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Structural Fiscal Policy in Uruguay: A Proposal

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Abstract*

This paper presents a design and simulation of a structural fiscal policy in Uruguay. The design includes the derivation of a metric for the structural balance that is most adequate for the country and the calculation of a structural fiscal target. This target is associated to a goal for the net worth of the public sector that ensures sustainability of the financial position of the public sector, or at least reduces its historical vulnerabilities. The paper also discusses the current situation in meeting the preconditions for the establishment of a structural fiscal balance target, and makes some recommendations on the policy reforms that appear to be needed to implement a structural fiscal policy in Uruguay.

JEL Codes: E62, H60
Keywords: Fiscal Policy, Structural Fiscal Policy, Structural Balance, Structural Fiscal Target

* This report on a structural fiscal policy for Uruguay has been prepared at the request of the IDB and as part of a larger effort that includes similar works for other countries in the region. The preparation of this report included a five day visit to Montevideo in early March 2010, and has included a significant effort in compiling and processing data under the efficient lead of Salvador Andino and the help from Agustina Sanguinetti from Ceres. We are particularly grateful to Ernesto Talvi and his team from Ceres for helpful discussions and for sharing with us their data set, and to the several current and former Uruguayan authorities who were kind enough to share with me their views on the "optimal" design for fiscal policy. Finally, we acknowledge the valuable comments of Teresa Ter-Minassian, Gustavo García, Antonio Fernández, and Alberto Barreix and other seminar participants at the IDB.

INDEX

I. Introduction

The report for structural fiscal policy in Uruguay is divided in three parts. The first consists of a presentation and interpretation of descriptive statistics for the Uruguayan fiscal accounts and macroeconomic data. The time series were put into place compiling data from different sources and ensuring its compatibility, but despite our best effort there are different limitations, which may affect the results. First, the database was assembled with pieces of data coming from several sources, which are considered individually reliable, however there are no guarantees that the series are fully consistent. In addition, because of data gaps in the series we had to use estimates for certain variables and parameters that could be inaccurate. This is the case of depreciation, for which information was obtained from the World Penn Tables, the weight of labor and capital in the Cobb Douglas production function, which was estimated following academic work rather than statistics on functional income distribution. Finally, the estimates of the elasticities of fiscal revenue with respect to actual and trend GDP and the GDP gap are the result of regressing the aggregates, rather than building an estimate from the aggregation of the elasticities of individual taxes and sources of income, owing to data limitations.

The second part of the report presents a design and simulation of a structural fiscal policy in Uruguay, including the derivation of a measurement for the structural balance that is most adequate for the country and the calculation of a structural fiscal target. Considering that the main source of volatility and deviations from trend of the fiscal revenue in Uruguay is the GDP cycle, this second part presents an analytical framework for defining and estimating trend GDP and the relevant structural fiscal variables, drawing from Chile's decade of experience in structural fiscal policy. Uruguay's structural fiscal revenue was estimated as a function of trend GDP, which was estimated on the basis of a Cobb Douglas production function and time series on capital stock, labor force, unemployment, and total factor productivity that go back to the 1960s.

The selection of the structural fiscal target was associated to a goal for the net worth of the public sector that ensures sustainability of the financial position of the public sector, or at least reduces its historical vulnerabilities. In the case of Uruguay, the goal for net worth is more directly linked with the composition of the public debt in terms of currency of denomination than with the level of debt. The ability to have a large portion of debt in

domestic currency is the main condition to minimize the financial vulnerabilities of the public sector and ensure the conditions under which this debt is sustainable.

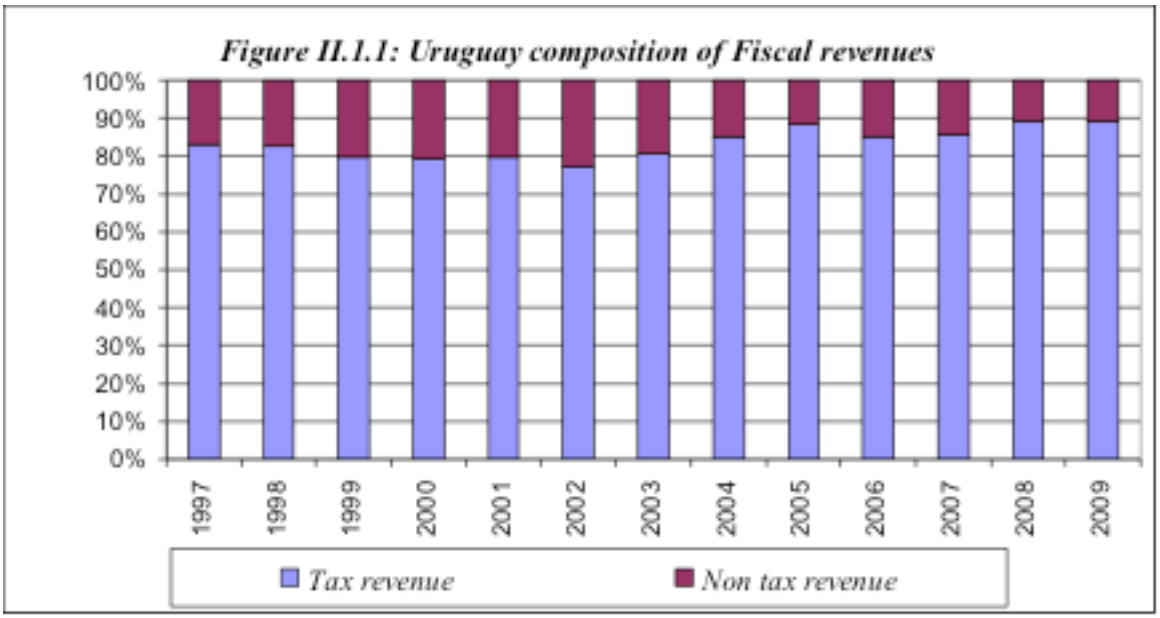
The third part of the report discusses the current situation in meeting the pre conditions for the establishment of a structural fiscal balance target. The report makes some recommendations on the policy reforms that appear to be needed to implement a structural fiscal policy in Uruguay. That includes a budgeting process centralized in the ministry of finance, and where the political discussions are focused on the composition of spending and associated priorities rather than on the level of fiscal spending, which is defined by the estimated structural revenue and the fiscal target. The level of total spending is defined by a macroeconomic framework, the response of fiscal revenue to trend GDP and the target for the structural fiscal balance. Finally, some important conditions for a successful structural fiscal policy are discussed, including the need for further transparency of fiscal data, on revenues and expenditures, as well as debt and contingent liabilities.

The final objective of introducing a structural fiscal policy in Uruguay is to improve on the country's macroeconomic resiliency, eliminating a major source of vulnerability to macroeconomic and financial crisis. Creating fiscal institutions that may lead the definitions associated to fiscal policy in consistency with macroeconomic stability would only attain this objective. This would imply stabilizing the rate of growth of spending to avoid the forced adjustments and eventually the economic crashes that result when the inter-temporal restrictions are ignored.

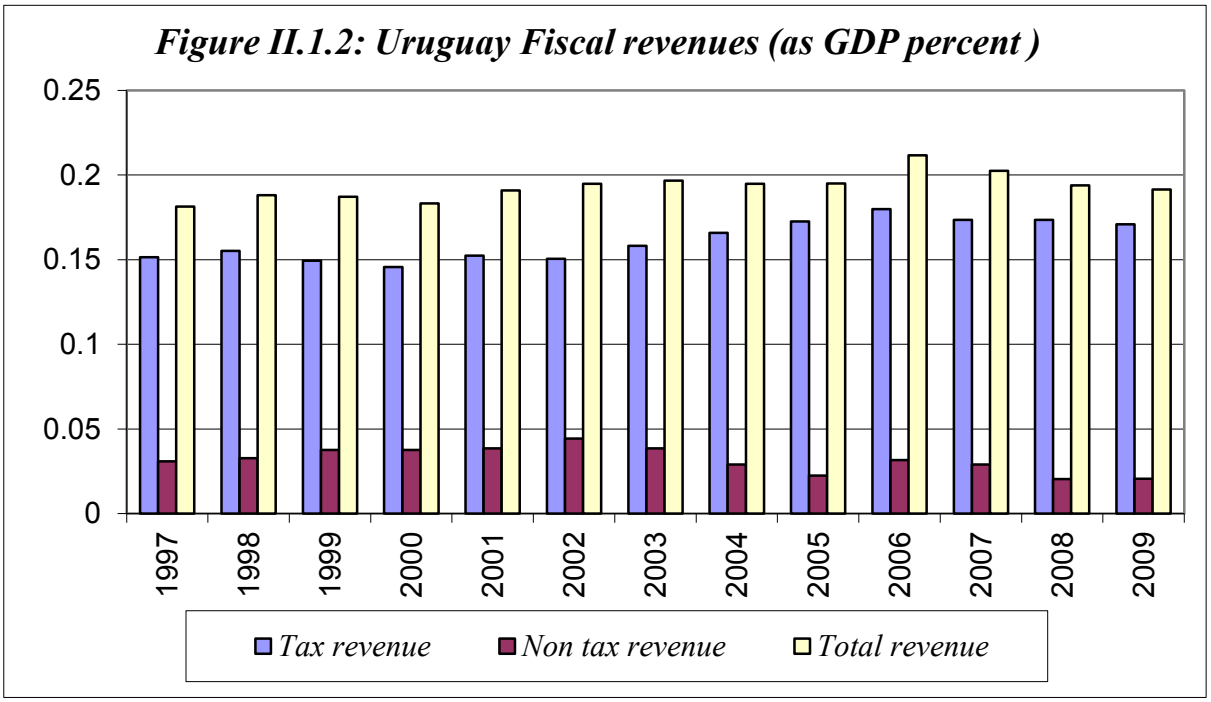
II. *Uruguay Descriptive Statistics*

1. Fiscal Revenues and Expenditures

The main source of fiscal revenue in Uruguay is tax collections, which on average over the last 10 years amounts for nearly 90 percent of total revenue, fluctuating around 16 percent of GDP. Non-tax revenue contributes with an additional 3 percent of GDP to Uruguayan public finances. Most of the tax revenues come from indirect taxes, and hence are associated to domestic private spending. Indirect taxes represent an average of about 70 percent of total revenue for the past 10 years. Indirect taxes are concentrated on taxes on goods and services, and particularly the Value added tax, equivalent to 13 percent of GDP.



Source: LE&F, based in information of Contaduría general de Uruguay.



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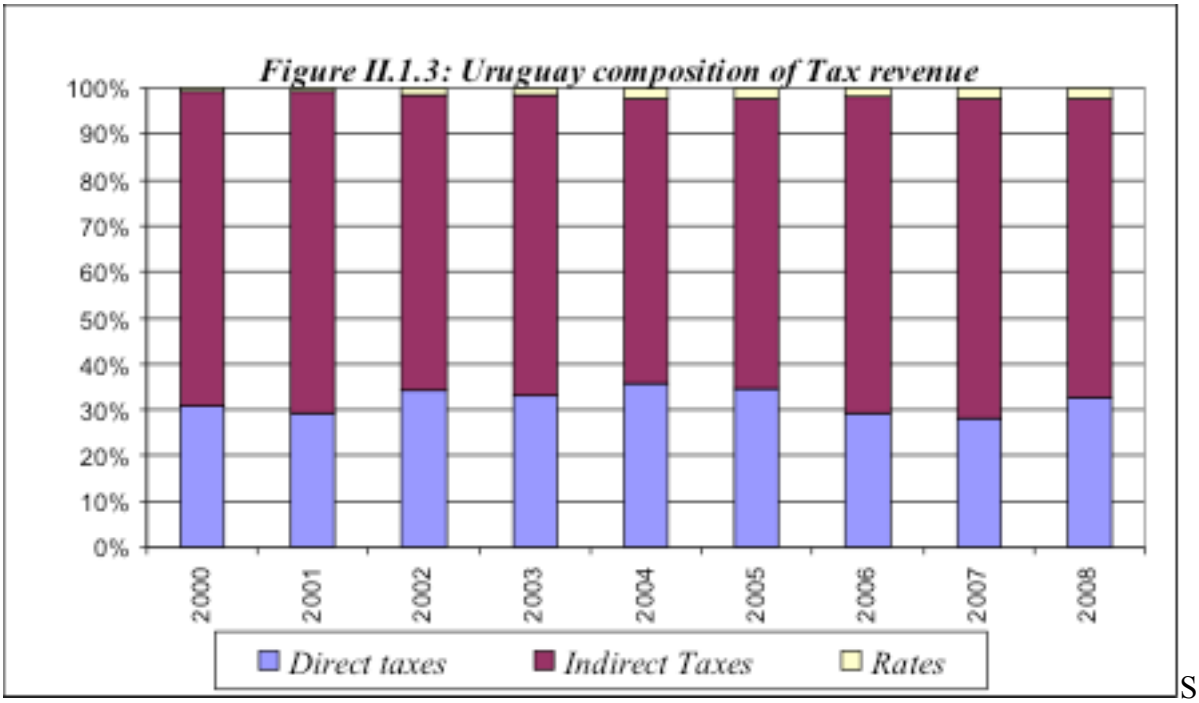

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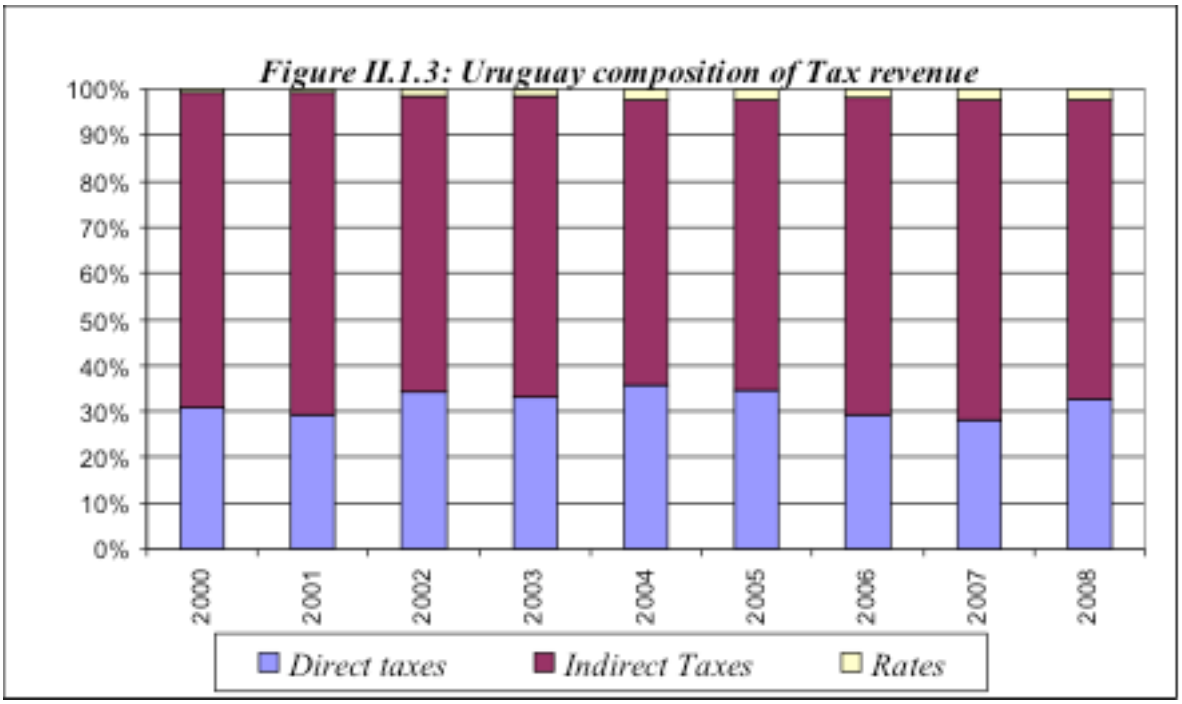

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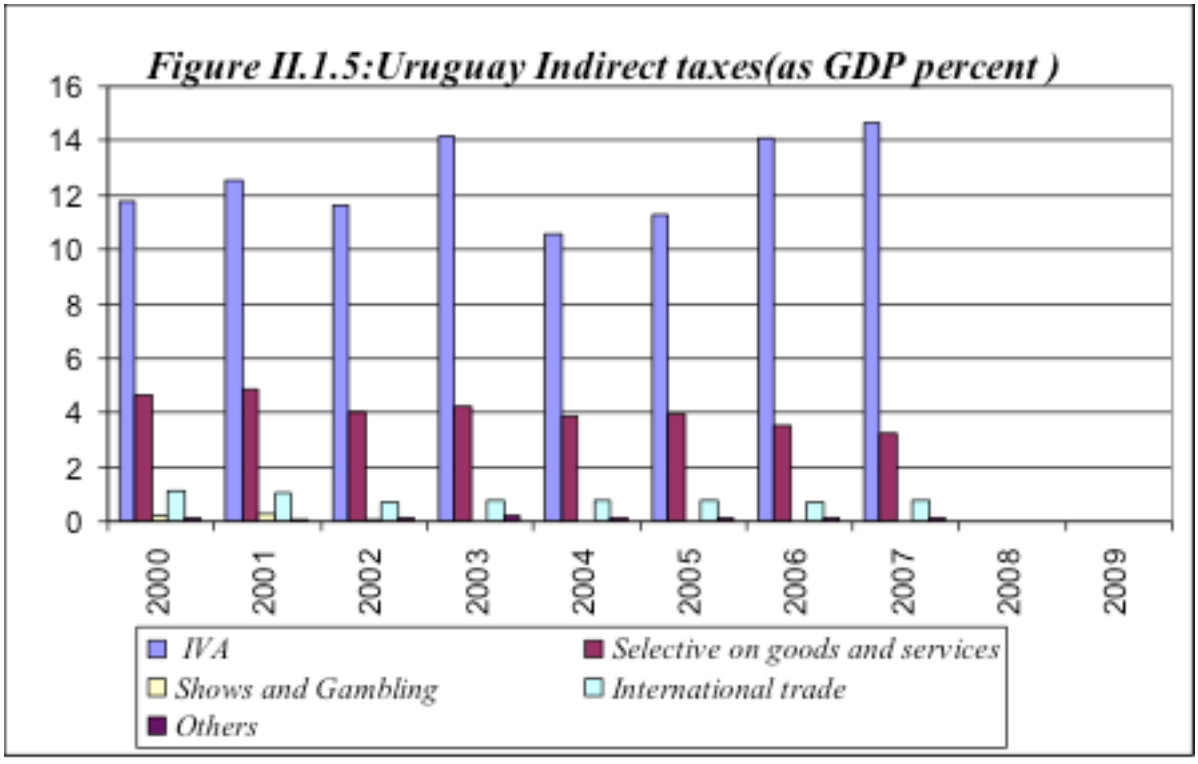
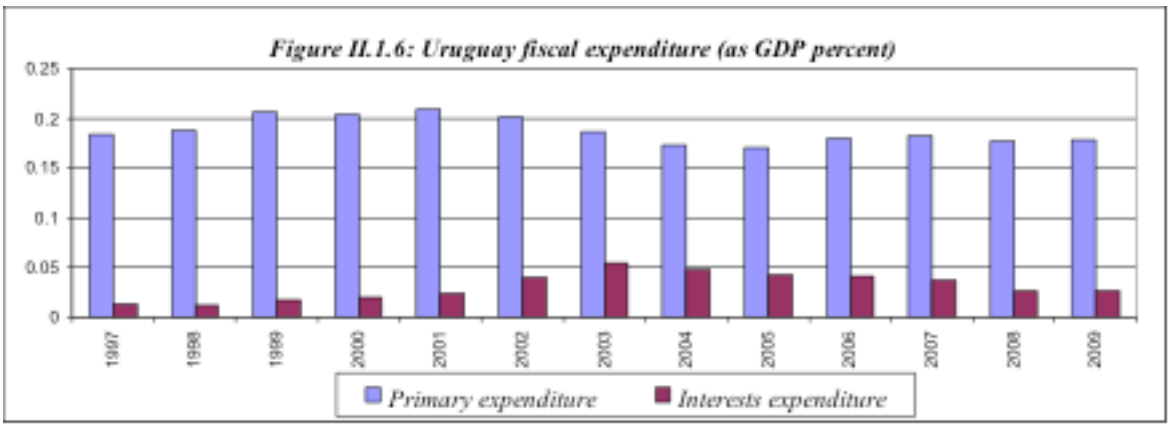
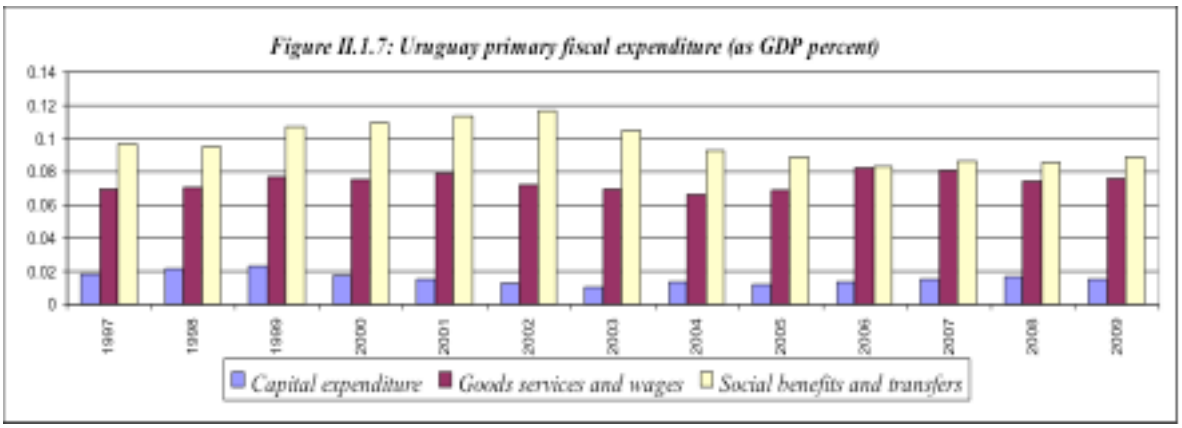


Source: LE&F, based on information from Contaduría general de Uruguay.

Primary fiscal expenditure expanded continuously reaching above 20 percent of GDP early this decade, but has since declined converging towards 17 percent of GDP in the last few years, while interest expenditure has risen from 2 percent of GDP to 5 percent of GDP over the last decade. Operational expenditures represent the bulk of primary spending, about 90 percent of total, and capital represent the remaining 10 percent. In operational spending, pension and other welfare benefits represent 40 percent of total expenditures and wages 20 percent. Finally, social benefits expenditure represent around 9 percent GDP while expenditure on goods, services and wages close to 8 percent of GDP and both have remained relatively stable over the last few years.



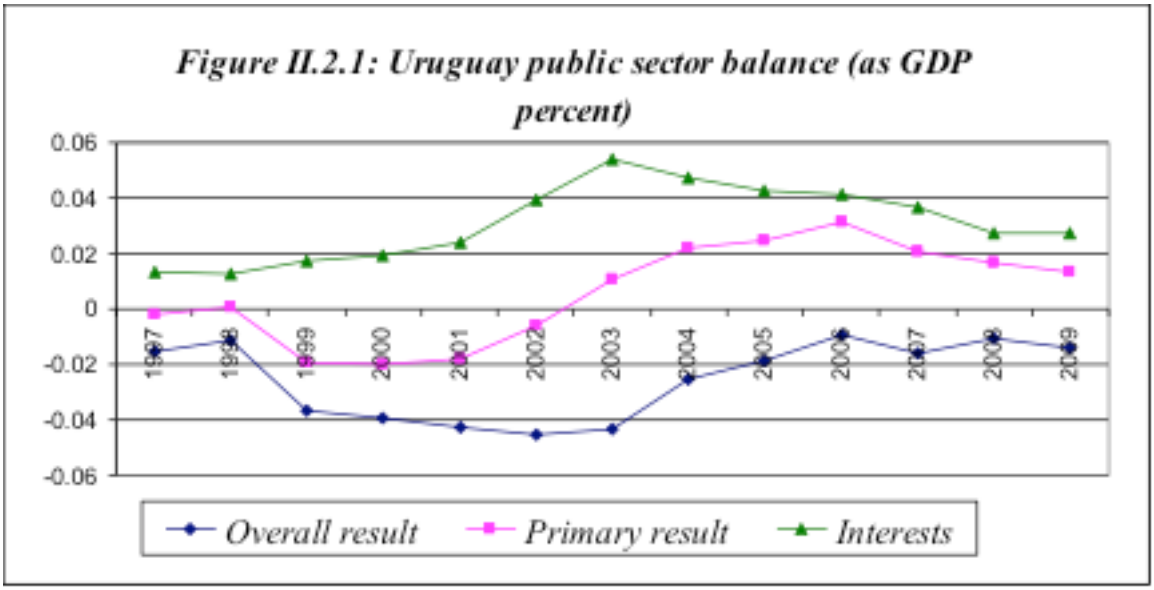
Source: LE&F, based on information from Banco Central de Uruguay.



Source: LE&F, based on information from Banco Central de Uruguay.

2. Primary and Overall Fiscal Balances

Uruguay's primary fiscal balance went into deficit from 1999 to 2001 as the crisis ensued, but with the adjustment and recovery begun in 2003 brought a succession of increasing primary surpluses reaching up to 3 percent of GDP in 2006. Since then the primary surplus has declined gradually just below 2 percent of GDP. Uruguay's debt crisis resulted in a sustained increase in interest expenditures, which reached a maximum of 5 percent of GDP en 2003–2004. The adjustment, debt rescheduling and decline in international rates that followed resulted in the continuous decline of interest spending to less than 3 percent of GDP in 2009. The overall fiscal balance has remained in deficit throughout the decade, with a significant improvement over the last few years when the overall balance stood at -1 percent of GDP and the primary balance at a surplus just below 2 percent of GDP.

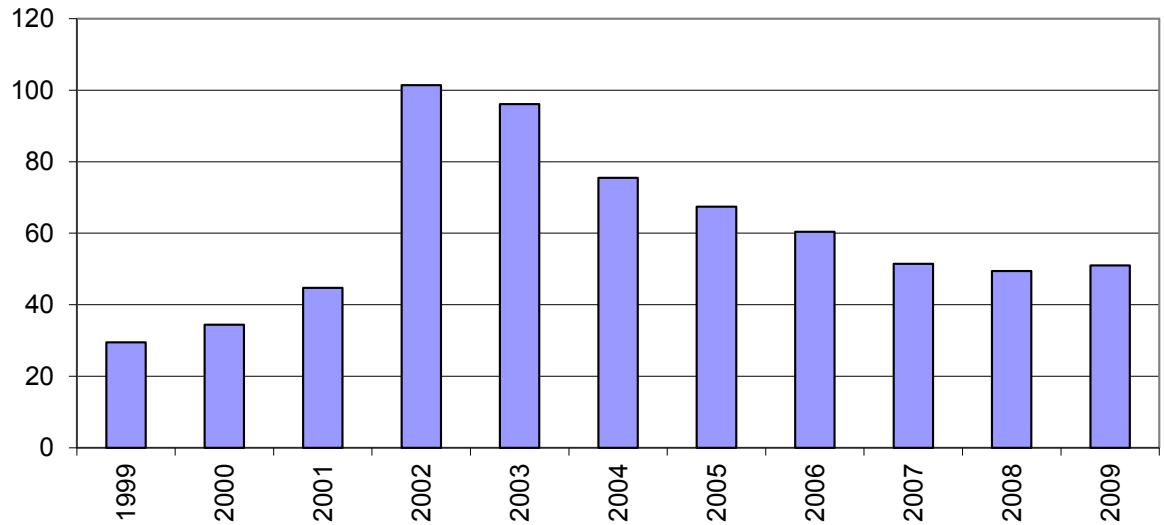


Source: LE&F, based on information from Banco Central de Uruguay.

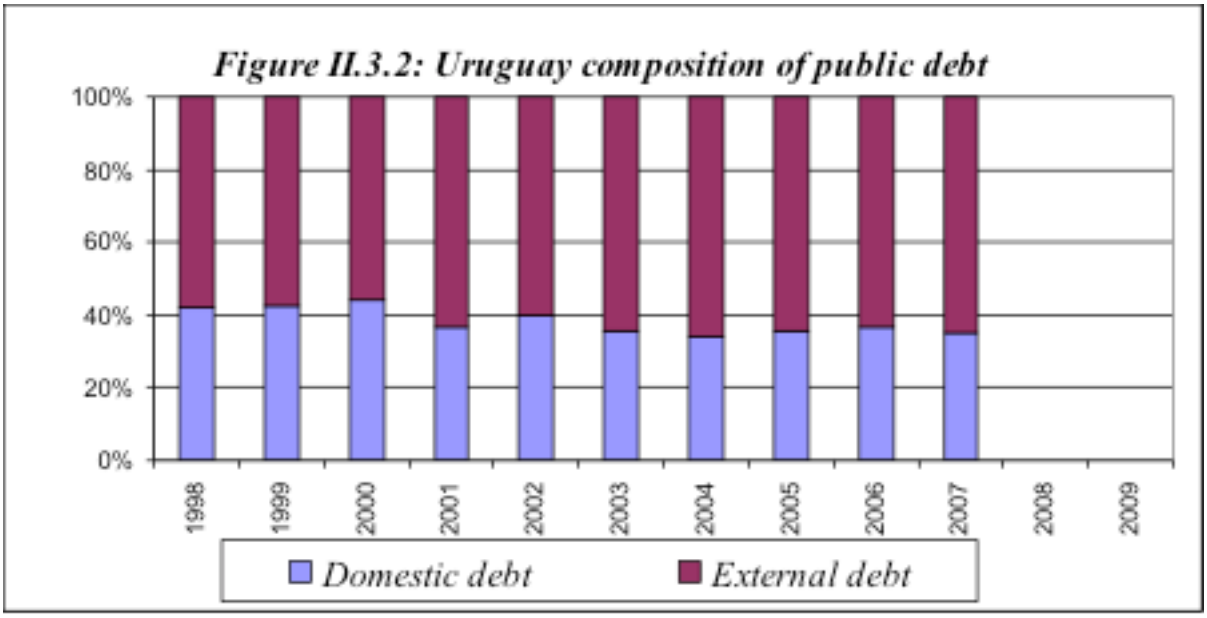
3. Public Debt

The financial crisis of 2002–2003 represented an explosion in the public debt, which increased from less than 30 percent of GDP in 1999 to 100 percent of GDP by 2002. Subsequently, with the rescheduling, recovery and adjustment, the public debt level has gradually declined without reaching the pre crisis level; the debt ratio stood at about 50 percent of GDP in the period 2007–2009. The debt structure is characterized by an almost even level of foreign and domestic debt, 60 percent and 40 percent of total debt, respectively. External debt reached levels of over 60 percent of GDP in 2002 and 2003, and then descended gradually to just over 30 percent in 2007. Domestic debt followed a similar pattern, reaching levels of 40 percent in 2002 and falling gradually to just under 20 percent o GDP in 2007.

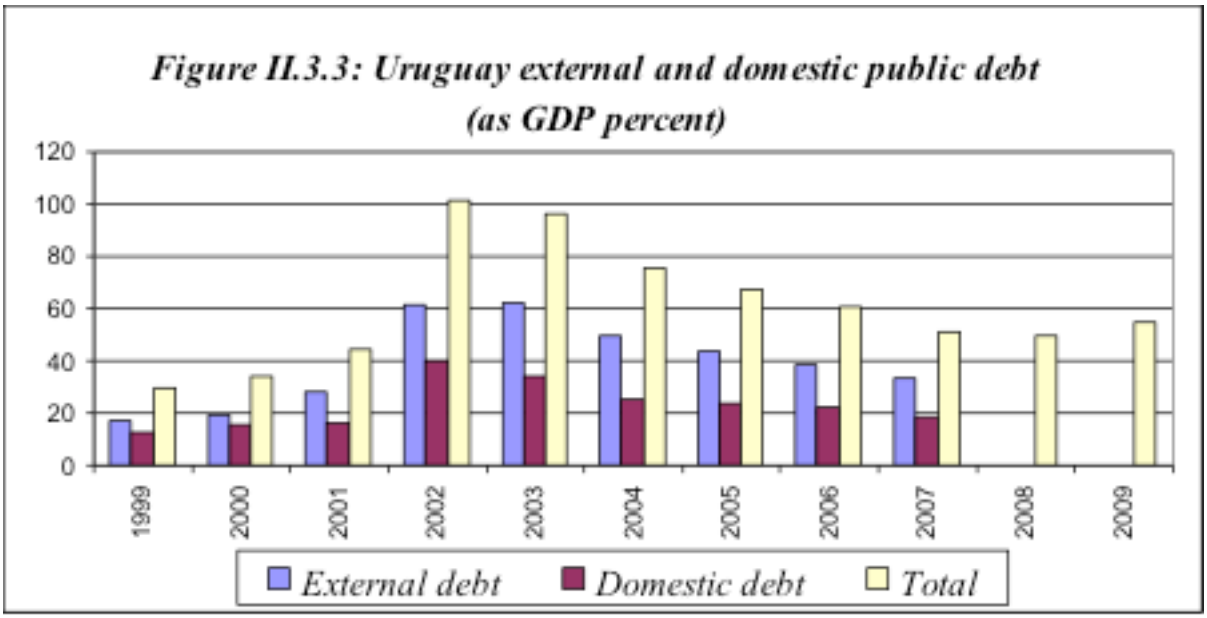
Figure II.3.1: Uruguay public debt (as GDP percent)



Source: LE&F, based on information from Contaduría general de Uruguay.



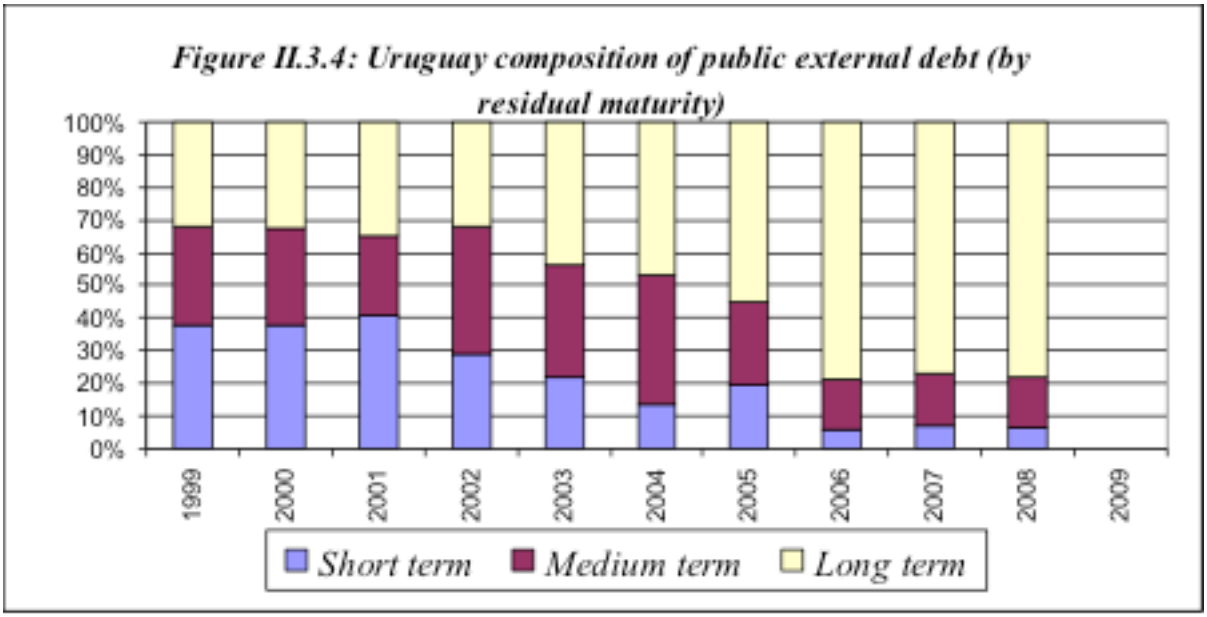
Source: LE&F, based on information from Contaduría general de Uruguay.



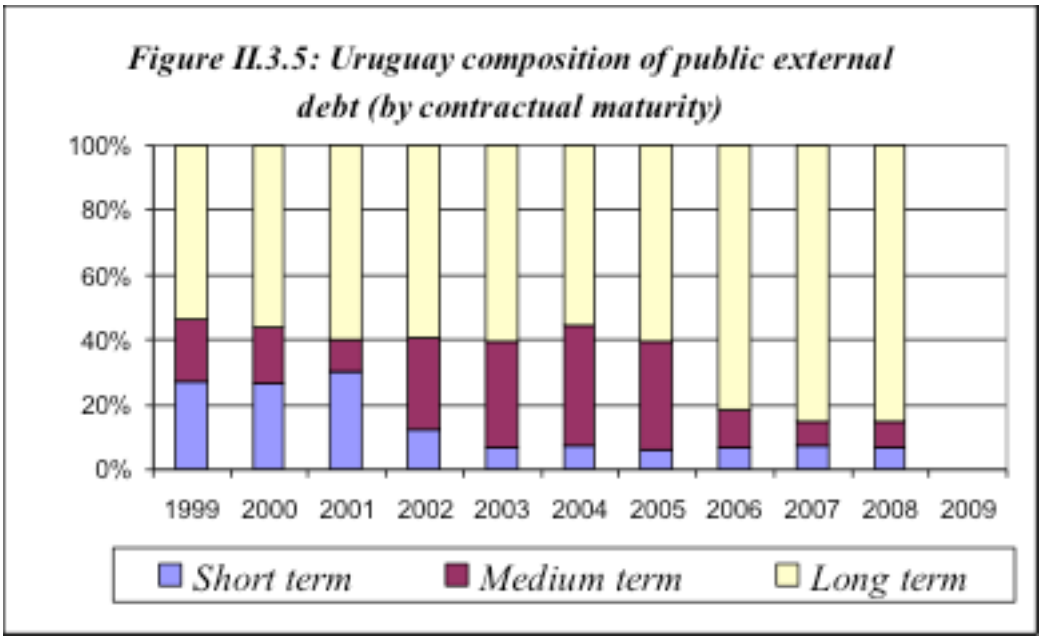
Source: LE&F, based on information from Contaduría general de Uruguay.

The composition of Uruguayan Public debt has improved over the last few years after the crisis, the maturity of the debt has increased, the fixed interest rate has gained ground over the flexible rate, and a lower percentage of debt is denominated in foreign currency. The residual maturity of external debt instruments has increased over the last few years. Long-

term[1] instruments represent almost 80 percent of total in 2008 after being only 30 percent earlier in the decade.



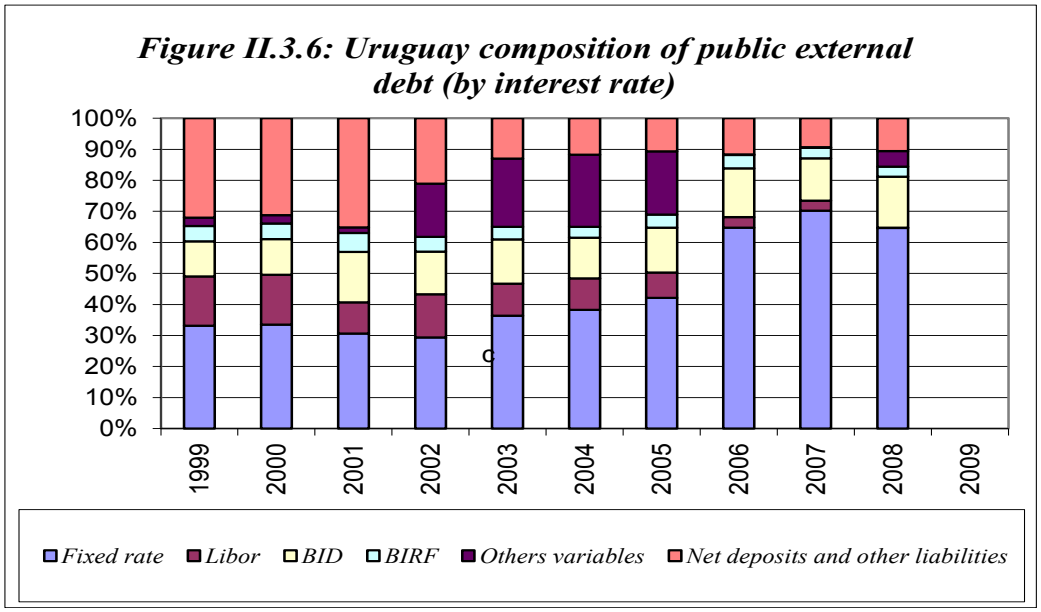
Source: LE&F, based on information from Contaduría general de Uruguay.



Source: LE&F, based on information from Ministerio de Economía y Finanzas of Uruguay.

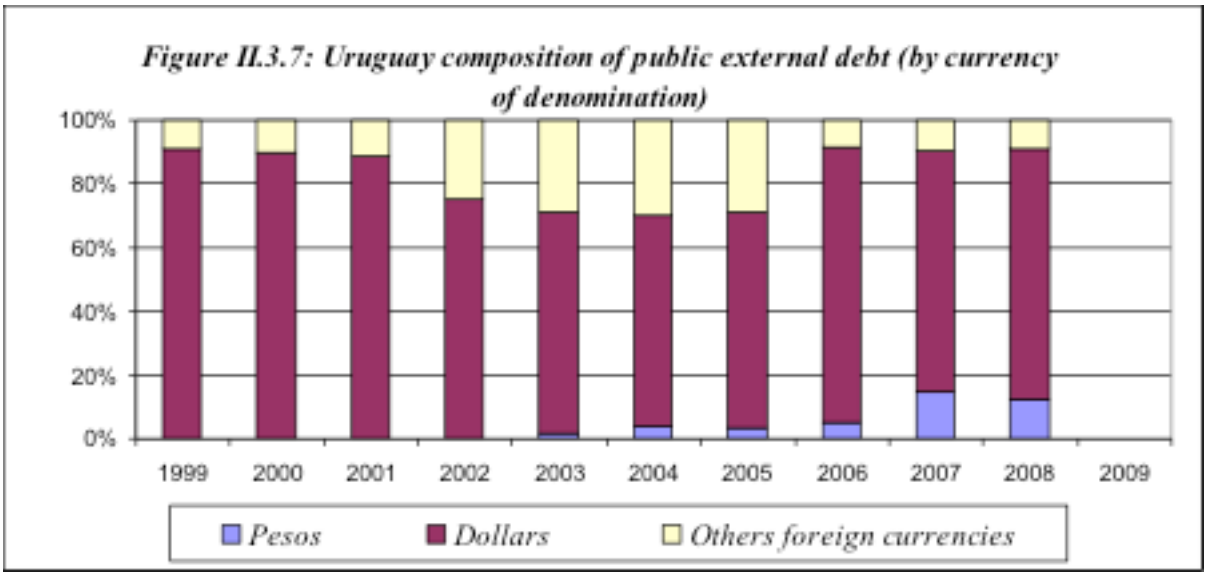
[1] Long term: more than 5 years; medium term: 1-5 years; short term: less than 1 year

Fixed interest rates debt has increased from 30 percent of total in 1999 to 60 percent of total in 2008.



Source: LE&F, based on information from Ministerio de Economía y Finanzas of Uruguay.

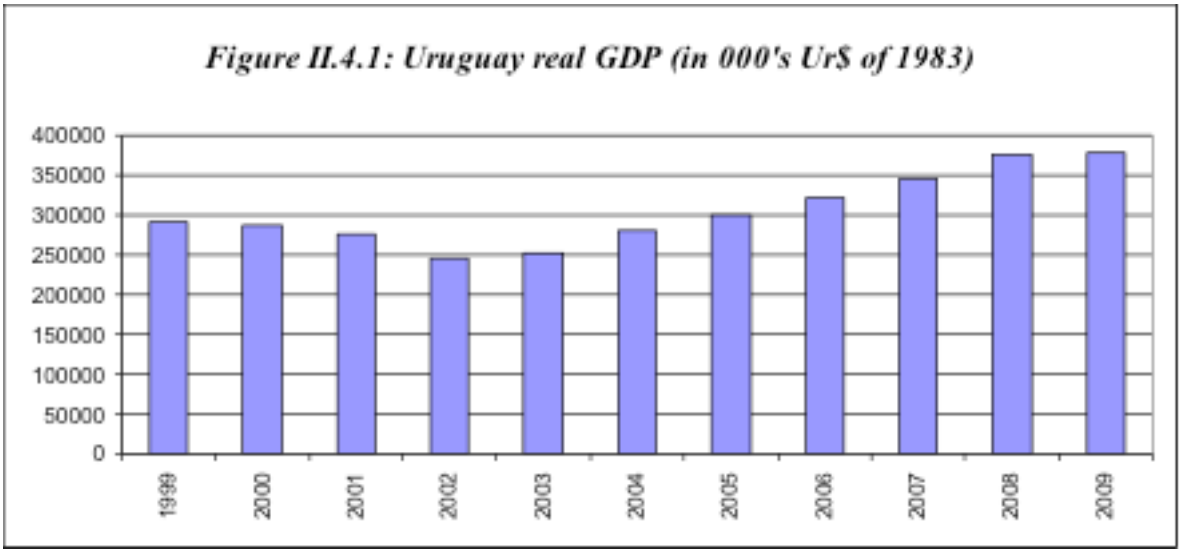
Currency composition: Foreign debt is denominated mostly in dollars, but it has declined from around 90 percent of total in 1999 to less than 80 percent in 2008. A significant portion of domestic debt is also denominated in US dollars, but its importance is declining, Actually, in 2009, 30 percent of total debt is denominated in domestic currency, either nominal or adjustable by the CPI inflation rate.



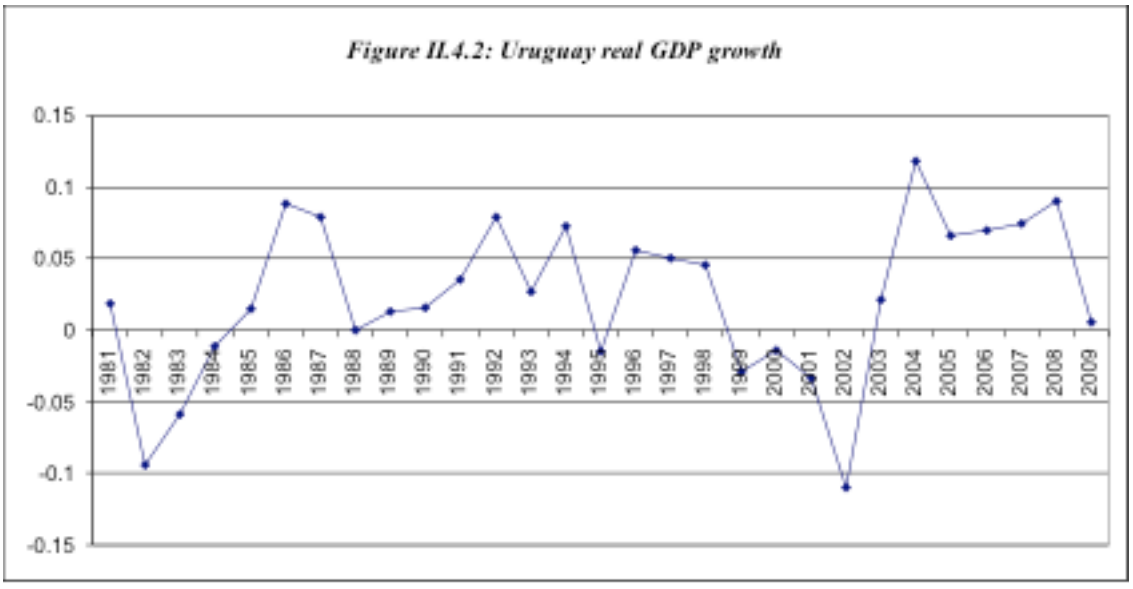
Source: LE&F, based on information from Ministerio de Economía y Finanzas de Uruguay

4. Real GDP and Components

As it is well known, Uruguay experienced another financial crisis and a major recession earlier in this decade mostly as a result of contagion from the financial crisis of Argentina through a very vulnerable domestic financial system. The recovery that was evident in the data from 2004 on has been quite strong, with an annual GDP growth rate that averaged around 8 percent per year in 2004-2008, but has since then declined to almost 0 in 2009, partly as a result of the effects of the sub prime crisis in Uruguay's international markets.

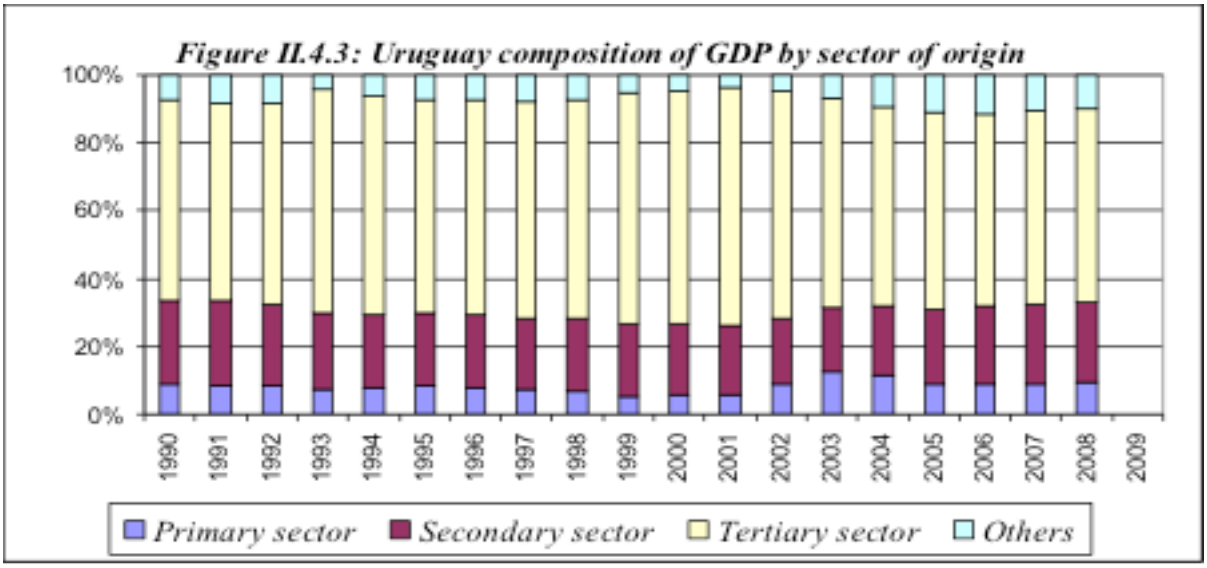


Source: LE&F, based on information from Banco Central de Uruguay.

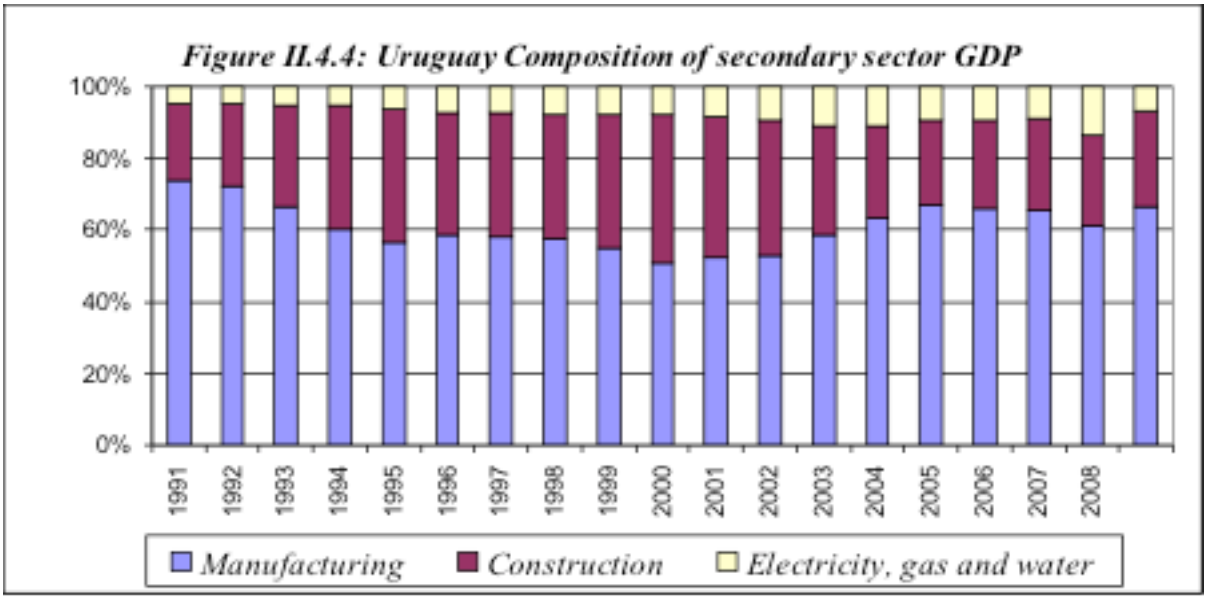


Source: LE&F, based on information from Banco Central de Uruguay.

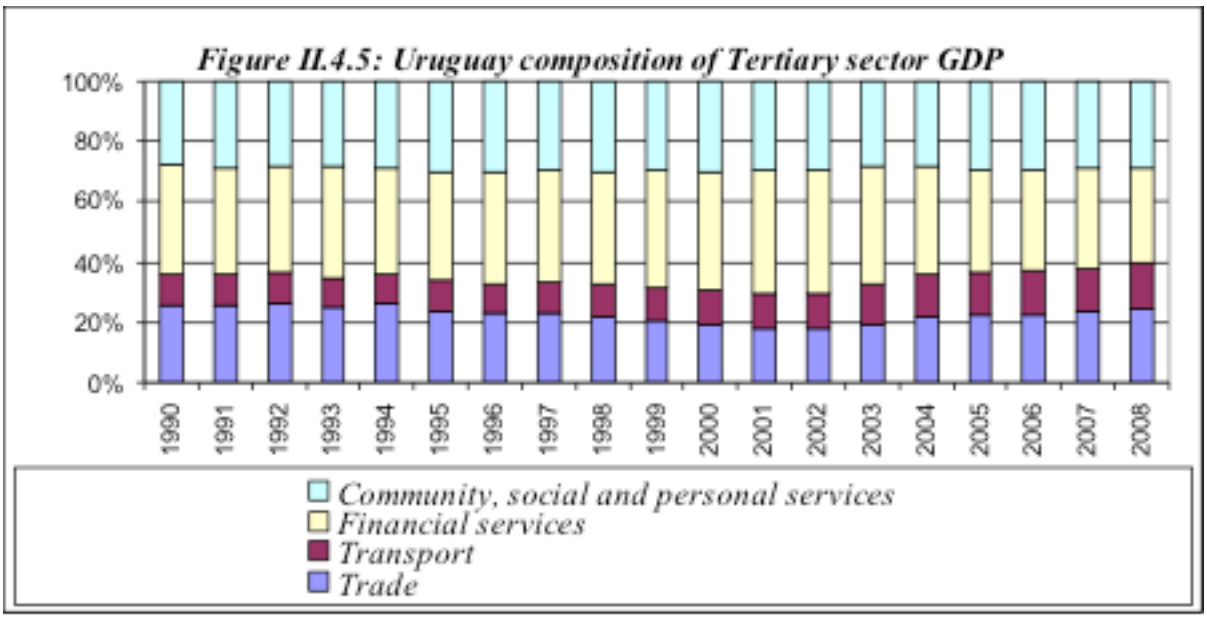
The composition of Uruguay's GDP shows a certain bias towards services, with the tertiary sector representing close to 60 percent of total GDP. Services like financing, insurance, real estate and renting accounts for 1/3 of this total, business services other third, and community, social and personal services the remaining. The secondary sector represents approximately 20 percent of GDP, with manufacturing, construction and electricity accounting for 70 percent, 20 percent and 10 percent of this total, respectively. Despite its agricultural export base, the primary sector in Uruguay is about 10 percent of GDP, with agriculture representing over 80 percent of primary sector activity.



Source: LE&F, based on information from UN ECLAC.



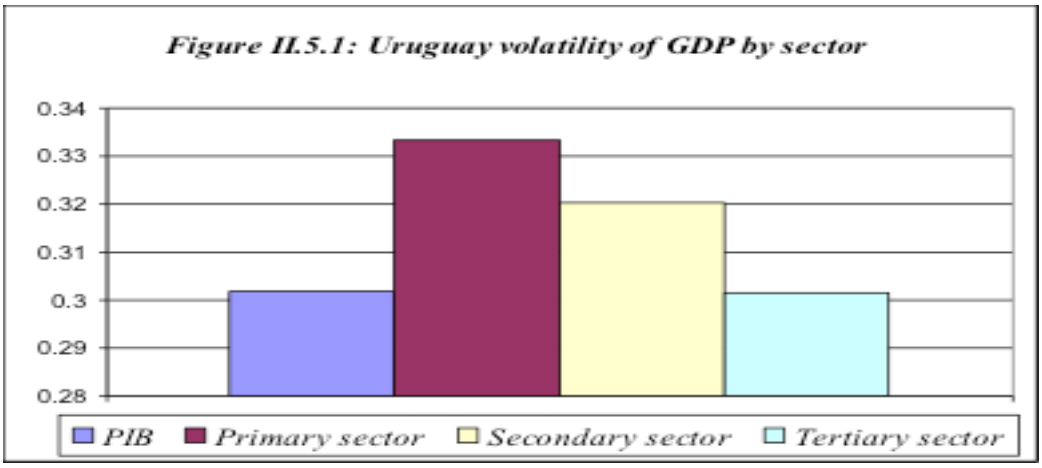
Source: LE&F, based on information from UN ECLAC.



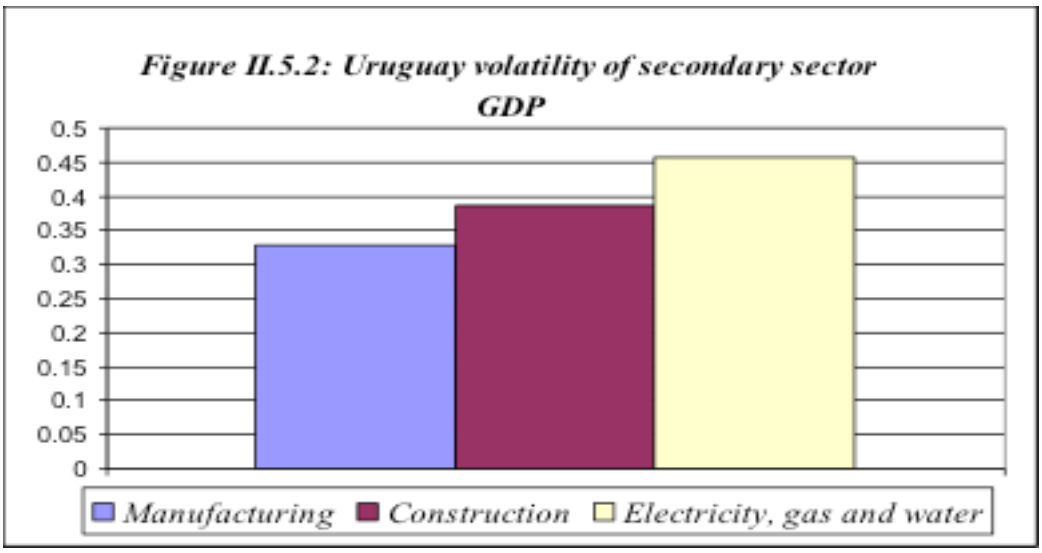
Source: LE&F, based on information from UN ECLAC.

5. Volatility of Real GDP

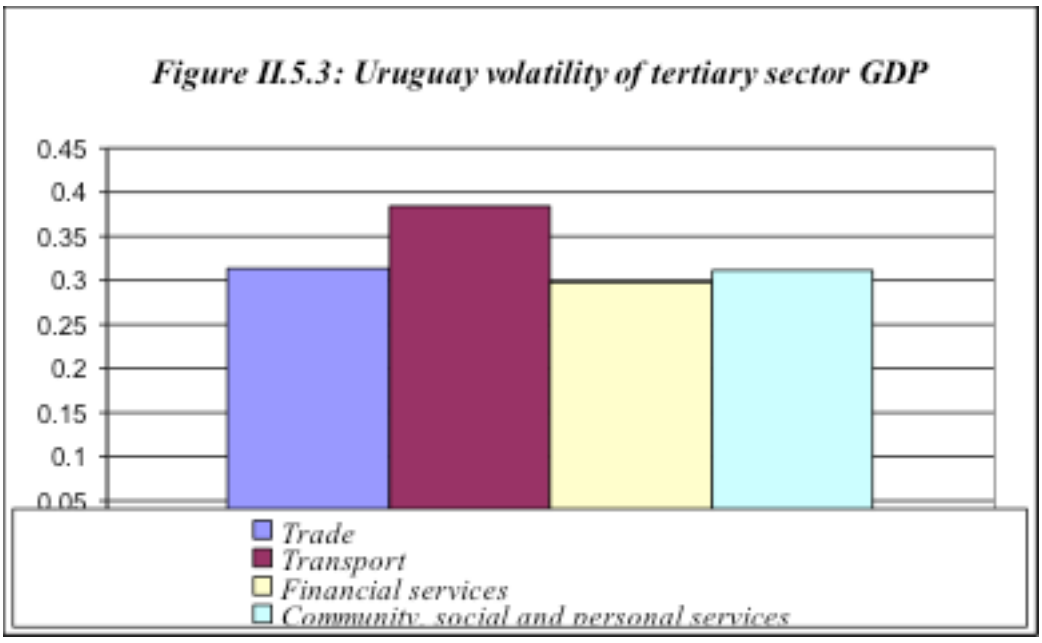
In order to measure the variability of GDP, we use the coefficient of variation for total GDP and its main sectors of origin. The primary sector presents the highest volatility, with a coefficient of 0.33, higher than total GDP, 0.30. By individual sectors, electricity is the most volatile, even more than agriculture. To a large extent the volatility of electricity is the result of the weather, given that the value added of hydro-electrical generation, highly dependent on rainfall, is much higher than that of thermo electrical generation. The rainfall changes the composition of electrical generation and with that sectorial GDP.



Source: LE&F, based on information from UN ECLAC .



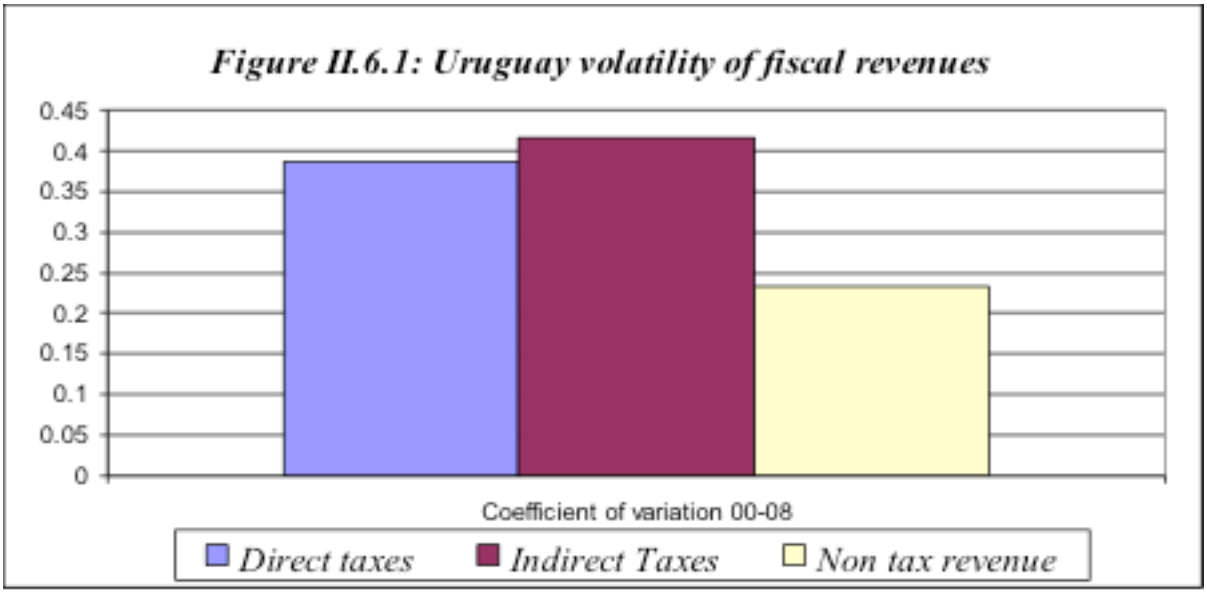
Source: LE&F, based on information from UN ECLAC.



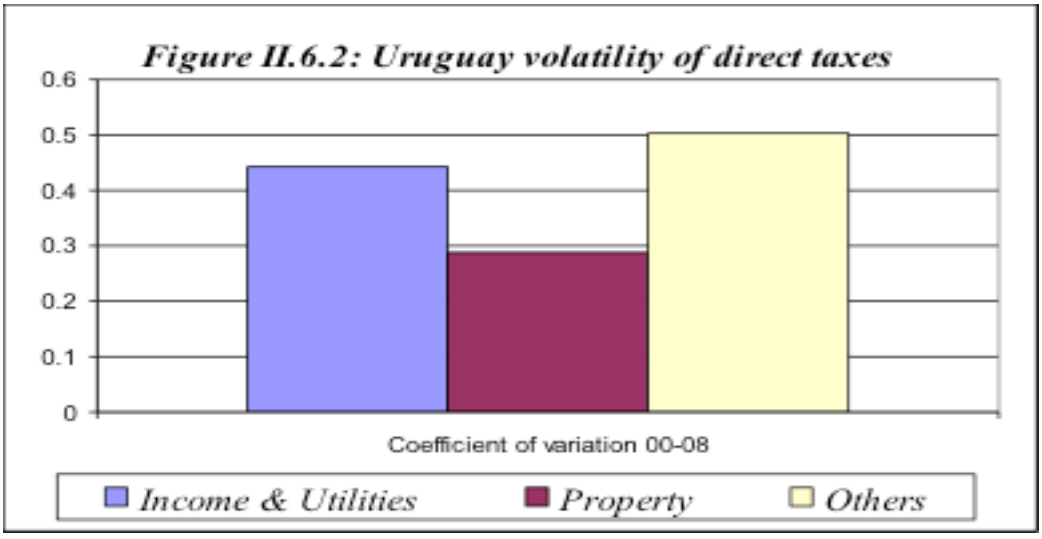
Source: LE&F, based on information from UN ECLAC.

6. Volatility of Fiscal Revenues

Fiscal revenue is more volatile than fiscal expenditure. In turn, tax revenues are more volatile than non-tax revenue. The revenue form the Value Added Tax (VAT) presents a slightly higher volatility than total GDP, probably reflecting that the volatility of domestic demand is higher than that of GDP, and that the VAT exemptions for exports imply that the VAT tax base is domestic demand rather than output.



Source: LE&F, based on information from Contaduría general de Uruguay.



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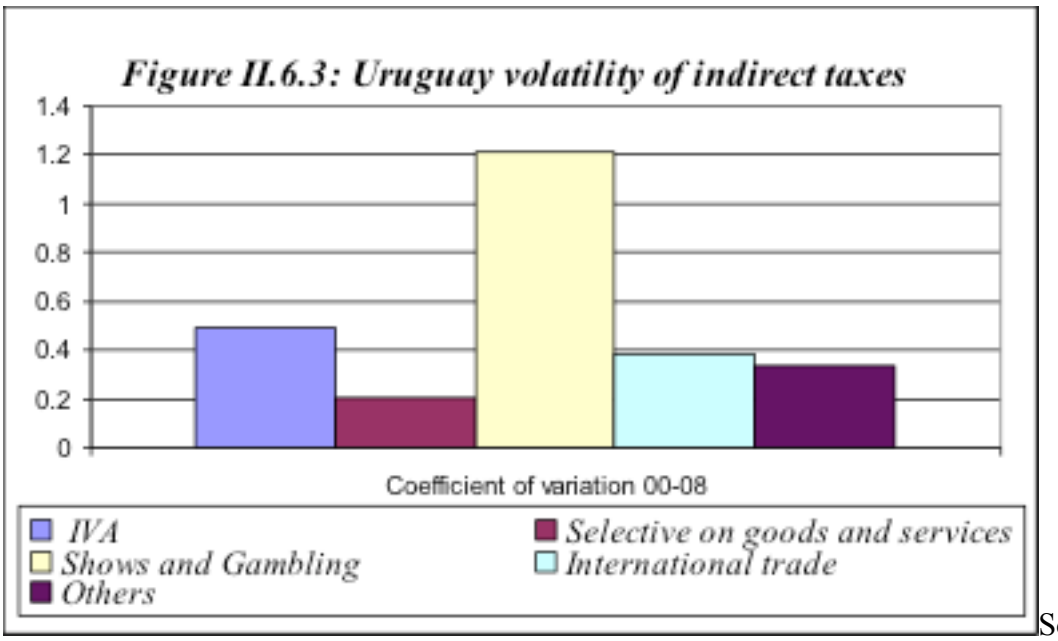
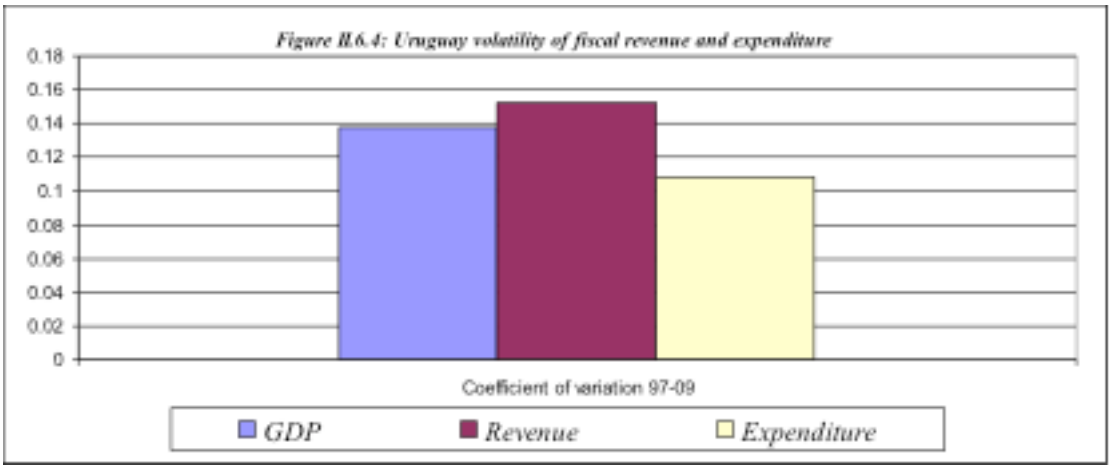


Source: LE&F, based on information from Contaduría general de Uruguay.

Interest expenditure is more volatile than primary expenditure, and within this item, both spending on goods and services and capital spending have a volatility higher than that of social spending which seems quite protected by policies from the ups and downs of domestic activity and fiscal revenue. While the volatility of interest expenditure seems to reflect the volatility of the exchange rate and of international interest rates, the volatility of capital expenditure is residual, that is reflects the efforts of conforming the fiscal balance to available resources.



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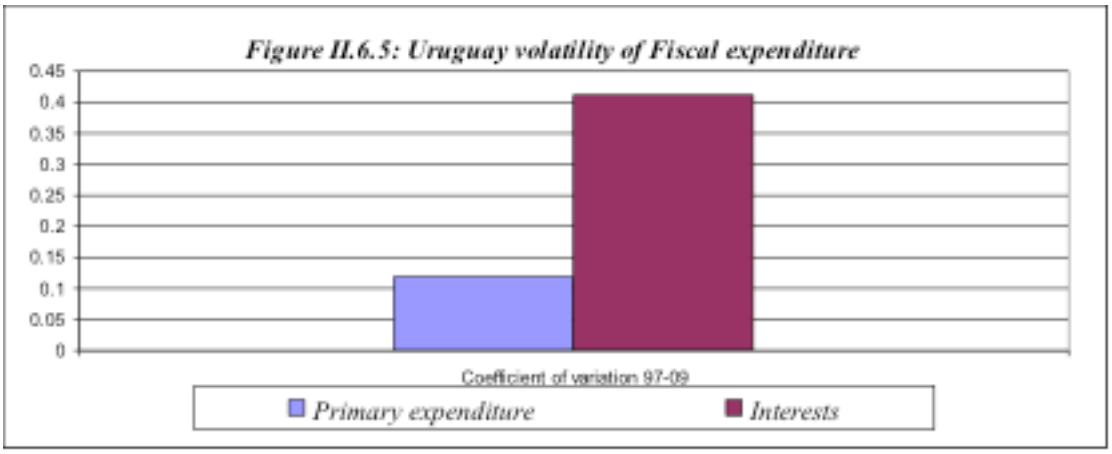

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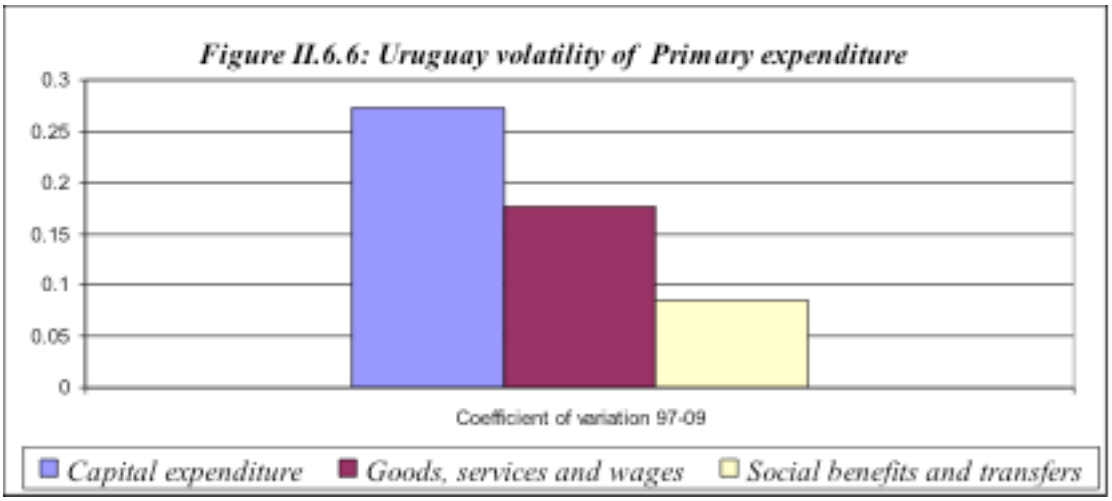


Source: LE&F, based on information from Contaduría general de Uruguay.

III. Estimating and Projecting the Structural Fiscal Balance in Uruguay

Uruguay is an open economy that exports a variety of agricultural commodities, including meat, rice, wool, leather and others. However, its degree of specialization is lower than that of other Latin American countries where the main export item plays a significant role in the generation of fiscal revenue. That is the case of oil in Venezuela, Ecuador and Trinidad and Tobago, or of Copper in Chile and Peru. A combination of a tax structure focused on domestic spending and the relative export diversification of Uruguay implies that the volatility of total fiscal revenue is mostly associated to the cycle of GDP, and not to the evolution of the price, cost and export of some of the agricultural commodities exported. The methodology to estimate structural fiscal revenue will then focus in the estimation of trend and transitory GDP and their effects on fiscal revenue and the fiscal balance. To the extent that the information is available, we will follow the procedures identified by the OECD in a similar way as it has been implemented by the Chilean government over the last decade.

1. Estimation of Trend or Structural GDP

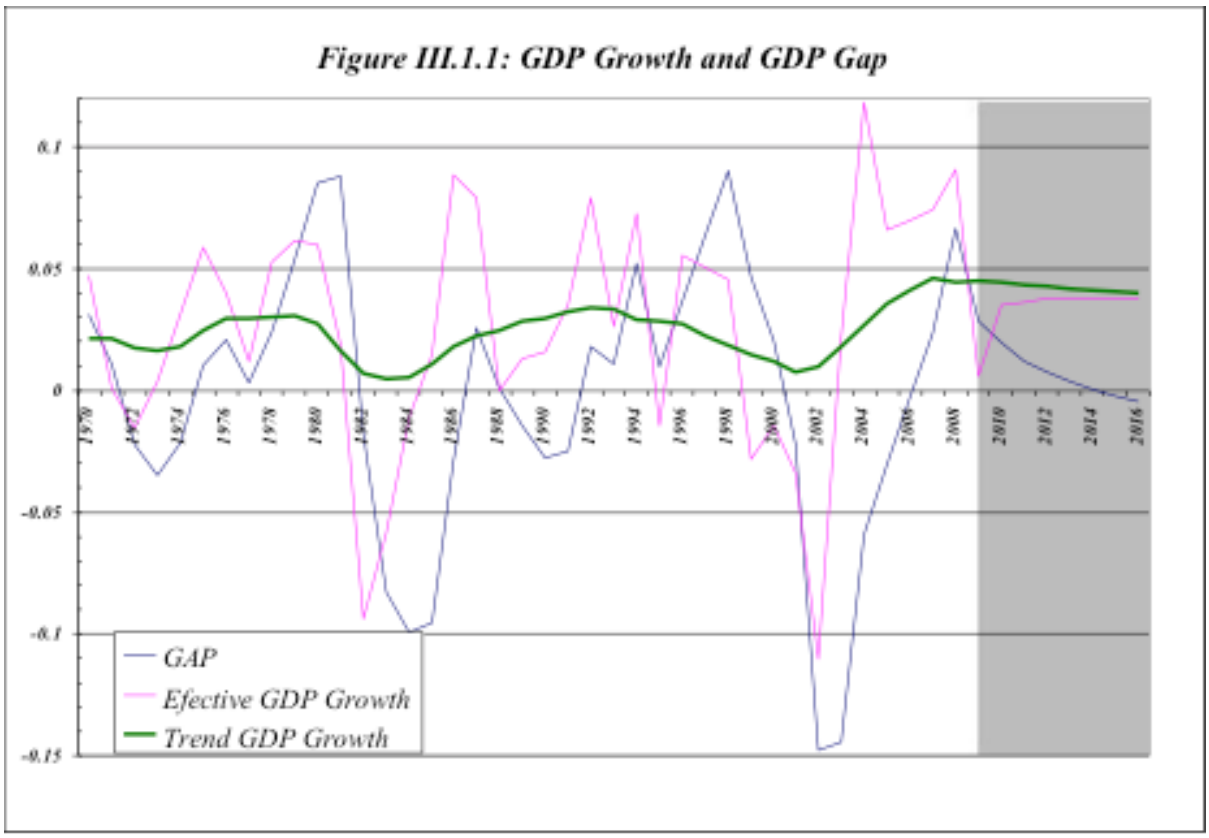
Real GDP (y) can be analytically decomposed in a permanent (Yp) and a transitory component (Ytran). The log of transitory GDP, also called the GDP gap, is positive in expansionary periods, negative during slow downs and recessions and cero during neutral or normal periods, besides its mean is also cero.

$$\log y_t = \log y_t^P + \log y_t^{tran}; \log y_t - \log y_t^P = \log y_t^{tran} = gap_t^Y$$

Permanent GDP is estimated from a Cobb Douglas production function with constant returns to scale, where A is total factor productivity, K capital, N effective labor and a the share of capital in total income. The superscript P is used to represent the permanent or trend component of the corresponding variable, total factor productivity, capital stock, and effective labor. In selecting the capital and labor shares we use the results of previous works, Theoduloz (2006), where a is a constant estimated equal to 0.27[2].

$$y_t^P = A^P (K_t^P)^{\alpha} (N_t^P)^{(1-\alpha)};$$
$$\log y_t^P = \log A_t^P + \alpha \log K_t^P + (1-\alpha) \log N_t^P$$

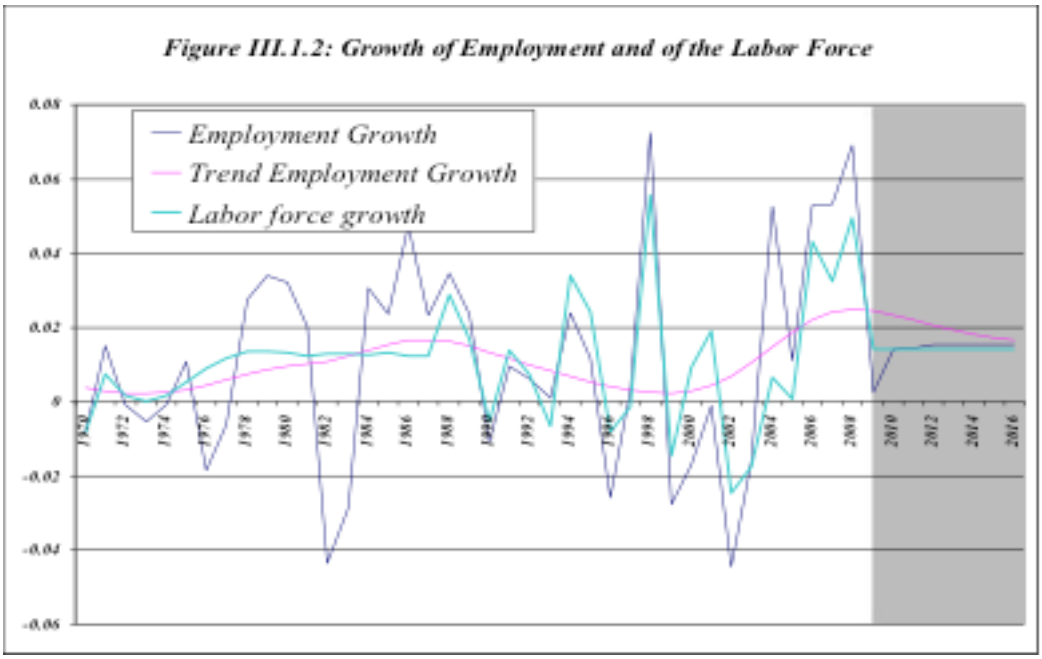
[2] Ideally, alpha should be obtained from the national income accounts, considering it represents the share of capital in the functional distribution of national income. Such source of data is not available in Uruguay.



Source: LE&F, based on information from ECLAC, INE and CERES.

Effective employment (N) can be defined as the total hours of effective work, and calculated multiplying the number of employed workers (N#) by the average number of hours worked (h) and by the average years of schooling (s). The series on the number of workers N# was obtained from the ECLAC and INE for the period 1970-2009. Unfortunately the series on average number of hours worked and average years of schooling of the labor force are not available, thus we have assumed value 1 for all observations of both variables.

$$N_t = N_t\# \times h_t \times s;$$



Source: LE&F, based on information from ECLAC and INE.

The degree of utilization of Labor and capital is derived from the unemployment rate (U) which is defined as the difference between the labor force (L) and the number of people employed N#, as a percent of the labor force[3]. Trend or natural unemployment is obtained applying a HP filter to the unemployment rate series[4].

$$U_t = \frac{L_t - N_t\#}{L_t}$$

$$U_t^P = HPfilter(U_t)$$

The trend value of effective employment is obtained applying a Hodrick and Prescott filter (HP filter) to the series of labor force L, and multiplying it for one minus the natural unemployment rate. Over the last years and with the recovery from the debt crisis, the rate of growth of trend employment has increased reaching a maximum slightly above 2 percent per year. Given the demographic projections the trend growth rate of employment will be gradually declining below 2 percent over the next decade.

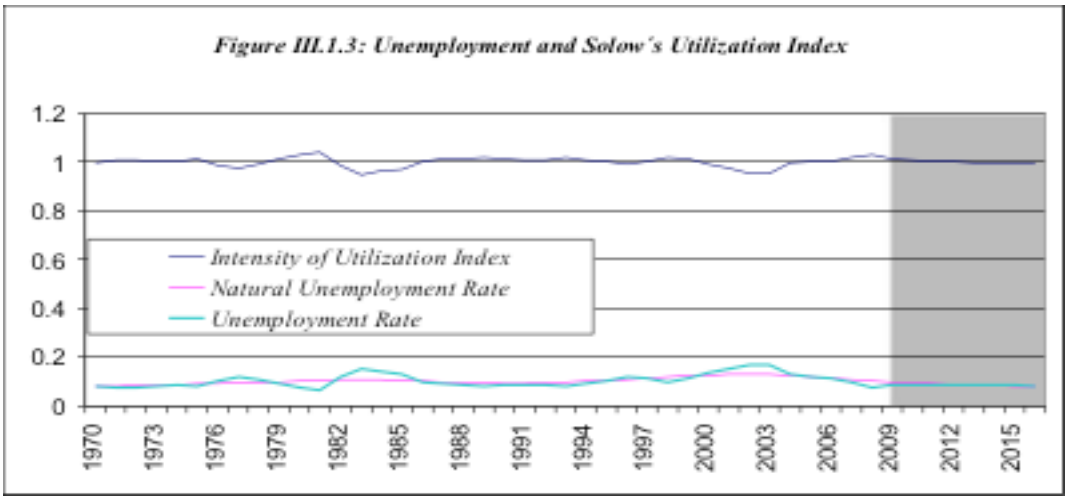
$$N_t^P = HPfilter(L_t) \times (1 - U_t^P)$$

[3] The source of the series on the labor force and employment is ECLAC and INE

[4] The OECD recommendation is to use a lambda value of 100 for obtaining the trend unemployment rate, where lambda is the HP filter parameter.

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.

$$S_t = \frac{(1-U_t)}{(1-U_t^P)}$$

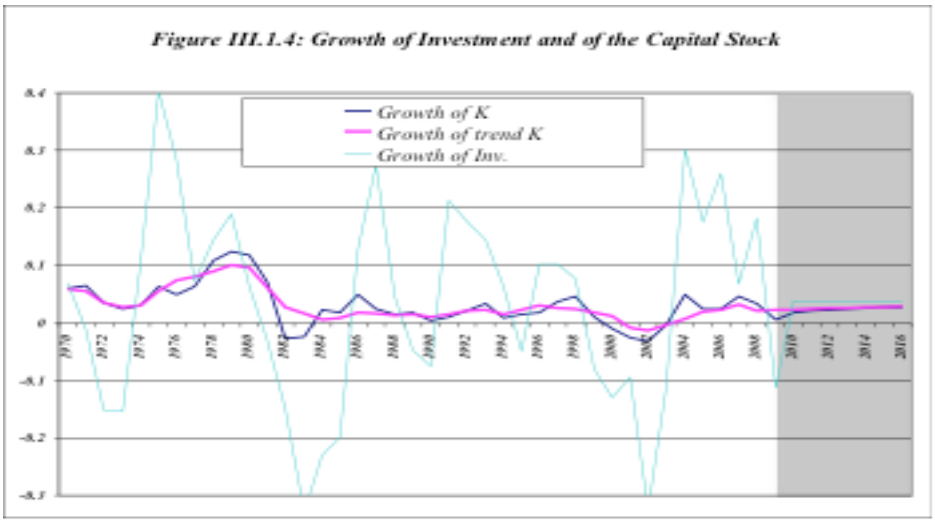


Source: LE&F, based on information from ECLAC and INE.

The estimation of the capital stock is based on the regular inventory accumulation equation, where K is the capital stock, I is investment, defined as the fixed gross capital formation, and d is the depreciation rate. The series on gross capital formation was obtained from the ECLACC and CERES, and the depreciation rate was obtained from World Penn extended table. The initial value for the capital stock implies a capital labor ratio equal to 1.6 in 1970.[5] On the basis of 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, implying a continuous decline in the capital-output ratio.

$$K_t^P = K_{t-1}^P(1-\delta) + I_t$$

[5] The initial estimate of the capital stock (1970) was obtained from the data on fixed capital formation and depreciation using a regular inventory methodology see Haindl and Fuentes (1986).



Source: LE&F, based on information from ECLAC and CERES.

The estimation of the effective capital stock K is obtained by correcting the trend capital stock K by the Solow intensity of use (S):

$$K_t = K_t^P \times S_t$$

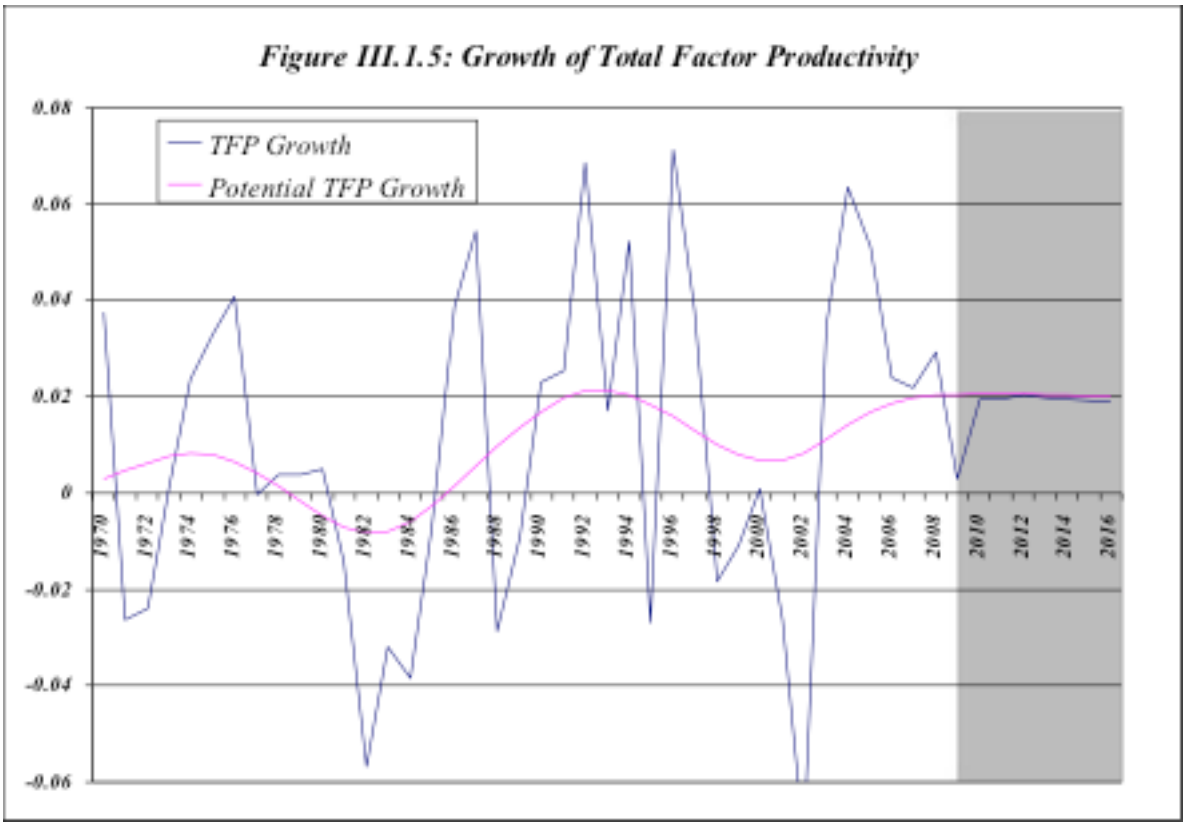
Finally, total factor productivity TFP is derived as a residual using the production function and effective data on GDP, capital, adjusted by the intensity of use, and effective employment. To obtain the permanent or trend total factor productivity we applied the Hodrick and Prescott filter to the TFP series. Surprisingly enough, trend productivity growth not only has increased to about 2 percent per year, but also is projected to remain at that expansionary rate over the next few years.[6]

$$A_t = \frac{y_t}{K_t^{\alpha} N_t^{(1-\alpha)}};$$

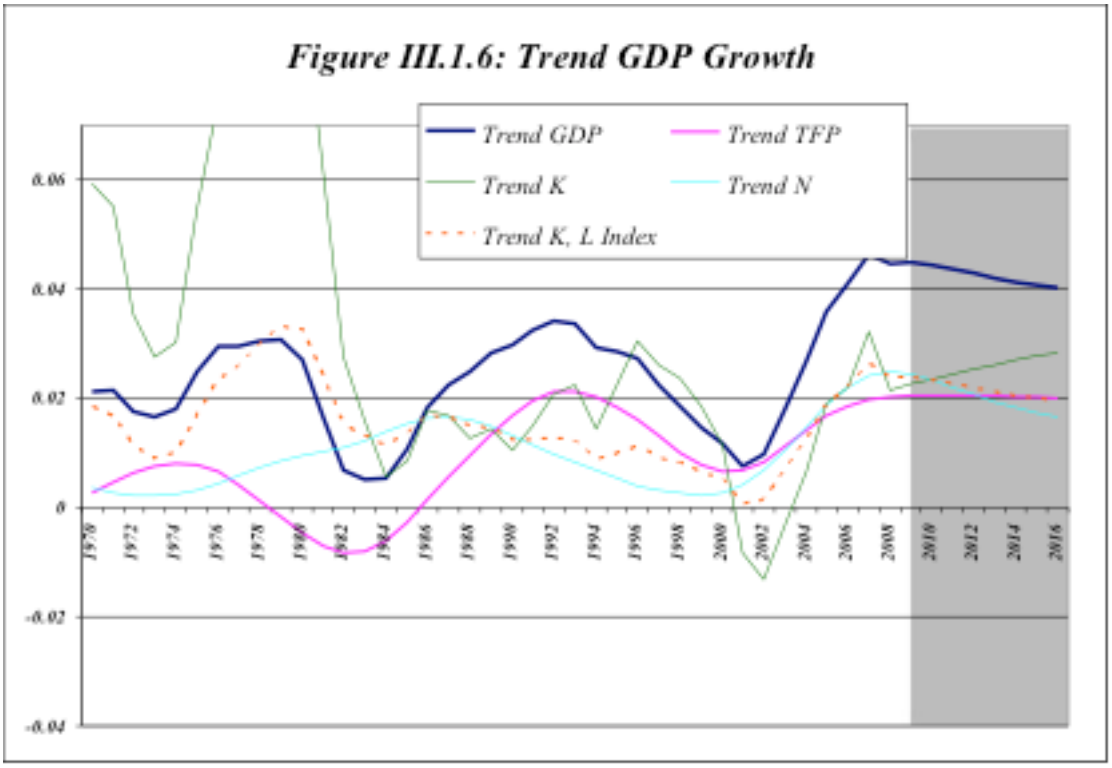
$$\log A_t = \log y_t - \alpha \log K_t - (1-\alpha) \log N_t$$

$$A_t^P = HPfilter(A_t)$$

[6] We have used the IMF WEO projections for real GDP growth through 2016, and assumed 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 we assume that the unemployment rate will converge to the last observation of the natural unemployment rate and considered that the labor force would increase with the working age population.



Source: LE&F, based on information from ECLAC and CERES.



Source: LE&F, based on information from Banco Central de Uruguay.

The results indicate that over the last few years, the growth of trend GDP in Uruguay has been accelerating reaching a rate slightly above 4 percent per year. Growth has then stabilized but our projections indicate a convergence of trend GDP growth to about 4 percent during the second decade of the 21st century. The forecasted rate of expansion for trend GDP is significantly above its historical value, with ups and downs around 2 percent, and could be affected by the recent recovery. The assumptions used for future GDP, labor force and gross capital investment growth are subject to discussion and for that reason should be derived from the opinions of several experts on the Uruguayan economy, and revised annually.

2. Elasticities and the Structural Balance

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. The elasticity of fiscal revenue with respect to trend GDP is going to play a pivotal role in determining the value of the structural revenue and the structural balance. The estimated regression is of the following form,

$$\log T_t = \beta_0 + \beta_1 \log y_t^P + \beta_2 gap_t^y + \beta_3 D_t^{1997} + \varepsilon_t$$

Where T represents the real fiscal revenue, total or components, Yp the permanent GDP, gap y the GDP gap and D1997 a qualitative variable to represent the structural break that represents the policy reaction that resulted in a structural break in the level of Public sector revenue in Uruguay.

Table III.2.1: Regressions for Total Fiscal Revenue and GDP

dependent variable	log total fiscal revenues	
	Coefficient	p value
Constant	-7.525084	0
log trend GDP	1.460225	0
GDP gap	1.098978	0
Dummie	0.073261	0.0434
R2	0.981797	
Durbin Watson	1.344245	

dependent variable	log total fiscal revenues	
	Coefficient	p value
Constant	-8.545618	0
log effective GDP	1.545102	0
R2	0.975311	
Durbin Watson	1.057832	

Source: LE&F, based on information from ECLAC and CERES.

Table III.2.1.i: Co-integration Analysis *(residual test)*

		t-Statistic	Prob
Augmented Dickey-Fuller test statistic		-4.757	0.0005
Test critical values	1% level	-3.639	
	5% level	-2.951	
	10% level	-2.614	

Source: LE&F, based on information from ECLAC and CERES.

Table III.2.2: Regressions for Tax Revenue and GDP

Dependent variable	log fiscal tax revenues	
	coefficient	p value
Constant	-8.169227	0
log trend GDP	1.502307	0
GDP gap	1.257763	0
R2	0.971845	
Durbin Watson	1.242875	
Dependent variable	log fiscal tax revenues	
	coefficient	p value
Constant	-8.032751	0
log effective GDP	1.491247	0
R2	0.970761	
Durbin Watson	1.201451	

Source: LE&F, based on information from ECLAC and CERES.

Table III.2.3: Regressions for Non-tax Fiscal revenue and GDP

Dependent variable	log fiscal non tax revenues	
	Coefficient	p value
Constant	-16.72136	0
log trend GDP	2.044116	0
R2	0.734499	
Durbin Watson	0.829801	
Dependent variable	log fiscal non tax revenues	
	Coefficient	p value
Constant	-15.79879	0
log effective GDP	1.969392	0
R2	0.715332	
Durbin Watson	0.804337	

Source: LE&F, based on information from ECLAC and CERES.

Table III.2.4: Regressions for the VAT and GDP

Dependent variable	log VTA	
	Coefficient	p value
Constant	-15.64766	0
log trend GDP	2.049237	0
GDP gap	1.639195	0
R2	0.932975	
Durbin Watson	0.799446	
Dependent variable	log VTA	
	Coefficient	p value
Constant	-15.41079	0
log effective GDP	2.030142	0
R2	0.929759	
Durbin Watson	0.746703	

Source: LE&F, based on information from ECLAC and CERES.

Table III.2.5: Regressions for Fiscal Expenditure and GDP

dependent variable	log total fiscal expenditure	
	Coefficient	p value
Constant	-7.241518	0
log trend GDP	1.449694	0
GDP gap	0.24453	0.3792
R2	0.942847	
Durbin Watson	0.884553	

dependent variable	log total fiscal expenditure	
	Coefficient	p value
Constant	-6.568933	0
log effective GDP	1.395187	0
R2	0.914524	
Durbin Watson	0.719985	

Source: LE&F, based on information from ECLAC and CERES.

The results of the estimation indicate that the elasticity of revenues to trend GDP is somewhat greater than one in which the structural break is in general significant. Moreover, both fiscal revenues and fiscal expenditures present a pro cyclical response to GDP, given the positive and significant elasticity of revenue and expenditure with respect to the GDP gap.[7]

Conceptually, the structural fiscal balance is the one that would have existed if GDP were at its trend level. Correspondingly the structural fiscal revenue is the revenue that would have been obtained under a zero gap. Then the structural fiscal balance is defined as the difference between the total structural fiscal revenue and the total fiscal expenditure. The estimation of the total structural revenue can be obtained using the estimated regression for total revenue, and assuming a zero gap:

Thus the structural fiscal balance is

$$SFB_t = T_t^P - G_t$$

Government revenue (T) has a permanent (TP) and a transitory (Ttran) component

$$T_t = T_t^P + T_t^{tran}$$

Which can be expressed as a percent of GDP in lower case letters:

$$t_t = t_t^P + t_t^{tran}$$

The primary fiscal balance is obtained by excluding the interest expenditures. The structural primary balance, psb, is derived subtracting the transitory revenue.

[7] In addition, the regular co-integration analysis was carried out for the fiscal revenues and tax equation, and it was obtained that the residuals of the main regression (Table III.2.1) are stationary, so that these variables co-integrate among themselves.

$$pfb_t = t_t^{DP} + t_t^{D,tran} - pg_t = psb_t + t_t^{D,tran}$$

The structural fiscal balance (sfb) can be obtained subtracting from the primary surplus the interest expenditure.

$$sfb_t = t_t^P - pg_t - ig_t = ps^* - ig_t$$

The actual fiscal balance (fb) is the structural balance plus the transitory revenue, which can be positive or negative. Any positive transitory revenue is to be saved in the form of a larger fiscal balance, and any negative transitory revenue dis-saved through a smaller fb or larger deficit.

$$fb_t = t_t^P + t_t^{tran} - pg_t - ig_t = sfb_t + t_t^{tran}$$

In the case of Uruguay, permanent and transitory fiscal revenue stems from the business cycle that gives rise to fluctuations in the domestic revenue (DT). The ups and downs in GDP result in ups and downs in domestic revenue (DT):

$$\log DT_t = \beta_0 + \beta_1 \log Y_t^P + \beta_2[\log Y_t - \log Y_t^P] + \varepsilon_t$$

Where bo, b1 and b2 are parameters to be estimated and e represent the disturbances of the domestic revenue equation. In some specifications used by the OECD b2 is considered equal to cero, however we consider that excluding the gap from this equation may bias the estimate for the elasticity with respect to trend GDP. We can distinguish permanent or structural revenue from transitory revenue.

$$\log DT_t^P = \beta_0 + \beta_1 \log Y_t^P$$
$$\log DT_t^{tran} = \beta_2[\log Y_t - \log Y_t^P] + \varepsilon_t = \log DT_t - \log DT_t^P$$

Presenting revenue in percent of GDP

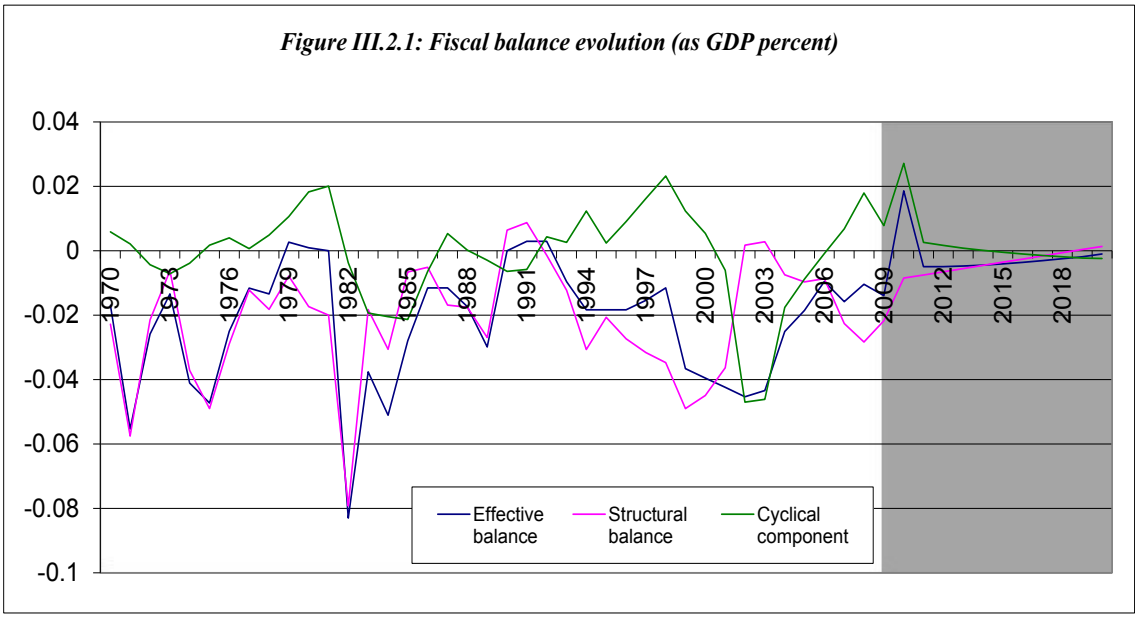
$$\log dt_t^P = \beta_0 + \beta_1 \log Y_t^P - \log Y_t$$

$$\log dt_t^{tran} = \beta_2 [\log Y_t - \log Y_t^P] - \log Y_t + \varepsilon_t$$

$$DT_t^{tran} = DT_t - DT_t^P$$

$$dt_t^{tran} = \frac{DT_t - DT_t^P}{Y_t}$$

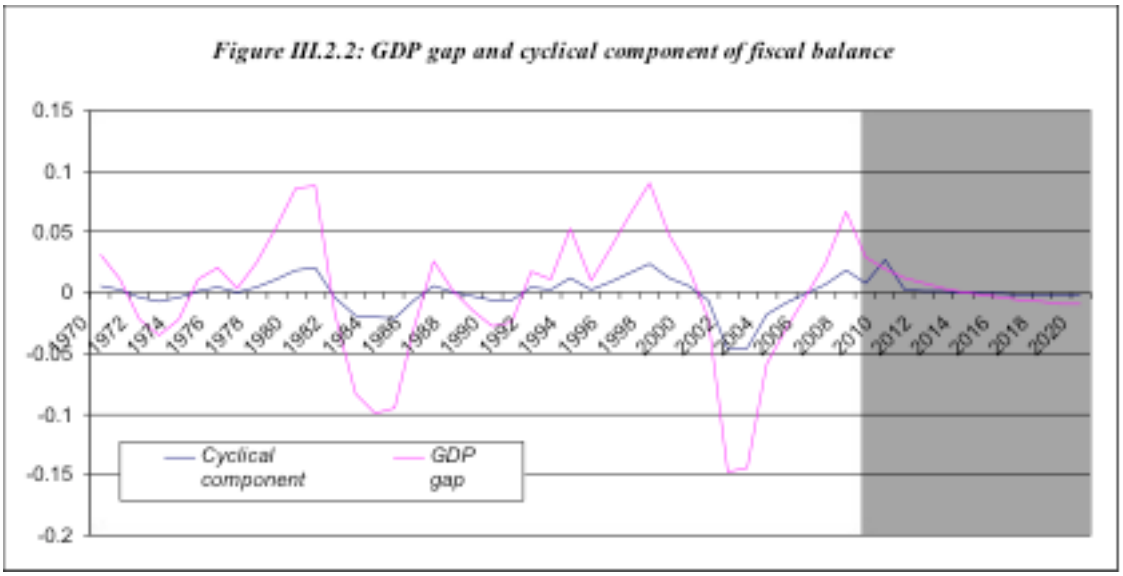
Figure III.2.1: Fiscal balance evolution (as GDP percent)



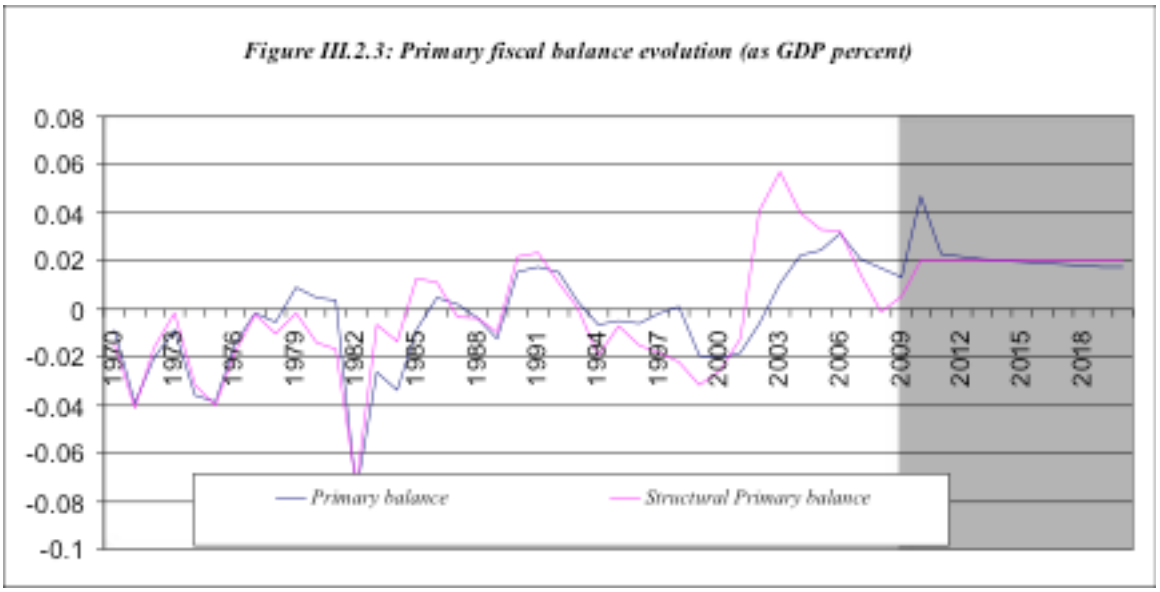
Source: LE&F, based on information from ECLAC and CERES.

Our estimates indicate that Uruguay's total structural fiscal balance has remained in deficit almost continuously, exception made for a brief period of zero structural balance in the early 1990s. The debt crisis of 1982 had implied a large widening of the structural fiscal deficit and a continuous adjustment effort followed, reaching its peak results in terms of fiscal consolidation in 1989-1992. From then on a sustained deterioration in the structural fiscal balance took the deficit to a new local maximum of 4 percent of GDP in the years of the turn of the century (1999-2002). The adjustment that followed the last debt crisis once again reduced the structural fiscal deficit to 1 percent of GDP for a few years, but the structural deficit has recently widened to about 2 percent of GDP in 2009. Despite the improvements in public finances of the last 5 years by no means Uruguay is out of the woods, as it has happened before the debt level may again rise to critical levels unless a structural fiscal policy committed with the reduction of the vulnerabilities of the public finances is

implemented. That would require a return of the fiscal balance or slight surplus similar to the one carried out during the early 1990s.



Source: LE&F, based on information from ECLAC and CERES.



Source: LE&F, based on information from ECLAC and CERES.

The structural primary balance in Uruguay has fluctuated around 0 with some periods of deep 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; actually a succession of primary deficit preceded the last debt crisis. The most notable surplus periods are two, the first stabilization effort of the early 1990s that resulted in a sustained reduction on the inflation rate. The second is the recent adjustment that followed the debt crisis of 2002 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 fallen below 1 percent of GDP in 2008 and 2009.

3. Fiscal Projections

In the fiscal projections exercise we assume an active policy scenario in which a structural fiscal policy is implemented. Primary government expenditure as a percent of GDP (pg) is budgeted on the basis of permanent revenue (tP) and the fiscal target for the primary balance (ps*). Interest spending (ig) is predetermined by debt contracts, added to primary spending we obtain total government expenditure (g).

$$pg_t = t_t^P - ps^* \quad g_t = pg_t + ig_t = t_t^P - ps^* + ig_t$$

To define the budget for primary expenditure (pg) it is necessary first to estimate the structural fiscal revenue (tP) and then to set the fiscal target for the primary structural balance ps*. The future structural fiscal revenue is to be obtained from the estimation of the future trend GDP, for that purpose we use the estimated elasticity of fiscal revenue with respect to trend GDP.

$$\log DT_{t+1}^P = \beta_0 + \beta_1 \log Y_{t+1}^P$$

The future value of trend income has to be estimated on the basis of the production function, using projected future values for trend productivity (Ap), trend Capital stock (Kp) and trend employment (Np).

$$\log y_{t+1}^P = \log A_{t+1}^P + \alpha \log K_{t+1}^P + (1-\alpha) \log N_{t+1}^P$$

$$A_{t+1}^P = HPfilter(A_{t+1})$$

Trend productivity can be obtained applying an HP filter to the series of actual and projected productivity. For that purpose projections of A through 2020 were used.

$$\log A_{t+i} = \log y_{t+i} - \alpha \log K_{t+i} - (1-\alpha) \log N_{t+i}$$

For consistency the projected values for total factor productivity (A) should be obtained as a residual from the projections of GDP, Capital and Labor.

$$K_{t+1}^{P} = K_{t}^{P}(1-\delta) + I_{t+1}$$

Trend capital is equal to total capital and the projections for K can be obtained on the basis of the inventory equation and projections for gross capital formation. Again we projected the capital stock adjusted for the intensity of use through 2020.

$$N_{t+1}^{P} = HPfilter(L_{t+1}) \times (1 - U_{t}^{P})$$

Finally, the projection of trend employment requires the projection of the trend labor force, and of the trend unemployment rate. Summing up, projections through 2020 were used for GDP, gross capital formation, labor force and the unemployment rate. From there the budgeting process can derive trend GDP and thus the trend fiscal revenue. Given the target for the structural balance, the budgeted primary fiscal expenditure is to be obtained. In this exercise we used the WEO projections for GDP growth through 2016 and assumed a stable growth rate afterwards at the level of the last observation. Investment was projected assuming that the last five-year average for the investment GDP ratio will prevail in the future. Finally, the projected expansion of the working age population was used to project labor force, and the stabilization of the unemployment rate at the natural rate value was used to derive effective employment.

4. The Structural Fiscal Target

The proposed structural fiscal target has to be derived for the structural primary balance. The target for the structural primary balance should be defined so as to provide fiscal sustainability by meeting certain goals for the relevant definition of the public sector net financial wealth (B). The fiscal balance represents the change in financial wealth. It is equal to the primary balance and net interest, where i is the nominal interest rate.

$$FB_t = T_t - PG_t - IG_t = PFB_t - IG_t$$
$$B_t - B_{t-1} = T_t - PG_t + iB_{t-1} = PS_t + iB_{t-1}$$

We can define the wealth equation for the primary surplus:

$$B_t = PS_t + (1+i)B_{t-1}$$

Defining the variables as a percent of GDP, where p is inflation and l real GDP growth, and r the real interest rate.

$$b_t = psb_t + (1+i_t)b_{t-1} \times \frac{Y_{t-1}}{Y_t} = psb_t + \frac{(1+i_t)}{(1+\lambda_t)(1+\pi_t)} b_{t-1}$$

$$b_t = psb_t + \frac{(1+r_t)}{(1+\lambda_t)} b_{t-1} = psb_t + (1+\psi_t)b_{t-1}$$

The idea is to find a permanent target for the primary structural surplus psb*, which we will assume to be constant. In addition we will assume constant real interest rate and constant growth rate, so that the wealth equation is transformed to:

$$b_t = psb + (1+\psi)b_{t-1}$$

Where the discount factor is: $(1+\psi) = \frac{(1+r)}{(1+\lambda)}$

Developing the wealth equation for future periods:

$$b_{t+1} = psb + (1+\psi)b_t = psb[1+(1+\psi)] + (1+\psi)^2 b_{t-1}$$
$$b_{t+2} = psb\,[1+(1+\psi)+(1+\psi)^2] + (1+\psi)^3 b_{t-1}$$

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

The value for the targeted psb* depends on the initial wealth level b(t-1), the discount factor, the target for the wealth level b(t+N), and the number of periods to reach the target (N). If the fiscal target were set to keep constant the wealth to GDP ratio at its initial level b(t-1), then

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

Otherwise, a given target for the wealth to GDP ratio at a given horizon of N years into the future b(t+N) would give the general result for the annual structural fiscal target.

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

To calculate the fiscal target and as shown in the above equation, there are several information requirements. First about debt or public sector wealth, including actual, in the last period available, and targeted debt, second about the discount factor for which we need the real interest rate and the real growth rate, and, finally, the horizon in which the debt target is to be met. The debt information was obtained from the central bank of Uruguay; the growth rate used is that obtained previously as the projected potential growth rate of the economy. We recognize that different views are possible regarding the future growth of the Uruguayan economy, our estimate of 4 percent sustained real GDP growth may seem high for historical standards in this country [8]. However, the trend growth rate will be endogenous to the policies implemented which can easily reduce or increase the sustained growth rate through their effect on productivity growth, i.e. incentives for innovation, capital stock

[8] Using the WEO projections for economic activity, and under assumptions for investment, working age population and productivity growth rates

growth, i.e. incentives on savings and investment, and labor growth, incentives on migration of the qualified labor force. Different views may exist about the future trend GDP growth of the Uruguayan economy, and the views may change over time.

Given that Uruguay is a debtor country, we estimate the relevant real interest rate on the basis of an indicator for the real return on global assets and a representative risk spread for Uruguay. The real global rate of return in the long run is estimated on the basis of the average annual growth rate of JPM Global Bond and MSCI all countries indices, both in real terms. We assume an equal weight for both indices to represent a global portfolio and its historical average real return in the long run of it is to be considered the global real interest rate that will prevail in the future. Our estimation indicates a global long run real interest rate of 4.65 percent. However that is not the relevant rate for the Uruguayan public sector that borrows at that rate plus a risk spread. To estimate the relevant Uruguayan spread we compare the actual returns of the Uruguayan debt (actual real interest rates) with the historic global rate of return, yielding an average spread of 1.1 percent. Thus the Uruguayan log run real interest rate on debt was estimated at 5.75 percent.

Again, as in the case of the real growth rate, the estimate for the interest rate of the Uruguayan debt over the long term is subject to discussions and different views. The one presented is our best guess with the information and expertise available, but the spread of he Uruguayan debt is endogenous and in the future will reflect the risk that markets give to its repayment. A virtuous cycle of lower deficit, lower debt, and lower spread is possible, but also is possible a vicious one of higher deficit, debt and spread. A repeated assessment of the debt risk is required to estimate the future values of the spread.

Given that it is not possible to determine a single horizon and a single debt target that would be appropriate for Uruguay we present a table considering a range of possibilities for a given value of the discount ratio psi, which was estimated at 1.549 percent. For the time horizon we consider a wide range from 5 to 50 years, considering as a minimum the period of one Uruguayan government, and as a maximum the period of ten governments. To set a target for such a long period, a very solid political consensus should be developed to back the structural fiscal policy. For the future public wealth target we also considered a relatively large range of options, from -50 percent of GDP similar to the existing level of public debt, to +10 percent of GDP similar to the public sector wealth accumulated by Chile at the end of 2009, before the earthquake.

Table III.4.1: Fiscal targets for the primary balance as percent of GDP

Horizon/wealth target	-50%	-40%	-30%	-20%	-10%	0%	10%
5	0.91%	2.51%	3.80%	5.72%	7.32%	8.93%	10.53%
10	0.85%	1.69%	2.35%	3.37%	4.21%	5.06%	5.90%
15	0.83%	1.38%	1.81%	2.50%	3.05%	3.61%	4.16%
20	0.82%	1.22%	1.53%	2.04%	2.44%	2.85%	3.26%
30	0.80%	1.06%	1.24%	1.57%	1.82%	2.07%	2.33%
50	0.79%	0.92%	1.00%	1.19%	1.32%	1.45%	1.58%

Source: LE&F, based on information from ECLAC and CERES.

As is evident in Table III.4.1, the longer the time horizon to fulfill the fiscal target, the lower is the required primary balance target. On the other hand, the more demanding is the wealth target, the higher is the required primary balance. To attain a wealth target of -50 percent of GDP, that is a net debt level equivalent to 50 percent of GDP and similar to the existing starting point, a sustained 1 percent (0.8 percent -0.9 percent) of GDP of structural primary fiscal surplus is required regardless of the time horizon considered. That would be the lowest possible primary balance target consistent with debt sustainability: one to conserve the existing public debt level. On the other extreme, attaining a public sector wealth goal of 10 percent of GDP[9] in a 10 years horizon would require a sustained structural primary surplus of almost 6 percent of GDP, and achieving the same goal in twice the time horizon (20 years) would require a surplus slightly above half the previous, 3.3 percent of GDP.

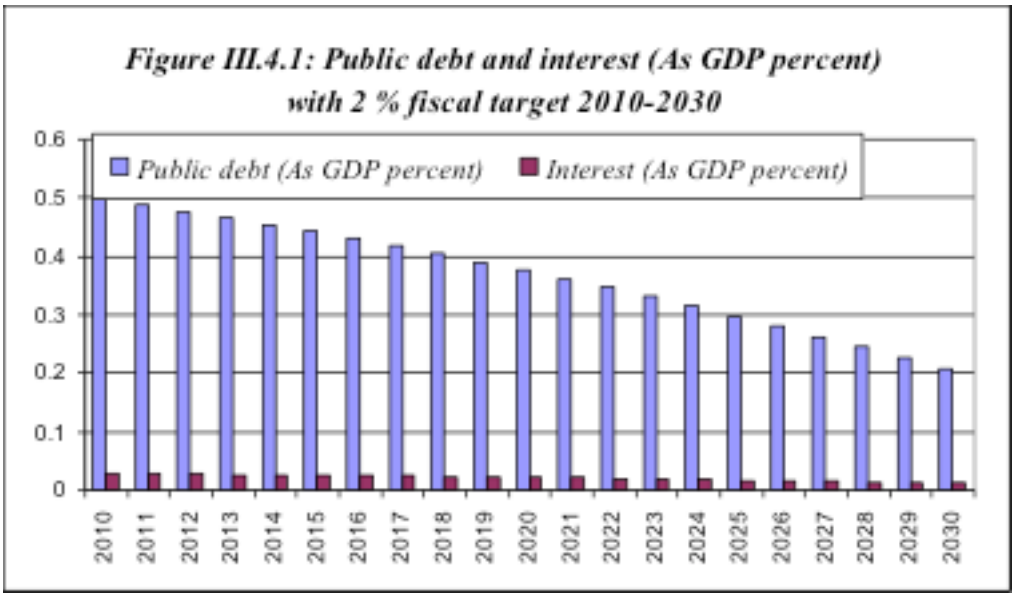
From inspection the fiscal target cannot be less that a sustained primary surplus of 1 percent of GDP. However a desirable target ought to be higher than that one that only maintains the wealth level at the actual one. Currently in Uruguay, 70 percent of the debt is denominated in foreign currency, despite all the efforts applied by the authorities to change debt denomination from US dollars to the unit indexed to GDP. Thus, an exchange rate shock would increase the debt ratio very significantly. Under a real exchange rate shock of a 50 percent real depreciation, the debt to GDP ratio would jump from 49 percent of GDP to 66 percent of GDP even if the total fiscal balance is zero. A debt ratio of 66 percent of GDP is already in the vulnerability zone, and is higher than the debt level that Uruguay had before the last crisis.

A 50 percent increase of the real exchange rate is not unlikely considering the country's vulnerabilities as presented in the history of this variable in Uruguay. Moreover, several analysts consider that currently the real exchange rate is 25 percent to 35 percent overvalued as compared to its long-term equilibrium. If the debt ratio were to be reduced to

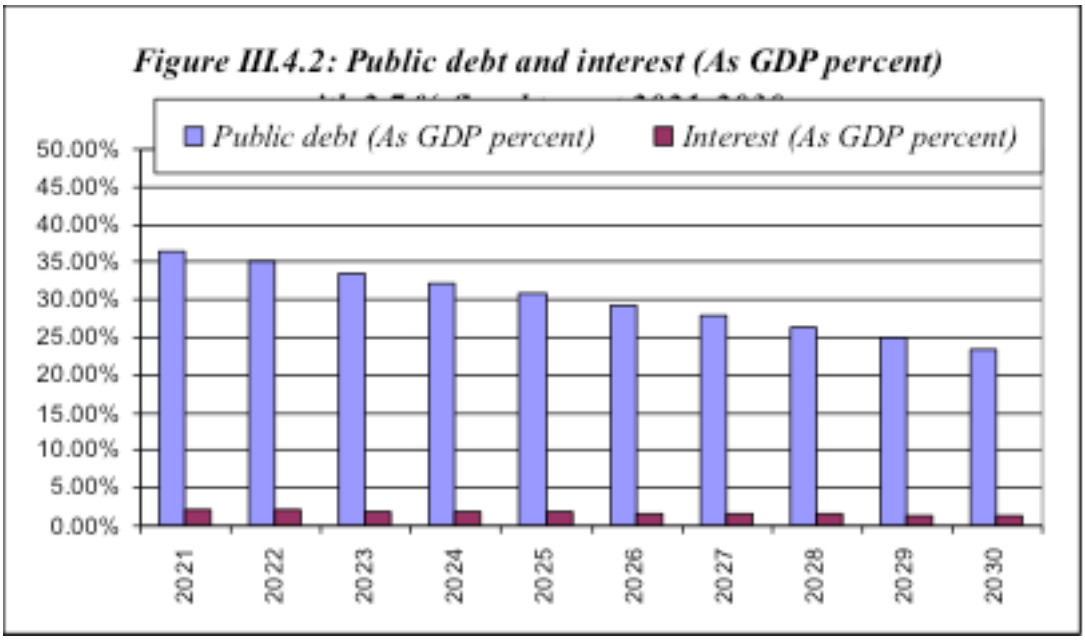
[9] Similar to the wealth level of the Chilean public sector at the end of 2009.

20 percent of GDP it would be possible to concentrate the debt reduction (30 percent of GDP) in eliminating debt denominated in foreign currency. Under those conditions of reduced share of foreign currency debt and lower debt level, even if the domestic currency debt cannot be increased, a similar 50 percent real exchange rate shock would increase the debt ratio only marginally, from 20 percent to 22 percent of GDP.

Our recommendation would be to set the debt goal in 20 percent of GDP (-20 percent public sector wealth) and to give a total of 20 years to attain the debt goal. Under those conditions the target for the structural primary fiscal balance would be a surplus of 2.0 percent of GDP. It can be verified on Table III.4.1 that a similar fiscal target would be obtained to achieve the goal of a -40 percent of GDP fiscal wealth in more than 5 and less than 10 years. Despite the recommendation, setting the fiscal target ought to be one of the elements of the new institutional framework for fiscal policy in Uruguay.



Source: LE&F simulations.



Source: LE&F simulations.

Introducing a structural fiscal policy in Uruguay would not just be a tool to reduce the cyclical fluctuations of fiscal expenditure, which are significant but no extreme so as to justify the effort to build a complex political commitment. The increasing vulnerability of the fiscal position and risk of repeating yet another episode of fiscal insolvency and financial crisis are considered sufficient motivation. No individual government or political group in the country can carry by itself the costs of initiating a long term fiscal consolidation knowing that all its efforts of reducing debt and deficits may reduce its chances to remain in power an open the possibility to other political group to run an expenditure binge in the future. Fiscal consolidation should be part of a concerted effort, a national policy built on the basis of permanent institutions that would give guarantees of a sustained effort that would yield benefits to all.

IV. Preconditions and Recommendations for the Implementation of the Fiscal Rule

The structural fiscal policy is based upon a national agreement on the importance of a rules based fiscal policy, which is expressed in a policy framework used in the definition of the budget with an explicit target for the structural primary balance derived from a medium-term debt goal and projections for the structural or trend fiscal revenue derived from a macroeconomic framework. The structural fiscal target, the debt goal and the macroeconomic framework for fiscal policy are political decisions that should be defined democratically, but with the technical backing of a group of experts. Besides, fiscal accounts, including revenues, expenditure, assets and liabilities and their components must be fully transparent and public, so that the compliance or noncompliance with the fiscal target is information known by all.

1. Improving the Budgetary Process

One of the characteristics of fiscal policy in Uruguay is its decentralized nature and the lack of a macroeconomic framework in the definition of the five-year budget and for its annual revisions. The budget process in Uruguay can be characterized as a process of aggregation in which individual entities either present their own budget proposal to Congress or lobby in both chambers so as to modify the budget presented by the Ministry of Finance. The MEF has to fight against the pressure of political interests, congressmen and often other Ministries in an effort to trim down the budget coming out from that process so as to limit the departure from the expenditure level originally proposed. Some times the support of the President of the Republic allows the MEF to cut down to size the proposed budget resulting from the interaction of Congress and interest groups, others the final budget is not much different from the expression of will of the individual public sector entities. At the end of the aggregation process the size of the budget as well as its composition are the result of the political game played by Congress, the individual interests and the MEF. In a democratic setting that would be appropriate for the budget composition, the budget size should obey a rational application of an inter-temporal budget constraint for the Public Sector and not a political game.

At the heart of this decentralized and aggregative budget process is the idea that expenditures can be financed generically from "general government revenue" or from a deficit. Consequently, Congress can add to the budget by stating that the additional expenditures are going to be financed by one of this "generic sources". The application of a structural fiscal policy requires setting up a macroeconomic framework that represents the

inter-temporal budget constraint. Under that idea, the MEF should define an initial budget proposal, which is to be developed on the basis of a macroeconomic framework that considers a projected level for the government revenue and the target for the structural balance in similar fashion as the one presented in the previous section. For that, the rules of the budget process should be modified.[10] The budget discussion should be developed on the basis of that initial proposal, and the modifications by Congress may consider reallocating expenditure from item to item, or increasing expenditure. However, in this latter case the initiative should also include an increase in government revenue (some tax measure or sale of assets) that the MEF considers sufficient to cover the added expenditure. In short the budget discussion would consist in the selection and application of priorities to decide the composition of government expenditures and only under exceptional circumstances would also include initiatives to increase the level of total expenditure, and if that is the case it would not modify the projected fiscal balance.

The budget should set up an authorization to spend in well-defined items, including some contingencies to be defined later. In addition to the spending level and composition, the budget should set a level of projected revenue, projected fiscal balance, and the uses and sources of any additional financing or financing needs. The additional financing or financing needs may arise from the deviations in the level of actual government revenue from the one projected in the budget. An authorization to issue debt up to certain amount could take care of the financing needs that may arise if there is a short fall in the projected revenue. Contributions to a sovereign "debt reduction" fund may be consider for the allocation of an unexpected fiscal surplus. The sovereign fund should consider a limited number of low risk assets in which to be invested, including the purchase of Uruguayan public debt.

2. Setting the Macroeconomic Framework for Fiscal Policy

The structural fiscal framework requires a number of macroeconomic variables that are required to setup the target for the annual structural primary balance, those are a goal for public sector wealth, and the number of years needed to achieve that goal. Besides the framework also requires the projections for the macroeconomic variables needed to estimate

[10] Mr. Ignacio de Posadas, a well-respected lawyer and former Minister of Finance and Senator, believes that an interpretative law can be used to improve fiscal discipline. In essence Mr. de Posadas proposal considers that every spending initiative has to be financed by genuine resources, which are defined as well identified sources of government revenue and not just general resources or deficit financing.

the fiscal target and the structural fiscal balance, the long term real interest rate relevant for Uruguayan debt, and trend GDP growth.

In one extreme it would be possible that the technicians at the Ministry of Finance (MEF) could carry out all the estimations by themselves under the guidance of the current Minister. However, that would not be representative of a national and permanent policy framework, since the structural policy would be entirely under the control of the current administration. A better possibility would be to limit the action of the technicians of the MEF by giving them certain parameters on which to base their work. The fiscal target and macroeconomic projections for trend GDP growth and the real interest rate relevant for Uruguayan debt could be agreed by a technical commission of 5 members. All of them should be reputed economists, that would be nominated by the government with the approval of the Senate and that would represent the different points of views on fiscal policy. They would give to the government once every 5 years a target for the primary balance, supported on a goal for the fiscal wealth, a time horizon to attain such goal, and estimates on the long term relevant real interest rate and the long-term growth rate of GDP for Uruguay.

The technical commission would also give to the MEF annually their projections for the next five years on real GDP, real gross capital formation, labor- force and unemployment rate. On the basis of that macroeconomic framework and on the fiscal target, the MEF would present its estimates for structural revenue and the annual expenditure budget, or the annual revisions to the five-year budget used in Uruguay.

In case the technical commission cannot come to agreement on the values of certain variables, each member would present his or hers individual estimate in the Committee meeting. The committee should present to the MEF a summarized minute of the result of its deliberations, the value and the way that the fiscal target was calculated, the points of agreement and the divergences. The MEF would calculate the median value of the variable excluding the two extremes from the calculation, and complete all the other technical procedures to obtain the projected trend GPD and structural revenue. The MEF should present to the parliament and the public a technical report explaining the methodology and results obtained in the estimation of the structural revenue and of the structural balance, and of the advance to meet the fiscal wealth goal, including at least:

- The determination of structural fiscal revenue and the projections of trend GDP in which they are based. Those projections are generated by a group of fiscal experts, representing different views on this matter.

• The fiscal target chosen and the real interest rates and growth rates estimates, based on a comprehensive study done by the experts, that clearly states the consequences of such target on fiscal wealth or fiscal debt over time, and the risks involved.

3. Dealing with the Embedded Procyclicality of Expenditure

In many countries fiscal expenditure presents a procyclical bias that result in a faster rate of growth in real expenditure during the expansionary phase of the business cycle or when the GDP gap is positive. It is to be expected that this procyclical bias will be eliminated when a structural fiscal policy is introduced, then the growth of real expenditure would be stable during the business cycle. The procyclical bias often result from a budgeting process that starts from the forecasting of next year's actual fiscal revenue, which in itself is a pro cyclical variable, and the definition of expenditure on the basis of forecasted revenue. By using the forecast of structural rather that actual fiscal revenue to define expenditure that procyclical bias is eliminated.

However in Uruguay there are further complications to eliminate the cyclicality of fiscal expenditure since the procyclical bias is generated at least in part from some institutional characteristics of the social security system. According to the law, the value in Uruguayan pesos of pension benefits is 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. That procyclical characteristic of a large portion of total expenditure will not disappear by the introduction of a structural fiscal policy, and consequently, the rest of expenditure will have to follow a counter cyclical bias to allow that total expenditure is cyclically neutral. Considering that public sector wages and salaries in effect follow a similar path, it is possible that the flexible portion of fiscal expenditure in Uruguay is much reduced, imposing a significant rigidity to the introduction of a structural fiscal policy. In effect only capital expenditure can be managed with flexibility.

The rigidity of current expenditure in Uruguay may require different sources of flexibility to carry out a structural fiscal policy. One possible source of flexibility could be a counter cyclical public investment policy and a pro cyclical tax rate. That is, during the expansionary phase of the cycle when current fiscal expenditure by institutional design becomes excessive and procyclical, then capital expenditure should contract to a minimum to allow meeting the structural target on the fiscal balance.

If the flexibility of public investment were not enough, meeting the structural fiscal target may require an additional source of flexibility in some tax rates, for example in the VAT rate. This would provide additional fiscal revenue during the expansionary phase helping to meet the fiscal target without investment cuts and even when current expenditure is expanding faster. On the other hand the tax increase may help in softening the procyclical impulse of public expenditure. In a similar fashion during the contractionary phase of the cycle, public investment may take the slack generated by the lower growth rate in current expenditure, and in addition tax rates may be lowered. During a relatively normal phase of the cycle tax rates would return to its regular level. The changes in the VAT rate may represent some practical problems and be a source of additional macroeconomic volatility. If that is the view the only source of fiscal flexibility would be that of discretionary capital expenditure.

The success in implementing variables taxes, that is, to raise taxes when expansionary shocks occur and lower them when a contractionary shock occur, will depend on many factors identified in the interesting paper of Kaufman (2000). The paper argues that the existence of variable taxes increase welfare as long as two conditions are met: There are restrictions on credit, and on the other side that tax distortions in the labor market are low (especially the income tax). It is reasonable to expect that in Uruguay there are important credit constraints as in may other developing countries. On the other hand it is difficult to quantify the distorting effects of taxes in the Uruguayan labor market. In this sense a variables tax policy in the Uruguayan economy may be positive in this context. Notwithstanding, it is also necessary to analyze the direct costs involved in such a step, as is the case of recurrent changes in prices, with the subsequent influence in the inflation, which in a country with history inflation as in Uruguay can be very dangerous. At the same time it must consider potential lags in economic activity; such changes may be injurious to the cycle.

4. Sustainability Path of Fiscal Policy in the Medium and Long Term

The recommended target for the structural primary fiscal balance of 2.0 percent of GDP should be enough to generate a sustainability path for fiscal policy in the medium and long run. Even some of the other target levels considered would also generate a sustainable fiscal path although subject to some additional vulnerability. A 1 percent of GDP primary balance would stabilize debt around 50 percent of GDP. Looking at Figure II.3.1 we note that from 1999 to 2001 the level of Uruguayan public debt was about 30 percent of GDP. However, the

crisis in Argentina in 2001 generated several shocks that resulted in an explosion in the level of public debt that rose to more than 100 percent of GDP in the following years. The debt increasing shocks include the exchange rate depreciation, the increase in refinancing costs, the drop in real GDP due to the recession and the financial assistance given by the public sector to the financial system. Other measures may take care of the exposure to the recession and the financial system needs of assistance. However, the exposure to the exchange rate and refinancing cost shocks depends directly on the level of debt. In that regard, debt levels of around 50 percent of GDP are still insufficient to reduce vulnerabilities, and it would be highly advisable to continue to lower that percentage even below the pre-crisis levels mentioned above.

A primary structural balance of 2 percent of GDP would not be very different form what has already been achieved over the last years. In that sense the introduction of a structural fiscal policy with that target level would not represent a large shift in fiscal policy but taking an explicit commitment with the policy being developed would eliminate the risk of going down the slippery slope of increasing deficit like in past episodes. Such action would reduce uncertainty about the future course of fiscal policy and may end up generating significant benefits. Lower uncertainty would reduce the level financial spreads and the refinancing cost, allowing for improvements in debt composition, more long-term debt and more domestic currency debt, and a faster reduction in the debt level.

5. Information and Fiscal Transparency

A national fiscal policy should be backed by the availability of data on public sector operations and assets and liabilities that is of good quality, consistent and plenty of details, and that is opportunely distributed. Data shortcomings in Uruguay are significant, the series cover a relatively short period; fiscal data is collected on a cash rather than accrual basis, and consequently lacks consistency with national accounts and with data on assets and liabilities. Fiscal transparency requires a very significant effort in the compilation and development of fiscal statistics, which should encompass data on fiscal operations, revenues and expenditures on an accrual basis, aggregate and by institutions, and data on the assets and liabilities changes and positions that are resulting from such operations.

Transparency also requires that all fiscal operations are covered by the statistics. In this regards operations by the National Development Corporation or by firms fully owned by

Public Enterprises should be consolidated into the fiscal accounts. Moreover, a serious effort should be carried out to quantify all the contingent liabilities of the public sector, including the guarantees given to private debt.

Annex Table 1: Estimates of Trend GDP and GDP Gap

1961	2.98%	2.82%	2.84%
1962	-1.65%	2.33%	-2.30%
1963	-2.46%	1.32%	0.51%
1964	-1.30%	0.87%	2.04%
1965	-0.88%	0.77%	1.20%
1966	1.61%	0.81%	3.35%
1967	-3.81%	1.24%	-4.10%
1968	-3.55%	1.34%	1.60%
1969	0.60%	1.76%	6.07%
1970	3.10%	2.12%	4.71%
1971	1.10%	2.15%	0.12%
1972	-2.20%	1.75%	-1.55%
1973	-3.48%	1.66%	0.36%
1974	-2.18%	1.81%	3.14%
1975	1.06%	2.49%	5.86%
1976	2.06%	2.95%	3.98%
1977	0.31%	2.96%	1.17%
1978	2.44%	3.04%	5.26%
1979	5.40%	3.07%	6.17%
1980	8.55%	2.72%	6.00%
1981	8.80%	1.64%	1.90%
1982	-1.75%	0.69%	-9.39%
1983	-8.28%	0.51%	-5.85%
1984	-9.93%	0.55%	-1.09%
1985	-9.54%	1.08%	1.48%
1986	-2.86%	1.82%	8.86%
1987	2.56%	2.24%	7.93%
1988	0.08%	2.49%	-0.01%
1989	-1.44%	2.84%	1.29%
1990	-2.78%	2.97%	1.59%
1991	-2.49%	3.23%	3.54%
1992	1.78%	3.42%	7.93%
1993	1.09%	3.37%	2.66%
1994	5.23%	2.93%	7.28%
1995	0.96%	2.85%	-1.45%
1996	3.70%	2.73%	5.58%
1997	6.40%	2.25%	5.05%
1998	9.01%	1.84%	4.54%
1999	4.68%	1.46%	-2.85%
2000	2.05%	1.18%	-1.44%
2001	-2.15%	0.76%	-3.39%
2002	-14.81%	0.97%	-11.03%
2003	-14.44%	1.80%	2.17%
2004	-5.92%	2.69%	11.82%
2005	-3.03%	3.59%	6.62%
2006	-0.28%	4.09%	7.00%
2007	2.34%	4.64%	7.42%
2008	6.64%	4.47%	9.06%
2009	2.85%	4.49%	0.60%
2010	1.95%	4.44%	3.50%
2011	1.21%	4.37%	3.60%
2012	0.74%	4.28%	3.80%
2013	0.36%	4.20%	3.80%
2014	0.04%	4.13%	3.80%
2015	-0.22%	4.07%	3.80%
2016	-0.43%	4.02%	3.80%
2017	-0.61%	3.99%	3.80%
2018	-0.77%	3.96%	3.80%
2019	-0.90%	3.94%	3.80%
2020	-0.94%	3.84%	3.80%
Avg. 60-20	-0.22%	2.58%	2.59%

V. Uruguay Database

Primera parte.xls

Segunda parte.xls

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