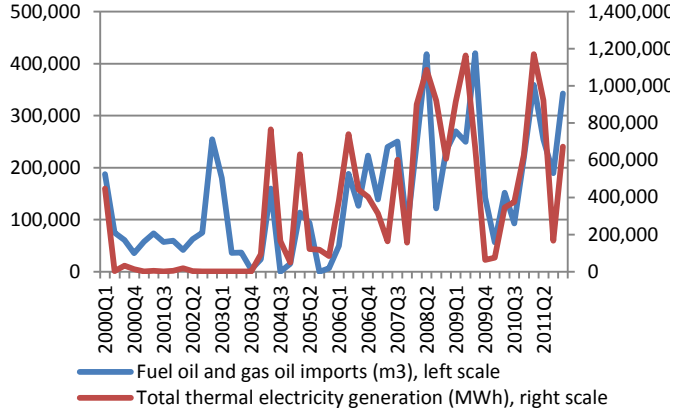
5.18. **Gasoil and fuel oil prices are the main cost factors for thermal electricity production.** Thermal electricity production requires the import of gas and fuel oil to run the thermal power plants (Punta del Tigre, La Tablada, José Batlle y Ordoñez and Maldonado – see Figure A.1 in Annex 6). The average cost for generating electricity with fuel and gas oil powered plants in 2009 and 2010 was 277m^3/GWh. The high oil price in the past years coupled with the high import needs due to low rainfall led to a surge in the import value of fuel and gas oil. The price for gas and fuel oil is highly correlated with the crude oil price. UTE has no long-term contracts to purchase oil and, thus, has to buy the required amounts at the spot price, which can lead to significantly higher costs.

Figure 5.13: Crude oil price (quarterly, $/bbl), 1981-2011



Source: Staff calculations based on data from DECPG

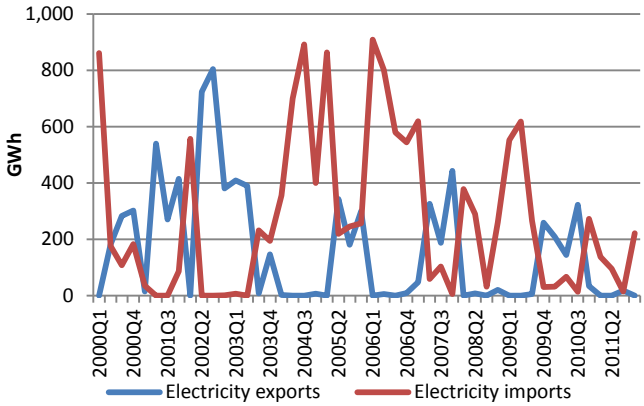
Figure 5.14: Imports of fuel oil and gas oil and thermal electricity generation, 2000-2011



Source: Staff calculations based on data from ANCAP

5.19. **Imports and exports of electricity, once more, depend mainly on rainfall and the import price of electricity.** In years of high rainfall, electricity can even be exported to Argentina and Brazil (Figure 5.15). The price for imports and exports of electricity, which can be derived from the annual reports of UTE on an annual basis, indicate a high variability with no clear link to hydropower generation or the volume of imports. The price of imports ranged from 100,000 to 300,000 US$/GWh in the last five years, while the price for exports fluctuated between 15,000 and 250,000 US$/GWh during the same period due to export prices being very low during times of high rainfall.

Figure 5.15: Electricity exports and imports, 2000-2011



Source: Staff calculations based on data from UTE

5.20. **Regression analysis confirms the importance of the volume and price of oil imports on UTE's expenditure, while the impact of electricity imports is not significant.** An estimation of the relationship between UTE's expenditure on goods and services as dependent variable and hydropower generation, gas and fuel oil imports, the oil price and electricity imports as explanatory variables yields the results shown in Table 5.3.[49] An impulse dummy has been included to account for a spike in UTE's expenditure on goods and services in November 2009. All variables carry the expected sign.

[49] All variables have been tested for a unit root and have been found stationary and trend stationary, respectively.

Table 5.3: Estimation results for UTE's expenditure on goods and services

Variable	Coefficient	p-value
Constant	7.657	0.000
Hydropower generation (MWh)	-0.575	0.000
Gas and fuel oil imports (m^3)	0.004	0.386
Oil price (US$/bbl)	1.528	0.000
Electricity imports	0.007	0.508
Impulse dummy (Nov 2009)	1.684	0.002
Observations	139 (Jan 2000 – Jul 2011)	
R2	0.78	
DW	1.04	
AR(12) [p-value]	-0.13 [0.00]	

Source: Staff calculation based on data from UTE and DECPG; Variables are in logarithms.
The residuals display autocorrelation, but are stationary.

C. SCENARIOS

5.21. **Different scenarios have been developed to evaluate the impact of low rainfall and high oil prices on UTE's finances and subsequently on the overall government balance.** These scenarios can help identify the historical average as well as the upper bounds of the implied costs to inform UTE's budget planning. Especially given the focus of Chapter 6 on rules-based fiscal frameworks, informed budget planning for UTE and other sectors will be critical. The relationships identified and quantified above between the key variables are used as a basis for the simulations in conjunction with a number of assumptions about the development of, among others, GDP, the GDP deflator and oil prices.

5.22. **The following scenarios have been considered.** The first two scenarios take only historical data into account while scenarios 3 to 5 include assumptions about future electricity demand and prices. For scenarios 3 to 5, real GDP is assumed to grow by 4 percent in 2012 with a GDP deflator of 7.2 percent (latest forecast of the Central Bank of Uruguay).

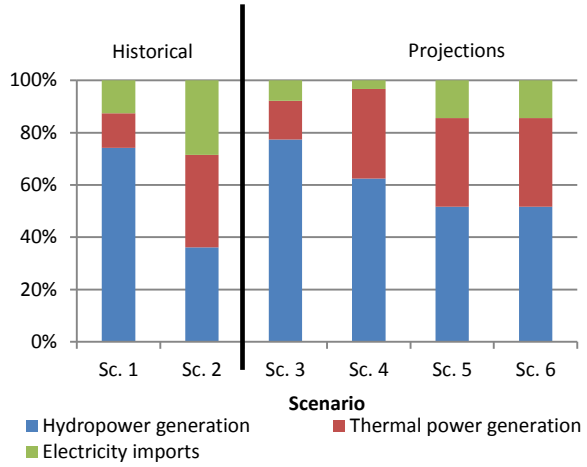
- Scenario 1 (historical average): The average of all the key variables from 2000 to 2010 is considered, i.e. rainfall, hydropower generation, electricity imports, thermal production and prices.
- Scenario 2 (historical worst case): This is the hypothetical worst case scenario based on historical data. The minimum rainfall in the past 10 years is considered coupled with the maximum electricity demand and the highest prices for imports and oil in the past decade.
- Scenario 3 (optimistic scenario): It is assumed that rainfall is within the 80th percentile of the distribution function, hydroelectric generation is consequently high and thermal power generation and electricity imports remain low. Oil prices are assumed to be US$98/bbl, as projected by the World Bank.
- Scenario 4 (likely scenario): Average rainfall is assumed, leading to average hydroelectric power generation. Electricity imports are projected using the (declining) trend over the last 5 years (2007-2011); the remaining shortfall is covered by thermal electricity generation. The oil price is projected at US$98/bbl.
- Scenario 5 (low rainfall, low oil prices): Rainfall is projected at the 20th percentile of the historical distribution function, implying limited availability of hydroelectric power.

Maximum historical thermal generation is assumed and the shortfall is expected to be covered through electricity imports. Oil prices are projected to be US$74/bb; (75 percent of the price of US$98/bbl, projected by the World Bank).

- Scenario 6 (low rainfall, high oil prices): Same assumptions as in Scenario 5, but with a higher projected oil price of US$123/bb; (125 percent of US$98/bbl).

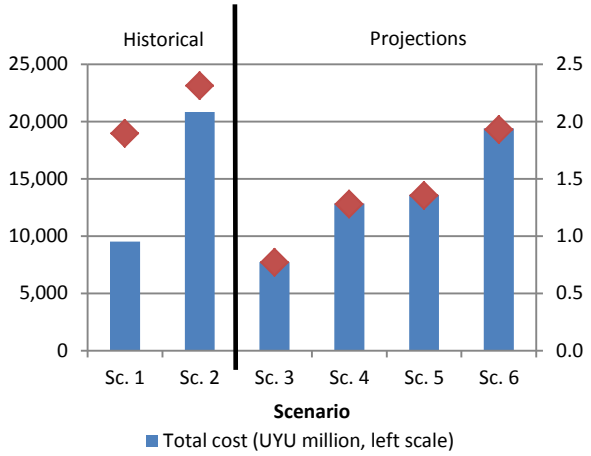
5.23. **The results of the scenarios confirm the high dependency of the cost of electricity generation on rainfall and the oil price.** In particular Scenarios 2 and 6 illustrate that a high electricity price is the result of a combined event of low rainfall and high oil prices, reaching over 2 percent of GDP in the historical scenario and close to 2 percent of GDP in the scenario for 2012. The scenarios also highlight the limits of hydroelectric and thermal power generation to keep up with electricity demand and the need to diversify electricity sources. The declining trend of electricity imports, for example, makes it difficult to fill the gap between low hydroelectric generation, maximum thermal generation and the increasing electricity demand in case of low rainfall. The difference between the outcomes of scenarios 5 and 6 helps to illustrate the impact of oil prices: the total cost of electricity generation in the high oil price scenario is about 1.4 times the cost in the low oil price scenario.

Figure 5.16: Electricity generation mix by scenario



Source: Staff calculation based on data from DECPG, UTE, OPP and ANCAP

Figure 5.17: Total costs in UR$ million and as share of GDP



Source: Staff calculation based on data from DECPG, UTE, OPP and ANCAP

D. MITIGATION MEASURES

5.24. **The diversification of energy sources is the main mitigation measure, which is particularly important in the context of limited electricity import possibilities in the future.**[50] Given increasing electricity shortfalls in Argentina, electricity exports to Uruguay are unlikely to increase in the near future. It is therefore necessary to install alternative electricity generation capacity, a strategy that is already being pursued by Uruguay. A good example is the development of wind power. Biomass is also an important source and installed capacity grew considerably in the past year. Uruguay could generate a substantial share of its power by installing as many wind farms as its electricity grid can handle (Center for International Finance

[50] It should be noted, however, that the start of the construction of an additional unit at the Puntas del Tigre thermal power plant is planned to start in 2012, bringing the total capacity of Puntas del Tigre to 520 MW.

and Development, 2011). Another option is greater connectivity with Brazil, which has a higher surplus potential than Argentina. Efforts are already under way in this regard with a project to improve the electricity connections between Brazil and Uruguay, financed by the *Fondo Estructurales del Mercosur* (FOCEM).

5.25. **Energy efficiency should be increased and energy losses mitigated.** Greater energy efficiency could free up additional resources and substantial progress has already been made in that regard. Technical energy losses artificially inflate the electricity demand and should therefore be addressed in the short to medium term, especially via increased investments in distribution systems.

5.26. **Alternative financing options should be considered as well.** Besides the measures mentioned above, financing options for possible shortfalls include (i) the use of existing budget space, (ii) the issuance of debt at market conditions, (iii) the transfer of risk to international financial markets, or (iv) the establishment of contingent credit or debit lines at concessional terms. UTE is already pursuing options (i) and (ii) with the Energy Stabilization Fund and the issue of bonds to cover budget shortfalls. Option (iii) would transfer extreme risks with the potential to lead to substantial debt accumulation and option (iv) could offer financing at lower costs. In addition, given increasing electricity demand, user fees should be designed to ensure the long-term sustainability of the system.

Box 5-2 Energy Stabilization Fund

In order to reduce the impact of changes in rainfall on UTE's finances, the Parliament approved a law for the creation of the Energy Stabilization Fund on December 27, 2010.[51]

The law set the Fund's ceiling at 4 billion Indexed Units (approximately US$480 million), which can be funded either through transfers from general revenues directly collected by the government or through UTE's contributions. The first contribution to the Fund on December 29, 2010 was made by UTE and amounted to US$150 million. However, during 2012 already half of the US$150 million has been used due to low rainfall.

Contributions and use of the Fund's resources

The criteria for contributing to the Fund, as well as the conditions for managing and using resources, were not included in the Budget Law, but were later introduced by decree on December 19, 2011 (Decree No. 442/011). As outlined below, these regulations were based on hydrologic criteria.

According to the decree, UTE's contributions to the Fund must be made on an annual basis until the Fund's ceiling has been reached. The calculation of UTE's contributions is based on the difference between the actual hydroelectric generation (AHG) and the expected hydroelectric generation (EHG), as follows:

- If the AHG is higher than 65% but less or equal to 100% of the EHG, the contribution is calculated as 6.5% of the Fund's ceiling.
- If the AHG is higher than 100% of the EHG, the contribution is calculated as 8.5% of the Fund's ceiling.
- If the AHG is higher than 115% of the EHG, an additional variable contribution will be made.

Likewise, the use of the Fund's resources to cover hydroelectric deficits is allowed when the AHG is equal or lower than the lower bound of hydroelectric generation, which equals 90% of the EHG.

Management of the Fund

The National Development Corporation (*Corporación Nacional para el Desarrollo*) will be the trustor of the Fund with an agreement with the National Financial Corporation of Investment Funds (*Corporacion Nacional Financiera de Fondos de Inversión)* as trustee and UTE as beneficiary. The Decree also allows the trust to issue debt and take out bank loans. In case the Fund's resources are not sufficient to cover debt obligations, the deficit will be financed by general government revenue.

[51]The creation of this Fund was included in the 2010-2014 Budget Law (Law No. 18.719).

5.27. **The recently established Energy Stabilization Fund is one tool to mitigate the impact of rainfall variability.** To better manage low rainfall and the associated low hydroelectric generation, a law was approved at the end of 2010 to establish a stabilization fund. In years of sufficient rainfall, UTE contributes a certain specified amount to the fund while in years of low rainfall the fund's resources can be used to cover shortfalls. More details on the Energy Stabilization Fund are given in Box 5-2.

5.28. **A further possibility is the transfer of the weather risk to international financial markets.** Uruguay has a very unique risk exposure to low levels of rainfall due to its small size (limited capacity to have geographic diversification of climate zones) and the relative importance in terms of fiscal exposure from negative rainfall patterns. In consequence, Uruguay faces a significantly higher than average exposure to rainfall at the sovereign level than most other countries. As a result it is difficult to find comparable examples of sovereigns hedging their exposure to rainfall. However, arrangements with similar characteristics have been made, for example, by regional entities, such as the Sacramento Utility company in California, which signed a multi-year weather hedge contract in 2000 to protect itself against the combined effects of low precipitation and large swings in the electricity prices. Furthermore, the Chilean power utility Colbún hedged more than US$300 million worth of exposure with a rainfall-contingent oil hedge (see Box 5-3 for more details.) These weather instruments could provide a viable option for Uruguay by reducing the risk of accumulating a substantial amount of debt when forced to purchase additional fuel and gas oil at spot prices in the case of hydropower shortfall, as is currently the case.

Box 5-3 Chile's rainfall-contingent oil hedge

In July 2010, Environmental Finance announced that the winner of the 'Weather Risk Deal of the Year' was the rainfall-contingent oil hedge of the Chilean power utility Colbún, which was groundbreaking by combining weather and commodity risk and by being in a developing country. About half of Colbún's capacity is provided by hydropower, the other by diesel- or natural gas-fuelled plants. A drought in 2007 limited hydropower generation, which, coupled with restricted gas exports from Argentina, forced the Chilean power utility to spend additional US$650 million on diesel and gas in the open market. In 2008, Colbún hedged diesel purchases with 'plain vanilla' call options, which were not cost efficient.

To reduce the cost of call options, Colbún therefore started to explore other options for weather-commodity products. JP Morgan structured, priced and executed a rainfall-contingent oil hedge where the payout was linked to the price of crude oil and the precipitation near Colbún's facilities: if the accumulated rainfall between May and October 2009 fell below a pre-defined level, the hedge would become active and pay out for each months where the price of oil would exceed a defined threshold. According to Colbún, the maximum payout of the deal was in excess of US$300 million and the premium for the hedge, although its exact value has not been disclosed, was significantly cheaper than that of a plain call option. Although the hedge was not triggered in 2009 due to high rainfall, going forward, the instrument will remain an important tool for Colbún.

Source: Environmental Finance (2010)

5.29. **Another option would be to secure contingent credit lines at concessional terms.** This would imply negotiating a financing agreement with a multilateral organization, which could be, for example, in the form of a deferred drawdown option (DDO), similar to a Catastrophe Risk DDO (Cat DDO). A Cat DDO would be disbursed in the case of a predefined shortfall of rain in a given period. Similar Cat DDOs are in place for countries such as Guatemala which is disbursed in the case of natural disasters, such as tropical storms or volcano eruptions (World Bank, 2011). This instrument is an immediate source of liquidity to respond to economic shocks at lower costs than market rates. Different financial designs are possible as well, such as bundling a guarantee for debt issuance with a commercial credit line to access financing at below market rates.

Part 3

Rules-based fiscal frameworks – Reform options for Uruguay

Chapter 6. Towards a rules-based fiscal framework for enhanced fiscal stability

6.1. **Uruguay stands to gain from adopting a rules-based fiscal framework.** Over time, fiscal policy in Uruguay has displayed characteristics similar to those that prompted other countries to adopt a rules-based fiscal framework. Specifically, time inconsistency and common pool problems in policymaking have contributed in the past to indebtedness and vulnerability to crises. To consolidate the gains from Uruguay's successful adjustment following the 2002 crisis and to protect the recently re-gained investment grade status, the adoption of a permanent fiscal framework could therefore benefit Uruguay. A permanent fiscal framework could also play an important role in monitoring and mitigating longer-term fiscal challenges for health (Chapter 3) and social security (Chapter 4) related to population aging, as well as potential contingent liabilities in energy (Chapter 5).

6.2. **There is no single best practice for a RFF** and different combinations of policy rules, procedural rules, transparency standards and a monitoring and enforcement mechanism are possible, depending on the objectives of the government. **Rules-based fiscal frameworks have been applied to:**

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

6.3. **While a rule-based fiscal framework is no guarantee for fiscal discipline *per se*, it can provide important insights for fiscal policy.** Though in countries where compliance with a well-designed framework has been satisfactory, evidence suggests these countries were able to successfully eliminate the deficit bias and reduce the public debt-GDP ratio. Furthermore, RFF have also been credited with contributing to restoring policy credibility and helping the economy get to a higher and more sustainable growth rate.

6.4. **The purpose of this chapter is to review international evidence on rules-based fiscal frameworks and to provide design lessons for Uruguay, without favoring any particular set-up.** The chapter will therefore thoroughly examine the theoretical concepts behind this framework, from the rationale for adopting such a structure to international empirical evidence on rules-based fiscal frameworks. This chapter will conclude by focusing on the specifics from Uruguay, laying out interesting and relevant questions and implications for Uruguay to consider in regards to this framework. These questions and lessons are important because critical to the success of existing rules-based fiscal frameworks is that they are context specific. This chapter is complemented by a technical annex which estimates a structural balance for Uruguay (Annex 9); which forms the basis of some of the simulations presented in this chapter.

B. FISCAL SUSTAINABILITY IN URUGUAY

B.1. RECENT DEVELOPMENTS AND CHALLENGES

6.5. **Over the last decade, fiscal performance in Uruguay has improved significantly.** As initially discussed in Chapter 1, in the wake of the Argentine crisis, Uruguay experienced a debt crisis of its own, as public indebtedness more than tripled during 1999 and 2002 (from some 30 percent to over 100 percent) as a proportion of GDP. Following a debt rescheduling exercise, the Uruguayan authorities embarked on a successful adjustment program which helped partially reverse the previous debt buildup back to about 50 percent of GDP.

6.6. **Uruguay's fiscal system is effective in terms of fiscal redistribution.** As discussed in Chapter 2, Uruguay achieves a nontrivial reduction in inequality and poverty when all taxes and transfers are combined. In comparison with other five countries in Latin America, Uruguay fiscal system ranks second in terms of poverty reduction, third in terms of inequality reduction and first in terms of overall redistributive effectiveness. Direct taxes are progressive and indirect taxes are regressive. Social spending is quite progressive in absolute terms and the only regressive item is spending on tertiary education. Contributory pensions are neutral in absolute terms, i.e. they are equalizing.

6.7. **There are however a number of policy-based and exogenous factors that will affect fiscal space over the coming years.** Apart from the effect of climate variability on fiscal costs of energy policies (see Chapter 5), significant changes that have occurred in health and social protection are a critical factor to consider in fiscal planning (see Chapters 3 and 4). Uruguay is currently going through an advanced demographic transition and significant outward migration of the young; an ageing population combined with recent increases in pension eligibility presents an increasing challenge. In 2007, Parliament approved a comprehensive health reform program to create a more harmonized health care system and to improve equity in access to health services. Already earlier, in the late 1990s, Uruguay implemented a pension reform that introduced a private savings component in addition to the traditional mandatory social insurance pillar. The most recent social protection reform in 2008-2009 increased the flexibility to qualify for old age pensions, thereby increasing the total number of pension beneficiaries.

B.2. URUGUAY'S CURRENT FISCAL FRAMEWORK

The Debt Ceiling

Public sector debt is regulated by Law N° 17.947 and subsequent amendments (Law No18.519 and Law No 18.834 art. 266) **that limit the annual increase in net public debt**. From 2011 onwards, increases in total net public debt are limited to 5.5 billion Indexed Units (approximately US$ 650 million) per year. In the event of extraordinary and unforeseen circumstances, the Executive Branch can breech this limit for a specific year and up to a maximum of 100%, without affecting the ceiling set for following years. The limit can be increased in case of adverse climate conditions that involve extraordinary costs for UTE, only up to a maximum equivalent to 1.5 percent of GDP but the sum of UTE's extraordinary costs and the variation in the Energy Stabilization Fund cannot be higher than 1.5 percent of GDP.

6.8. **In 2006, Law No 17.947 replaced Law No 17.296 which had been in place since January 2001 and introduced some noteworthy changes**:

- Application of a net rather than gross debt concept:

- If a debt ceiling only applies to gross debt, a government can in theory use foreign reserves to finance public expenditures without violating the law.
- If a debt ceiling applies to net debt, the government can benefit from temporary favorable market conditions and reduce financing costs. The government can issue debt when interest rates are low and store these lower-cost funds as international reserves, thus keeping the level of net debt constant. These reserves can then be used in another period, where additional net debt is within the law and financing costs are higher.

- By limiting overall debt, rather than placing specific limits by instruments, the law no longer restricts debt composition. The government can adjust its debt strategy to market conditions and diversify financing needs across the whole array of instruments.
- As the previous debt ceiling only applied to government bonds, it did not apply to debt contracted with international organizations or the resident and non-resident banking sector. The government could therefore accumulate debt through other channels without infringing the law.

Towards a New Fiscal Framework

6.9. **On 7 April, 2010, the opposition sent for parliamentary approval the draft law "*Aplicación de Política Fiscal Contracíclica*"** (Implementation of Countercyclical Fiscal Policy). This document introduces two main ideas:

- The implementation of a fiscal rule where revenues and expenditures would be adjusted by business cycles, the exchange rate and other variables that could have a significant impact on fiscal accounts. The draft law establishes that the methodology to be applied would be defined by the Executive branch with the advice of the Planning and Budget Office and a group of independent experts.
- The creation of a reserve fund for countercyclical policies that could be created with the surplus emerging from the structural balance. This fund could be used for repaying debt or implementing countercyclical policies.

C. RATIONALE FOR RULES-BASED FISCAL FRAMEWORKS – A REVIEW OF THE LITERATURE

6.10. **Discretionary fiscal policy has been found to suffer from an inherent *deficit bias* and a tendency for *excessive accumulation* of government debt**. Excessive debt accumulation, understood here as the accumulation of debt in excess of what lies in the long-term interest of the majority of voters, can be attributed to various sources (see Calmfors (2010) and references therein):

- **Insufficient understanding of the long-run constraints on fiscal policy.** This can include a lack of understanding of both the electorate and politicians of the *intertemporal government budget constraint*, according to which government solvency requires that future primary surpluses need to cover the outstanding net government debt, and that future fiscal policy needs to compensate for current fiscal deficits. Insufficient understanding of future policy demands is often associated with over-optimism ('this

time it's different') or overconfidence (underestimation of future shocks), both lead to insufficient fiscal savings for the future and thus greater future fiscal deficits**.**

- **Politicians motivated by self-interest and myopia.** Lack of fiscal transparency and voters' difficulties of evaluating macroeconomic outcomes can foster rent-seeking behavior of self-serving politicians. If voters demand greater government consumption and lower taxes in good times to prevent higher tax revenues from being wasted on political rents, then, rent seeking can further lead to pro-cyclical policy. Political self-interest prompting excessive debt accumulation has also been linked to political business cycles, as incumbent governments signal their competence through deficit-increasing measures that boost the economy in the short run. Furthermore myopia in policy making may create an incentive for the party in power to accumulate debt for the strategic reason to constrain the policies of future governments with different preferences, as future costs of current deficit will be borne by political opponents.
- **Time inconsistency.** Governments in democratic societies often indulge in time-inconsistent fiscal policy, which means that policies that are optimal *ex ante* are no longer so *ex post*.[52] Over time, a government may have various incentives to deviate from an earlier commitment to fiscal discipline. As an example, a commitment made by a government at the beginning of its mandate is abandoned in the run-up to the next election, as political leaders feel compelled to step up government spending or to cut taxes to secure re-election. In this case, fiscal performance may reflect not only the economic cycle but also the electoral cycle. Other explanations for time inconsistency causing debt accumulation brought forward in the literature are linked optimal fiscal policy and the role of private sector expectations, and the varying nature of the time preferences.[53]
- **Common pool problems** arise because government spending usually targets individual groups, but is financed out of general taxes.[54] Individual groups therefore often lobby for spending on their preferred programs without considering the full current or future budgetary impact. The common pool problem is prevalent within collegial or coalition governments, where interest groups may engage (through their representatives) in free-rider behavior neglecting the adverse impact of their spending demands on the overall budgetary outcome. The problem can be in particular acute in a decentralized fiscal system where lower-level governments pursue an expansionary fiscal stance without regard for its ultimate impact on the general government balance.[55] In the European

[52] See the seminal contributions of Buchanan and Wagner (1977) on the effect of electoral cycles and Kydland and Prescott (1977) on time inconsistency in monetary policy. An extension to fiscal policy can be found in Agell, Calmfors and Jonsson (1996).

[53] If private sector agents anticipate that governments will not follow through with announced plans, than expectations will never adjust to the government's announced plans and the economy will likely end up with high deficits. Time-inconsistent policy can also be the result of time-inconsistent preferences implying that people (and thus governments) are more impatient when they make short-run tradeoffs than when they make long-run ones. Ex ante rates of time preferences may then motivate a certain pace of deficit reduction in the future but once the future arrives decision makers could find themselves more impatient (with a higher rate of time preference) than initially and therefore choose to postpone the deficit reduction.

[54] For an analysis of the common pool problem, see Roubini and Sachs (1989).

[55] Implicitly, such free-rider behavior assumes that the central government and other lower-level governments will adopt a compensatory policy course or that the central government will bail out subnational governments as they run

Union, fiscal decentralization in a common economic space under a unified monetary policy embodies an inherent common pool problem.

6.11. **Discretionary fiscal policy can also induce pro-cyclicality and expenditure rigidities.** If spending pressures are not accompanied by commensurate tax increases, the narrowing fiscal space prevents stabilization and results in a *procyclical bias*, especially during recessions. In addition, as some mandatory expenditure is difficult to reverse, time inconsistency and common-pool problems can also bias the composition of expenditures, making them more rigid and limiting the scope for discretionary spending adjustments (*expenditure composition bias*):

6.12. In emerging market economies, especially in Latin America, procyclical fiscal policy has been exacerbated by exposure to pronounced economic fluctuations—due to real shocks from sharp changes in the terms of trade.[56] In this region as well, expenditure composition became increasingly distorted as economic booms encouraged the rise in social transfers and government payrolls. During recessions, fiscal adjustments were often frontloaded with sharp cuts in investment spending on infrastructure projects.

6.13. **Rules-based fiscal frameworks are widely seen as an appropriate method to offset tendencies to excessive debt accumulation and procyclicality**.

C.1. POSSIBLE DESIGN OF RULES-BASED FISCAL FRAMEWORKS

6.14. Inspired by New Zealand's Fiscal Responsibility Act of 1994, an increasing number of advanced economies as well as emerging market economies have enacted a RFF.[57] More recently, introduction of the RFF was prompted by a looming financial crisis (Argentina) or by the experience of a financial crisis (Bulgaria, Sweden), in an environment of high capital mobility. In some countries, the RFF was implemented in tandem with a rules-based monetary framework that incorporates explicit or implicit inflation targeting.

6.15. Typically, the RFF consists of a combination (though not necessarily in equal proportions or with equal weight) of policy rules, procedural rules, transparency standards, and a monitoring and enforcement mechanism:

Transparency

6.16. It is widely recognized that transparency in government structure and operations is essential for effective fiscal policymaking,[58] whether rules- or discretion-based.[59] Yet the need for transparency is strengthened in the case of fiscal policy rules, since constraints on policymaking generates pressures for engaging in creative accounting and operating procedures

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into financial trouble. Extreme cases of such behavior could be observed through the nineties in Argentina, Brazil, and India.

[56] For evidence on procyclicality, see Gavin and others (1996) and Kaminsky and others (2004).

[57] For issues and practices in advanced economies, see Kopits and Symansky (1998) and Banca d'Italia (2001); in emerging-market economies, see Kopits (2004).

[58] See Kopits and Craig (1998), which forms the basis of the International Monetary Fund's Code of Good Practices in Fiscal Transparency.

[59] For example, as in New Zealand, Australia's Charter of Budget Honesty Act of 1998—albeit without a fiscal policy rule—requires the national authorities to publish fiscal strategy statements; annual and mid-year reports on fiscal outlook and outcome; intergenerational reports; and pre-election economic and fiscal assessments.

to comply formally, but not in practice, with preset performance indicators—as predicted by Goodhart's Law in reference to monetary targeting.[60]

6.17. The benefits from the RFF depend on the timely availability of reliable, understandable and comprehensive information on the public sector and its intentions. This includes transparency in institutional structure and functions within the public sector, as well as the relations between the government and the private sector. Transparency serves to contain or reduce quasi-fiscal activities that try to circumvent public oversight of explicit budgetary operations.

6.18. Equally important is clear and frequent government reporting, as mandated for compliance with fiscal rules in New Zealand, Brazil, UK and EU.[61] In turn, reports should be prepared not only on a cash basis but also on the basis of accrual-based conventions which tend to be less prone to creative accounting practices. By the same token, transparency also requires that budget projections, including those in medium-term programs, be supported by realistic macroeconomic assumptions, especially as regards to future productivity growth and interest rates.[62]

Procedural rules

6.19. Procedural rules encompass the myriad regulations spanning the entire budgeting process from preparation to execution and audit. They can be viewed as underpinning the institutional infrastructure for the operation of a RFF—though they are just as necessary for discretion-based policymaking. Besides the regulations that normally govern budget practices, key procedural rules include: medium-term budget programming and pay-go or self-financing requirement for each additional spending or tax cut proposal.[63]

6.20. Over the past decade, an increasing number of countries have introduced *multiyear budget programming* as the context for the annual budget process. Although actual practices vary among countries, medium-term programming is recognized as a prerequisite for informed policymaking and debate.[64]

6.21. More important, a rolling multiyear macro-budgetary program is an essential ingredient for the RFF since it alerts the authorities and financial markets as to the policy adjustments or reform measures that may be necessary for compliance with the framework. Also, it ensures that policymakers are accountable for adhering to budget targets. For these reasons, the preparation of medium-term budget forecasts has become an integral part of fiscal policy rules and of associated reporting requirements in Brazil, New Zealand, Peru, and EU member countries. Specifically, within the euro area, member governments must submit medium-term stability

[60] According to Charles Goodhart, a numerical indicator, such as a monetary aggregate, is no longer a reliable measure if it is used as a policy target or performance variable.

[61] This is illustrated, for example, by the requirements under EMU to follow accrual-based accounting; to classify privatization receipts as financing in the calculation of the budget balance; to measure debt on a gross basis; and to expand coverage to the general government.

[62] Calculation of the cyclically-adjusted balance, to determine compliance with a structural budget balance rule, need to be based on transparent and realistic estimates of the output gap. For opaque practices in the Netherlands in the 1960s, see Wellink (1996).

[63] See, for example, Poterba and von Hagen (1999).

[64] For an overview of multiyear budgets and fiscal targets in OECD countries, see OECD (1995).

programs, and outside the area, they must prepare medium-term convergence programs—subject to review and approval by the European Council.

6.22. In addition, for compliance with a policy rule, it is useful to establish a mechanism of *mid-course correction* for unanticipated deviations from target, unless they stem from cyclical fluctuations covered by escape clauses or can be offset with recourse to a contingency fund.

6.23. Furthermore, under the so-called *pay-go rule*—popularized by the US Budget Enforcement Act of 1990—any budget proposal involving a revenue loss or expenditure increase must contain an appropriate offset of the budgetary cost, so as to leave the overall budget balance unchanged (Brazil, New Zealand and several EU members).

Policy rules

6.24. A fiscal policy rule consists of a permanent constraint on a broad performance indicator (or target), usually expressed in terms of stock (public debt) or flow aggregates (government balance, borrowing, expenditures). Policy rules are also known as numerical rules, with the indicator often set in proportion of GDP. In a decentralized fiscal system, policy rules may need to be applied to subnational jurisdictions as well. Likewise, countries that belong to a cooperative arrangement, including a monetary union, may assume that uniform rules are applied to each member government.

6.25. In general, the *stock* of public sector liabilities (or net worth) is seen as a key summary indicator of a country's vulnerability. Financial markets tend to assess default risk on the outstanding debt of the public sector as a whole, rather than just the central government. This is due to the implicit guarantee provided by the central government on the liabilities of the rest of the public sector.[65] More generally, to maintain or restore fiscal sustainability, a number of countries have introduced policy rules, first to reduce public debt, and then to stabilize it at a prudent ratio to GDP.[66] In New Zealand and the United Kingdom, the government sets a medium-term target or ceiling for the debt ratio, as well as an adequate floor for public net worth. In addition, to avoid free-rider behavior, in Brazil, a target debt ratio is set at each level of government. For similar reason, in the European Union, member governments are obliged to reduce the gross debt ratio to 60 percent of GDP.

6.26. A weakness of the EU debt rule (enshrined in Poland's constitution) is that it specifies the final policy target, as a ceiling on the debt ratio, but not the operational target. A more sophisticated alternative specifies the convergence to the debt ratio ceiling by setting either implicitly or explicitly (e.g. Brazil) the minimum primary (non-interest) budget surplus ratio necessary to reach the debt ratio, as an operational target. The primary budget surplus target is determined by the differential of the interest and growth rates augmented by the desired yearly reduction in the debt ratio. In principle, the inherent procyclicality of these rules could be partially corrected by specifying the surplus target in structural terms (that is, extracting the transitory component). However, as the authorities have no direct control over the primary

[65] Again, possible exceptions are countries without the precedent of bailouts of defaulting subnational governments by the central government. In such cases, credit rating agencies assess risk separately for the borrowing government in each jurisdiction.

[66] There is no specific debt ratio that meets this criterion. However, in practice, a debt ratio of up to 40% is usually regarded prudent for an emerging market economy. Obviously, a much higher ratio can be acceptable for an advanced economy or any economy with solid export earnings, broad tax base, strong financial or resource endowment, etc. See, for example, International Monetary Fund (2003) and Hausmann (2004).

surplus ratio (that is, the surplus and the underlying GDP), a more meaningful operational target can be narrowed down to the discretionary budget balance preset in nominal terms (Hungary), which implicitly allows for the operation of automatic stabilizers (Box 6-1).[67]

6.27. A more common rule is defined in reference to a comprehensive *flow* indicator of fiscal performance, such as the budget balance. There is wide variety of budget balance rules: maintenance of overall balance, current balance, primary balance or non-oil balance. Alternatively, a numerical limit is set on the overall deficit (European Union, Peru, India) or a floor for the overall surplus (Chile, Sweden). The current balance rule, also called the 'golden rule' (Brazil, India, Venezuela), is commonly used to prevent crowding out much-needed public investment. The actual target or numerical limit (or floor) is specified by the circumstances of the given country,[68] including the need for simplicity, transparency and ease of technical implementation.

6.28. In some countries, the budget balance rule is accompanied by additional limits on total government expenditures (Bulgaria, Venezuela), primary outlays (Argentina, Ecuador, Peru, Sweden), interest payments (Colombia) and/or the wage bill (Brazil, Colombia) in order to contain the fastest growing components of fiscal imbalance and the ensuing distortions in the composition of the budget. Further, setting expenditure targets in line with potential GDP growth (Ecuador) can help support a neutral stance with respect to the cycle.

6.29. Similarly, to ensure cyclical neutrality, the budget balance rule can be defined in terms of structural or cyclically-adjusted balance (Chile, Germany, Sweden, and Switzerland) that allows for the operation of automatic stabilizers.[69] Structural overall or primary balance (mentioned in connection with the debt rule) targets, however, depend on real-time estimates of the underlying output gap. The latter regrettably are subject to a considerable margin of error in advanced economies, which can be ascertained only after the fact.[70]

6.30. In some countries, the balanced budget requirement specified in a multiyear or medium-term context (New Zealand, Estonia, European Union) not only allows for the operation of automatic stabilizers but also for some active countercyclical discretionary action.[71] An alternative approach to encourage countercyclical action (or to support the structural or medium-term balance rule) requires depositing contingency reserves in a stabilization fund, generated from fiscal surpluses during economic booms and allows withdrawals to finance deficits during recessions (Argentina, Chile, Ecuador, Estonia, Peru).

[67] This approach follows the approach suggested by Coricelli and Ercolani (2004).
[68] In Sweden, the structural surplus target was initially set at 2% of GDP to capture the favorable effect of the operations of government-mandated pension funds, included in the general government accounts. In Chile, the target of 1% of GDP is intended to cover earlier central bank losses.
[69] Frankel (2011) provides a favorable view of the structural balance rule, as practiced in Chile.
[70] See Barrell, Hurst, and Mitchell (2007).
[71] According to the reform of 2005, the EU Stability and Growth Pact prescribes a medium-term position of close to balance or in surplus for high-debt members while allowing a deficit of up to 1% of GDP for high-growth low-debt members.

Box 6-1 Rule-Based Fiscal Framework – Legal Characteristics

Formally, the RFF can be enshrined in various types of statutes (Table Box 6.1): a constitutional provision (Germany) or high-level legislation (Brazil), ordinary legislation (India) or an international treaty (European Union) that applies to all governments over successive electoral cycles. Alternatively, the framework may consist of a (in some cases implicit) policy guideline or agreement among coalition partners, assumed by a given government and presumably—but not necessarily—binding on future governments (Bulgaria, Chile, Estonia, United Kingdom) or a combination of a legal statute and a policy guideline (Sweden). In some cases (Chile, Sweden), the government guideline evolved and was eventually formalized into legislation. The statute may be very detailed, specifying design features as well as every aspect of implementation (Brazil), or simply define a broad outline, to be accompanied by regulations issued by the government in charge (Australia, New Zealand, India).

Neither the legal format nor the degree of detail of the statute lends itself to generalization as best practice. In fact, in most countries the RFF has been tailored to country-specific circumstances, including legal precedents and cultural traditions. Compliance with an implicit policy guideline in some countries might be far stronger than with a constitutional clause in another country. Whereas in Latin America there is a preference to cast the RFF in detailed legislation, in Anglo-Saxon countries the framework is spelled out as a broad outline, with considerable emphasis placed on transparency. Effectiveness is determined by the credibility of the RFF, whatever its statutory form.[1] Ideally, at an initial stage, the RFF should operate as an implicit policy guideline and then later it should be formalized but only after successful implementation during a learning period. This is perhaps best illustrated by Chile's recent legislative enactment of the RFF, after applying and perfecting an informal rules-based framework over five years.

Table Box 6.1: Selected Countries – Rules-Based Fiscal Frameworks

Country, Effective Date	Policy Rules [a]	Government Coverage	Statute	Surveillance	Sanction
New Zealand (1994)	MT overall balance, debt reduction	general	law		reputational
Sweden (1998)	structural surplus, primary expenditure limit	general	law	fiscal council	reputational
EU Pact (1998) [b]	MT overall balance, deficit limit, debt limit	general	treaty	peer review	financial, reputational
Bulgaria (1998)	deficit limit, primary expenditure limit	general	guideline		reputational
Estonia (1998)	overall balance, stabilization fund	general	guideline		reputational
Poland (1998)	debt limit	national, subnational	constitution		judicial
Chile (2000)	structural surplus, stabilization fund	national	law	expert group	judicial
Peru (2000)	overall balance, deficit limit, stabilization fund, primary expenditure limit	national	law	central bank	judicial
Brazil (2001)	current balance, primary surplus (from debt reduction), wage bill limit	national, subnational	constitution, law		judicial
Colombia (2002)	current balance, debt reduction, wage bill limit, interest bill limit	national, subnational	law		judicial, financial
India (2004)	current balance, deficit limit	national, subnational	law		judicial
Switzerland (2004)	structural balance (NG), current balance (SG)	national, subnational	constitution		judicial
Hungary (2010)	discretionary deficit limit (from debt limit), expenditure limit	National	law	fiscal council	reputational
Germany (2014)	structural balance (NG), current balance (SG)	national, subnational	constitution		judicial

Notes: [a] All rules are applied on an annual basis, unless specified on a multiyear (MT) basis; [b] In an number of euro area members, fiscal policy rules are applied at the subnational level as well; NG = national government, SG = subnational government.

Surveillance and enforcement

6.31. Compliance with fiscal policy rules, procedural rules and transparency standards must be subject to continuous monitoring preferably by an independent authority. Beyond traditional auditing of accounts and of legal observance, monitoring the RFF involves real-time surveillance of macro-fiscal projections, fiscal risks and sustainability over the medium to long run.

A key institutional issue is the nature of the authority responsible for surveillance and enforcement, including the associated transparency requirements. Although this responsibility could be exercised by the national audit office, in fact the only such attempt (United Kingdom, under the previous administration) resulted in failure because of the lack of expertise to carry out real-time economic analysis.

6.32. To ensure such competence and independence, for example, in Peru, the surveillance function has been assigned to the central bank. More focused to ensuring this, however, is the approach of specialized institutions (Belgium, Netherlands, Sweden, and until recently Hungary) responsible for technical oversight of the RFF implementation.[72] Though it does not have a remit to monitor compliance with fiscal rules, the US Congressional Budget Office is regarded as a model among independent fiscal watchdogs.

6.33. Some authors have proposed outsourcing fiscal policy-making to an independent fiscal council.[73] However, unlike monetary policy which can be outsourced to an independent monetary council, such a fiscal council is not viable because of the difficulty in defining a clear and independent principal-agent relationship for the conduct of fiscal policy. In fact, nowhere has the proposal of a fiscal council, endowed with policymaking powers, been adopted.[74]

6.34. In decentralized systems, the surveillance function is often assumed by a central authority. In the EU, Ecofin (Council of Ministers for Economy and Finance) is entrusted with the surveillance function, with the support of the Commission and with specialized monitoring (of compliance with accounting standards) by Eurostat (the statistical agency).

6.35. Part of the dissuasive function in the enforcement of the RFF is linked to the nature and the extent of sanctions for noncompliance with the rules. For the relevant government, sanctions usually consist of loss in reputation with the electorate or with financial markets. In a few cases, violation of rules may entail a judicial process that eventually could lead to criminal prosecution of the responsible government officials (e.g. Brazil).

6.36. In principle, especially in coordinated decentralized systems, financial sanctions are levied on the delinquent government, for instance, in the form of non-interest-earning deposits by EU euro members (to be retained in the budget if the excess deficit is not corrected within a prescribed period), outright fines in Canada and Colombia or suspension of budgetary transfers in Brazil and the EU (Cohesion Funds in the case of non-euro members). However, in practice, such fines are rarely applied. Apart from the ultimate threat of imposing financial sanctions, the independent authority is responsible for assessing or forecasting the extent of the violation and for formulating or approving corrective action to be undertaken by the authorities.

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[72] For an overview of the characteristics and structure of such institutions, see Kopits (2011).

[73] See, for example, Eichengreen and others (1999) and Wyplosz (2002).

[74] As a possible exception, in Nigeria, the fiscal council is assigned a prominent executive role, including in the management of a common saving fund. The council is envisaged to be comprised of representatives of federal and state governments in order to gain the confidence and support of state governments.

Box 6-2 How to select a Rule-based Fiscal Framework?

RFF should be evaluated in terms of the following internationally accepted set of criteria (see Kopits 2011a):

- ***Definition:*** are the performance indicators, time-frame and institutional coverage sufficiently well specified? The proposed fiscal rule should stipulate clear and unambiguous conditions, the spectrum of institutions covered by the fiscal indicators should be broad and well-defined (including the quasi-fiscal activities of state enterprises) for the national government, while subnational governments should be covered by a separate set of rules. The time-frame of the indicator which underlies the fiscal policy rule should also be clearly defined.
- ***Transparency:*** is there scope for creative accounting and forecasting and can compliance with the rules be monitored in real time? Generally speaking, the proposed RFF should contain transparent norms of accounting and forecasting, on the basis of clear regulatory responsibilities. However, at the local government level, the rule should be applied on in the context of transparent intergovernmental arrangements.
- ***Adequacy:*** are the rules likely to achieve their objective? The proposed RFF should significantly improve the medium- and long-term debt sustainability by containing the rise in the real public debt burden or as a ratio to GDP.
- ***Consistency:*** is there consistency among fiscal policy rules on the one hand and between these rules and other economic policy instruments on the other? A primary or discretionary balance constraint derived from the debt target ensures internal consistency. At the same time, compliance with the rules should reduce fiscal dominance, and thereby expand the room for monetary policy and maintain external balance.
- ***Simplicity:*** are the rules easy to understand by politicians, citizens and investors? Communication and explanation of a relatively complex set of rules requires a major outreach effort.
- ***Flexibility:*** can the rules accommodate business cycles and various exogenous shocks or do they aggravate their macroeconomic impact? The proposed rules should permit the operation of automatic stabilizers, neutralizing the impact of unforeseen deviations from the initial underlying macroeconomic projection. In other words, the proposed rules should ensure a neutral fiscal stance, while passively cushioning the impact of the cycle. In addition, it should be possible to suspend the rule in the case of a severe national emergency (natural disasters, severe financial crises, etc.).
- ***Enforceability:*** are the rules enforceable in practice? The proposal should provide the government with direct control over the operational target, with the support of useful procedural rules (particularly the pay-go principle). If the rules are breached, the sanction consists primarily of a significant reputational loss (rather than pecuniary or legal penalties). In most countries this is an adequate deterrent to non-compliance.
- ***Efficiency:*** does compliance with the rules cause distortions in resource allocation? At the outset, in principle, the rules can be applied efficiently, but over time, in the absence of reform in the tax system or in spending programs, the government will need to rely increasingly on stop-go or across-the-board measures to comply with the debt rule.

As trade-offs exist among the criteria, it is not always easy to improve the design under a particular criteria without sacrificing another one. This explains why there is no universally applicable RFF template and why none of the existing RFF meets all criteria in full. In designing a RFF, countries need to make a strategic choice, taking into account their own circumstances and objectives. The design of any proposal under consideration should however approximate these criteria of good practice.

C.2. EXPERIENCE FROM OTHER COUNTRIES

6.37. **Countries that adopted a RFF can be separated into four groups, in accordance with the extent of compliance.** In the *first group*, consecutive governments have fully implemented the framework since its introduction—at least until the outbreak of the financial crisis in 2008. This group includes Brazil, Bulgaria, Chile, Estonia, New Zealand, Peru, Poland and Sweden. Also, a few euro members, notably, Belgium, Finland, Ireland, and Luxembourg, which complied with the EU Stability and Growth Pact, can be classified in this group as well. All governments in this group can be said to adhere to some policy rules, procedural rules and

transparency standards. In addition, some of them (Belgium, Chile, Sweden) have operated under the oversight of their own independent fiscal watchdogs.

6.38. In the *second group*, compliance with the framework has been mixed in one or several respects: revision or loose interpretation of rules; rules are not binding by design; partial compliance; significant recourse to creative accounting; or suspension of sanctions in case of noncompliance. This group includes the majority of EU members and most other listed countries. The *third group* is comprised of countries, such as Argentina, Ecuador and Venezuela, where the framework has been substantially diluted or abandoned soon after introduction. The *fourth group* includes countries with a very short track record: India, Switzerland and Germany.

6.39. In general, the experience of these countries confirms that a RFF alone, without the political will to enforce it, is doomed to failure, as was the case in Argentina.[75] In sum, the RFF statute cannot guarantee responsible fiscal policy.

6.40. An initial evaluation of the effects of the RFF must focus on the first group, where compliance with a relatively well designed framework has been satisfactory. All countries in this group were successful in eliminating the deficit bias and in reducing the public debt-GDP ratio since the introduction of the RFF. With improved debt sustainability, investor confidence was restored, and inflation and real interest rates abated. In most of these countries, growth rate was higher and volatility was lower than in comparable regions (Table 6-1). This helps counter the criticism that fiscal rules restrain growth or are procyclical.

Box 6-3 Lessons from international experiences with RFF

There are several lessons that can be distilled from the international experience, of possible relevance for Uruguay:

- ***Does work, if well designed.*** A well-designed RFF that meets most of the above criteria of good practice (see Box 6-2) can contribute significantly to the sustainability of public finances. More importantly, it can reduce the vulnerability to crisis, while paving the road to economic growth and stability. Furthermore, structural reforms with large fiscal costs (e.g. pension reform), should be undertaken before the implementation of a RFF.
- ***There is no single best practice and RFF need to be tailor-made.*** RFF is an effective way of signaling commitment to fiscal discipline. To make this commitment credible, the framework should be home-grown and home-owned rather than imported from (or seen as imposed by) a supranational authority or international organization. Ownership, and thus adherence to the framework, should help anchor fiscal expectations of households and businesses.
- ***Not a magic wand.*** The adoption of a rules-based framework is not sufficient by itself. Rules per se are unlikely to make a difference, if the overall political compromise to fiscal responsibility is lacking. Furthermore, to be successful in influencing market expectations, it must be accompanied by phased-in implementation of reform measures that improve the structural budget balance over a medium- to long-term horizon, possibly in the context of a coherent strategy.
- ***Consultations are crucial.*** Successful implementation of the RFF must be preceded by a concerted outreach campaign, including public education and media coverage to generate sufficient public understanding of the need for such a framework and to gain widespread support. The campaign must accompany a lively and informed political debate that will lead to broad legislative consensus. Failure to engage the electorate and the legislature at the preparatory stage can undermine from the very outset the credibility of any well-designed RFF.

6.41. Brazil is a major exception among the countries in the first group, as growth remained lackluster owing mainly to unfinished structural reforms. However, following a spike during the

[75] See the discussion in Kopits (2001) and Schick (2004), and the cross-country evidence for Europe in Debrun (2007).

2002 presidential election campaign, Brazil has enjoyed a significant decline in risk premium on sovereign borrowing, once investors felt reassured that the center-left government would abide by the RFF.[76] Arguably, Brazil's success must be gauged by the ability to stave off a potential financial crisis rather than simply by growth performance.

Table 6-1: Selected Countries – Macro Performance under Fiscal Frameworks

	Growth (Geometric mean)		**Volatility** (Coefficient of variation)	
	Own	Comparator	Own	Comparator
New Zealand	3.2	2.7	0.4	0.3
Sweden	3.3	2.3	0.3	0.4
Belgium (euro)	2.3	2.3	0.4	0.4
Finland (euro)	3.7	2.3	0.3	0.4
Ireland (euro)	6.6	2.3	0.3	0.4
Luxembourg (euro)	5.3	2.3	0.4	0.4
Bulgaria	5.1	4.3	0.3	0.5
Estonia	6.7	4.3	0.4	0.5
Poland	4.2	4.3	0.4	0.5
Chile	4.4	3.6	0.3	0.6
Peru	5.1	3.6	0.5	0.6
Brazil	3.4	3.6	0.5	0.7

Source: IMF data; Note: Geometric mean and coefficient of variation cover the period from the effective date of the RFF through 2007; Comparator regions are: advanced economies, euro area, Central and Eastern Europe, or Western Hemisphere.

6.42. It is worth noting that none of the complying countries were threatened by loss of market confidence since the outbreak of the recent financial crisis in 2008. In a departure from the previous decades, Latin American countries with good or mixed performance under the RFF did not need to resort to the International Monetary Fund (IMF) for financial assistance. In contrast, all recent IMF assistance (sometime in combination with the EU) was provided to non-complying EU member countries, including peripheral euro members—Ireland being an exception for non-fiscal reasons—and to non-EU member countries.[77] This can be interpreted as circumstantial evidence that a RFF can significantly reduce the vulnerability to crisis.

6.43. In addition to the vanishing deficit bias, compliance with RFF did not entail procyclicality nor added budget distortions. Though not all countries have been equally successful on this score. Some highly-indebted emerging market economies, where experience with an RFF was only brief, had failed to convince investors that a downturn in activity warranted a fiscal expansion—even absent a deterioration in the structural budget balance. In these countries, application of the RFF is likely to remain procyclical (that is, disallowing budget deficits) during recessions until credibility has been fully established.[78]

6.44. By the same token, in some countries, especially during downturns, compliance with the RFF was achieved with some budget distortions (including through suspension or abandonment

[76] Measured in terms of the EMBIG index, market perceptions of Brazil improved significantly over this period. In spring 2002, the spread on government paper jumped from 600 bps to over 2,000 bps. Since then, it declined gradually to a stationary level of around 200 bps.

[77] Interestingly, this outcome runs counter to the earlier expectations as regards the performance of Latin American and Central European countries; see Kopits (2002). Much of the difference is attributable to the moral hazard prevailing among investors and political leaders in the new EU member countries in connection to an assumed protective halo conferred by EU membership. For early evidence, see Berger, Kopits, and Székely (2007).

[78] These findings are in line with the statistical evidence covering a wide range of countries with fiscal rules, reported by Manasse (2006).

of infrastructure projects), though to a lesser extent where rules were specifically designed to prevent these distortions. In Brazil, for instance, limits on wage and pension expenditures are intended to contain such expenditures in proportion with other outlays. On the other hand, the current balance requirement (the golden rule) is meant to protect investment spending from budget reductions. More generally, a number of countries attempted to meet the RFF by relying on stop-gap measures (one-off expenditure cuts or temporary tax hikes) while postponing key structural reform steps in social security, taxation or local government finances. These countries include, besides Brazil, many EU members, including those in the second group that, as a result, were able to comply only for a short period or failed altogether. At the other end of the spectrum, Chile, Estonia, Finland and Sweden stand out as examples where a major overhaul of public finances paved the way to strict compliance with the RFF.

6.45. Due to the brief experience with RFF, any assessment of the effects of RFFs can at this stage only be tentative and incomplete. Yet, preliminary evidence nevertheless suggests that an RFF can contribute significantly to restoring policy credibility and placing the economy on a higher and sustained growth path.

D. REFORM OPTIONS FOR URUGUAY

6.46. **Prior to the 2002 crisis, fiscal policy in Uruguay displayed characteristics similar to those that prompted other countries to adopt a rules-based fiscal framework.** Specifically, it experienced time inconsistency and common pool problems in policymaking, manifested in deficit bias and procyclicality that contributed to indebtedness and vulnerability to crises[79]. In fact, to consolidate the gains from its successful adjustment and to protect the recently re-gained investment grade status, the adoption of a permanent fiscal framework could be beneficial for Uruguay. A permanent fiscal framework could also play an important role in monitoring and mitigating longer-term fiscal challenges for health (see Chapter 3) and social security (see Chapter 4) related to population aging, as well as potential contingent liabilities in energy (see Chapter 5).

6.47. Among the various types of rules that have been implemented elsewhere, it seems there is a **strong case for introducing a rule intended to further reduce public indebtedness** to help prevent a future financial crisis, but more important, to a level consistent with higher sustained economic growth.

6.48. The following section presents alternative design options for this purpose, without the intention to prescribe a specific rule.

6.49. If the overarching goal is to bring about an accelerated reduction of the debt ratio, a possible option would be a ***debt ratio rule*** to be attained with a structural primary surplus target—along the lines of Brazil's main policy rule—calibrated to reduce the public debt ratio to, say, 20 percent of GDP or less, within a 10-year period.[80] After reaching the debt ratio target, the government would simply be bound by an overall structural budget balance target.

6.50. However, as already discussed above, a structural balance rule is not immune from a couple of deficiencies: unreliability of real-time estimates of the output gap and failure to define

[79] See Kopits (2011b) and Le Fort (2012).

[80] This debt ratio would be well within the threshold values calculated by Reinhart and Rogoff (2010) and Cecchetti, Mohanty and Zampolli (2011) for emerging-market economies.

an operational target under direct control of the policymaker. An alternative option that corrects these deficiencies consists of a ***real debt rule*** to be pursued with a nominal target defined in terms of the actual primary balance, preset in advance and consistent with the debt target—as in Hungary.

Debt rules based on structural primary targets

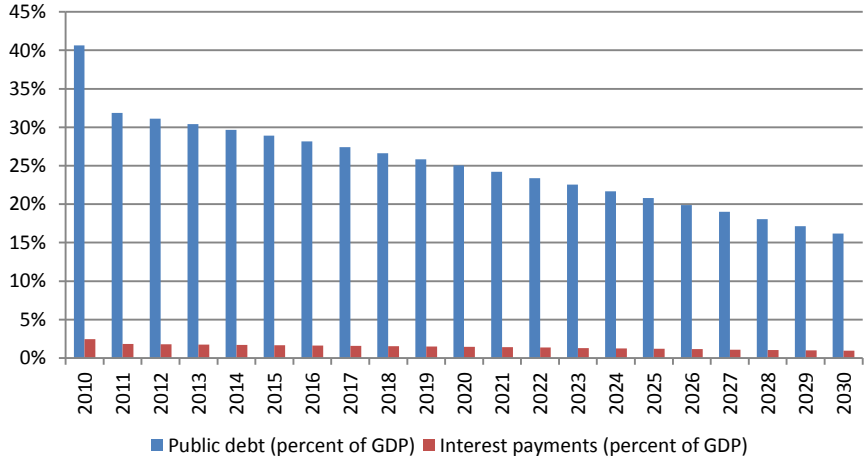
6.51. **While the structural balance provides a measure of the cycle-adjusted fiscal stance, the structural balance is often taken as the basis for a fiscal rule.** Rather than proposing a specific fiscal rule for Uruguay, in this section a range of fiscal targets is specified based on the structural primary balance and the associated path of public sector net worth simulated. Annex 9 details the underlying estimates of the structural balance used in this section.

6.52. As change in public net worth can be taken as a measure of fiscal sustainability, such simulations provide important insights with respect to the sustainability of the financial position of the public sector. The simulations and underlying assumptions are described in Box 6-4 and the results are shown in Table 6.2.

6.53. **Maintaining the current debt/GDP ratio at 30 percent over the next 50 years requires a structural primary fiscal surplus target of 0.3 percent of GDP.** As a structural surplus target of 0.3 percent preserves the public debt at its current level, it defines the floor for debt sustainability in Uruguay, as for lower structural primary surpluses targets, the debt/GDP ratio would increase over time. To provide a cushion against external shocks and to facilitate net wealth accumulation, the desirable fiscal target ought to be higher than the one that stabilizes current public sector wealth. This is illustrated in the following simulations:

6.54. **Reducing debt to GDP within 20 years to 10 percent of GDP is consistent with a structural primary fiscal surplus of 1.2 percent of GDP.** The resulting path for the debt levels and interest payments is shown in Figure 6.1.

Figure 6.1: Public debt and interest payments (percent of GDP) with a fiscal target of 1.24 percent (2010-2030)



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

Table 6-2: Fiscal targets for the primary balance as percent of GDP

wealth target (% of GDP)	-30%	-20%	-10%	0%	10%
5 years	0.6	2.2	3.9	5.5	7.1
10 years	0.5	1.3	2.2	3.1	3.9
15 years	0.4	1.0	1.6	2.2	2.7
20 years	0.4	0.8	**1.2**	1.7	2.1
30 years	0.4	0.6	0.9	1.2	1.5
50 years	0.3	0.5	0.6	0.8	0.9

Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

6.55. **A fiscal target of 4 percent for the next 10 years would be required to yield a net worth position of 10 percent of GDP.** Attaining a public sector wealth goal of 10 percent of GDP, which is equivalent to Chile's net wealth position prior to the 2009 earthquake, in 10 years time would require sustaining a structural primary surplus of almost 4 percent of GDP. Achieving the same goal in double the time (20 years) would require a surplus slightly above 2 percent of GDP.

Box 6-4 Calculation of structural primary balance targets

The targeted structural primary balance, $psb*$, depends on the initial wealth level bt-1, the discount factor, the target for the wealth level b_{t+N}, and the number of periods to reach the target (N). All lower case variables represent ratios of GDP.

Maintaining the wealth to GDP ratio constant and at its initial level b_{t-1}, requires a policy that targets the following structural primary balance:

$$\frac{b_{t-1}[1-(1+\psi)^{N+1}]}{\sum_{j=0}^{N}[1+\psi]^{j}} = psb^*$$

While for a given future wealth to GDP ratio, b^*_{t+N}, the annual structural target is calculated as follows:

$$\frac{b^*_{t+N} - b_{t-1}[1+\psi]^{N+1}}{\sum_{j=0}^{N}[1+\psi]^{j}} = psb^*$$

Table 6.2 displays fiscal targets which are consistent with alternative public wealth targets at different points in the future. A time horizon of 5 to 50 years is considered and a relatively large range of public wealth targets analyzed, from -30 percent of GDP (equivalent to a net debt ratio of 30 percent of GDP and similar to the current 2011 level of public debt in Uruguay) to about +10 percent of GDP (which is comparable to the level of public sector wealth accumulated by Chile at the end of 2009, prior to the earthquake).

To illustrate, the longer the time horizon to fulfill the fiscal target, the lower the required primary balance target. In addition, the more demanding the wealth target, the higher the required primary balance. Maintaining the current debt/GDP ratio at 30 percent over the next 50 years would require a structural primary fiscal surplus target of 0.3 percent of GDP. On the other hand, attaining a public sector wealth goal of 10 percent of GDP in 10 years time would require sustaining a structural primary surplus of almost 4 percent of GDP.

Calculations of the fiscal targets are based on the following underlying assumptions: a real GDP growth trend of 4 percent, a long-term real interest rate of 5.75 percent and a discount factor of 1.55 percent.

From the simulations one can see that exogenous shocks may significantly impact the exchange rate or the debt-to-GDP ratio. In such cases, the structural fiscal target may have to be adjusted to reach the desired target for public wealth within a given horizon.

6.56. **A primary structural balance of 1.2 percent of GDP would be similar to the levels already been achieved over the last years.** The introduction of a structural fiscal policy with this target level would, therefore, not represent a large shift in fiscal policy. It would, however, be an explicit commitment to eliminate the risk of increasing fiscal deficits, as it was the case in

past crisis episodes. This would reduce the uncertainty about the future course of fiscal policy and could thereby reduce financial spreads and refinancing cost. This would allow improvements in the debt composition and maturity and enable a faster reduction of the debt level.

Real Debt Rule with a nominal target for the actual primary balance

6.57. **While the decomposition of the fiscal balance to cyclical and structural components seems intuitive, it has to be kept 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 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).

6.58. GDP growth-revisions further complicate the estimation of the structural balance in real time. An alternative that attempts to correct for the unreliability of real-time estimates of the output gap is a ***real debt rule*** which instead of aiming for a structural balance target, pursues a nominal target for the primary balance - as proposed for Hungary (see Annex 8 for more details).

6.59. **Uncertainty about the output gap implies that in real-time, estimates of the structural balance are likely to be unreliable.** The uncertainty involved in the assessment of the output gap in real time originates in the difficulties in predicting growth. Predictions are routinely updated, and preliminary data is often revised. Revisions in the GDP growth forecasts impact the output gap directly,[81] through the revision of the level of activity and indirectly through their effect on the estimated trend output. To a certain extent, this second effect partially neutralizes the first impact, but only very slightly. The behavior of the output gap, from concurrent to final, mimics the behavior of growth, from predicted to final.

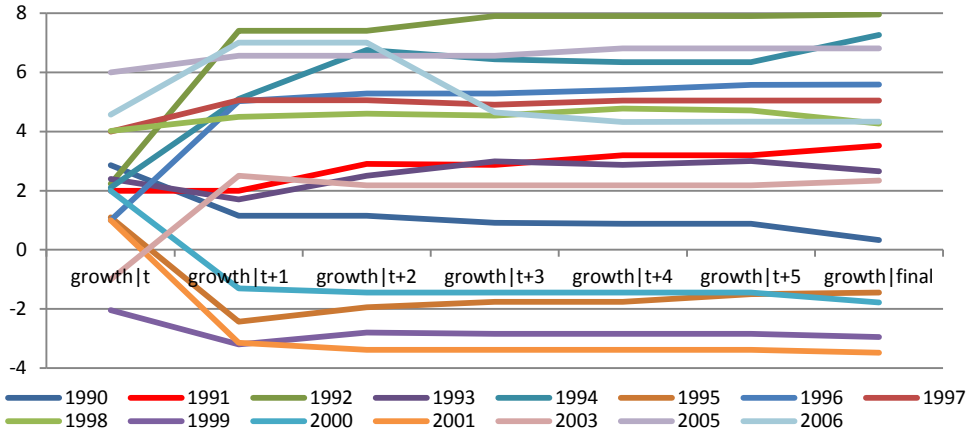
6.60. **Growth revisions can be significant.** The analysis of a sample of 175 countries with data from 1966 to 2011 from the IMF's World Economic Outlook shows that that the revisions to the original same-year growth predictions and same-year output gaps are quite substantial. Overall, for the cross-sample during the time period considered, output growth predicted in April of the year considered is at 4 percent ±3 percentage points.

6.61. **Is Uruguay any different?** A good starting point for this is to consider Uruguay's own predictions. Again, same-year April predictions for 1990-2006 are contrasted with final data using WEO data up to 2011. Figure 6.2 tracks the evolving growth prediction for each year as it is being updated over time; i.e. a given line represents growth for a specific year *t* as seen from different points in time as indicated on the *x*-axis.[82] It takes about three periods for the predictions to settle down. Revisions during the first two years subsequent to the original prediction are quite substantial in size. The median movement (in absolute value) is about 2.2 percentage points of GDP. Where Uruguay appears to differ from other countries is that predictions for Uruguay tend to consistently remain either below or above its own median growth (3.5 percent); a sign reversal occurs in only 3 out of 25 cases.

[81] Assume, for example, that the gap was estimated at 1 percent of GDP and that growth is revised upwards in 1 percentage point. If potential output were not to change, then the gap doubles to 2 percentage points of GDP.

[82] The year 2004 has been dropped from the figure since it is an outlier. It started with a growth prediction of 10 percent, which increased to 12 percent for a number of vintages to later settle in 4.6.

Figure 6.2: Uruguay growth predictions (%), 1990-2006



Source: Staff calculations based on IMF WEO data. For more details, see Ley and Misch (2012).

6.62. **Revisions of output data—and hence of estimations of the output gap—seriously affect (i) whether benevolent governments can adhere to fiscal rules, and (ii) whether fiscal rules achieve their objectives.** To illustrate this point, we consider the impact of real-time revisions for a simple balanced-budget fiscal rule (sFR) as well as for a more sophisticated fiscal rule which requires a balanced-budget over the cycle (structural balance-based fiscal rule, SBFR).

6.63. **Under a sFR, output revisions result in missing the target.** In practice, it would therefore be impossible to maintain a zero balance as long as revisions in output data occur. As a consequence, this type of fiscal rule lacks credibility and it may still result in debt accumulation. Assuming reasonable values for the elasticities, the implications for debt accumulation can be simulated. Over a decade, the average cumulative change in the debt-to-GDP ratio is a decrease of 0.4 point of GDP. This is a direct consequence of positive revisions dominating the negative revisions since growth projections for Uruguay were slightly prudent but the location statistics of the error in growth forecasts are close to zero. However, individual simulated series show substantial variability. The maximum cumulative decrease, over a decade, is of 14 percentage points of GDP while the maximum cumulative increase is of 12 percentage points of GDP. For single years, the maximum decrease is of 8 percentage points and the maximum increase is of 5 percentage points.

6.64. **What target level for the budget balance will produce a balanced budget, or better, at 95 percent of the time?** This could be reached with an average budget surplus of 2 percent of GDP. If we are content with compliance 75 percent of the time, then the required target is 0.4 percent of GDP with the average surplus of 0.5 percent of GDP. This would seem a more sensible strategy. It involves targeting a surplus of 0.5 percentage point of GDP and getting, on average, a slight reduction in the level of debt.[83]

6.65. In the second case, under a SBFR, things are even more complicated. **While this fiscal rule allows for greater flexibility and for countercyclical fiscal policy, a SBFR implicitly requires governments to follow an adjustment path that sets targets for fiscal surpluses during economic upswings.** However, these fiscal targets require correct information about the

[83] For illustrative reasons, the sampling is done from the WEO dataset while a more Uruguay-specific distribution should be used.

output gap which may not be available. Therefore, in addition to missing the target, the implicit target for the budget balance may be incorrectly specified even if the government wishes to adhere to the SBFR.

E. RECOMMENDATIONS

6.66. **There is no single best practice for a RFF and different combinations of policy rules, procedural rules, transparency standards and a monitoring and enforcement mechanism are possible.** Even if Uruguay's objective is not to adopt a full-fledged RFF, fiscal policy could benefit from improvements in some of the pre-requisites of a RFF, such as greater fiscal transparency such as greater fiscal transparency and stronger incentives for fiscal discipline:

Enhancing Fiscal Transparency

6.67. Above all, there is a case for a more **timely access to reliable and comprehensive data on fiscal developments** and to information on methodology and macroeconomic assumptions underlying short- to medium-term fiscal forecasts, as well as long-term scenarios capturing the fiscal impact of population dynamics and contingent liabilities in energy. Given Uruguay's vulnerability to various types of fiscal risk - stemming from exchange rate, interest rate and terms of trade fluctuations, it would be useful to conduct **periodically stress tests** and risk assessments on the public sector balance sheet.

6.68. **Transparency also requires that all fiscal operations are covered by comprehensive statistics**. Fiscal transparency requires comprehensive fiscal statistics, which should encompass data on fiscal operations, revenues and expenditures on an accrual basis, aggregated and by institutions, and data on the assets and liabilities changes and positions that are resulting from such operations. At present, fiscal data in Uruguay cover a relatively short period. Fiscal data is collected on cash rather than an accrual basis, which implies that fiscal data lacks consistency with national accounts and with data on assets and liabilities. Furthermore, operations by the National Development Corporation or by firms fully owned by Public Enterprises are not consolidated into the fiscal accounts and contingent liabilities of the public sector, including the guarantees given to private debt are not fully quantified. Furthermore, investing in information systems that are able to collect sufficient and integrated data in areas that impact the government balance, as recommended in Chapter 3 for the health sector, would be a critical step forward.

Improving the Budgetary Process and Medium-Term Planning

6.69. **One of the characteristics of fiscal policy in Uruguay is its decentralized nature**, which was initially flagged in Chapter 1. The budget process in Uruguay can be described as a process of aggregation or as a bottom-up approach where the role of the MEF is to limit the deviation from the originally proposed expenditure level. At the end of the aggregation process the size of the budget, as well as its composition do not necessarily reflect a rational application of an inter-temporal budget constraint for the public sector. In view of the common pool problem due to collegial budgetary decision-making and the openness to amendments during the budget debate, Uruguay could benefit from the introduction of a pay-go procedural rule. This would also be important in addressing the potential increasing costs for the health and social security sectors as discussed in Chapters 3 and 4.

6.70. Equally, **medium-term programming is recognized as a prerequisite for informed policymaking**. A rolling multiyear macro-fiscal program is an essential component of a fiscal

framework to anticipate the necessary reforms and to permit compliance with the debt rule. Also, it ensures that policymakers are accountable for adhering to budget targets. Such a comprehensive multiyear fiscal framework should not only cover expenditure components, but also projected revenue and a comprehensive debt issuance calendar.

Independent Fiscal Watchdog

6.71. **An independent fiscal council can play a crucial role in strengthening incentives for fiscal discipline, whether as a complement to a fiscal rule or as a free-standing set-up.** Independent 'fiscal watchdogs' can mitigate excessive debt accumulation and procyclicality, as identified in Section C1:

- To the extent that a deficit bias arises due to *insufficient understanding* of the long-run constraint of fiscal policy or *political self-interest* due to fiscal opacity, a fiscal council can raise awareness of future fiscal costs, provide realistic macro-fiscal forecasts and offset tendencies to *over-optimism* and *overconfidence* by providing independent analysis. A fiscal council can further increase government accountability by enhancing fiscal transparency (e.g. through better monitoring of off-budget items or vetting budget proposals).

- While *time inconsistency* and *common pool* problems are best addressed by a fiscal rule, charging a fiscal council with the monitoring of the rule can help increase the credibility of the rule and even make it more binding. According to Frankel (2011), the key innovation that allowed Chile to achieve countercyclical fiscal policy and in particular to run surpluses in booms was not just the structural budget rule by itself, but rather the adoption of a regime that entrusts the responsibility for forecasting its structural parameters (i.e. the long-term copper price and trend GDP) to independent expert commissions, insulating it from politician's *over-optimism*, which in particular within a fiscal rules can lead to an over-estimation of "(…) the permanence of the booms *and* the transitoriness of the busts" (Frankel, 2011, p.31, emphasis in the original).[84]

Dealing with procyclicality

6.72. While a fiscal rule can help eliminate a pro-cyclical bias in fiscal policy, a fiscal rule will be of limited use, if the source of pro-cyclicality is due to institutional characteristics and/or of external origin Uruguay appears to be affected by both.

6.73. World Bank (2005a) and Le Fort (2012) find that pension payments are highly procyclical and explain this by the indexation to wages. In Uruguay, pensions have been indexed to wages since 1989, which tend to rise in real terms during booms and to fall during recessions.[85] As pension payments are thus closely linked to the business cycle, this can contribute to fast-rising costs of the pension system during booms, thus increase procyclicality.

[84] Frankel (2011) points out that among many countries there is a tendency toward wishful thinking in official forecasts of growth and the budget. Governments unrealistically extrapolate booms three years into the future. The bias is worse among the European countries that are supposedly subject to the budget rules of the Stability and Growth Pact, presumably because those in the government who make the forecasts feel pressured to be able to announce that they are on track to meet the budget targets even if they are not.

[85] Mailhos and Sosa (2002) provide some evidence that the pro-cyclicality of BPS expenditures may have increased following the switch to wage indexation, their research requires however further scrunity as the reported increase in correlation may not be due to greater procyclicality but at least partly driven by the fact that the correlation coefficient increased with smaller sample sizes, and their post-indexation sample spans less than ten observations.

6.74. As such, the pro-cyclicality of a large share of total expenditure will unlikely disappear with the introduction of a structural fiscal policy, and consequently, the rest of expenditure would have to follow a counter cyclical bias to attain cyclically neutral total expenditure.

6.75. The rigidity of current expenditure in Uruguay has decreased (see Chapter 1), but the remaining level of rigidity may require enhancing the flexibility and counter-cyclicality of other government expenditures to carry out structural fiscal policy. One possible source of flexibility could be a counter-cyclical public investment policy. That is, during the expansionary phase of the cycle, when current fiscal expenditure by institutional design expands procyclically, capital expenditure should contract to a minimum to allow meeting the structural target of the fiscal balance.

6.76. Enhancing the pro-cyclicality of some tax rates, such as VAT, could also help introduce greater flexibility on the revenue side. More procyclical tax rates would provide additional fiscal revenue during the expansionary phase, helping to meet the fiscal target without investment cuts. Moreover, the tax increase may help in softening the pro-cyclical impulse of public expenditure. The changes in the VAT rate may raise some practical problems and be a source of additional macroeconomic volatility. In that case, the only source of fiscal flexibility would be that of discretionary capital expenditure.[86]

6.77. External factors may also contribute to greater pro-cyclicality. While Daude et al. (2010) identify fiscal policy as highly procyclical in Uruguay, they find that once the adjustment to the 2002 crisis is removed from the sample, fiscal policy is found to be almost neutral. As such, the procyclicality of fiscal policy in Uruguay could be at least in parts be explained by access to external financing. Byrne at al. (2011) examine the impact of global capital market shocks on fiscal sustainability in emerging and industrial countries and highlight an important difference between both sets of countries: while industrial countries have been able to combine a concern about debt sustainability with the ability to smooth the business cycle, emerging market economies cannot as their access to external capital is restricted during crisis time. Access to contingent credit lines, which already form part of the Government's financing strategy, are therefore likely to be helpful in mitigating procyclical adjustments should external financing cease in the event of a global financial crisis.

6.78. Determining the sources of procyclicality of fiscal policy in Uruguay remains an important issue for future research, as its determinants affect the optimal design and response of fiscal policy. An independent fiscal council could also play an important role within this context.

[86] For a more detailed discussion on variable tax rates, see Kaufman (2000).

References

Agell, J., L. Calmfors, and G. Jonsson, 1996, "Fiscal Policy when Monetary Policy is Tied to the Mast," European Economic Review, Vol. 40, pp. 1413-1440.

AGSS, 2011, "Evolución de los cotizantes 2010." Asesoría General en Seguridad Social, BPS.

Amarante, Arim, Salas, 2008, "Impacto distributivo de la reforma impositiva", Report prepared for the Poverty and Social Impact Analysis (PSIA) - Uruguay Development Policy, Loan (DPL) II.

Auerbach, A. J., 2002, "Is There a Role for Discretionary Fiscal Policy?" in Rethinking Stabilization Policy A Symposium sponsored by the Federal Reserve Bank of Kansas City (Jackson Hole, Wyoming, August 29-31), pp. 109-150.

Banca d'Italia, Research Department, 2001, Fiscal Rules, papers presented at the Bank of Italy workshop held in Perugia, February 1-3 (Rome, Banca d'Italia)

Barreix, A. And J. Roca, 2007, "Strengthening a fiscal pillar: the Uruguayan dual income tax," CEPAL Review 92, August 2007, pp. 121-140.

Barrell, R., I. Hurst, and J. Mitchell, 2007, "Uncertainty Bounds for Cyclically Adjusted Budget Balances," in M. Larch and J. Nogueira Martins, eds, *Fiscal Indicators*, European Economy: Economic Papers, No. 297, European Commission, December, pp. 185-204.

Barnhill, T., and G. Kopits, 2004, "Assessing Fiscal Sustainability under Uncertainty," Journal of Risk, Vol. VI (Summer), pp. 31-53.

Berger, H., G. Kopits, and I. Székely, 2007, "Fiscal Indulgence in Central Europe: Loss of the External Anchor?" Scottish Journal of Political Economy, Vol. 54, No. 1 (February), pp. 116-135.

Besley, T., and A. Case, 2003, "Political Institutions and Policy Choices: Evidence from the United States," Journal of Economic Literature, Vol. 41 (March), pp. 7-73.

Borchardt, M., I. Rial and A. Sarmiento, 1998, "Sostenibilidad de la política fiscal en Uruguay," Estudios CERES.

Bornhorst, F., G. Dobrescu, A. Fedelino, J. Gottschalk and T. Nakata, 2011, "When and How to Adjust Beyond the Business Cycle? A Guide to Structural Fiscal Balances," IMF Technical Notes and Manuals 11/02 (April).

BPS, 2011, "Proyección financiera del sistema previsional contributivo administrado por el Banco de Previsión Social Periodo 2015-2060, Análisis Global." Comentarios de Seguridad Social Noviembre 2011, Asesoría General en Seguridad Social, BPS.

_____, 2010, Boletín Estadístico, Banco de Previsión Social (Statistical Bulletin of the Social Insurance Bank (BPS)), Uruguay.

Brovia, L., 2011, "La ecuación de equilibrio Financiero. Resultados para el periodo 2004-2010." Comentarios de Seguridad Social Nº 33, Asesoría General en Seguridad Social, BPS.

Buchanan, J., and R. Wagner, 1977, Democracy in Deficit: the Political Legacy of Lord Keynes (New York, Academic Press)

Bucheli, M., N. Lustig, M. Rossi, and F. Amabile, 2012, "Social Spending, Taxes, and Income Redistribution in Uruguay", Tulane University, Economics Department, Working Paper 1216, New Orleans, Louisiana, August 2012. Background paper prepared for Public Expenditure Review for Uruguay, World Bank.

Burnside, C., 2000, "Fiscal Policy, Business Cycles, and Growth in Mexico", Background paper prepared for *Mexico: Financial Sustainability*. Report No. 20236-ME, Latin American and Caribbean Region, World Bank, Washington, DC, 2001.

Burnside, C. and Y. Meshcheryakova, 2005, "Cyclical Adjustment of the Budget Surplus: Concepts and Measurement Issues," in: Burnside, C. (ed.) Fiscal Sustainability in Theory and Practice – A Handbook, World Bank, Washington, D.C.

Buti, M., and G. Giudice, 2002, "Maastricht Fiscal Rules at Ten: An Assessment," *Journal of Common Market Studies*, Vol. 40, pp. 823-848.

Byrne, J., N. Fiess and R. MacDonald, 2011, "The global dimension to fiscal sustainability", *Journal of Macroeconomics*, 33, 137-150.

Calmfors, L., 2010, "The role of independent fiscal policy institutions," Rapport till Finanspolitiska radet, 2010/9.

Camacho, L., 2009, "Estimación de las tasas de mortalidad futuras para su aplicación en las proyecciones financieras del régimen previsional." Comentarios de Seguridad Social Nº 23, Asesoría General en Seguridad Social, BPS.

_____, 1997, Elementos generales del financiamiento del nuevo sistema provisional uruguayo (Overview of the financing of Uruguay's new social insurance system). Montevideo: Banco de Previsión Social (BPS), Asesoría Económica y Actuarial (Economic and Actuarial Consultancy).

Canova, F., 1998, "Detrending and business cycle facts," Journal of Monetary Economics, 41, 475-512

Cecchetti, S., M. Mohanty, and F. Zampolli, 2011, "The Real Effects of Growth," paper presented at the Jackson Hole Symposium on Achieving Maximum Long-Run Growth, Federal Reserve Bank of Kansas City (August 25-27, forthcoming)

Center for International Development and Finance, 2011, "Uruguay to Expand its Energy Options," February 13, 2011: http://uicifd.blogspot.com/2011/02/uruguay-to-expand-its-energy-options.html

CEPAL, 2009, Mortalidad. América Latina y Caribe. Observatorio Demográfico Nº 9. Santiago, Chile.

CEPAL-CELADE, 2008, Proyección de población. América Latina y Caribe. Observatorio Demográfico Nº 7. Santiago, Chile.

_____2006, Población económicamente activa. América Latina y Caribe. Observatorio Demográfico Nº 2. Santiago, Chile.

Colombo, C., 2011, "Índice de revaluación y pasividad promedio. Evolución enero 1985 a diciembre 2010." Comentarios de Seguridad Social Nº 33, Asesoría General en Seguridad Social, BPS.

Contaduría General de la Nación, 2005, Exposición de motivos, Ley de Presupuesto 2004-2009

Contaduría General de la Nación, 2010, Exposición de motivos, Ley de Presupeusto 2010-2014

Contaduría General de la Nación, 2011, Exposición de motivos, Rendición de Cuentas 2010

Coppini, M. A., 2000, Técnica de los seguros sociales, Vol I y II. International Social Security Association, ISSA.

Coricelli, F., and V. Ercolani, 2004, "Fiscal Rules on the Road to an Enlarged European Union," in G. Kopits, ed., *Rules-Based Fiscal Policy in Emerging Markets: Background, Analysis and Prospects* (London, Macmillan), pp. 146-163.

Cotlear, D. (Editor), 2011, Population Aging: Is LAC ready?, World Bank, 2011

Dabán, T., 2011, "Strengthening Chiile's Rule-Based Fiscal Framework," IMF Working Paper WP/11/17 (January)

Daude, C., A. Melguizo, and A. Neut, 2010: Fiscal Policy in Latin America: Better After All? OECD Development Centre, http://dx.doi.org/10.5018/economics-ejournal.ja.2011-14

Debrun, X., 2007, "Tying Hands is not Commitment: Can Fiscal Rules and Institutions Really Enhance Fiscal Discipline?" Bruegel Working Paper No. 2007/01 (February)

Decree 442/011, December 2011. http://archivo.presidencia.gub.uy/sci/decretos/2011/12/mef_644.pdf

Deroose, S., A. Montanino, and Strømsheim Wold, 2006, "The EU Approach to Fiscal Sustainability," in Fiscal Policy and the Road to the Euro (Warsaw, National Bank of Poland), pp. 87-120.

Deutsche Bundesbank, 1997, "Problems Associated with Calculating 'Structural' Budget Deficits," *Monthly Report*, April, 31-45.

DGI-Asesoría Económica, 2006, "Eficiencia de la Administración Tributaria en la recaudación, ¿Contribuye la gestión de la DGI a incrementar la recaudación impositiva?", Documento de trabajo Nº4.

DGI-Asesoría Económica, 2010, "Estimación del Gasto Tributario en Uruguay 2005-2009".

DGI-Asesoría Económica, 2011, "Estimación del Gasto Tributario en Uruguay 2008-2010."

DNSS, 2007, DIALOGO NACIONAL SOBRE SEGURIDAD SOCIAL EN EL URUGUAY. Documento Reglas de Juego. MESAS TEMÁTICAS DE DIÁLOGO. Objetivos, características y criterios de funcionamiento.

ECLAC, 2010, Economics of Climate Change in Latin America and the Caribbean, United Nations.

Eichengreen, B., R. Hausmann, and J. von Hagen, 1999, "Reforming Budgetary Institutions in Latin America: the Case for a National Fiscal Council," Open Economies Review, Vol. 10 (October), pp. 415-442.

Eleftheratos, Kostas at al., 2011, "Observed and predicted climate changes in Uruguay and adjacent areas", *Hellenic Journal of Geosciences*, vol. 45, 83-90.

Environmental Finance, 2010, "Weather Risk Deal of the Year," July 22, 2010.

ERT/PIT-CNT, 2011, CAMINANDO. Los trabajadores y la seguridad social en Uruguay. Equipo de Representación de los Trabajadores en el BPS de Uruguay, PIT-CNT – Plenario Intersindical de Trabajadores – Convención Nacional de Trabajadores, Uruguay.

European Commission, Directorate-General for Economic and Financial Affairs, 2000, *European Economy: Public Finances in EMU – 2000*, No. 3 (Brussels, European Communities).

Fatás, A, and I. Mihov, 2003, "The Case for Restricting Fiscal Policy Discretion," *Quarterly Journal of Economics*, Vol. 118 (November), pp. 1419-1447.

Ferreria-Coimbra, N. and A. Forteza, 2004, Protección Social en Uruguay. Financiamiento, Cobertura y Desempeño 1990-2002 (Social Protection in Uruguay: Financing, Coverage and Performance, 1990 – 2002). Organización Internacional del Trabajo (International Labour Organization), ISBS 92-2-315497-9, Santiago de Chile.

Forteza, A., I. Apella, E. Fajnzylber, C. Grushka, I. Rossi and G. Sanroman, 2010, Work Histories and Pension Entitlements in Argentina, Chile and Uruguay. World Bank Working Document 32, Superintendencia de Pensiones, Santiago, 2009.

Frankel, J.A., 2011, "A Solution to Fiscal Procyclicality: the Structural Budget Institutions Pioneered by Chile" NBER Working Paper 16945 (April)

Frankel, J.A., C. Végh, and G. Vuletin, 2011, "On Graduation from Procyclicality", University of Maryland (mimeo).

Gagnon, J.E., 2011, *The Global Outlook for Government Debt over the Next 25 Years: Implications for the Economy and Public Policy* (Washington, Peterson Institute for International Economics)

Gavin, M., R. Hausmann, R. Perotti, and E. Talvi, 1996, "Managing Fiscal Policy in Latin America and the Caribbean: Volatility, Procyclicality, and Limited Creditworthiness," IDB Working Paper No. 13 (Washington, Inter-American Development Bank).

Giedion, U., G. Panopoulou and S. Gómez-Fraga, 2009, "Design and Adjustment of Explicit Benefit Plans: the Case of Colombia and Mexico," ECLAC, Financing for Development, Series 219

Girouard, N. and Ch. Andre, 2005, "Measuring Cyclically Adjusted Budget Balances for OECD Countries," OECD Economics Department, Working Paper No. 434 (Paris: OECD).

Gómez, V., 1999, "Three Equivalent Methods for Filtering Nonstationary Time Series," *Journal of Business and Economics Statistics*, 17, 109–116.

Goni, E.; Lopez, J.H. and L. Serven (2011): Fiscal Redistribution and income inequality in Latin America, *World Development*, 39, 9, 1558-1569.

Grushka, C., 2002, Proyecciones previsionales de largo plazo. Argentina, 2000-2050. Serie Estudios Especiales N°14. SAFJP, Buenos Aires.

Grushka, C. and D. Altieri, 2003, Paraguay. Evaluación actuarial del régimen de jubilaciones y pensiones administrado por el Instituto de Previsión Social (IPS). Proyecciones 2000-2050. ILO, Santiago, Chile.

Hagemann, R., 1999, "The Structural Budget Balance: The IMF's Methodology," *IMF Working Paper* 99/95, International Monetary Fund, Washington, DC.

Haindl, E. and R. Fuentes, 1986, "Estimación del stock de capital en Chile: 1960-1984," Estudios de Economia, University of Chile, Department of Economics, Vol. 13 (April), 39-72.

Harvey, A. and A. Jaeger, 1993, "Detrending, Stylized Facts, and the Business Cycle," *Journal of Applied Econometrics* 8, 231–247.

Hausmann, R., 2004, "Good Credit Ratios, Bad Credit Ratings: the Role of Debt Structure," in G. Kopits, ed., *Rules-Based Fiscal Policy in Emerging Markets: Background, Analysis and Prospects* (London, Macmillan), pp. 30-52.

Hodrick, R., and E. Prescott, 1997, "Post-war Business Cycles: An Empirical Investigation," *Journal of Money Credit, and Banking* 29, 1–16.

Inclan, C. and G. Tiao, 1994, "Use of Cumulative Sums of Squares for Retrospective Detection of Changes of Variance," *Journal of the American Statistical Association*, Vol. 89, No. 427 (Sep., 1994), pp. 913-923

International Labor Organization, 2001, The ILO Population Projection Model. Version 1.0. Geneva, September.

_____, 1998a, The ILO Pension Model. Technical Guide. Departament of Social Security, Geneva, November.

_____, 1998b, Internal Guidelines for the Actuarial Analysis of a National Social Security Sension Scheme. Departament of Social Security, Geneva, June.

International Monetary Fund, 2011, "Uruguay – Assessing the Structural Fiscal Stance," *IMF Country Report* 11/63, International Monetary Fund, Washington, DC.

_____, 2003, "Public Debt in Emerging Markets: Is It Too High?" *World Economic Outlook* (September), Chapter 3.

Kaiser, R. and A. Maravall, 2001, *Measuring Business Cycles in Economic Time Series*, Lecture Notes in Statistics 154, New York: Springer-Verlag.

Kaminsky, G., C. Reinhart, and C. Végh, 2004, "When it Rains, it Pours: Procyclical Capital Flows and Macroeconomic Policies," NBER Working Paper No. 10780 (Cambridge, Mass.)

Kaufman, M., 2000, "Fiscal Policy Through Time-Varying Tax Rates: If and How," IMF Working Paper WP/00/170 (October).

Kell, M., 2001, "An Assessment of Fiscal Rules in the United Kingdom," IMF Working Paper WP/01/99 (July).

King, R. and S. Rebelo, 1993, "Low Frequency Filtering and Real Business Cycles," *Journal of Economic Dynamics and Control*, 17, 207–233.

Kopits, G., 2011a, "Independent Fiscal Institutions: Developing Good Practices" *OECD Journal on Budgeting* (November, forthcoming).

_____, 2011b, „Scope for a Rules-Based Fiscal Framework in Uruguay," Background Paper for the Uruguay PER.

_____, 2010, "Views on Germany's Fiscal Policy Rules" in C. Kastrop and others, eds., *Die Neuen Schuldenregeln in Grundgesetz* (Berlin, Berliner Wissenschafts-Verlag), pp. 121-123.

_____, ed., 2004, *Rules-Based Fiscal Policy in Emerging Markets: Background, Analysis and Prospects* (London, Macmillan)

_____, 2002, "Central European EU Accession and Latin American Integration: Mutual Lessons in Macroeconomic Policy Design," *North American Journal of Economics and Finance* (December), pp. 253-277.

_____, 2001, "Fiscal Rules: Useful Policy Framework or Unnecessary Ornament?" in Banca d'Italia, Research Department, *Fiscal Rules,* papers presented at the Bank of Italy workshop held in Perugia, February 1-3 (Rome, Banca d'Italia), pp. 59-83.

_____, 2000, "How Can Fiscal Policy Help Avert Currency Crises?" in *Financial Crisis: A Never-Ending Story* (Vienna, Oesterreichische Nationalbank), pp. 35-45.

Kopits, G., and J. Craig, 1998, *Transparency in Government Operations*, IMF Occasional Paper No.158 (Washington, International Monetary Fund)

Kopits, G., J. P. Jiménez, and A. Manoel, 2000, "Responsabilidad Fiscal a Nivel Subnacional: Argentina y Brasil," *XII Seminario Regional de Política Fiscal: Compendio de Documentos* (Santiago, UNECLAC, January 24-26), pp. 25-57.

Kopits, G., and S. Symansky, 1998, *Fiscal Policy Rules,* IMF Occasional Paper No. 162 (Washington, International Monetary Fund)

Kydland, F.E., and E.C. Prescott, 1977, "Rules Rather than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy*, Vol. 85, pp. 473-491.

Lagomarsino, 2009, "A new social protection framework for Uruguay", ISSA Project on examining the existing knowledge of social security coverage, Working paper #5, Geneva.

Law No 18.395, October 2008.

Law No 18211, December 2007.

Lazo, 2010, “Estimación de las tasas de mortalidad especificas para los jubilados por vejez invalidez del régimen previsional contributivo uruguayo.” Comentarios de Seguridad Social Nº 27, Asesoría General en Seguridad Social, BPS.

Leeper, E., 2010, “Monetary Science, Fiscal Alchemy” in *Macroeconomic Challenges: the Decade Ahead,* A Symposium sponsored by the Federal Reserve Bank of Kansas City (Jackson Hole, Wyoming, August 26–28), pp. 361-434.

Le FortVarela, G., 2012, “Structural Fiscal Policy in Uruguay: A Proposal,” Background Paper for the Uruguay PER.

Ley, E. and F. Misch, 2012, “Real-Time Macro Monitoring and Fiscal Policy,” Background Paper for the Uruguay PER.

LLambí, Lanes, Perera and Ferrando, 2009, “Evaluación del impacto de la Reforma Tributaria de 2007 sobre la pobreza y la desigualdad en Uruguay,” CINVE, Uruguay.

Llambí, C.; G. Oddone; M. Perera and C. Velázquez, 2010, Estudio sobre impacto distributivo del gasto público social en Uruguay. Inter-American Development Bank, Montevideo.

Lustig, N., G. Gray-Molina, S. Higgins, M. Jaramillo, W. Jiménez, V. Paz, C. Pereira, C. Pessino, J. Scott, and E. Yañez, 2012, “The Impact of Taxes and Social Spending on Inequality and Poverty in Argentina, Bolivia, Brazil, Mexico and Peru: A Synthesis of Results.” Tulane University, Economics Department, Working Paper 1216, New Orleans, Louisiana, August 2012. Background paper for the Latin American Development Bank (CAF)’s Report “Fiscal Policy for Development Improving the Nexus between Revenues and Spending/ Política Fiscal para el Desarrollo: Mejorando la Conexión entre Ingresos y Gastos."

Lustig, N. and S. Higgins, 2012, “Commitment to Equity Assessment (CEQ): Estimating the Incidence of Taxes and Benefits Handbook,” Tulane University, Economics Department, Working Paper, and CIPR (Center for Inter-American Policy & Research) Working Paper, New Orleans, Louisiana, July 2012. (Revised version of Tulane Economics Department Working Paper 1119).

Mailhos, J. and S. Sosa, 2000, “El Comportamiento Cíclico de la Política Fiscal en Uruguay,” Estudios CERES.

Manasse, P., 2006, “Procyclical Fiscal Policy: Shocks, Rules, and Institutions—A View from Mars,” IMF Working Paper WP/06/27 (January)

McGillivray, W., 2010, “Actuarial Research into the Future Performance of Social Security,” in ISSA Social Security Research and Policy Manual, International Social Security Association, Geneva.

MSP, 2010, “La Construcción del Sistema Nacional Integrado de Salud 2005-2009.”

MVOTMA, 2010, “Gestión del MVOTMA 2005-2009.”

OECD, 1995, *Budgeting for Results: Perspectives on Public Expenditure Management,* (Paris, OECD)

OECD, ECLAC, CIAT, 2011, “Revenue statistics in Latin America 1990-2009”

ONSC, 2011, “Vínculos laborales con el Estado 2010”, Informe sobre vínculos laborales, altas y bajas (Art. 14 Ley No. 18.719).

Orphanides, A. and S. van Norden, 2002, “The unreliability of Output-Gap Estimates in Real Time,” *The Review of Economics and Statistics*, 84, 569–583.

PAHO/WHO and MSP, 2009, “Cuentas Nacionales de Salud 2005-2008” http://www.msp.gub.uy

Pereira, A., 2011, “La ecuación de equilibrio financiero. Resultados para el periodo 2004-2010.” Comentarios de Seguridad Social Nº 33, Asesoría General en Seguridad Social, BPS.

Plamondon, P. et al., 2002, Actuarial Practice in Social Security. ILO, ISSA, Geneva.

Planas, C. and A. Rossi, 2004, "Can Inflation Data Improve the Real-Time Reliability of Output Gap Estimates?" *Journal of Applied Econometrics*, 19, 121–133.

Poterba, J. M., and J. von Hagen, eds., 1999, *Fiscal Institutions and Fiscal Performance* (Chicago, University of Chicago Press).

Rattsø, J., ed., 1998, *Fiscal Federalism and State-Local Finance: the Scandinavian Perspective* (Cheltenham, Edward Elgar)

Reinhart, C., and K. Rogoff, 2010, "Growth in Time of Debt," *American Economic Review*, Vol. 100 (May), pp. 573-578.

Rofman and Oliveri, 2011, "La cobertura de los sistemas previsionales en América Latina: conceptos e indicadores", Serie de Documentos de Trabajo sobre Políticas Sociales No. 7, World Bank

Romano, 2008, "La reforma tributaria en Uruguay un proceso hacia la equidad."

Roubini, N., and J. Sachs, 1989, "Government Spending and Budget Deficits in the Industrial Democracies," *Economic Policy*, Vol. 8, pp. 100-132.

Scardino, A., 2011a, "Análisis de los movimientos financieros del Banco de Previsión Social. Año 2010". Comentarios de Seguridad Social Nº 33, Asesoría General en Seguridad Social, BPS.

_____, 2011b, "Evolución de las pasividades por sector. 1995- 2010". Comentarios de Seguridad Social Nº 33, Asesoría General en Seguridad Social, BPS.

Schick, A, 2004, "Fiscal Institutions versus Political Will," in G. Kopits, ed., *Rules-Based Fiscal Policy in Emerging Markets: Background, Analysis and Prospects* (London, Macmillan), pp. 81-94.

SSS, 2005, Prospectiva de la previsión social. Secretaría de Seguridad Social, Ministerio de Trabajo, Empleo y Seguridad Social y OIT, Buenos Aires.

Tanzi, V., and L. Schuknecht, 2000, *Public Spending in the 20th Century: Global Perspective* (Cambridge, Cambridge University Press)

Taylor, J.B., 2000, "Reassessing Discretionary Fiscal Policy," *Journal of Economic Perspectives*, Vol. 14 (Summer), pp. 21-36.

Theoduloz, T., 2006, "El producto potencial en la economía uruguaya," Estudios CERES.

Thullen, P., 1995, Técnicas actuariales de la seguridad social: regímenes de las pensiones de invalidez, de vejez y sobrevivientes. Ministerio de Trabajo y Seguridad Social de España.

United Nations, 2011, World Population Prospects, the 2010 Revision, (http://esa.un.org/unpd/wpp/index.htm), Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

UTE, "Memoria annual", 2007-2010

Villela, L., A. Lemgruber and M. Jorratt, 2010, "Tax Expenditure Budgets: Concepts and Challenges for Implementation," IDB Working Paper Series, No. IDB-WP-131.

Wellink, A.H., 1996, "Budgetary Control: Goodhart's Law in Government Finances?" in C. Kool, J. Muysken, and T. van Veen, eds., *Essays on Money, Banking and Regulation* (Dordrecht, Kluwer Academic Publishers)

World Bank, 2012a, Uruguay Integrated National Health System. Analysis of the Governability of the SNIS Benefit Plan. May 2012.

_____, 2012b, Implementation Completion and Results Report on a Global Environmental Facility Grant to the Oriental Republic of Uruguay for an Energy Efficiency Project, draft.

_____, 2011, "Guatemala Cat DDO, Providing Countries with Rapid Access to Funds after a Natural Disaster," Disaster Risk Financing and Insurance Case Study, GFDRR, January 2011.

_____, 2010a, "Uruguay – Policy Notes: Challenges and Opportunities 2010-2015", Report No. 54939-UY, World Bank, Washington, DC.

_____, 2010b, "Latvia: From Exuberance to Prudence. A Public Expenditure Review of Government Administration and the Social Sectors." Report No. 56747-LV, World Bank, Washington, DC.

_____, 2007, Income Transfer Policies in Uruguay: Closing the Gaps to Increase Welfare. Human Development Department, Latin America and the Caribbean Region, World Bank, Montevideo.

_____, 2005a, "Uruguay – Improving the Efficacy of Public Expenditures," Report No. 30943-UY, World Bank, Washington, DC.

_____, 2005b, "Uruguay Sources of Growth – Policies for the Development of Human Capital, Integration, Competition and Innovation," Report No. 31737-UY, World Bank, Washington, DC.

Wyplosz, C., 2002, "Fiscal Policy: Institutions versus Rules," CEPR Discussion Paper No. 3238 (London, Center for Economic Policy Research)

Annexes

ANNEX 1: TAX REVENUE COMPOSITION

Table A.1 Tax revenues composition (% of GDP)

	2000-05	2006	2007	2008	2009	2010	2011	2006-11
DGI	**14.0**	**16.8**	**16.5**	**17.1**	**17.6**	**17.4**	**17.6**	**17.1**
VAT	7.9	9.9	10.2	10.2	10.2	10.0	9.9	10.1
Domestic	4.8	5.8	5.9	5.8	6.0	5.8	5.6	5.8
Imports	3.1	4.1	4.3	4.4	4.2	4.1	4.3	4.2
COFIS	0.5	0.7	0.3	0.0	0.0	0.0	0.0	0.2
Domestic	0.5	0.7	0.3	0.0	0.0	0.0	0.0	0.2
Imports	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1
IMESI	2.5	2.4	2.2	1.7	1.9	2.0	2.1	2.0
Fuels	1.3	1.1	1.0	0.7	0.8	0.8	0.9	0.9
Tobacco	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Automobiles	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Imports advance	0.0	0.0	-0.1	0.0	-0.1	0.0	-0.1	0.0
Other indirect taxes	0.7	0.8	0.8	0.4	0.3	0.3	0.4	0.5
IRPF	0.0	0.0	0.7	2.0	2.0	2.1	2.3	1.5
IRNR	0.0	0.0	0.1	0.2	0.3	0.2	0.3	0.2
Corporate income tax (IRIC/IRAE)	1.9	2.8	2.1	2.5	2.6	2.7	2.4	2.5
Net worth tax	0.8	1.0	0.9	1.0	1.2	1.1	1.1	1.1
Banking institutions asset tax	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.1
Tax on external trade	**1.0**	**1.3**	**1.3**	**1.1**	**1.0**	**1.1**	**1.2**	**1.2**
IRP	**1.4**	**0.9**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**
Total tax revenues	**16.4**	**19.0**	**18.4**	**18.2**	**18.6**	**18.4**	**18.7**	**18.6**
o/w total indirect taxes	12.6	15.1	14.8	13.5	13.4	13.4	13.5	13.9
o/w total direct taxes	4.6	5.0	4.6	5.7	6.2	6.1	6.1	5.6
o/w other and adjustment (*)	-0.7	-1.1	-1.0	-1.0	-1.0	-1.1	-0.9	-1.0

Source: Staff calculations based on data from Ministry of Economy and Finance, DGI and Central Bank of Uruguay

(*) Note: individual tax contributions were estimated based on two different sources and the adjustment corresponds to the difference between both.

ANNEX 2: INCOME CONCEPTS USED IN URUGUAY'S FISCAL INCIDENCE ANALYSIS[87]

Table A.1		
URUGUAY: INCOME CONCEPTS USED IN INCIDENCE ANALYSIS *(Encuesta Continua de Hogares* , 2009)		
Yellow highlight shows difference between:	**BENCHMARK**	**SENSITIVITY ANALYSIS**
Pre-incidence Analysis Income	Market Income	Market Income
INCOME CONCEPTS: DEFINITIONS, METHODS AND SOURCES		
MARKET INCOME		
Earned and Unearned Incomes of All Possible Sources and Excluding Government	Included	Included
Social Security Pensions	Included	Not included
Gifts, proceeds from sale of durables.	Not included	Not included
Autoconsumption	Included	Included
Imputed rent for owner occupied housing	Included	Included
NET MARKET INCOME=MARKET INCOME - (DIRECT TAXES AND EMPLOYEE CONTRIBUTIONS TO SOCIAL SECURITY)		
Direct Taxes	Simulation Method: Subtracted from Market Income to generate Net Market Income. Taxes not reported in survey. For wages/salary, "Impuesto a la Renta de las Personas Físicas", for capital "Impuesto a la Renta de las Personas Físicas". Estimates based on official estimates by the finance ministry, imputed by applying the tax law to the ECH data. Methodology used is consistent with imputations made for spending in present study.	Simulation Method: Subtracted from Market Income to generate Net Market Income. Taxes not reported in survey. For wages/salary, "Impuesto a la Renta de las Personas Físicas", for capital "Impuesto a la Renta de las Personas Físicas". Estimates based on official estimates by the finance ministry, imputed by applying the tax law to the ECH data. Methodology used is consistent with imputations made for spending in present study.
Employee contributions to social security	Not included	Simulation Method. Estimates based on reported income and contributions rate rules. The survey inquires whether the worker contributes to SS. We substract out contibutions to pensions and other contributions.
DISPOSABLE INCOME = NET MARKET INCOME + DIRECT GOVERNMENT TRANSFERS		
Non-contributory pensions	Direct Identification Method. These transfers corresponds to old-age and disability assistant programs ("Pensión a la vejez"). They are captured by the survey	Direct Identification Method. These transfers corresponds to old-age and disability assistant programs ("Pensión a la vejez" and "Pensión de invalidez"). They are captured by the survey
Targeted monetary transfers	Direct Identification Method. For Uruguay this column only includes AFAM (Family allowances program)	Direct Identification Method. For Uruguay this column only includes AFAM (Family allowances program)
Other direct transfers	Direct Identification Method. Public transfers like unemployment insurance and maternity allowance were included.	Direct Identification Method. Public transfers like unemployment insurance and maternity allowance were included.
Food Transfer	Direct Identification Method. The survey reports the beneficiaries from food voucher and food baskets. The program of food voucher is "Tarjeta Uruguay Social" and it aims to provide money for buy food in extreme poverty households. This cash transfer does not have conditions, but it can only be used to purchase food and cleaning products. The amount of the transfer ranges depending on the number of children under 18 years at home. In 2009, the transfer for one child at home was 479 pesos per month and it can reached 1287 pesos per month if there were 4 children or more children at home. The food basket program gives food baskets through health posts, pre-schools and schools.	Direct Identification Method. The survey reports the beneficiaries from food voucher and food baskets. The program of food voucher is "Tarjeta Uruguay Social" and it aims to provide money for buy food in extreme poverty households. This cash transfer does not have conditions, but it can only be used to purchase food and cleaning products. The amount of the transfer ranges depending on the number of children under 18 years at home. In 2009, the transfer for one child at home was 479 pesos per month and it can reached 1287 pesos per month if there were 4 children or more children at home. The food basket program gives food baskets through health posts, pre-schools and schools.
Social Security Pensions	Not included	Direct Identification Method. Included
POST-FISCAL INCOME = DISPOSABLE INCOME + INDIRECT SUBSIDIES - INDIRECT TAXES		
Indirect subsidies	Not included	Not included
Indirect taxes	We matched the Household Survey (2009) and the Expenditure Survey carried out in 2006 using the command uvis of STATA. Uvis means "univariate imputation sampling" and imputes missing values in the single variable *yvar* based on multiple regression on *xvars* . The estimated consumption includes indirect taxes. Estimates on indirect taxes are based on tax rates. We did not consider evasion.	We matched the Household Survey (2009) and the Expenditure Survey carried out in 2006 using the command uvis of STATA. Uvis means "univariate imputation sampling" and imputes missing values in the single variable *yvar* based on multiple regression on *xvars* . The estimated consumption includes indirect taxes. Estimates on indirect taxes are based on tax rates. We did not consider evasion.

[87] For further details see Lustig and Higgins (2012).

Table A.1 (continue)		
URUGUAY: INCOME CONCEPTS USED IN INCIDENCE ANALYSIS *(Encuesta Continua de Hogares* , 2009)		
FINAL INCOME = POST-FISCAL INCOME + GOVERNMENT IN-KIND TRANSFERS/FINAL INCOME* = DISPOSABLE INCOME + GOVERNMENT IN-KIND TRANSFERS		
In-kind education	Imputation Method. The survey reports whether the individual attends school and the level of education. It does not report if the individual attends public or private school. But the survey of 2008 did. Thus we use the 2008 survey to predict the attendance to public school for the survey of 2009. The education benefit is based on the cost per student by level. The **annual per capita cost** is (calculated as the coeficient of public accounts and number of asistence to public education by ECH): preschool: $29 533 pesos; primary: $29008 pesos; secondary: ciclo básico: $36297; secondary bachillerato $35899; technical: $36938; university: $76968; teaching: $76927; technical education $67978. Source: ECH (2009) and CGN (2009).	Imputation Method. The survey reports whether the individual attends school and the level of education. It does not report if the individual attends public or private school. But the survey of 2008 did. Thus we use the 2008 survey to predict the attendance to public school for the survey of 2009. The education benefit is based on the cost per student by level. The **annual per capita cost** is (calculated as the coeficient of public accounts and number of asistence to public education by ECH): preschool: $29 533 pesos; primary: $29008 pesos; secondary: ciclo básico: $36297; secondary bachillerato $35899; technical: $36938; university: $76968; teaching: $76927; technical education $67978. Source: ECH (2009) and CGN (2009).
In-kind health	Imputation Method. Imputations based on average cost. The survey reports if the individual usually use care services of public or private sector. If he uses public services, we impute the average cost of public services. If he uses private services, the survey reports if he has a subsidy. In this case, one possibility is that the individual uses the mutual system in which case the subsidy is the monthly fee. Another possibility is that the individual has a private insurance in which case he receives a partial subsidy. For those who report affiliation to public health service the benefit is $13686 pesos **per year**, if the affiliation is to mutual system: $11615 pesos **per year** (average public transfer to the system) and if it is to private insurance system, $8584 pesos **per year** (average public transfer to the system). Source: CGN (2009), Junasa (2009) and ECH (2009).	Imputation Method. Imputations based on average cost. The survey reports if the individual usually use care services of public or private sector. If he uses public services, we impute the average cost of public services. If he uses private services, the survey reports if he has a subsidy. In this case, one possibility is that the individual uses the mutual system in which case the subsidy is the monthly fee. Another possibility is that the individual has a private insurance in which case he receives a partial subsidy. For those who report affiliation to public health service the benefit is $13686 pesos **per year**, if the affiliation is to mutual system: $11615 pesos **per year** (average public transfer to the system) and if it is to private insurance system, $8584 pesos **per year** (average public transfer to the system). Source: CGN (2009), Junasa (2009) and ECH (2009).
Subsidized portion of social security (social security "deficit" as a percent of total social security spending)	We did not take into account this phenomenon. In fact, from public accounts 29% of total transfers were subsidized in 2009.	We did not take into account this phenomenon. In fact, from public accounts 29% of total transfers were subsidized in 2009.
SCALED-UP INCOMES, TAXES AND TRANSFERS FOR INCIDENCE ANALYSIS INCLUDING GOVERNMENT IN-KIND TRANSFERS		
Scaling up factor and method	The ratio between National Accounts and household income in ECH is 1.20. We used this factor to scale up: earnings, capital income, other contributory benefits, inter household transfers, taxes on income, profits, and capital gains (IRPF), social contribution to security system and Indirect taxes (IVA, IMESI). The factor is 1.09 for contributory pensions and direct taxes to contributory pensions (IASS). The factor is 1.49 for non-contributory pensions. The factor is 1.39 for food voucher. The scaling up factor for ASFAM, Health, Education, Food baskets, Imputed rent for owner-occupied housing and auto-consumption is 1, because we imputed the per capita values of publics benefits in the survey.	The ratio between National Accounts and household income in ECH is 1.20. We used this factor to scale up: earnings, capital income, other contributory benefits, inter household transfers, taxes on income, profits, and capital gains (IRPF), social contribution to security system and Indirect taxes (IVA, IMESI). The factor is 1.09 for contributory pensions and direct taxes to contributory pensions (IASS). The factor is 1.49 for non-contributory pensions. The factor is 1.39 for food voucher. The scaling up factor for ASFAM, Health, Education, Food baskets, Imputed rent for owner-occupied housing and auto-consumption is 1, because we imputed the per capita values of publics benefits in the survey.

ANNEX 3: FISCAL INCIDENCE – DEFINITIONS[88]

Effectiveness Indicators

In mathematical notation, let $X(I^j)$ be the inequality or poverty measure of interest (e.g., the Gini coefficient or headcount index), which is defined for each income concept $j = m, n, d, pf, f, f^*$. Let S^D be total public spending on the direct transfer programs captured by the survey or otherwise estimated by the authors, measured by budget size in national accounts (note that in the sensitivity analysis this concept includes spending in social security pensions), and let S^H and S^E be total public spending on health and education, respectively.

Then the effectiveness indicator for direct transfers is defined as:

$$\frac{(X(I^n) - X(I^d))/X(I^n)}{S^D/GDP}$$

and the effectiveness indicator for direct and in-kind transfers is defined as:

$$\frac{(X(I^n) - X(I^f))/X(I^n)}{(S^D + S^H + S^E)/GDP}$$

Progressive and Regressive Revenues and Spending: Definitions

Given that there is no unique convention defining progressivity and regressivity as it relates to taxes and transfers, the definitions used here are also presented in order to avoid ambiguities. Progressivity can be measured in absolute terms: i.e., by comparing transfers/taxes per capita among quantiles; or in relative terms: i.e., by comparing transfers/taxes as a share of each quantile's income.

A convention often followed in the literature is to call transfers progressive when they are progressive in absolute terms and to call taxes progressive when they are progressive in relative terms.[89] This is a bit strange as it leaves us with different criteria for taxes and transfers; how would we use the terminology in the case of net transfers? We shall call net transfers progressive (regressive) if the post-taxes and transfers distribution of income is more (less) equal than the market income distribution. Transfers and taxes classification will use a terminology consistent with this definition.

Transfers will be progressive in absolute terms when their per capita value declines with market income. The corresponding concentration coefficients are negative. The latter is very typical of, for example, conditional cash transfer programs (CCTs). Transfers will be progressive in relative terms when while their per capita value increases with market income, their relative value with respect to market income declines. The concentration coefficient is positive but smaller than the market income Gini. The latter is typical of contributory pensions, public spending on education and health and general price subsidies (including VAT exemptions) on basic foodstuffs, for example. A transfer that implies the same benefit in per capita terms (in proportion to market income) for everyone is neutral in absolute (relative) terms. In these cases, the concentration coefficient is zero (equal to the market income Gini coefficient). Of course, it is better (for equality, that is) if a transfer is progressive or neutral in absolute (as opposed to relative) terms.

[88] For further details see Lustig and Higgins (2012).
[89] See Lambert (2002).

Transfers will be regressive when their relative value with respect to market income goes up. The corresponding concentration coefficient is positive and higher than the market income Gini. Regressive transfers are uncommon or nonexistent within social spending. However, subsidies to certain industries and producers as well as some consumption subsidies on items purchased primarily by the middle-classes and the rich will be regressive.[90]

Taxes will be *progressive in absolute terms* when their per capita value increases with market income. However, practically all taxes (except for a poll tax: i.e., everyone pays the same amount) are progressive in absolute terms. Thus, we are interested in relative progressivity: taxes (and social security contributions) will be *progressive in relative terms* when not only their per capita value rises with market income but when their relative value with respect to market income does too. For purposes of the analysis, we will call this tax *progressive* and omit the "relative" qualifier since it is really unnecessary. The majority of income tax systems (on paper but not necessarily in practice) have this characteristic. A tax will be *regressive* whenever its relative value with respect to market income declines as income rises. Value Added Taxes (VAT) are broadly regressive. A flat tax in absolute terms (a poll tax) is *regressive.* When everybody pays the same tax rate in proportion to their income, the tax is called *neutral.*

[90] If a transfer is progressive (regressive) in absolute (relative) terms, it follows by definition that it must be progressive (regressive) in relative (absolute) terms, but the converse is not true. If a tax is progressive (regressive) in relative (absolute) terms, it follows by definition that it must be progressive (regressive) in absolute (relative) terms. However, the converse is not true.

ANNEX 4: FISCAL INCIDENCE – DESCRIPTION OF SOCIAL SPENDING AND TAXES IN URUGUAY[91]

1. Social Spending

Contributory social security programs: benefits and contributions

The main benefit for contributors is a **retirement pension**. The eligibility requirement for receiving a pension is to be at least 60 years of age and have worked a minimum number of years. Up until July 2009, the minimum number of years was 35; after July of 2009, the minimum is 30.[92] Starting in July of 2009, women were granted an additional year for each child born alive or adopted, up to a maximum of five years. The pension is a proportion of the base salary, which increases with the contributor's age and the number of years he or she has made contributions. As of July 2009, the minimum rate decreased from 50 percent to 45 percent, and the maximum rate was maintained at 82.5 percent. It is possible to receive a retirement pension equivalent to 50 percent of the base salary at 65 years of age (70 years, prior to July 2009), and 25 years of service (15 years, prior to July 2009). In all cases, the base salary is calculated as the highest value of either the average salary over the last ten years of work plus 5 percent, or of the twenty best years. The pension schedule is updated based on the average salary index.

Upon the contributor's death, a **survivors' pension** is generated. Those eligible for this type of benefit include surviving spouses, unmarried children under 18 years of age (or up to 21 years of age for those who aren't working), disabled children, divorced spouses who receive a food pension, and disabled parents. In all cases the beneficiaries may not have income greater than a certain limit. The benefit is equivalent to between 50 percent and 75 percent of the pension, depending on the degree of kinship and family structure.

There are also five types of benefits that are available while the contributor is active.

Unemployment insurance helps finance periods of unemployment. This program is based on a similar program implemented in 1958 and modified several times since then. At present the program is governed by a 2008 law. It covers salaried workers who have lost their employment (rural workers and domestic employees were included recently, in 2001 and 2006, respectively), have been suspended or have had their normal hours reduced by more than 25 percent. Public sector employees are not covered, since they are only fired due to misconduct, nor are independent workers. Workers with more than one job can draw unemployment if, by being suspended or losing their job, they lose more than half of their income.

The eligibility requirements are: i) the loss of employment cannot be due to voluntary resignation, reasons of discipline or strike; ii) the beneficiary cannot refuse a job offer without a legitimate reason, nor can he or she be receiving a regular monetary income (this last condition is not binding for those with multiple jobs, for whom the requirement is that they must have lost at least half of their income); iii) the beneficiary must have made contributions for at least six of the past twelve months and must not have drawn unemployment during the previous year. The law also requires the beneficiary to attend job training programs or forfeit the benefit. However, no

[91] For further details see Bucheli et al. (2012).

[92] Prior to the 1996 reform, the minimum number of years of service was 30. The reform increased this number to 35, and in 1996 it was reduced once again to 30.

implementing regulations have been issued for the last requirement and it therefore does not operate effectively.

The benefit is available to the contributor over a maximum period of six months, except for those over 50 years of age, in which case it is available for a year. In the event that GDP declines for two consecutive quarters, it is possible to extend coverage for two additional months. On the other hand, in cases of "public interest," coverage for specific cases may be extended up to twelve additional months.

The amount of the benefit decreases over the six month period of coverage. At the outset, it is equivalent to 66 percent of the lost salary (the average over the last six months), and at the end of the period it is equivalent to 40 percent, with a declining monthly maximum limit. In cases where the employer has temporarily suspended the worker and plans to rehire him or her, the maximum period of coverage is four months. If, at the end of this period the employee has not been rehired, he or she has the right to claim severance pay.

The **maternity allowance,** which was created in 1958, establishes paid maternity leave. All private sector female employees are covered, female employees who are eligible for unemployment insurance, female non-government public sector officials and the dependent wives of the owners and co-owners of businesses. Those who are not eligible include female business owners, non-salaried female directors of cooperatives and assisting spouses. Female workers employed in the public sector are entitled to the same benefits but receive them directly from the agency that employs them.

This program does not have seniority requirements. The benefit is equivalent to the average salary over the last six months prior to the beginning of the period of maternity leave, with a minimum and a maximum limit. The period eligible for paid leave is 12 weeks and may be extended to up to six months for medical reasons.

Another benefit is **temporary or permanent disability coverage**. This benefit is equivalent to 65 percent of the basic retirement pension, plus the proceeds of the individual capitalization account. To qualify, the worker must have been working for at least two years and have been making contributions for at least six months. The temporary disability benefit has a maximum term of three years. The worker may receive this benefit while carrying out an activity that is different from the one that caused the temporary disability.

The **sickness allowance** is a monetary benefit paid to the worker during the time that he or she is unable to work due to health problems. This benefit is available to all private sector dependent employees, partners in cooperatives and sole business proprietors who have no other employees. To receive this benefit, the beneficiary must be up-to-date with his or her social security contributions. The beneficiary must also have made contributions for at least 75 work days or three months during the twelve month period prior to making the claim. The benefit is equivalent to 70 percent of the workers monthly salary, with a maximum limit. The first three days of the illness do not generate a benefit. As of the fourth day, the maximum period of coverage is one year, and may be extended one additional year if the same illness persists.

Finally, contributors are eligible to receive benefits from the **family allowance** program, which was created in 1943 and has been modified a number of times. At present it is a program that focuses on households (with children) whose income is below a certain threshold.

This benefit is available to private sector workers, those who are eligible for unemployment benefits and to rural producers with dependent children. The benefit covers from the time pregnancy is detected until the child is fourteen years of age (if the child only finishes primary school), or 18 years of age (if the child goes on to higher education). To receive the benefit the child must attend school. The benefit consists of a certain amount per minor child. There are two different amounts, including a higher amount for families with higher incomes (but below the program's established threshold). In 2008 a new targeted, non-contributory family allowance program was created, and the contributory program became a subsidiary program for those families who did not qualify for the new program.

In 2009, social security's contributory programs were equivalent to 9.7 percent of GDP (Table 1). Retirement and survivors' pensions were equivalent to 8.7 percent of GDP. It is important to note that, although during the last decade, non-contributing workers have accounted for between 30 percent and 40 percent of all workers, 88 percent of the population over 65 receive a contributory pension from the social security system. This is largely due to the fact that, given the non-existence of employment registries (they were not created until 1996), testimony was admitted as proof of having made contributions, thus giving access to contributory benefits to many who did not fulfill the eligibility requirements. Camacho (1997) estimated that during the mid-1990s – at the time when the registries were created – 23 percent of expenditure on contributory pensions was not backed by the necessary funding from corresponding contributions.

Old-age and disability assistance programs

In addition to the system of contributory benefits, there are cash transfer assistance programs equivalent to 0.5 percent of GDP. The assistance pension programs are available to older adults (over 70 years of age prior to July 2009, and over 65, as of July 2009) and to low-income disabled individuals who are not eligible for benefits from the contributory system. The main reason for accessing this program is if one has not made contributions over the minimum required period of time. The assistance pension program provides monetary transfers of less value than the contributory system.

Family Allowances

Within a context of increased poverty, in 1999 and 2004 the coverage of the family allowances program (which until that time had been available only to those who were social security system contributors) was expanded to include non-contributing, low-income families. In 2008, these modifications were repealed and a new, targeted, non-contributory program was created. The benefits in this new program decline with an increase in the number of children in a household, and increase with each level of education each minor child studies. It was at this time that the contributory program became subsidiary in the sense that it only covers those who are not covered by the non-contributory program.

The beneficiaries of the family allowances program are children under 19 years of age who are attending school, as well as those who have not yet entered elementary school. Eligibility to receive the benefit depends on the socioeconomic level of the household to which the child belongs. This level, in turn, is determined by a set of parameters designed to capture the program's target population, who are households (with children) that fall into the first quintile of per capita income (without imputed rent for owner's occupied housing). The calculation of

income includes the deduction of food benefits and the cost of rent in the case of those who are renters.

For each household receiving the benefit, the amount received increases with the number of children, but at a decreasing rate, and is greater for a child attending secondary school than one studying elementary school. The average amount of the family allowance in this program is greater than the benefit available through the contributory program.

The total cost of providing this program is equivalent to 0.4 percent of GDP (Table 1). According to administrative records (BPS, 2010) and the population projections carried out by the INE (www.ine.gub.uy/socio-demograficos/proyecciones2008.asp), the program covers 38 percent of the total under-19 population, while the contributory family allowance program covers 18 percent.

The health care system: benefits and financing

Public expenditure on health care, which is equivalent to 4.7 percent of GDP, is comprised of two programs: direct public health care for people living in poverty -- a program that has existed since the end of the nineteenth century -- and a subsidy available to contributors to the *Fondo Nacional de Salud* (FONASA; National Health Fund), within the framework of the National Health Insurance system, which was launched in 2007.

For low-income individuals, access to health care in the public health care system is free of charge. All services are provided free of charge: appointments with a physician, lab tests, medications and interventions. Those employed by the police and armed forces have their own health care center, and its services are also free of charge, paid for out of the public sector budget.

FONASA is a fund that transfers an amount of money to the health care provider that is serving the beneficiary. These health care providers may be public or private sector institutions. The beneficiary chooses the health care provider. The amount that FONASA transfers varies with the age of the beneficiary, with eight different ranges in the shape of a "U." The amount is larger for those between 15 and 64 years of age (and is less for all other age ranges), and is greater for women than for men. The tax that is allocated to FONASA is composed of an employers' contribution rate of 5 percent of the beneficiary's salary, and a personal rate, which is also proportional to the salary. The base personal rate is 3 percent of the salary, with an additional charge if the worker's income exceeds a certain limit. This additional rate is 3 percent, if the worker has dependents and 1.5 percent if he or she does not.

The beneficiaries are workers in a dependent work relationship, those who are sole proprietors or business owners with up to one additional employee besides themselves, their spouses and dependent children under 18, or dependent disabled adult children. The system currently covers some inactive workers and the intention for the future is to attain universal coverage. To gain access to the service, the worker must be contributing to FONASA, be working at least 13 days or 104 hours per month or receive a minimum wage that makes it possible for the worker's contribution to cover the cost of the transfer. If the worker does not meet these requirements, the employer is allowed to pay an additional contribution that covers the difference.

The education system

Towards the end of the nineteenth century, primary education was made mandatory. At present, preschool (for 4 to 5-year-olds) and the first three years of secondary school are also mandatory.

In 2009, national school attendance rates were 98 percent for children between 7 and 13 years of age, 81 percent for teens between ages 14 and 17, and 42 percent for young people between ages 18 and 22.

The following statistics give an idea of the new generations' educational capital. In 2009, an estimated 31 percent of the population between 21 and 25 years of age had not completed the mandatory 9 years of schooling; 45 percent of this age group had completed between 9 and 12 years of schooling and 24 percent had at least initiated a program of post-secondary education.

At all levels of education there are two systems: a free, public education system, and a private system. The public education system has the largest enrollment and accounts for 85 percent of elementary school enrollment, 82 percent of secondary school enrollment and 83 percent of post-secondary enrollment.

Food assistance benefits

Food assistance benefits are administered by different agencies. Without considering the food assistance provided in schools (which is paid for out of the education budget), these programs account for 0.3 percent of GDP.

The most traditional food assistance programs offer free food baskets and dining room service to those in greatest need.

The beneficiaries of the food basket assistance program are the poorest families, indigent women who are pregnant or breastfeeding, households with children under 18 that are living in extreme poverty and households with children under 18 that show signs of nutritional risk. There are special baskets for low-income individuals with health problems. To gain access to this program due to economic reasons, a social worker must evaluate the family's socioeconomic situation and determine if the family should be granted access. Cases of nutritional risk are evaluated by the health services and no economic limitations are applied. The benefit is granted for a period of up to 24 months, which may be renewed.

The national dining room system provides food assistance in the form of daily lunches. This service is provided for individuals who are socially and biologically vulnerable, such as women who are pregnant of breastfeeding, disabled individuals, low-income elderly individuals and the unemployed. No income limits apply. A social worker decides who shall be granted access to the service and may also remove individuals from the program. Participants in the program must present an ID.

As of 2006, there is a food card system that allows participating households with children under 18 to obtain food and hygiene products, free of charge. Other participants in this program include women who are pregnant or breastfeeding. To qualify for this program the household must have an income lower than an established limit and be able to prove that they experience a situation of severe need. To remain in the program children under fourteen must attend school, and children and pregnant women must make regular visits to health care centers.

Housing and community services

Housing programs are administered by several different agencies. These programs include subsidies for purchasing or repairing homes and programs aimed at improving the quality of life for those living in irregular settlements. During the previous presidential term, a program called

Plan Junto was created, and is administered directly by the president's office. However, there is no information available regarding the implementation of this program.

2. Taxes

The tax structure in 2009 is shown in Table A.2.

Table A.2 Tax structure for 2009 (percentages)

TOTAL	100.0
Indirect taxes	56.4
IVA (VAT)	47.7
Others	8.7
Direct taxes on personal income	22.0
IRPF (Personal Income Tax)	9.6
FONASA (National Health Fund contribution)	10.8
FRL (Labor Retraining Fund)	0.2
IASS (Social Security Assistance Tax)	1.4
Other taxes	21.6

Indirect taxes

Of the taxes levied by the government, 56 percent are indirect taxes, with the Value Added Tax (IVA) accounting for a predominant share. The IVA accounted for 48 percent of government tax revenues in 2009. The IVA's base rate is 22 percent. Goods and services considered basic necessities are exempt (for example, education and milk), or are taxed at a rate of 10 percent (for example, several types of food, such as meat and bread, and health care items). The remaining 9 percent of tax revenues derived from "other" indirect taxes refers to taxes on specific products such as fuel, alcoholic beverages, tobacco, automobiles and various other articles.

Direct taxes on personal income

Direct taxes on personal income account for 22 percent of the government's tax revenues. This entire amount is withheld from salaries and wages at the moment they are generated.

The principal direct tax is the tax on personal income (IRPF), which was created in 2007. This tax treats income derived from work and income derived from capital separately. Income derived from capital is taxed at a 12 percent flat rate, although there are some differences between categories. There are thresholds below which income is not taxed. Deductions are also allowed for such things as irrecoverable loans or subleases.

Income derived from work, on the other hand, is taxed at progressive rates. Deductions are allowed for all levels and are basically related to family-related responsibilities. Those whose income falls into the first income tier do not pay taxes. Individuals must file an annual tax return, but in cases where the individual only has one job, it is assumed that the employer has withheld the correct amount of taxes.

At first the IRPF also required pensioners to pay taxes similar to those on income derived from work. Pensions were to be considered in addition to income derived from work, and were subject to similar deductions. However, following a series of successful court appeals by pensioners who were able to win exemptions from paying income tax, it was decided to abolish the requirement, and pensions are no longer taxable under the IRPF. At the same time (2008), the Social Security Assistance Tax (IASS) was created. Similarly to the IRFP on work-derived income, pensions are also taxed at progressive rates and deductions are allowed, but the taxes are lower than the

income tax. In 2009, the IASS and the IRPF together accounted for 11 percent of the government's tax revenues.

The tax that finances FONASA, created in 2008, accounted for 11 percent of total tax revenues. As mentioned in the section describing the health care system's benefits, this tax consists of a tax rate equivalent to either 3 percent or 6 percent of the beneficiary's income, depending on the beneficiary's level of income and on whether the worker is the sole beneficiary or if his or her family are also covered.

Finally the *Fondo de Reconversión Laboral* (Labor Retraining Fund), created in 1992, is a tax that is proportional to the beneficiary's salary, and is allocated to creating work programs. Only private sector salaries are taxed, at a rate of 0.125 percent. This tax accounts for less than 1 percent of total tax revenues.

Other taxes

Twenty two percent of total tax revenues come from taxes on business revenues and on taxes on the property of individuals and legal entities.

ANNEX 5: BPS INCOME STATEMENTS

1) *Overall net income position*

Table A.3 BPS – Total income and expenditure 2010 (millions of UR$ and %)

Total income	**116,496**	**100%**
Direct income	*61,756*	*53.0%*
IVS contribution	32,879	53.2%
Worker contribution	1,747	2.8%
Fines and surcharges	474	0.8%
Miscellaneous	78	0.1%
Third-party income	26,573	43.0%
Flow of various funds	5	0.0%
Income in the form of government payments	*54,740*	*47.0%*
Total expenditure	**116,496**	**100%**
IVS benefits	60,508	51.9%
Worker benefits	10,291	8.8%
Third-party benefits	20,522	17.6%
AFAP transfers	10,947	9.4%
Other transfers and pending payments	10,341	8.9%
Administrative expenses	3,889	3.3%

Source: Staff calculation based on Scardino (2011a).

2) *Own net income position*

Table A.4 BPS Own Income and Expenditure, 2010

Total income	**83,319**	**100%**
IVS contribution	49,094	58.6%
Worker contribution	1,747	2.1%
Fines and surcharges	474	0.6%
Miscellaneous	78	0.1%
Earmarked taxes	25,314	30.2%
Flow of various funds	5	0.0%
Government contributions	54,740	8.5%
Total expenditure	**85,813**	**100%**
IVS benefits	60,655	70.7%
Worker benefits	10,291	12.0%
AFAP transfers	10,947	12.8%
Other transfers and pending payments	32	0.0%
Administrative expenses	3,889	4.5%
Profit or loss	**-1,994**	

Source: Staff calculation based on Scardino (2011a).

ANNEX 6: GEOGRAPHICAL LOCATION OF POWER PLANTS IN URUGUAY

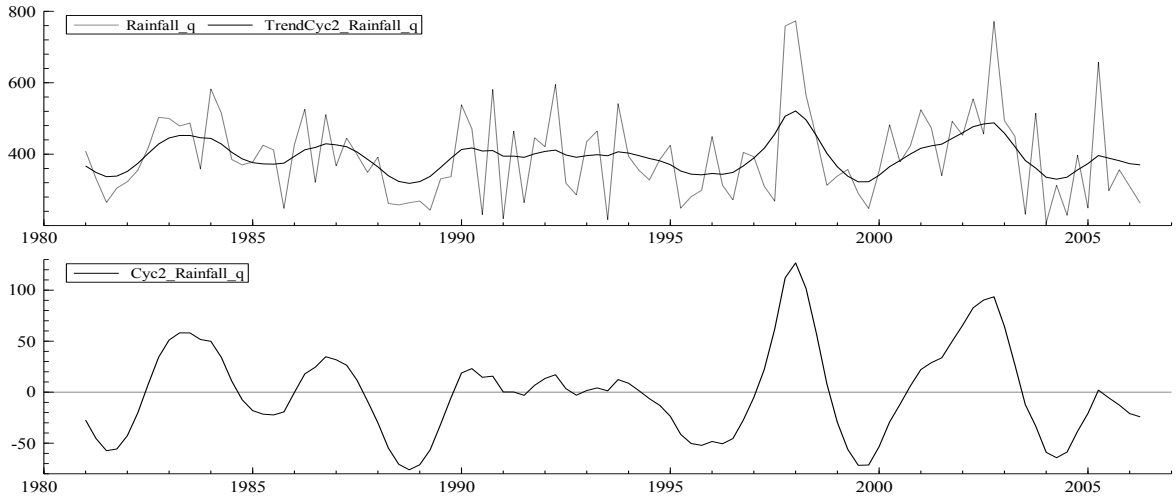
Figure A.1: Geographical location of power plants in Uruguay

Source: UTE (2010)

Annex 7: Cyclicality of rainfall in Uruguay

A preliminary analysis of the quarterly rain fall data shows that the rainfall series has a constant mean although individual autocorrelations are quite small, the correlogram shows evidence of a cycle buried in the noise. The same message appears from the estimated spectrum. Assuming a constant mean and a single cycle, a simple cycle plus noise model can be estimated for rainfall in Uruguay. It can be seen that the cycle is somewhat irregular in period and amplitude, and is dominated by the irregular component. The estimated period of the cycle is 4.13 years.

Allowing for the possibility of a second cycle, reveals some interesting features. While the irregular component continues to dominates, introducing a second cycle produces smoother cycles, both in terms of period and amplitude. Most noteworthy is the increase of the amplitude of the first cycle from late 1990s onwards. The first cycle has period of about 2 years, while the second has a period of 4 years.



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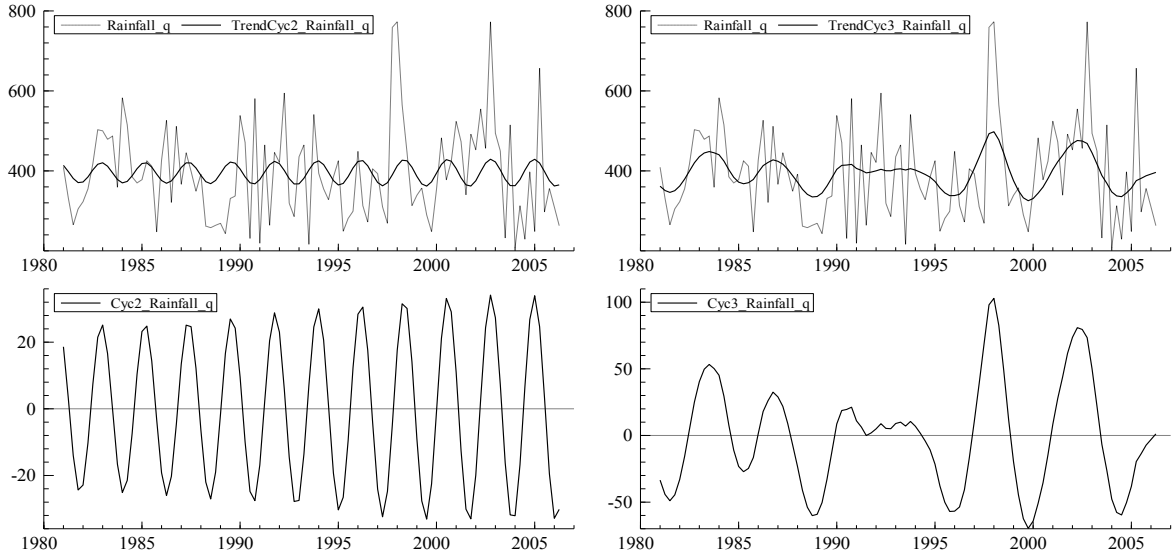


ANNEX 8: EXAMPLES OF FISCAL RULES

1) Hungary's Government Debt Rule

The Fiscal Responsibility Act of 2008 establishes a rules-based policy framework, aimed at restoring public debt sustainability and containing the growth of government spending. These respective goals are pursued primarily through a real debt rule. In addition, it provides for a limit on government expenditures and some procedural rules, including the pay-go rule and the expenditure limit. The rules became effective from January 1, 2010. Application of the rules is subject to a set of transparency standards and is monitored by the Fiscal Council.

The debt rule limits the stock of central government liabilities, corrected for inflation. To this effect, starting three years in advance, the rule prescribes a two-step algorithm to derive a ceiling on the discretionary primary deficit, which serves as the binding operational target, consistent with the ex ante policy target, namely, the debt limit. The discretionary deficit ceiling is derived from the (i) initially set debt limit, the projected net interest payments and primary balance (always constrained to a nonnegative value), and (ii) subsequently projected mandatory components. The government is only bound by the ceiling on the discretionary deficit – which is under its control – regardless of actual deviations from the debt limit or from the projected mandatory components, notably tax revenue and unemployment compensation. Any excess above the debt limit due to an excess in the discretionary deficit must be corrected within three years. Upon compliance with the rule, the ratio of public debt to GDP is envisaged to decline over time as a function of real GDP growth (or to increase in case of GDP contraction), while allowing for the operation of automatic stabilizers.

2) The case of Chile

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.

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. 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).

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. However, the fiscal rule has been adjusted to the changing economic structure and several modifications have been made to the methodology to calculate the structural balance.

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.

Between 2005 and mid-2008, the international price of copper climbed to record levels (160.6 percent between January 2005 and June 2008). Through the application of the fiscal rule, this resulted in record primary fiscal surpluses averaging 7.2 percent of GDP during that period.

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 for contingent liabilities provision. In 2009 and 2010, 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 and to respond to financing needs following the earthquake in February 2010, respectively.

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 2008/09 global financial crisis: the application of the fiscal rule during the copper boom that preceded the crisis accumulated large fiscal savings that once the global financial crisis broke, could be deployed for large-scale, counter-cyclical fiscal stimulus without burdening public debt.

Source: World Bank (2010), Dabán (2011)

ANNEX 9: A STRUCTURAL BALANCE FOR URUGUAY

I. CONCEPTUAL ISSUES

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.

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 pro-cyclical policy adjustments.

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 build the basis for a fiscal rule by setting budget target levels based on the structural rather than the actual budget balance.

While the decomposition seems intuitive, it has to be kept 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).

Furthermore, the level of the structural balance is not only sensitive to the underlying estimation method but also sensitive to the accounting methodology, i.e. if a very narrow definition of the public sector is applied and too many accounts are excluded (e.g. state enterprises), the level of the structural balance looses meaning for fiscal sustainability, as the base for assessing fiscal sustainability becomes too narrow.

Finally, revisions to GDP estimates affect several aspects of fiscal policy management, including the estimation of the structural balance in real time. Uncertainty about the output gap, in addition to uncertainty about the sensitivity of the budget balance to changes in output, implies that in real-time, estimates of the structural balance can be biased.

As such, 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.[93]

II. KEY COMPONENTS OF THE STRUCTURAL BALANCE

Potential output and output gap

Potential output is the maximum output compatible, at any given time, with the absence of unexpected inflation. The *output gap* is defined the percent difference of actual output with respect to potential:

$$\text{Output Gap} = \frac{\text{Actual Output} - \text{Potential Output}}{\text{Potential Output}}$$

A *positive* output gap means then that the economy may be overheating, and inflation may be above expectations. A *negative* output gap, in turn, corresponds to a level of activity below potential.

How is potential output measured? Potential output is an economic concept generally equated, in practice, to the statistical concept of *trend output.* In practice, the GDP series is subject to a trend-cycle decomposition. The basic idea is to decompose the GDP (or any economic series of interest) into the sum of a slowly-evolving secular "trend" and a transitory deviation from it which is classified as "cycle":

$$\text{Output} = \text{Permanent Trend} + \text{Cycle}$$

However, as these constituent parts—trend and cycle—are not readily observed, any decomposition must necessarily be built on a conceptual artifact. Thus, any de-trending method must start out by somehow arbitrarily defining what shall be counted as trend and as cycle, before these elements can be estimated from the data. Unfortunately, there is little agreement on how to make these definitions operational. Canova (1998) shows that the various de-trending methods proposed in the literature all have dramatically distinct implications for the cyclical properties of the data.

The most common method used to extract the trend from a time series is the Hodrick-Prescott (HP) filter (Hodrick and Prescott, 1980). The HP filter extracts the trend by maximizing the fit of the trend to the series while minimizing the changes in the trend's slope. In contrast to its original *ad hoc* formulation, the HP filter has different interpretations which provide additional rationale and justification for its use.[94] The HP filter is one of the two methods used by the European Commission to generate cyclically-adjusted quantities, and it is also an integral part of

[93] When cyclically adjusting the budget, it is important to decide which expenditures and revenues fall into the automatic and discretionary categories. The assumption is that the business cycle causes automatic stabilizers to adjust, while the business cycle itself is caused by discretionary components. If all components of the budget were adjusted for cyclicality, the resulting structural budget would be, by construction, completely uncorrelated with the business cycle (Burnside 2000). Hagemann (1999) and others point out that the conceptual classification of fiscal policy in discretionary and nondiscretionary components is not unambiguous.

[94] It can be seen as a particular case of the Butterworth family of filters (Gómez, 1999), it can also be obtained in the context of an unobserved-components formulation (Harvey and Jaeger, 1993 and King and Rebelo, 1993), or as a Wiener-Kolmogorov filter (Kaiser and Maravall, 2001).

the other method, the production-function approach—which requires more structural modeling. There are also other filtering techniques available.

The more general approach of the statistical approaches to estimating trend output, of which the HP is a special case, is the unobserved-components framework. This method is often complemented with a wage or price (Phillips) equation. As noted by Orphanides and van Norden (2002), the application of the Phillips equation introduces a possible misspecification and additional parameter uncertainty, as it entails the estimation of several additional parameters. However, Planas and Rossi (2004) report an improvement in reliability of real-time output gap estimates due to the inflation equation. This formulation is used, within the Commission production-function approach, for decomposing unemployment into permanent and cyclical components.

Elasticities

The estimation of the structural fiscal balance requires the estimation of a stable relationship between fiscal revenue and its components with trend GDP and the GDP gap. Different methods can be used to obtain elasticity estimates. One way to obtain elasticities is by estimating the relationship between the respective revenue component and GDP. Furthermore, elasticities can be derived from the country's tax code with reference to the statutory tax rates or a certain elasticity can be assumed based on estimates for other countries.[95] Table A.2 gives the most commonly used range for the elasticities of different taxes.

Table A.5: Common tax elasticities

Tax category	Elasticity of tax revenue relative to its base	Elasticity of base relative to output gap	Elasticity of tax revenue relative to output gap
Personal income taxes	≈ 1.5–2	2 ≈ 0.6–0.9	≈ 1.0–1.7
Corporate income taxes	≈ 1	≈ 1.2–1.8	≈ 1.2–1.8
Social security contributions	≈ 0.8–1.1	≈ 0.6–0.9	≈ 0.5–0.9
Indirect taxes	≈ 1	≈ 1	≈ 1

Source: Bornhorst et al. (2011) as in Girouard and Andre (2005)

III. CALCULATION OF A STRUCTURAL FISCAL BALANCE FOR URUGUAY

6.79. The following section outlines the steps necessary to calculate a structural fiscal balance for Uruguay. The concept of a structural balance is applied to central government operations including BPS but excluding SOEs and the BCU. The focus is on primary expenditure, excluding interest payments. The data has been obtained from several data sources, including BCU, INE, CGN, MEF, ECLAC and CERES. While overall calculations are based on annual data from 1970 onwards, quarterly data from 1999 onwards is also used to illustrate some of the results in more detail. All data series are in constant prices and in the case of the quarterly series have been seasonally adjusted.

Output gap

To estimate potential GPD and the output gap, a production function approach has been used. Permanent GDP is estimated from a Cobb-Douglas production function with constant returns to

[95] For more details on elasticity estimates see e.g. Bornhorst et al. (2011) or Burnside and Meshcheryakova (2005).

scale by using capital and labor shares obtained by Theoduloz (2006).[96] The degree of labor and capital utilization is derived from the unemployment rate, where the trend, or natural, unemployment rate is obtained by applying the HP filter to the unemployment rate series. Trend employment is obtained by applying the HP filter to the labor force series, multiplied by one minus the natural unemployment rate.[97] During recent years and with the recovery from the debt crisis, the rate of growth of trend employment has increased to slightly above 2 percent per year. Given demographic projections, the trend growth rate of employment is expected to gradually decline to below 2 percent over the next decade. The estimation of the capital stock is based on a regular inventory accumulation equation.[98] Based on an estimated growth rate of gross capital formation of less than 4 percent over the next few years, the trend growth rate of the capital stock remains slightly below 3 percent; this implies a continuous decline in the capital-output ratio.[99]

TFP growth has increased over the last decade and is projected to remain high. Total factor productivity TFP is derived as a residual using the production function and actual data on GDP, capital, adjusted by the intensity of use and actual employment. To obtain permanent or trend total factor productivity, the HP filter was applied to the TFP series. Figure A.2 shows that trend productivity growth did not only increase to about 2 percent per year but is projected to remain at such an expansionary rate in the near future.[100]

[96] Theoduloz (2006) estimates a value of 0.27 for the share of capital in total income. Ideally the share of capital in total income should be obtained from the national income accounts, considering it represents the share of capital in the functional distribution of national income, but such data is not available in Uruguay.

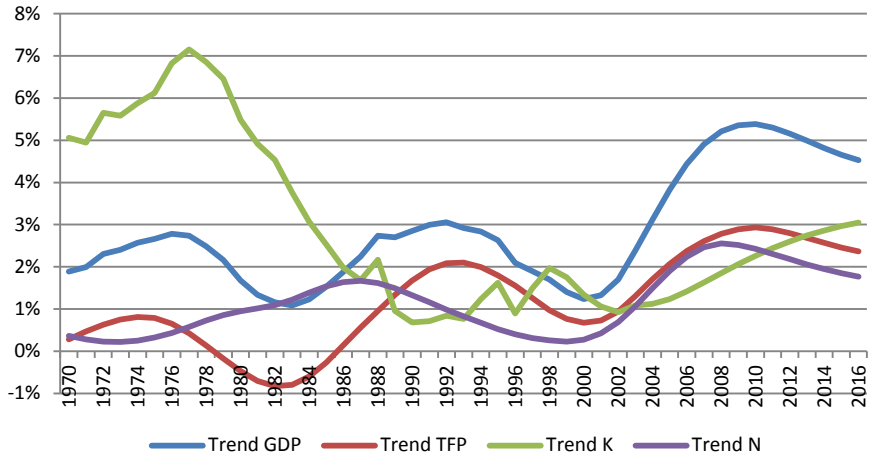
[97] [97] Labor input is defined as total hours of actual work, calculated by the number of employed workers multiplied by the average number of hours worked and the average years of schooling. The number of workers was obtained from the ECLAC and INE for the period 1970-2011. Unfortunately the series on average number of hours worked and average years of schooling of the labor force are not available, thus a value of 1 was assumed of both variables. The source of the series on the labor force and employment is ECLAC and INE

[98] The series on gross capital formation was obtained from the ECLACC and CERES, and the depreciation rate from the World Penn extended table. The initial value for the capital stock implies a capital labor ratio equal to 1.6 in 1970, calculated with data on fixed capital formation and depreciation using a regular inventory methodology as presented by Haindl and Fuentes (1986).

[99] The Solow index of the intensity of use is defined on the basis of the regular and natural unemployment ratios, so that the index value is 1 when the unemployment rate is equal to the natural unemployment rate, and less than one when effective unemployment is above the natural rate. The estimation of the effective capital stock is obtained by correcting the trend capital stock by the Solow intensity of use.

[100] IMF WEO projections for real GDP growth from 2012 to 2016 were used, assuming that the investment to GDP ratio will continue at its average value of the last five years, thus deriving a gross capital formation estimate. To project employment it was assumed that the unemployment rate will converge to the last observation of the natural unemployment rate and that the labor force would increase with the working age population.

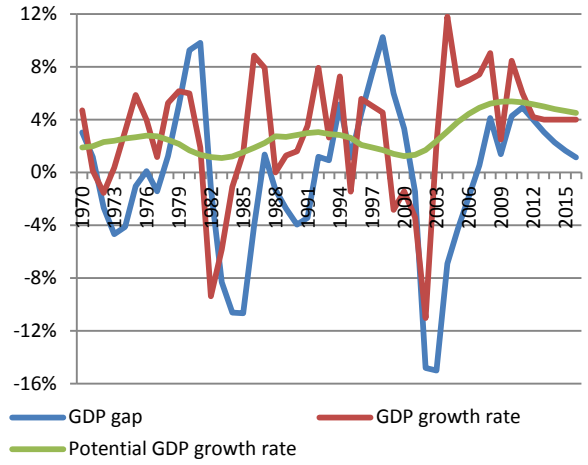
Figure A.2: Trend GDP, TFP, labor (N) and capital (K) growth, 1970-2016



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

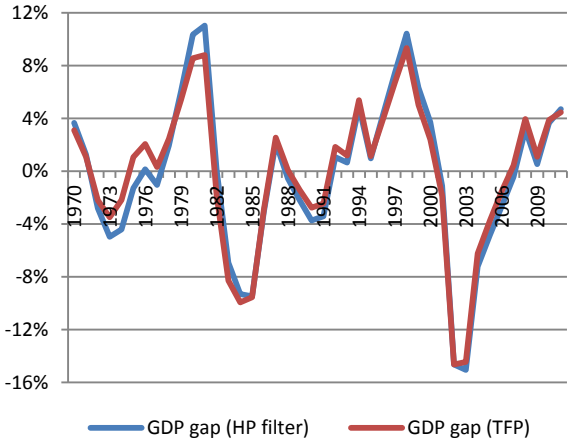
Trend GDP grew well above its historical rate since the 2002 crisis. The results indicate that over the last few years, the growth of trend GDP in Uruguay has accelerated, reaching a rate of above 5 percent per year in 2011. However, growth is projected to decline in line with trend GDP growth, converging to about 4.5 percent in 2016. The forecast for trend GDP growth is significantly above its historical value of around 2 percent (Figure .3).

Figure A.3: GDP, potential GDP and output gap, 1970-2016



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

Figure A.4: Comparison of different methodologies to derive the output gap, 1970-2011



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

Different methodologies to derive potential GDP do not appear to yield substantially different results. Potential GDP and the output gap derived from the production function approach are compared to potential GDP and the output gap estimated from applying the HP filter directly to GDP data. The results are quite similar to those of the production function approach, resulting only in slightly deeper cycles in potential GDP growth and a slightly higher overall potential GDP growth (Figure A.4). These results are confirmed by findings reported in IMF (2011),

where four different methods of deriving potential GDP and the output gap for Uruguay are compared; all are found to yield similar results.[101]

Elasticities

As pointed out in the previous section, the elasticity of fiscal revenue with respect to trend GDP plays a pivotal role in determining the value of the structural revenue and the structural balance. The estimated regression is as follows:

$$\log T_t = \beta_0 + \beta_1 \log y_t^p + \beta_2 gap_t^y + \varepsilon_t,$$

where T represents the real fiscal revenue or revenue component, y^p is potential GDP, and gap^y is the output gap. The results of the regression are given in Table A.3.

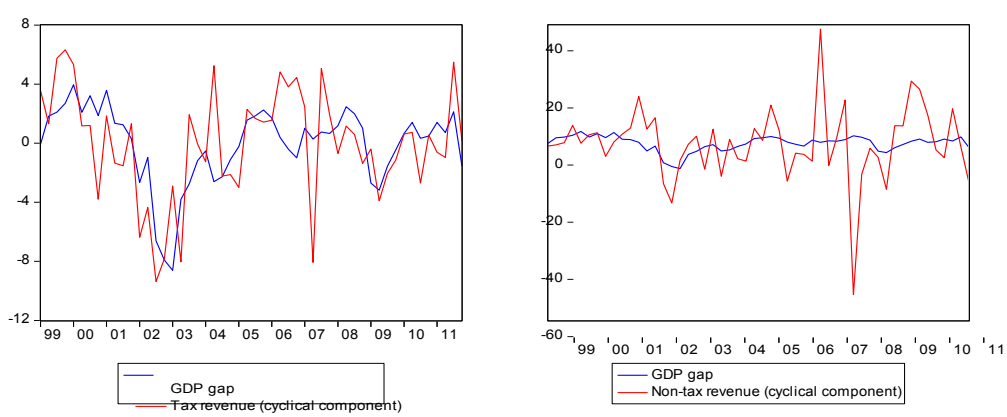
Table A.6: Elasticities of revenue and revenue components

	Trend GDP	GDP gap
Total revenue	1.54	0.84
Tax revenue	1.72	1.09
Non-tax revenue	1.02	not sign.
VAT	2.68	not sign.
BPS revenue	2.74	not sign.

Source: Staff calculation based on information from ECLAC and CERES.

Regression results confirm the positive and significant relationship between revenues and potential GDP. The results of the estimation indicate that the elasticity of revenues to trend GDP is somewhat greater than one. Moreover, both total revenue and tax revenue display a pro-cyclical response to GDP, given the positive and significant elasticity of revenue with respect to the GDP gap.[102] Exceptions are certain components of fiscal revenue, such as VAT and BPS revenue that do not seem to respond to the output gap, but appear to be quite elastic to trend GDP. Figure A.5, which shows the cycle components of tax revenue and non-tax revenue together with the output gap, also illustrated a clear correlation between the output gap and tax revenue and the absence of any correlation with non-tax revenue

Figure A.5: Co-movement of the GDP gap and tax revenue and non-tax revenue, respectively (quarterly data)



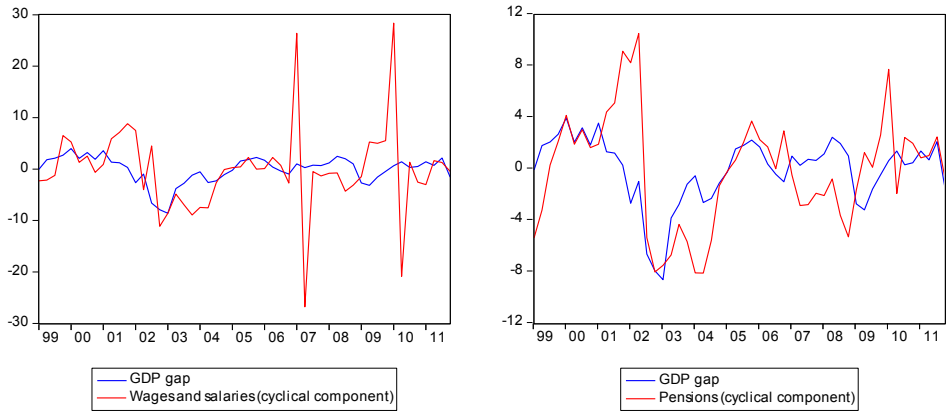
Source: Staff estimates based on data from MEF and BCU

[101] In IMF (2011), the HP filter is compared to the Baxter and King filter, the Christiano-Fitzgerald filter and the Piece-Wise Linear Detrending method.

[102] Cointegration tests confirm a cointegration relation between total fiscal revenue and trend GDP as well as total tax revenue and trend GDP.

Some expenditure components also display pro-cyclical behavior. As can be seen in Figure A.6, wages and salaries as well as pension payments are highly correlated with the output gap. In Uruguay, the pro-cyclicality of expenditure is at least in part induced by the institutional characteristics of the social security system. According to the law, pension benefits are indexed to the economy-wide wages and salaries. Consequently, social security spending, which represents a large portion of total fiscal expenditure, tends to increase faster during the expansionary phase of the cycle when wages and salaries increase in real terms. The pro-cyclical behavior of wages and salaries of the public sector, however, cannot be explained by the same mechanics. Wages are usually set through collective bargaining and are not indexed to other economic variables. The observed pro-cyclicality of public sector wages could be explained by the willingness of the government to be more generous in giving wage adjustments to public sector workers in times of economic upswings because of the additional tax collections coupled with increasing demand by public sector labor unions for adjustments given likely wage increases in the private sector. Conversely in bad times, fewer public resources are available and the private sector demonstration effect is weaker. Therefore, the structural fiscal balance will not be corrected for expenditure components. This is in line with IMF (2011), where it is assumed that all spending components have an elasticity equal to zero except for the unemployment benefits.

Figure A.6: Co-movement of the GDP gap and wages and salaries and pensions, respectively (quarterly data)



Source: Staff estimates based on data from MEF and BCU

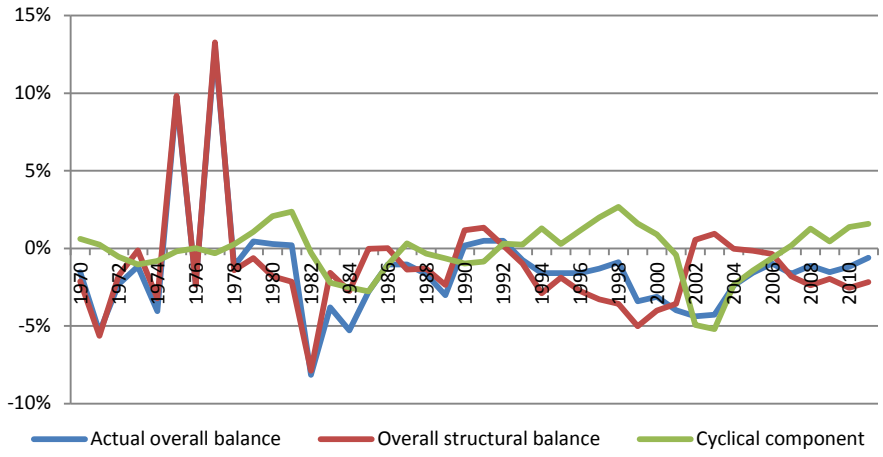
Structural fiscal balance

Conceptually, the structural fiscal balance is the one that would have existed if GDP were at its trend level. Correspondingly, structural fiscal revenue is that revenue that would have been obtained with a zero gap. Thus, the structural fiscal balance is defined as the difference between total structural fiscal revenue and total fiscal expenditure. The estimation of total structural revenue can therefore be obtained by using the estimated elasticities for total revenue and assuming a zero gap.

Estimates indicate that Uruguay's total structural fiscal balance has remained almost continuously in deficit, with the exception of a brief period of a zero structural balance in the early 1990s. The debt crisis of 1982 led to a substantial deterioration of the structural fiscal deficit that was followed by continuous adjustment efforts that achieved a structural surplus in

1989-1992. From the mid 1990s onwards, a sustained deterioration in the structural fiscal balance led to a deficit of 3 percent of GDP in 2000. The adjustment that followed the 2001/2002 crisis once again reduced the structural fiscal deficit, which, however, widened again to about 2 percent of GDP in 2009.

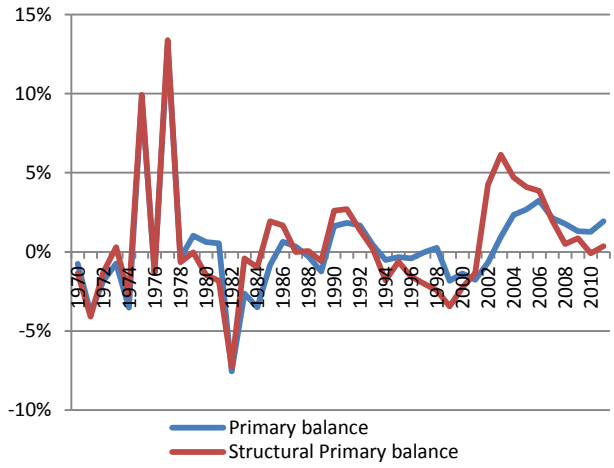
Figure A.7: Evolution of the overall fiscal balance (percent of GDP)



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

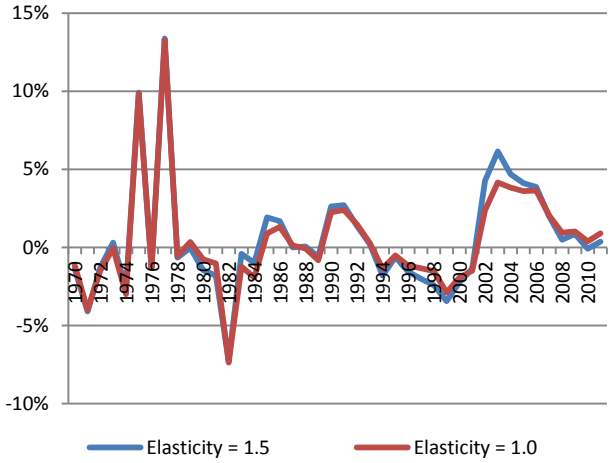
The structural primary balance has fluctuated around zero with periods of large deficits and a few years of sustained surpluses. The deficit periods are associated with the debt crisis of 1982 and the debt crisis of 2002. The first notable surplus period is linked to the stabilization effort of the early 1990s that resulted in a sustained reduction on the inflation rate. The second surplus period is associated with the recent adjustment following the 2002 debt crisis, generating large structural primary surpluses of up to 4 percent of GDP in the period 2004-2007. However, since then the structural primary surplus has declined almost continuously.

Figure A.8: Evolution of the primary fiscal balance (percent of GDP)



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

Figure A.9: Structural primary balance – comparison of different elasticities (percent of GDP)



Source: Staff calculation, based on data from ECLAC, CERES, INE and BCU

The results are robust to a range of different revenue elasticities. A sensitivity analysis, considering different revenue elasticities, yields very similar structural primary balances. The structural primary balance using the estimated elasticity of 1.54 is compared to the standard assumption of a unit elasticity, which has also been used by IMF (2011) for the case of Uruguay. Figure A.9 shows that the resulting structural primary balances follow very similar paths.