Tax reforms and fiscal stabilisation in Latin American countries

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Abstract

The fiscal burden in OECD (Organisation for Economic Co-operation and Development) countries more than doubles the overall taxation level in Latin American countries. In terms of revenue composition, OECD countries collect a larger share from direct taxes; there is also a greater component from social contributions.

During the nineties, the revival of economic growth and the design of better tax systems enabled fiscal revenues to recover strongly, reaching an increase of 3 points of GDP (Gross Domestic Product). However, this effort has not been sufficient, considering the dynamics of public debt in an environment of high interest rates and low growth.

In this paper, the main trends of tax burden and composition of tax revenues in Latin American countries are described, and then the short-term tax-gap, as OECD has defined it, are calculated for 18 countries. The reversal of economic cycle makes impossible to fill this gap in the short term without significant macroeconomic costs. Some room of manoeuvre, namely a cyclical safety margin, has to be considered.

The magnitude of this cyclical safety margin is very significant, because of the volatility of output and the high value of tax elasticities, despite the relatively minor size of public sector when compared to OECD standards. If fiscal policy is more efficient when letting operate automatic stabilisers, then "second generation" macro fiscal rules will have to address on the issue of the pronounced pro-cyclical bias that defined fiscal policies in the nineties in many Latin American countries.

Introduction

The fiscal burden in OECD (Organisation for Economic Co-operation and Development) countries more than doubles the overall taxation level in Latin American countries. In terms of revenue composition, OECD countries collect a larger share from direct taxes; also there is also a greater component from social contributions. However, during the last decade tax burden in Latin America increased significantly. The revival of economic growth and the design of better tax systems enabled fiscal revenues to recover strongly, reaching an increase of 3 points of GDP (Gross Domestic Product). Revenue growth has been particularly notable in VAT (Value added tax), and to a lesser extent among direct taxes. In Latin America income and capital gains taxes show a relatively low collection level; its weight has fluctuated between 2% and 3% of GDP. Although this feature is a structural weakness, major tax reforms have tended to favour duties easier to collect and with a larger tax base, reduce personal income tax highest marginal rates, and a reduction in the average corporate income tax rate, which have been compensated through an enlargement of the income tax base. The overall increase of effective tax rates evidence the need for greater funding from Latin American governments in the last decade. The efforts have been concentrated on the internal aspects of taxation (as well as those sources which are easier to collect).

However, this effort has not been sufficient, considering the dynamics of public debt in an environment of high interest rates and low growth. Some countries of Latin America are once again facing an external debt crisis, mainly in the public sector this time. In addition of establishing consistent and credible anti-cyclical fiscal rules, these countries need an overall solution which includes sovereign debt restructuring mechanisms designed in a global context.

In this paper, we first describe the main trends of tax burden and composition of tax revenues in Latin American countries, and then we estimate some indicators to emphasize the magnitude of the problem. We calculate the short-term tax-gap, as OECD has defined it, for 18 countries. This simple indicator of fiscal sustainability underlines the huge difference registered in the recent years between the primary surplus required to stabilize debt and the effective primary balance. Hence, fiscal adjustment cannot be avoided if financing conditions remain prohibitive. However, the reversal of economic cycle makes impossible to fill this gap in the short term without significant macroeconomic costs. Some room of manoeuvre, namely a cyclical safety margin, has to be considered, specially in the discussions with International Financial Institutions.

We estimate the magnitude of this cyclical safety margin, which is very significant because of the volatility of output and the high value of income elasticity, despite the relatively minor size of public sector when compared to OECD standards. If fiscal policy is more efficient when letting operate automatic stabilizers, then "second generation" macro fiscal rules will have to address on the issue of the pronounced pro-cyclical bias that defined fiscal policies in the nineties in many Latin American countries.

II. Main features of tax systems and recent trends

One of the main functions of taxes is to finance public spending on goods and services, therefore choosing a taxation level in some way is equivalent to choose a public spending level. Nonetheless, economic theory offers a very limited guide in relation to the optimal level of tax burden and revenue composition. Tanzi and Zee (2000) adopt an empirical approach, evaluating if the level and composition is "appropriate" by comparing the performance with other economies, taking into account the particularities of each country. If we compare the tax burden of OECD and Latin American countries, there is a great difference both in level and composition terms (see figure 1).

INTERNATIONAL COMPARISON OF TAX REVENUES 1999 OR 2000
(Percentage of GDP)
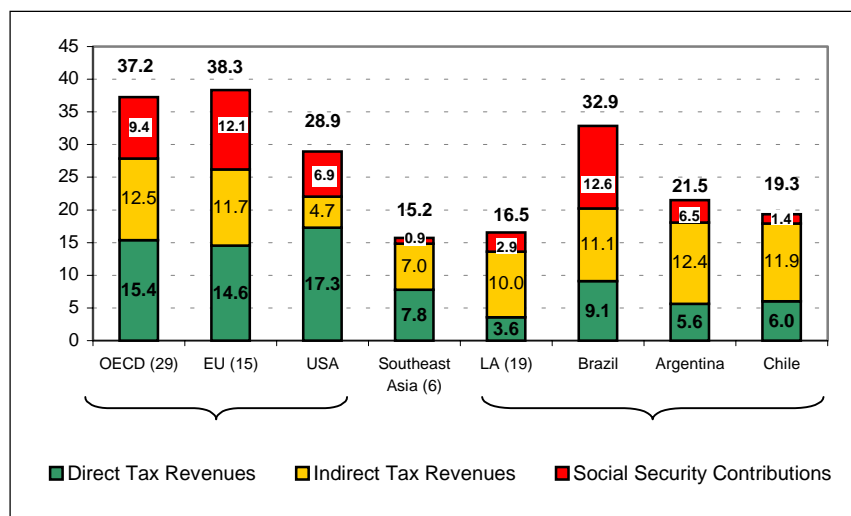
Source: For OECD countries, "Revenue Statistics of OECD Member Countries" (OECD), 2001. For Southeast Asia, "Government Finance Statistics" (FMI), 2000. For Latin-American countries, ECLAC, based on official data.

Note: Data for OECD countries and Argentina, Bolivia, Brazil, Chile, Costa Rica and Ecuador correspond to General Government coverage. The others correspond to Central Government.

For year 2000, the fiscal burden in OECD countries more than doubles the overall taxation level in Latin American countries. In terms of revenue composition, OECD countries collect a larger share from direct taxes; also there is a greater component from social contributions. In comparison to South-East countries, virtually there is no difference in the overall taxation level. However, in relative terms direct taxation is far more important than in Latin American countries.

2.1 Tax burden and composition

During the 1990's the tax burden in Latin America has increased significantly, on average (see figure 2). The revival of economic growth and design of better tax systems enabled fiscal revenues to recover strongly; 16 of the region's countries managed to increase central government tax revenue (see figure 3). Between 1990 and 2000, including social contributions, the increase reached 3 points of GDP, while excluding social contributions then the rise is 2 points of GDP. On average, the region registers a tax pressure of the Central Government Sector equivalent to 15% of GDP for year 2000, and 15.8% for 2001. Revenue growth has been particularly notable in VAT, and to a lesser extent among direct taxes. Social security contributions display wide disparities, because several of the region's countries reformed their pension system, which altered the public-private mix of social security financing and coverage.

Figure 2

LATIN AMERICA, CENTRAL GOVERNMENT TAX REVENUES 1980–2001

(Percentage of GDP)
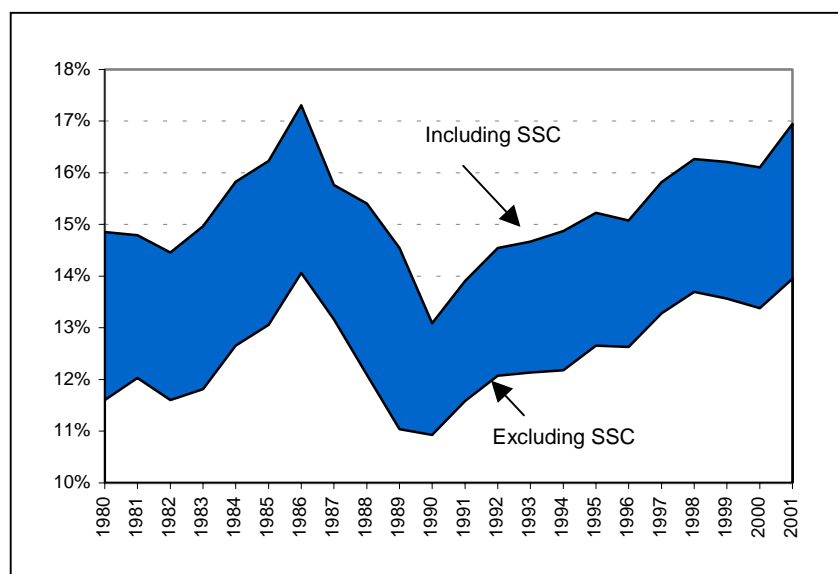
Source: ECLAC, based on official data.

Notes: For the period 1980-1989 there are no data available for Bolivia, Colombia, El Salvador and Nicaragua. Some data for Social Security Contributions (SSC) do not correspond to Central Government coverage.

Regional averages hide relevant differences between countries. These deviations are very significant in countries that show a larger weight in the relative share of social contributions such as Brazil, Colombia, Nicaragua, and Uruguay. For example, Brazil has a tax burden over 30% of GDP at the General Government level, even higher that the level registered for the United States, mainly explained by the high level of social security revenues. Argentina and Chile register numbers above average, reaching 20% of GDP, but in these countries the biggest part of social security is private. The income level of each country is also a variable that explains these differences; as shown in figure 4, the economies with a higher GDP per person have also a higher tax burden.

The sharp differences among countries can also be observed in relation to the revenue composition. Some general trends are depicted in figure 5. In Latin America income and capital gains taxes show a low collection level. During the 1990's, its relative weight has fluctuated between 2% and 3% of GDP. Major tax reforms have tended to favour duties easier to collect and with a larger tax base (such as VAT); reduce personal income tax (PIT) highest marginal rates, as well as a reduction in the average corporate income tax (CIT) rate, which have been compensated through an enlargement of the income tax base and an increase in the lowest marginal rates.

Figure 3
LATIN AMERICA, CENTRAL GOVERNMENT TAX REVENUES IN 1990 AND 2001
(Percentage of GDP)
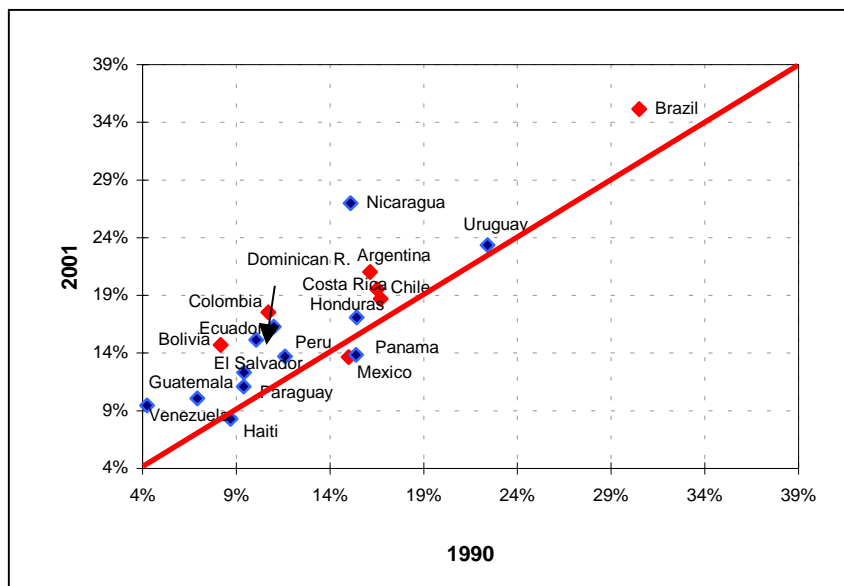
Source: ECLAC, based on official data.

Figure 4
TAXES AND GDP PER CAPITA IN 2000
(Percentage of GDP)
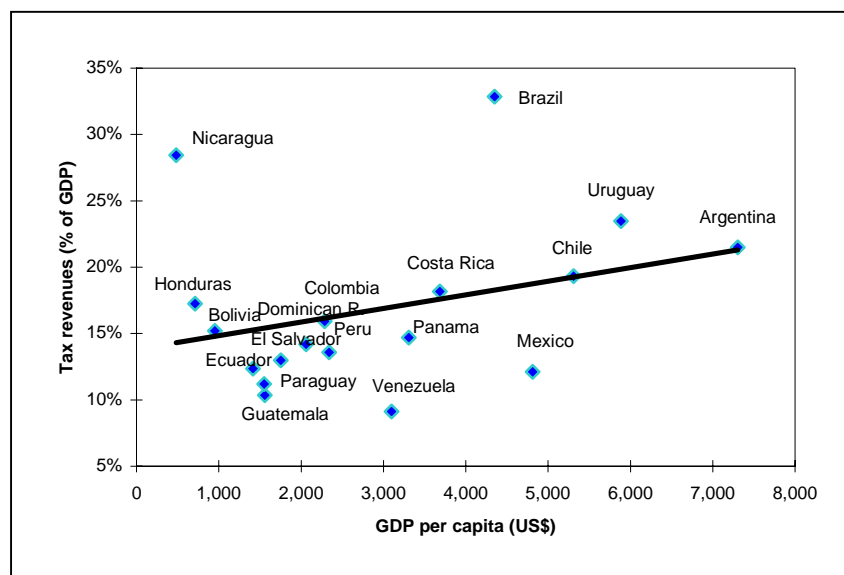
Source: ECLAC, based on official data.

Notes: Tax revenues data include Social Security Contributions and correspond to General Government coverage for: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, and Panama. Tax revenues data for Ecuador corresponds to 1999, and for Mexico 1998.

TAX BURDEN AND COMPOSITION OF TAX REVENUES IN LATIN AMERICA
Simple average, percent of total (left axis) and percent of GDP (right axis)
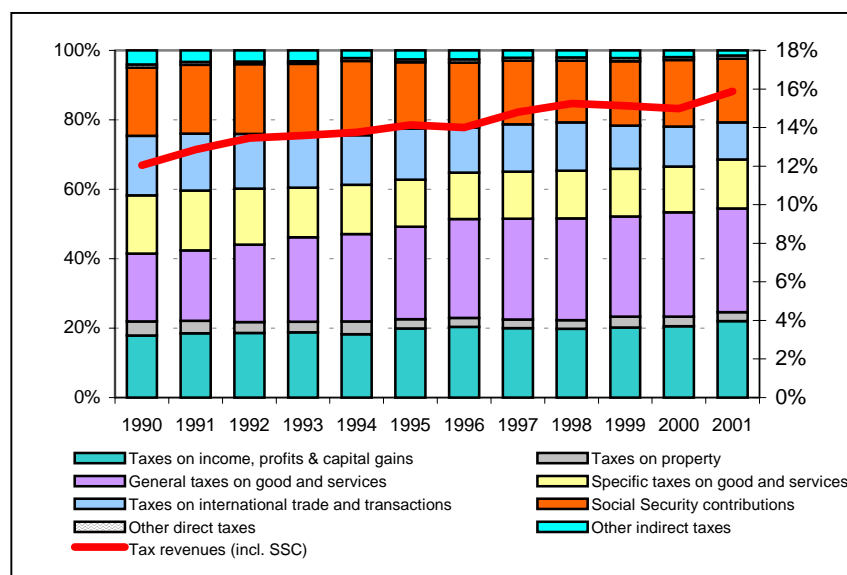
Source: ECLAC, based on official data.

Notes: In some cases data of social security contributions do not correspond to central government level.

Following the previous argument, the trend regarding PIT during the 1990's has been associated mainly with reducing the top marginal rates, increasing the lowest marginal rates, and the reduction in the number of taxable income brackets. Table 1 shows that since 1992 the average highest marginal rate has been reduced by six percentage points, while the average lowest rate has been increased by one point in the same period. The current structure is very different to the prevailing in the European Union, where PIT rates are significantly higher than in Latin America.

At the beginning of the nineties, most countries in the Region used different CIT rates depending on the economic sector. This practice allowed Government some degree of responsibility over economic resource allocation, which was not compatible with a market economy and contributed to a less efficient tax administration. During the decade this situation has been reverted, observing a clear tendency towards unification in the CIT rates (see table 1), which accelerated in the second half of the decade. Currently, only three countries keep a differentiated structure for this tax: Honduras, Paraguay, and Venezuela, and they have reduced their differences over time. When considering the Region's average, the dispersion between the highest and lowest rate goes from 26 percentage points in 1992 to only 2 points in 2001. With this performance the CIT structure assimilates itself to international standards.

Taxes on property have shown a systematic low collection; in 2000 the regional average was only 0.4% of GDP and adds up to a 2.9% of total government revenue. The only countries where this levy has a greater role is in Bolivia, Brazil, and Colombia, even though the numbers registered are not of great importance in the general structure of total government revenues. Explaining this condition could be the fact that most collection of property taxes are performed at the local government level, where tax administration capacities and inspection schemes are still very underdeveloped. There are several failures which undermine the local government collection capacity such as: the auto evaluation system by the owner, which incentives to declare a lower value of the property being assessed; the infrequent revaluation of unitary costs; the deficiencies and difficulties to create and keep updated the property cadastre; the ample range of excepted properties; and the high management cost for non-specialized tax administrations.

COMPOSITION OF INCOME TAX IN 2000
(Central Government, percentage of GDP)
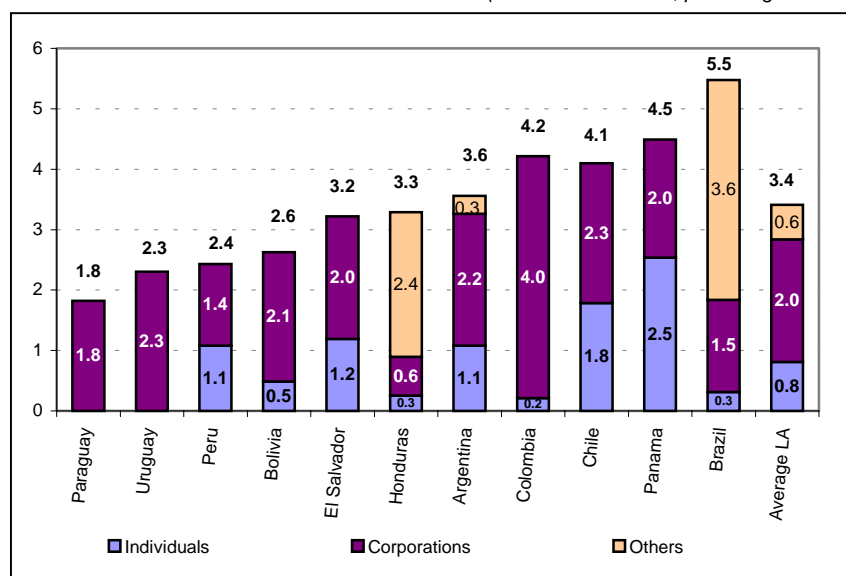
Source: ECLAC, based on official data.
Notes: Data for Argentina and Colombia correspond to 1999.

Table 1
INCOME TAX RATES FOR CORPORATIONS AND INDIVIDUALS
(Percentage)

	Corporations				Individuals			
	1992		Dec. 2002		1992		Dec. 2002	
	Min	Max	Min	Max	Min	Max	Min	Max
Argentina	20	20	35	35	15	30	9	35
Bolivia	0	0	25	25	10	10	13	13
Brazil	25	40	15	15	10	25	15	27.5
Chile	15	35	16	16	5	50	5	40
Colombia	30	30	35	35	5	30	0.13	22.92
Costa Rica	30	30	30	30	10	25	10	15
Ecuador	0	44.4	25	25	10	25	5	25
El Salvador	0	25	25	25	10	30	10	30
Guatemala	12	34	31	31	4	34	15	31
Honduras	0	40.2	15	25	12	40	10	25
Mexico	0	35	32	32	3	35	3	32
Nicaragua	0	35.5	30	30	8	35.5	10	25
Panama	2.5	45	30	30	3.5	56	4	30
Paraguay	0	30	25	30	0	0	0	0
Peru	0	30	27	27	6	37	15	27
Dominican Republic	0	49.3	25	25	3	70	15	25
Uruguay	0	30	30	30	0	0	0	0
Venezuela	20	67.7	15	34	10	30	6	34
Average Latin America	8.6	34.5	25.3	27.2	6.9	31.3	8.1	24.9
Average European Union	36.4	37.9	32.0	35.4	17.1	53.0	18.6	47.6

Source: Tanzi (2000) and Centro Interamericano de Administraciones Tributarias (CIAT).

Given the context of simplification and generalization of income tax, and the trade liberalization, which was accompanied by a reduction in trade tariffs, it was necessary for the countries of the region to search new ways to compensate the revenue reduction. The most appealed way to compensate was the wide introduction of value-added tax (VAT). In the 1960's Brazil and Uruguay were pioneers in the Region to introduce VAT in their tax codes; in the 1970's Argentina, Bolivia, Chile, Ecuador, Honduras, Nicaragua, Panama, and Peru followed suit; and in the 1980's the rest of the countries of the Region began implementing it, with the exception of Jamaica, El Salvador, Paraguay, and Venezuela, which adopt it in the 1990's.

The literature has amply reviewed the reasons to implement VAT as a major collection source. It should be stressed its wide tax base; tax neutrality in inter-temporal, international and national terms; and its relatively easy collection method, which compensates the management problems encountered by tax administrations. Compared with the previous sales tax, VAT has several advantages, such as generating information flows along the production, distribution, and sales process, which alleviates the tax auditing work. Also, the tax credit-debit mechanism generates incentives for complete tax returns by taxpayers, thereby reducing the needs for tax control.

Since its introduction, VAT has acquired a great importance becoming the main source of tax collection in the Region. Its relative weight has increased from 19.6% in 1990 to 31% in 2000; VAT collection in relation to GDP reached in 2000 a 4.4%. The countries that depend heaviest on VAT are Argentina, Chile, and Uruguay, which show a VAT tax burden above 7% of GDP, and rates that are specially higher compared to the rest of Latin American countries.[1] The main differences registered in the region relate to the tax base. For example, in some countries VAT is imposed generally on goods and services, other countries use as tax base all goods and some services, while some countries impose it only on goods. Nevertheless, the general trend has been to extend the tax base over time, leaving the least number of exceptions possible. Some differences can also be registered in the number of rates implemented, since in some countries there are different rates for some types of goods consumed, as is the case of Argentina, Colombia, Costa Rica, Honduras, Mexico, Nicaragua, and Panama.

The VAT basic rates have registered a generalized increase in the decade (see table 2), actually between 1994 and 2001 all the countries have increased or maintain the VAT rates. On average, the rates have grown in two percentage points. However, on the other hand the VAT compliance (measured as VAT collected in per cent of VAT rate multiplied by Final Private Consumption) is still relatively low in comparison to other countries, for 2001 the regional average VAT compliance reached only 53.2%.

Another outstanding trend has been the propensity to reduce multiple rates, where governments seek to achieve greater social equity by imposing lower rates to certain categories of highly demanded social products. The downside is that such structure creates higher administration costs, and incentives to generate greater tax evasion and elusion.

2.2 Estimation of VAT compliance and tax expenditures

Reducing tax evasion involves several benefits in terms of tax efficiency (whether the tax increases or reduces the overall welfare of those who are taxed) and tax equity (if the tax is fair to similar taxpayers), since compliant taxpayers are in disadvantage in comparison to tax evaders. Furthermore, the reduction of tax evasion would increase tax collection and improve resource allocation. In the case of VAT, there are several mechanisms used to evade file returns which sub-

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[1]   The numbers for Argentina and Brazil are referred to General Government level. For Argentina, VAT is "co-participated" which means that federal and regional governments share revenues from this tax. In Brazil, the "ICMS" tax is collected –and spent- by regional Governments.

declare the debits or over-declare the credits. In all tax evasion analysis it must be considered that VAT evasion carries together income tax evasion, due to the fact that sub-declaring sales (or over-declaring purchases) reduces the corporate or personal income tax base.

Estimating VAT compliance does not allow to account separately tax evasion, elusion, and tax expenditures. Figure 7 and Table 2 show the VAT compliance for 18 countries on year 2001. The regional average is 53.2% of the relevant tax base, namely private final consumption. However, the results are diverse; four countries have a record below 40% and five countries exhibit a tax compliance above 60%.

Table 2
VAT RATES AND COMPLIANCE
(Percentage)

		VAT Rates			VAT compliance				
	Initial year	1992a/	1994b/	1997c/	2002d/	1992	1994	1997	2001
Argentina e/	1975	18	18	21	21		67.1	60.6	52.4
Bolivia	1973	14.92	14.92	14.92	13	31.5	40.6	50.2	49.3
Brazil e/	1967	20.48	20.48	20.48	20.48	43.3	63.8	57.8	71.0
Colombia	1975	12	14	16	16	46.0	44.4	46.1	39.8
Costa Rica	1975	8	8	15	13	77.5	69.4	47.1	55.6
Chile	1975	18	18	18	18	74.5	71.9	68.9	69.8
Ecuador	1970	10	10	10	12	44.5	49.3	58.6	86.5
El Salvador	1992	10	10	13	13	46.5	56.2	52.6	51.5
Guatemala	1983	7	7	10	12	44.6	43.0	48.2	50.1
Honduras	1976	7	7	7	12	62.6	69.9	83.4	61.9
Mexico	1980	10	10	15	15	37.7	37.9	31.9	34.3
Nicaragua	1975	10	10	15	15	24.7	33.3	26.4	32.3
Panama	1977	5	5	5	5	63.7	69.0	69.7	53.9
Paraguay	1993	10	10	10	10	23.2	45.0	53.7	51.7 f/
Peru	1976	18	18	18	16	27.1	46.4	51.8	50.6 f/
Dominican R.	1983	6	6	8	12	42.5	32.3	46.9	64.5
Uruguay	1972	...	...	...	23	…	…		42.7
Venezuela	1993	...	10	16.5	15.5	…	29.0	39.6	39.8
Average		**11.4**	**11.8**	**13.7**	**14.4**	**46.0**	**51.1**	**52.6**	**53.2**

Source: Tanzi (2000) for rate information of 1992 and 2000, CIAT for rate information of 2002.

Notes: VAT collection corresponds to central government level. VAT compliance is calculated as follows: $x = \dfrac{VATc}{PFC * VATr}$, where VATc represents VAT collection; VATr represents VAT rate; and PFC represents Private Final Consumption.

a/ July of 1992. b/ March of 1994. c/ June of 1997. d/ December of 2002. e/ VAT collection correspond to State Governments level. f/ 2000

Figure 7
VAT COMPLIANCE IN 2001
(Percentage)
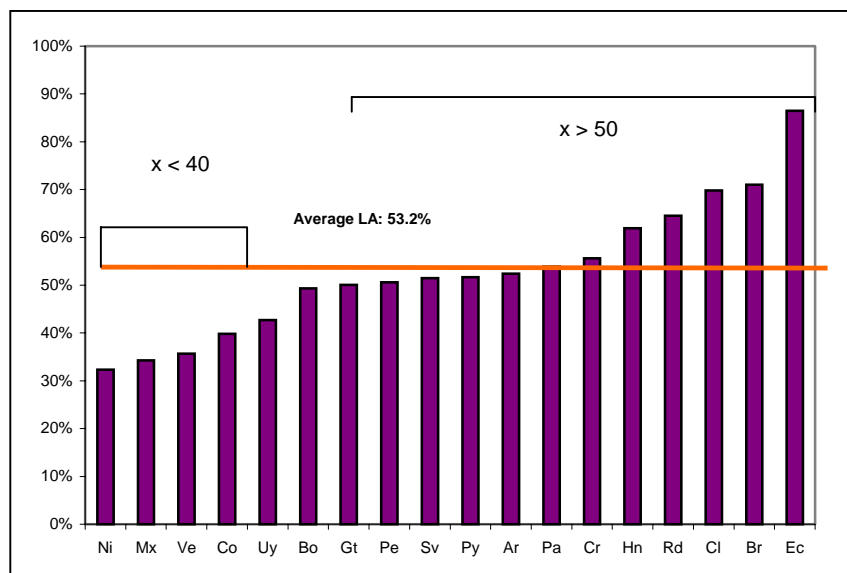
Source: Calculations of the authors based on data from ECLAC.

Note: Collection VAT data for Argentina and Brazil correspond to General Government coverage. Data for Panama and Paraguay correspond to 2000.

Tax expenditures are fiscal instruments which governments use as an alternative to direct spending. However, because of its nature it has several problems: horizontal inequity; lack of budgetary control; fiscal transparency problems; and management difficulties, and are defined as the amount of income that Government does not receive for giving a tax treatment which deviates from the general tax law. Tax expenditures are aimed at benefiting, promoting, or encourage certain activities, sector, region or group of taxpayers. Usually they take the form of exemptions or tax deductions, differentiated tax rates, and accelerated depreciation. Tax expenditure seeks to promote certain types of consumption or "desirable" activities. The never-ending question on these matters is whether it is possible to achieve better results and lower costs at promoting these behaviours in a more targeted way through specific programs.

The surveys on tax expenditures in Latin America show that the magnitude of tax expenditure is high; estimations range from 7.4% of GDP in Colombia to 1.5% of GDP in Brazil (see Table 3). Depending on the country there is a different emphasis through which channel tax incentives are granted. In the case of Chile and Brazil tax expenditures rely heavily on direct taxes, while Argentina, Colombia, and Uruguay use in a greater proportion indirect taxes. A caveat must be made in relation to the above estimations, since there is great heterogeneity in the methodology and coverage used by each country. According to Simonit (2002) the majority of Latin American countries opted for the ex-post method to estimate tax expenditures.

Table 3
TAX EXPENDITURES IN SELECTED LATIN AMERICAN COUNTRIES
(Percentages)

Country	Year	Total tax expenditures *(% of GDP)*	Tax expenditures, direct taxes *(% of total)*	Tax expenditures, indirect taxes *(% of total)*
Argentina	2001	3.0	29	64
	2002	3.1		
Brazil	2001	1.5	66	17
Chile	1998	3.8	71	29
	2001	4.4		
Colombia	1998	7,4	35	65
Guatemala	2001	2.0		
Mexico	2002	5.3	51	49
Peru	2003	1.9	10	90
Uruguay	1999	6.6	20	76

Source: Simonit (2002) and ECLAC based on official information.

2.3　Evolution of effective tax rates

As was mentioned in the previous section, tax revenue increased by 3% during the decade. It is important to highlight what are the origins for such increase. This analysis is based on the indicators proposed by Mendoza *et al.* (1994), adapting them to the national accounts data and tax collection information available, as performed by the European Commission in 2001.[2] The estimations on the effective tax rate on consumption, labour, and capital show the tax structure underlying trends, as well as the existing differences in these rates among countries.

The indicators proposed by Mendoza *et al.* link tax revenue to the relevant national accounts items. The Effective Tax Rate on Capital (**K**) shows the relationship between taxes on property, capital gains, and corporate income tax to the net operating surplus of the overall economy. The Effective Tax Rate on Labour (**L**) shows the relationship between taxes levied on the work force and social security contributions to the wages and salaries of dependent employees. Finally, the Effective Rate on Consumption (**C**) compares VAT and excise taxes to private and public consumption.

Using the above methodology it can be shown on Figure 8 that during the decade there is an increase in the effective tax rates on consumption (+1.9 percentage points), labour (+3.8 percentage points), and capital (+1.2 percentage points). These trends evidence that changes in the tax structure detailed in previous sections were not driven by changes in the relevant tax bases, but rather by changes in the tax rates affecting each economic factor.

In comparison to the European Union, the regional averages for K, L, and C are substantially lower. While the regional average rate on consumption is 60% of the one registered in the European Union, the biggest difference is registered on work related costs (CL in the graph) where the European Union average is seven times higher than the Latin American average. Disaggregating labour costs shows that effective tax rates on work related costs explained only 20% of the effective rate on labour, and that they remained relatively stable along the decade (around 2%), while non-work related costs have increased by two percentage points. This increase can be mostly explained by the social security reforms implemented.

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[2]　The effective rates of consumption include the 19 countries included of the Region. For the rest of the indicators there is full information available from Bolivia, Brazil, Colombia, Chile, El Salvador, Honduras, Panama, Paraguay, and Peru.

Figure 8
EFFECTIVE TAX RATES, 1990-2000
(Percentage)
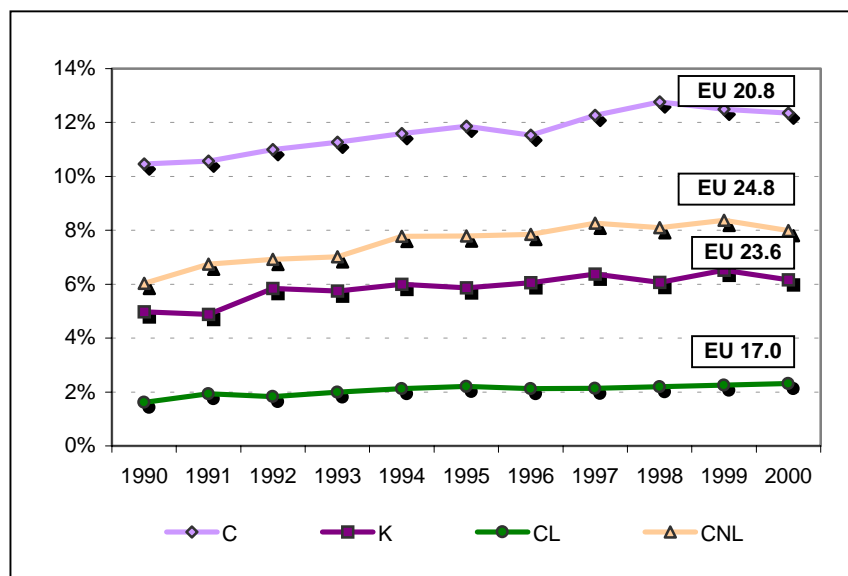
Source: Calculations of the author based on data from ECLAC.

Notes: This analyse is based on the indicators proposed by Mendoza *et al.* (1994):

$$C = \frac{Indirect\_tax\_revenues}{\Pr ivate\_Consumption + Government\_Consumption - indirect\_tax\_revenues}$$

$$K = \frac{Corporative\_Taxes\_on\_Income + Taxes\_on\_property}{Net\_Operating\_Surplus\_of\_the\_overall\_economy}$$

$$CNL = \frac{Social\_Security\_Contributions}{Wages}$$

$$CL = \frac{Taxes\_on\_work\_force}{Wages}$$

A country breakdown of L shows great differences on the non-work related labour costs. Brazil exhibits the highest contribution on this category (33.3% in 2000). However, on the work related labour costs there are no significant differences among countries. Indirect taxation shows the highest effective tax rates, reaching above 12% from 1997 to 2000. Even though VAT taxes are the most important revenue in the Region, there are still strong differences between countries. Finally, effective tax rates on capital show a relevant increase, probably related to the simplification of nominal tax rates, and greater control of corporate taxpayers by tax administrations.

III. Tax stabilization in Latin America

Despite the substantial progress of tax systems in the last decade, there remain crucial issues that will have to be addressed in the near future. In general terms, the situation is puzzling: the deceleration of economic growth and the reversion of capital flows has deteriorated the public finance situation, especially in terms of refinancing debt at reasonable interest rates. In this condition, the "tax gap" is significant in some cases, as it is shown in the next calculations.

3.1 The need for fiscal adjustment (once again)

The economic reform process since the eighties has implied a reduction of the weight of the cycle in the economy, when measuring public sectors as a whole. Nevertheless, the public spending of the Central (and General) Government grew four points of GDP during the 1990s: from 16.6% of GDP in 1990 to 20.7% in 2001. The reasons of this dynamics are diverse, but we can identify at least four structural sources of spending:

- There may be a positive association, as Rodrik (1998) has stressed, between more open economies and government consumption. In the case in Latin America, this seems to be the case in the nineties, as shown in figure 9. The usual explanation is that the Government has a function of isolation of the economy against external volatility.

- The decentralization process in some countries (Brazil, Colombia, Argentina) has ensured sub-national "spending rights", but not the corresponding financing;

- The social security reforms have been significant, both in the destabilizing process of privatization of pension funds in Chile, Peru, Argentina and Chile, and in the generalization of "social security rights" in Brazil and Colombia;

- The "snowball effect" of public debt has risen. Real interest rates on public-sector debt have been much higher than economic growth rates, particularly in recent years, and this has endangered public-sector solvency. As a result, a large and often growing proportion of fiscal revenues has been absorbed by interest payments in some countries, like Argentina, Brazil, Colombia, Costa Rica and Ecuador (see figure 10). This problem is magnified with the very high proportion of liabilities that are set in US dollars. The countries of Latin America cannot borrow in domestic money abroad, phenomenon that is known as "the original sin" (see, for example, Céspedes, Chang and Velasco, 2002).

Figure 9
RELATION BETWEEN OPENNESS AND PUBLIC SPENDING, 1990-2001
(Percentage of GDP)
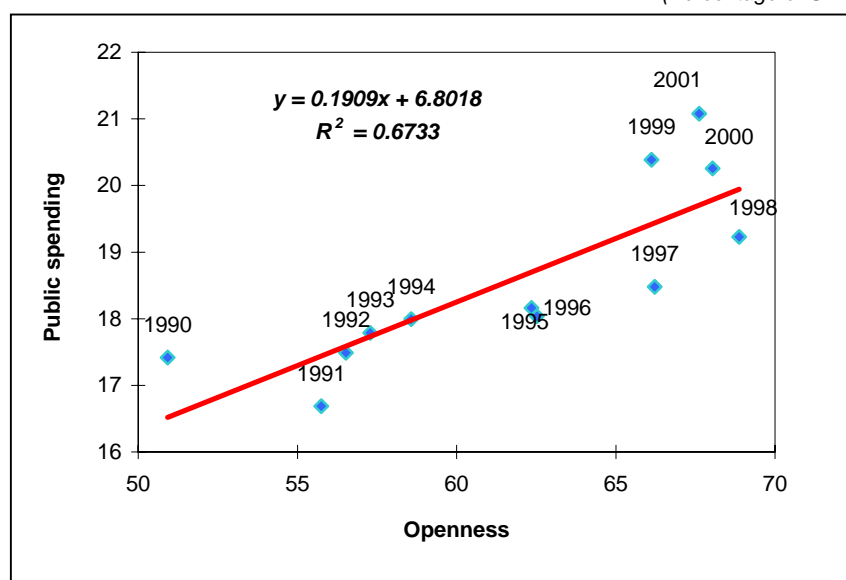
Source: ECLAC

The target of stabilizing or reducing public debt has proven to be very difficult in the context of highly volatile growth rates, exchange rates and interest rates. One way to look at the magnitude of this problem is to estimate the so-called ex-post short-term tax gap (see Blanchard /et al./, 1990), which is the primary surplus (or deficit, in few cases) that the public sector needs to stabilize its debt at the previous level. In table 6 we make these estimations for 19 countries of Latin America.[3] In some of them (Argentina, Bolivia, Colombia, Costa Rica, Paraguay, Peru) there is a systematic negative difference between effective and required primary balance, which results in a dangerous dynamic of debt accumulation. A combined process of systematic generation of primary surplus and of enhancement of financing conditions seem to be the only way to ensure medium term sustainability of public debt.

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[3]   Blanchard *et al.* (1990) estimate also medium-term tax-gap indicators forecasting the path of crucial variables as output, government consumption and transfers for each OECD country. The intention here is simply to highlight the importance of macroeconomic conditions in public debt dynamics, and not to estimate the exact situation of sustainability in Latin American countries.

Figure 10
LATIN AMERICA: DEBT INTEREST PAYMENTS
(Percentage of GDP)

A. 1990-1991 Average
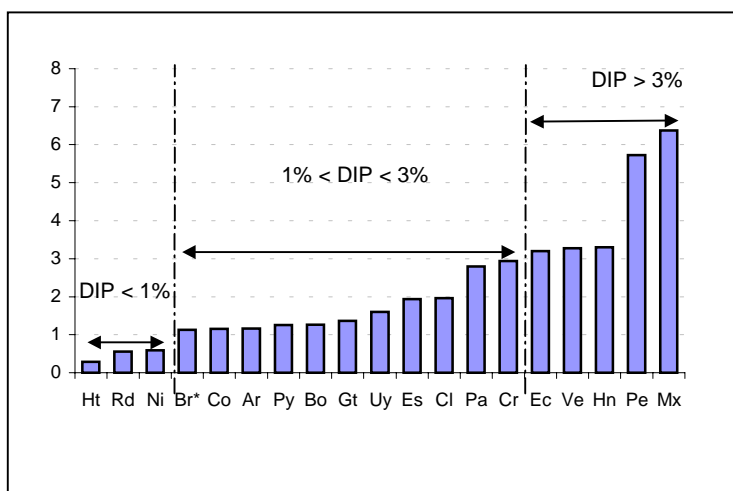
B. 2000-2001 Average
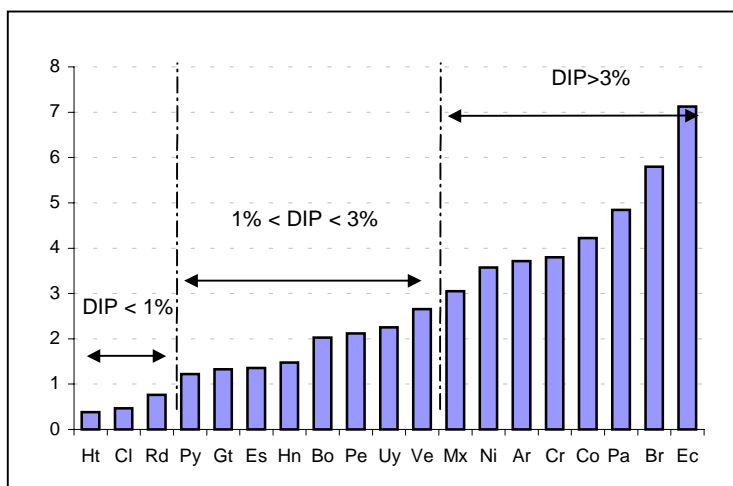
Source: ECLAC.

Notes: Institutional coverage: Central Government. DIP means Debt Interest Payments. * 1991.

3.2 The pro-cyclical bias of fiscal policy: evidence for Latin America

In a context of fiscal programming with an annual horizon and public revenues that closely follow the macroeconomic cycle, targeting the short-term deficit rather than the structural deficit has given rise to pro-cyclical public expenditure policies. In Latin American countries, during the nineties, many positive but transitory episodes were considered as permanents, while the negative ones were usually considered as short-lived. This behaviour has produced in some countries a accumulation of public debt ratio even in periods were output growth was above trend. In the future, it seems crucial to face this "optimistic bias" with explicit norms to ensure consistent and transparent fiscal policy.

Graphically, the asymmetry of discretionary fiscal policies can be shown comparing the changes in the cyclically adjusted balance with the output gap, measured as a percentage of trend GDP.[4] If automatic stabilizers had operated symmetrically, in the sense that discretional policies are neutral in the cycle, the dots would be distributed along the X-axis. In the case of anti-cyclical policies, dots should be found in bottom-left and top-right quadrants. If dots concentrate in top-left and bottom-right quadrants, discretional policies are pro-cyclical.

In Latin America (figure 11), the analysis of 45 episodes of changes of the global cyclically-adjusted balance (CAB) reveals that 12 of them were neutral;[5] in 25 cases fiscal policy had a pro-cyclical behaviour, and in only 8 the result was counter cyclical. More precisely, in thirteen of the seventeen episodes in which GDP grew above its trend the change in CAB was negative, reflecting an expansionary fiscal policy.

Table 4
TAX GAP INDICATOR
(Percentage of GDP)

		1995	1996	1997	1998	1999	2000	2001	2002
Argentina	Primary balance	-0.2	-1.3	0.5	0.5	-0.1	1.3	0.2	1.4
	Required Primary balance	2.5	-0.3	-0.9	0.9	4.2	3.7	6.0	7.6
	Difference	-2.8	-1.0	1.4	-0.4	-4.3	-2.5	-5.8	-6.2
	Debt Stock Variation	2.4	1.9	-1.2	3.1	5.4	2.1	8.7	80.6
Bolivia	Primary balance	0.9	0.9	-1.0	-1.4	-2.1	-2.9	-4.9	-5.7
	Required Primary balance	-2.0	-1.6	-1.7	-1.6	1.3	0.1	1.4	0.4
	Difference	2.9	2.5	0.7	0.3	-3.4	-3.0	-6.2	-6.1
	Debt Stock Variation	-4.3	-9.0	-6.7	-1.3	3.1	0.1	7.4	5.7
Brazil	Primary balance	-2.4	-0.7	0.3	0.8	2.4	2.1	2.4	2.7
	Required Primary balance	1.7	1.3	1.0	5.7	5.3	2.0	2.8	2.2
	Difference	-4.1	-2.0	-0.7	-4.8	-2.9	0.2	-0.5	0.6
	Debt Stock Variation	0.4	2.6	2.8	6.3	5.1	0.9	1.8	2.8
Chile	Primary balance	3.0	2.6	2.2	1.0	-1.0	0.6	0.2	-0.5
	Required Primary balance	-1.7	-0.8	-0.6	0.2	0.4	-0.1	0.1	0.0
	Difference	4.8	3.4	2.8	0.8	-1.4	0.7	0.1	-0.5
	Debt Stock Variation	-7.6	-4.4	-2.1	-0.2	1.0	-0.6	2.3	0.3

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[4]   Recent studies have shown that there was also a pro-cyclical bias in EMU countries before the Maastricht Treaty (See for example European Commission, 2001). We use here the same methodology.

[5]   The episodes where there were no significant changes in the CAB even with huge changes of the output gap are: Colombia (99-00), Chile (92-98), Bolivia (94-00), Brazil (90-94), Guatemala (92-00), El Salvador (93-00), Mexico (95-97), Panama (92-00), Paraguay (93-98), Peru (94-00), Dominican Republic (90-96 and 97-00).

Table 4 (continuation)

		1995	1996	1997	1998	1999	2000	2001	2002
Colombia	Primary balance	-1.9	-2.9	-2.4	-2.4	-4.3	-2.1	-2.4	-2.9
	Required Primary balance	0.6	1.6	1.5	2.8	4.1	3.2	3.4	3.1
	Difference	-2.5	-4.5	-3.9	-5.2	-8.4	-5.3	-5.8	-6.0
	Debt Stock Variation	0.0	2.0	0.8	5.2	6.7	7.8	8.4	0.4
Costa Rica	Primary balance	0.8	0.6	0.9	0.7	1.4	0.6	1.1	0.3
	Required Primary balance	3.3	4.4	2.1	0.8	0.6	2.8	3.7	3.2
	Difference	-2.5	-3.8	-1.3	-0.1	0.8	-2.2	-2.6	-2.9
	Debt Stock Variation	0.9	4.9	-2.7	8.8	-3.7	1.7	1.7	1.4
Ecuador	Primary balance	1.9	1.4	3.3	-0.1	4.7	7.6	3.2	3.1
	Required Primary balance	-0.7	0.0	-0.6	1.6	8.2	1.1	-1.0	-0.5
	Difference	2.6	1.4	3.9	-1.7	-3.4	6.5	4.2	3.6
	Debt Stock Variation	-13.0	-1.0	-3.8	4.7	35.4	-17.7	-16.3	-8.3
El Salvador	Primary balance	0.8	-0.2	0.2	-0.7	-0.9	-0.9	-3.0	-1.6
	Required Primary balance	-2.6	0.4	-1.0	-0.6	-0.2	0.5	0.4	0.5
	Difference	3.4	-0.6	1.2	-0.1	-0.7	-1.4	-3.5	-2.1
	Debt Stock Variation	1.1	-9.1	-6.3	-7.7	0.1	0.8	2.0	-3.5
Guatemala	Primary balance	0.5	1.2	0.0	-1.1	-1.5	-0.5	-0.5	0.0
	Required Primary balance	0.2	0.7	0.2	0.4	0.8	0.7	1.0	-0.3
	Difference	0.3	0.4	-0.2	-1.5	-2.3	-1.2	-1.5	0.3
	Debt Stock Variation	-2.2	0.2	0.0	-0.1	2.9	-0.1	0.5	-1.2
Haiti	Primary balance	-4.1	-1.6	0.2	-0.4	-0.6	-1.7	-2.5	-2.4
	Required Primary balance	---	---	-0.7	-0.5	-0.4	-0.3	0.6	0.8
	Difference	---	---	0.9	0.2	-0.1	-1.4	-3.1	-3.2
	Debt Stock Variation	---	---	---	---	-0.6	-1.2	-3.4	6.6
Honduras	Primary balance	-2.8	-2.6	-2.1	-1.8	-4.2	-5.7	-4.7	-3.7
	Required Primary balance	0.3	0.3	-0.7	0.2	3.3	-2.1	-0.6	-1.3
	Difference	-3.1	-2.9	-1.4	-2.0	-7.5	-3.7	-4.2	-2.4
	Debt Stock Variation	-7.6	-4.8	-1.9	-7.6	4.5	-7.5	-4.6	2.0
Mexico	Primary balance	3.2	3.5	2.5	1.1	1.6	2.0	2.2	0.8
	Required Primary balance	5.2	1.9	1.5	1.2	2.2	1.5	3.0	2.4
	Difference	-2.0	1.6	1.0	-0.2	-0.6	0.5	-0.8	-1.6
	Debt Stock Variation	11.9	-4.1	-4.9	0.5	-0.1	-2.7	0.2	-0.2
Nicaragua 1/	Primary balance	3.6	1.5	3.5	2.9	-2.1	-4.3	-7.7	---
	Required Primary balance	-17.2	-17.9	-7.7	-9.2	-21.0	-15.7	-4.5	---
	Difference	20.9	19.4	11.2	12.0	18.9	11.4	-3.1	---
	Debt Stock Variation	-66.3	-184.2	105.7	-14.4	-23.8	-20.2	-4.6	---
Panama	Primary balance	3.8	3.0	2.8	-1.4	1.7	3.2	2.7	2.2
	Required Primary balance	1.7	1.2	-0.6	-0.4	1.2	2.3	4.2	3.8
	Difference	2.1	1.8	3.4	-1.0	0.5	0.9	-1.5	-1.6
	Debt Stock Variation	-2.7	20.9	-4.2	-1.2	6.0	-4.6	6.2	-21.6
Paraguay	Primary balance	0.6	0.5	-0.1	0.7	-1.9	-1.9	0.9	-0.8
	Required Primary balance	0.4	0.5	0.3	0.8	0.8	1.3	0.7	1.4
	Difference	0.2	0.1	-0.4	-0.1	-2.7	-3.2	0.2	-2.3
	Debt Stock Variation	2.8	-0.3	0.6	2.6	8.1	5.0	3.3	10.1
Peru	Primary balance	0.0	1.0	0.9	0.8	-1.0	-0.6	-0.7	-0.2
	Required Primary balance	-1.3	1.2	-1.3	2.0	1.7	0.8	2.1	-0.4
	Difference	1.3	-0.2	2.2	-1.2	-2.8	-1.3	-2.7	0.1
	Debt Stock Variation	-5.6	-2.7	-13.3	8.4	6.8	-1.8	-0.3	2.2

Table 4 (concluded)

|		1995	1996	1997	1998	1999	2000	2001	2002
Dominican R.	Primary balance	2.1	0.5	1.4	1.1	0.0	1.8	1.2	1.1
	Required Primary balance	-0.7	-1.9	-1.8	-1.2	-1.2	-0.8	0.3	0.3
	Difference	2.8	2.4	3.3	2.4	1.3	2.6	0.9	0.9
	Debt Stock Variation	-4.2	-4.9	-4.9	-1.4	-1.4	-2.1	0.7	1.4
Uruguay	Primary balance	-0.6	-0.6	-0.2	0.2	-2.0	-2.0	-1.9	-0.6
	Required Primary balance	---	---	---	---	---	2.5	3.5	4.6
	Difference	---	---	---	---	---	-4.5	-5.4	-5.3
	Debt Stock Variation	---	---	---	---	---	5.3	6.9	38.6
Venezuela	Primary balance	-0.6	-11.7	-6.5	1.3	-3.8	-7.3	1.0	-3.9
	Required Primary balance	---	---	-0.3	2.7	4.8	1.9	2.6	7.4
	Difference	---	---	-6.2	-1.4	-8.6	-9.2	-1.6	-11.3
	Debt Stock Variation	---	---	-11.0	-3.1	-1.3	-1.1	2.6	9.2

Source: Calculation of the authors based on data from ECLAC. Coverage for Primary Balance is Central Government. Coverage for Public Debt is Central Government except Brazil (Federal Government and Central Bank), Honduras (Public Sector), Paraguay, Uruguay and Dominican Republic (only external debt of Central Government).

Notes: The Required Primary Balance was calculated multiplying the difference between the public debt implicit interest rate and the real growth rate of the economy with public debt stock of the previous period. The "Difference" corresponds to the difference between the effective Primary Balance and the Required Primary Balance.

1/ Results presented here for Nicaragua can be explained by high levels of debt stock and low levels of interest payments.

When the economies grew below GDP trend, the change in CAB was positive in twelve of the sixteen episodes, with a restrictive fiscal policy.[6] The conclusions are similar when the analysis is made in terms of cyclically-adjusted primary balance. These exercises show the usual behaviour of fiscal authorities in Latin America, which is not very different of other countries when there is no counter-cyclical rule.

Figure 11
PRO-CYCLICAL EPISODES IN LATIN AMERICAN COUNTRIES, 1990-2001
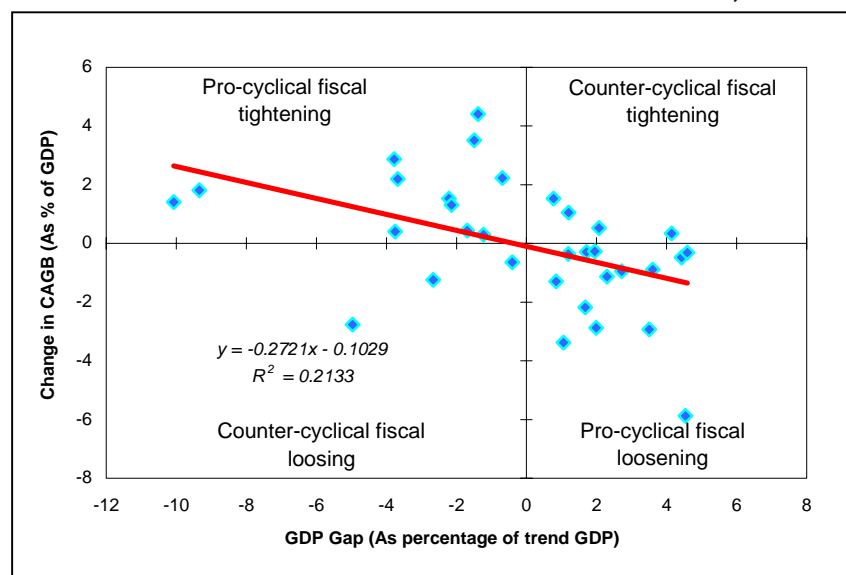
Source: Calculations of the authors based on data from ECLAC.

Note: CAGB: Cyclically-adjusted global balance. The graph only includes episodes where over at least two years the absolute values of the annual average output gap and of the annual average change in the cyclically-adjusted global balance was bigger than 0.25% of trend GDP.

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[6] In this case, countries had to adjust anyway, what we can call a result more than a policy.

The countries that gained degrees of freedom during the nineties by diminishing its public debt are better prepared today to deal with the reversion of the cycle. As it can be seen in figure 12, the dispersion of the values of the sovereign debt spread within Latin American countries is quite striking, reflecting the fact that financial contagion is somewhat under control.[7] The market is able to discriminate, essentially on the basis of the public debt stock.

Figure 12
SPREAD FOR SELECTED COUNTRIES
(EMBI index)
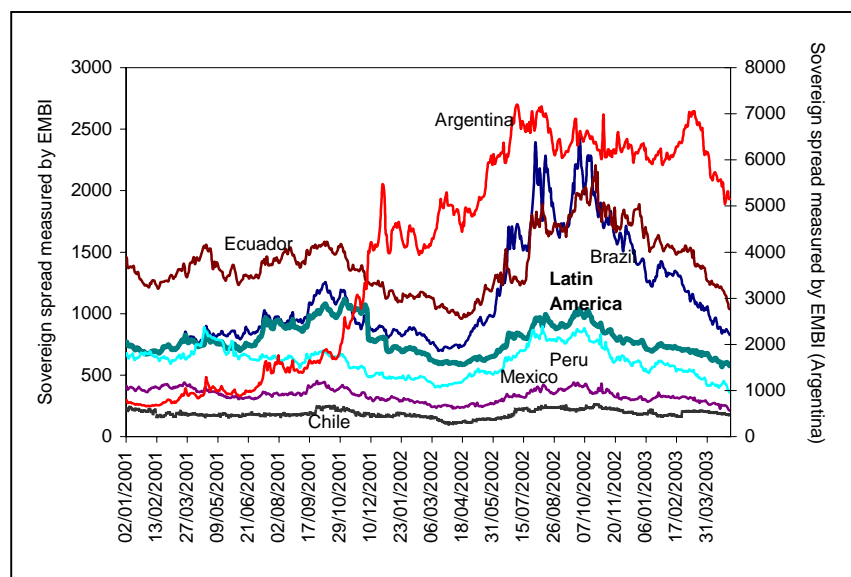
Figure 13 compares, for the 45 episodes analyzed, the position of the economies in the cycle with the changes in public debt at the Central Government level. We can identify 15 anti-cyclical episodes, where the "dividend of growth" was spent in the reduction of public debt: Chile (1992-98), Ecuador (1991-98), Peru (1994-2000), Mexico (1990-94 and 1998-2001) and Venezuela (1991-93 and 1997-98). Other periods of public debt reduction occurred with a negative output gap, especially in Dominican Republic (1990-96), Uruguay (1990-91) and Paraguay (1990-91). In various episodes public debt grew heavily in good periods, which explains the recent difficulties (or even collapse) of public finance. The cases of Argentina (from 1993) and Uruguay are very clear. To a lesser extent, Brazil (1995-98), Colombia (1994-98), Costa Rica (98-01) and Paraguay (1993-98) did not manage to control debt dynamics in the context of positive output gaps.

The complete absence of symmetry in the management of public finance is noteworthy. For example, the countries that succeeded to reduce public debt in good times did not permit a debt-smoothing path in bad times. This is a behaviour that is inverse of what is found in the literature, some kind of "surplus bias". In order to ensure credibility, the fiscal authorities tend to eliminate the operation of automatic fiscal stabilizers, even when there are no debt problems.[8]

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[7]   This is only one indicator; the reversion of capital flows to the region is widespread, see ECLAC (2002).

[8]   In some countries, even the concept of automatic stabilizers is inverse: once the target of public balance is set, any reduction of fiscal incomes are immediately corrected by expenditure cuts, in order to guarantee the stabilization of the economy!

Figure 13
GDP GAP AND CHANGE IN PUBLIC DEBT STOCK, 1990-2001
(Percentage)
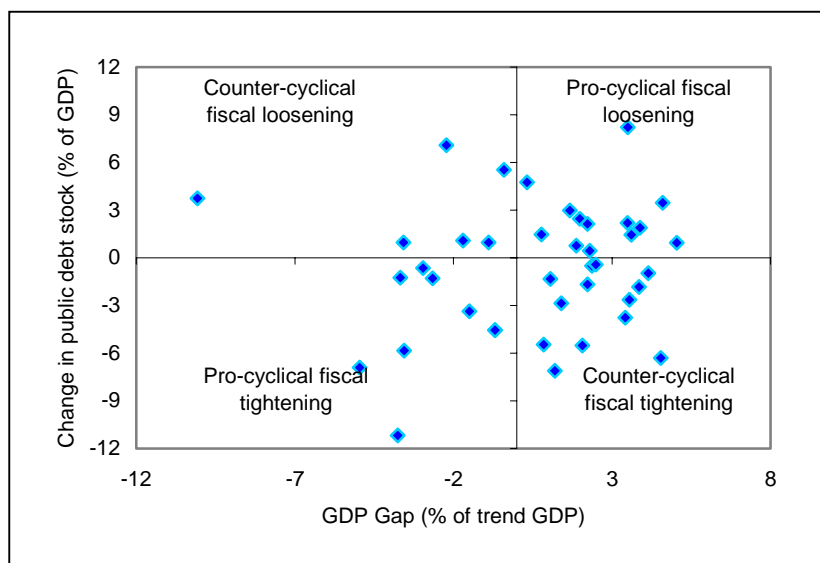

Source: Calculations of the authors based on data from ECLAC.

Note: The graph only includes episodes where over at least two years the absolute values of the annual average output gap and of the annual average change in public debt stock was bigger than 0.25% of trend GDP.

The pro-cyclical reflex is not only usual in expansions; many times the target of public balance is more important than output growth in the context of IMF-supported programs in Latin America.[9] The recent experience of Chile[10] has shown that it is possible to make tax smoothing by accepting higher than expected deficits without loosing market credibility. Of course, this premium is explained by the very low stock of public debt in the country.

These simple calculations show that dynamic consistency of fiscal policy is not spontaneous, even with the strong hypothesis of responsible discretionality. But the need for transparency is growing. In the recent debate of OECD countries the norm of the free operation of automatic stabilizers is widely accepted for the conduct of fiscal policy (see, for example, OECD, 2000, EMU, 2002, Heller, 2002). For Latin American countries, ECLAC (1998) has recommended the use of a structural indicator of public balance for the orientation of fiscal policy. More recently, the World Bank is promoting the adoption of cyclically adjusted rules for the conduct of fiscal policy, in order to enhance the credibility of the countries of the region. A traditional argument against this type of rules in developing countries is that it is necessary to obtain fiscal equilibrium before adopting counter-cyclical criteria. Nevertheless, it should not be imperative to complete fiscal consolidation to introduce at least indicators that can harmonize medium term sustainability with the remotion of the pro-cyclical behaviour of fiscal policy, especially in good times. The definition of the structural target depends essentially on the stock of public debt and the magnitude of contingent liabilities, and remains a domestic debate.

The problem is not only to set rigid fiscal targets of deficit or debt. Fiscal rules that sets only numerical targets, what we could call first generation rules, does not remove the pro-cyclical

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[9]   This is not indeed the issue of this paper. However, readers can find interesting discussions concerning structural conditionality and the effects of fiscal adjustments in the IMF web site.

[10]   The rule of a structural fiscal surplus of 1% of GDP adopted in 2000 defines public expenditure growth in terms of output trend, isolating this way the expenditure program from transitory fluctuations of fiscal incomes. This anti-cyclical design of fiscal policy is possible because of the systematic reduction of public debt during the nineties.

behaviour, as the recent experience in most Latin American countries has shown.[11] If the purpose of fiscal rules is to ensure the dynamic consistency of fiscal policy, reducing debt in good times and hence permitting Governments to access to debt at a reasonable interest rate in recessive periods, "second generation" fiscal rules has to include medium term programming, prudent macroeconomic assumptions and some explicit treatment of the "dividend of growth", the destination of public incomes when they are superior to the initial budget programming.[12]

Hence, fiscal rules in the Latin American context requires substantial institutional developments, especially of the capacity to transform sensitivity analysis of the effects of crucial macroeconomic variables in routine budgeting procedures within the administration. Any fiscal rule has to take into account three main aspects: a medium term target (and the path to meet it), exception clauses when there are unforeseen macroeconomic fluctuations, and some room of manoeuvre for dealing with persistent recessive situations (see Buti, Franco and Ongena, 1997 for a discussion).

3.3 The cyclical safety margin of fiscal balance

Variation in a component of public income or expenditure is cyclical when it is due to the difference between the observed product and the trend product. In the OECD methodology (Giorno et al. 1995), the deficit is broken down into a cyclical component and a structural one. The GDP gap is calculated as a percentage of the potential GDP, so that the cyclical balance is positive when the effective GDP is greater than the trend GDP and negative when it is smaller than it. Expressed as a percentage of GDP, the structural deficit is obtained from the difference between the global deficit and the cyclical deficit. The idea is that the structural or discretional deficit constitutes a suitable indicator of the fiscal trust: that is to say, the direction fiscal policy is taking.

In the case of many Latin American countries, this information is not enough, because there are many sources of non-tax income, ranging from the profits of public enterprises that export commodities to the income from privatization operations; furthermore, the variation in tax income is also due to other variables, such as inflation. For this reason, the concept of the structural deficit, as defined earlier, may not be a good indicator of the trust of fiscal policy. Hereinafter, we will use the concept of cyclically adjusted balance with the same methodology developed in the European Commission (1995).

Nonetheless, fixing deficit targets which are independent of other short-term oscillations (such as commodity prices) is of prime importance. It is also necessary to define what is "normal" for these forms of non-tax income. On the expenditure side, total elasticity in the OECD countries varies as a function of the size of the transfers provided for under the unemployment insurance legislation. These protection mechanisms are practically non-existent in Latin America, so there are virtually no expenditures or transfers automatically linked to the economic cycle. Consequently, cyclical expenditure is not taken into account in the calculations below.

The usual cyclical indicator breaks down taxation into its main components (taxes on goods and services, on companies and on households) and econometrically estimates the respective income elasticities, whose values depend basically on the tax structure and the progressiveness of the system. In contrast, it may be assumed that indirect taxes have an elasticity (instantaneous) of one.

The mean aggregate elasticity depends on the tax structure of the country. On average, the aggregate elasticity is near unity in OECD countries, with a standard deviation of 0.4, varying from 1.38 for Great Britain to 0.77 for Italy (Giorno et al, 1995, Van der Noord, 2000). In countries where direct

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[11] The recent Fiscal Responsibility Laws of Argentina (1999), Peru (2000), and Ecuador (2002), did set numerical targets for the annual deficits, eliminating by law the possibility of the free operation of automatic stabilizers. In the last two cases the targets of the Law had to be abandoned with the reversion of the cycle, hampering seriously the perception of commitment of fiscal policy. See Martner (2000) for a discussion.

[12] For recent experiences in European countries, see EMU (2001) and Buti *et al.* (2003). The major budgeting innovations within the OECD countries are synthesized in Blondal (2003).

taxes predominate, this elasticity will be greater than unity, but in those where indirect taxes are more important this parameter is generally close to unity, on average. This should be the case of the Latin American countries.

The high correlation between the changes in taxes and output can be seen for some countries in figure 14. In broad terms, the variations of tax revenues are more pronounced than the changes in output. Nonetheless, there are episodes were this correlation is even negative, reflecting perhaps changes in the legislation and also revealing the difficulty to estimate accurately this crucial parameter. On one hand, tax reforms, of which there have been many in the region in the recent past, change the rates or bases of the main taxes, thus making the econometric estimation of tax elasticities very difficult. On the other hand, tax elasticities are sensitive themselves to the business cycle, with tax revenues falling more rapidly than output during downturns and increasing more than proportionally during upswings.

Figure 14
NET TAX REVENUES AND GDP (REAL VARIATION IN 12 MONTHS)
(Percentage)
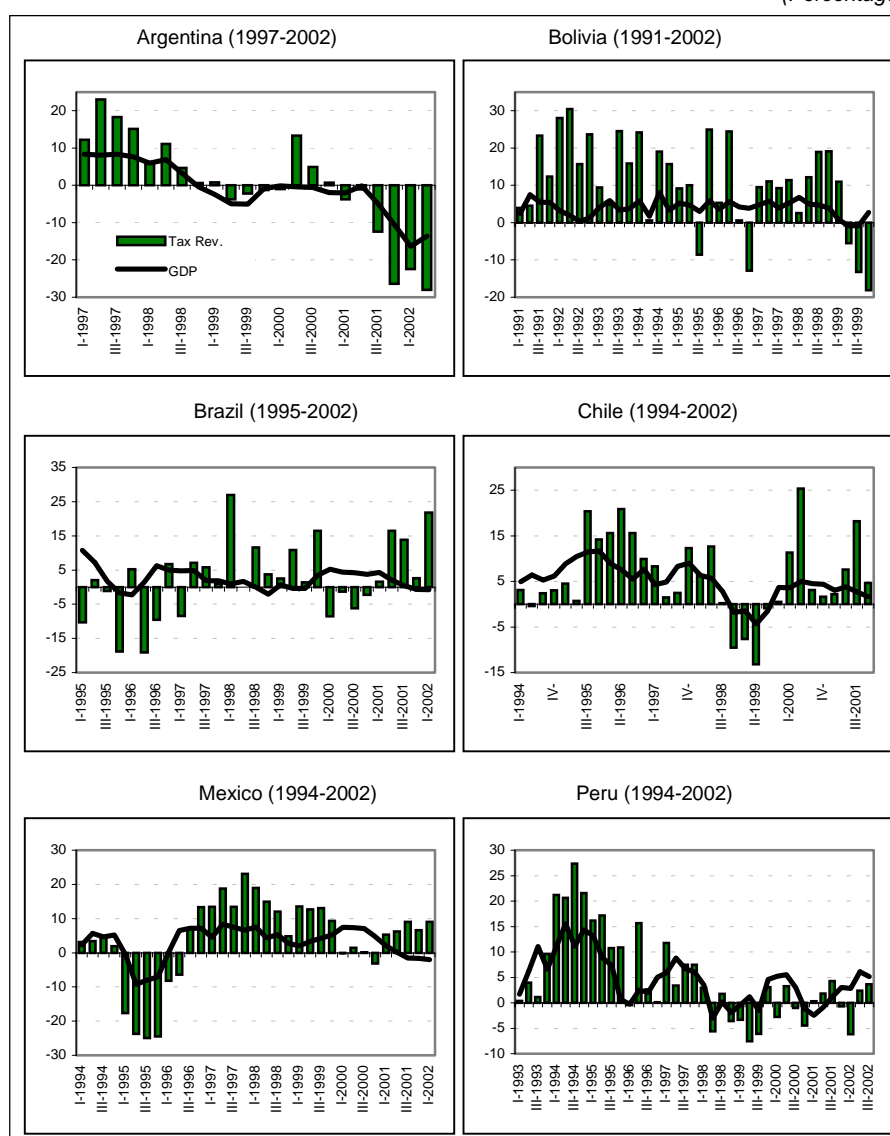
Source: ECLAC

Crisis in Latin America are usually marked by drastic external adjustments in which private consumption –and above all its imported component– falls much more than GDP. In this case, the elasticity would be much greater than unity. The elasticity of VAT depends on the breakdown of private consumption between durable and non-durable goods (in a recession, consumption of durable goods goes down more sharply and the elasticity of VAT with respect to total consumption is therefore greater than unity at such times, if there are differentiated tax rates); on the elasticity of the volume of imports with respect to GDP (if this elasticity is greater than unity, the VAT collected on imported goods grows more rapidly than GDP); and on the relation between tax evasion and the economic cycle: aspects which are not usually taken into account in comparative analyses but which can be highly significant in some situations. Table 5 shows the quarterly estimates of the output elasticity of total tax incomes.

Table 5
TOTAL TAX REVENUES ELASTICITY ESTIMATION
(Dependent Variable: Log of Total Tax Revenues)

	Argentina	Bolivia	Brazil	Chile	Mexico	Peru
Constant	-7.83 (-3.78)	-11.81 (-3.52)	-1.68 (-1.57)	-3.75 (-3.26)	-2.72 (-2.33)	-1.67 (-2.19)
Log (TR)_1	0.32 (2.32)	0.46 (3.88)	-0.02 (-0.23)	0.27 (1.80)	0.70 (8.28)	0.56 (5.42)
Log (GDP)	1.23 (5.13)	1.23 (3.98)	0.94 (5.83)	0.88 (4.48)	0.56 (4.10)	0.56 (4.17)
R2	0.839	0.916	0.933	0.949	0.919	0.941
F	26.07	127.9	86.9		120.6	68.2
No of obs.	25	39	30	50	36	38
Durbin Watson	1.67	2.07	1.53	2.01	1.50	1.84
Solved static long run equation						
Log (GDP)	1.81 (6.07)	2.29 (2.24)	0.92 (12.5)	1.22 (20.1)	1.87 (5.58)	1.13 (9.12)

Source: Calculations of the authors.

Notes: Test t by parenthesis. Seasonal effects were added in the estimations.

As expected, the elasticity is greater than unity in five of the six cases. This might be a normal result in countries were the tax burden is low, like Bolivia (14.5% of GDP), Mexico (12.5% of GDP) and Peru (13.6% of GDP). The very high value of elasticity in the case of Argentina reflects the sharp reduction of tax incomes during the recession period, that can be explained by the strong decrease of imports (and tariffs of imports), by tax evasion and by social security reforms. In the case of Chile, the effect on tax incomes of the slowdown in GDP growth in recent years has been counter balanced with a very active anti-evasion policy. In Brazil the elasticity is lower than one, reflecting perhaps the fact that the tax burden is already very high.

It is important to note that the indicator of cyclically adjusted balance is less sensitive to changes in the values of these elasticities than to changes in the measurements of the GDP gap (Giorno and Suyker, 1997). For the moment, we assume a unit income elasticity for all other countries. Under this hypothesis, the relative size of the cyclical deficit depends only on two factors: i) the gap between the effective and potential GDP, which measures the distance between the effective growth of the economy and its medium-term path, and ii) the weight of taxes in total public income, which represents the proportion of revenue directly linked to the level of activity.

The marginal sensitivity of the public balance to changes in the level of activity is obtained by multiplying the aggregate elasticity by the rate of taxation. For the average tax rates in the region, which are of the order of 20%, the cyclical balance would be one point of GDP for an output

gap of 5% and two points for a gap of 10%. In other words, the semi-elasticity or sensitivity of the public balance to changes in the level of activity is close to 0.2 (for each percentage point of the GDP gap, the public balance varies by 0.2 points of GDP), compared with the value of 0.5 calculated for both the European Union (Buti, Franco and Ongena, 1997), and the OECD on average (Van der Noord, 2000).

Table 6 shows the marginal sensitivity of the public balance to changes in the level of activity in some OECD countries and in Latin America. It also shows the size of the GDP gap and the cyclical deficit, with their maximum and minimum values, for 1960-1996 in the case of Europe and 1980-2001 in the case of Latin America. Estimation of the potential GDP with the Hodrick-Prescott method provides an elementary and immediate measure of macroeconomic fluctuations. According to the results obtained, the GDP gap (as a percentage of the potential GDP) varied between **minima** of -13% and **maxima** of 17% in countries such as Argentina, Peru, Chile and Uruguay in the 1980-2001 period. In the European Union, in contrast, the same indicator measured by the same means rarely exceeded 4% of the trend GDP.

This marked volatility of the level of activity has adverse consequences for the public deficit, even though the marginal sensitivity of the public balance in the region is far below that of the European Union. If we combine these two elements –tax rate and volatility of GDP– the application of this methodology to the Latin American countries brings out a cyclical component of the deficit which was significant in the 1990s, with values close to or higher than two points of GDP. It therefore seems worth estimating this component in order to evaluate the public accounts results properly. In Paraguay, Ecuador and Venezuela, in contrast, the cyclical component is only a little over 0.5 points of GDP. In Paraguay there were only moderate macroeconomic fluctuation, and in Ecuador and Venezuela the income from oil exports was equal to or greater than tax income.

The cyclical component is relevant not only because of its importance in the annual budget but also because of its persistence over various periods. Many of the countries of Latin America register recent declines in their GDP growth and hence will exhibit strongly negative GDP gaps and cyclical fiscal balances in the near future (see figure 15). These were offset by a positive cyclical balance in previous years; the condition of symmetry applied in these calculations should be borne in mind.

Such marked volatility of the level of activity has adverse consequences for the public deficit, and these are even greater when tax revenue represents a considerable proportion of public income. It is essential to identify a "sustainable" medium-term path and to formulate fiscal policy as a function of permanent sources of income generated when the economy is on its trend path. The magnitude of the automatic fiscal stabilizers and the uncertainty of the macroeconomic environment therefore shows the crucial importance of adopting prudent criteria regarding the management of the public finances, not so much in terms of precise annual deficit targets but rather in terms of simple and transparent rules which ensure their medium-term stability.

<div align="right">

Table 6

CYCLICAL COMPONENT OF PUBLIC BALANCE

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	Tax burden (% of GDP) (2001)	Marginal sensitivity of public balance to GDP (2001) 2/	GDP gap (% of potential GDP)		Cyclical component of public balance (% of GDP)	
			Minimum	Maximum	Minimum	Maximum
Argentina	20.2	0.36	-13.0 (90)	9.4 (98)	-4.9 (90)	4.3 (98)
Bolivia	14.7	0.34	-0.7 (92)	4.9 (98)	-0.3 (92)	2.6 (98)
Brazil	35.1	0.35	-5.9 (92)	2.7 (97)	-1.7 (92)	0.4 (97)
Chile	18.7	0.22	-1.4 (01)	4.6 (97)	-0.5 (01)	0.9 (97)
Colombia	17.5	0.18	-2.9 (99)	4.6 (98)	-0.5 (99)	0.8 (97)
Costa Rica	19.5	0.20	-5.7 (82)	8.8 (80)	-0.7 (82)	1.1 (99)
Ecuador	18.8	0.19	-5.5 (99)	4.4 (97)	-0.6 (00)	0.5 (97)
El Salvador	12.9	0.13	-3.8 (91)	5.0 (95)	-0.4 (91)	0.7 (95)
Guatemala	11.1	0.11	-4.7 (86)	5.1 (81)	-0.3 (86)	0.4 (81)
Honduras	16.6	0.17	-3.1 (83)	3.4 (93)	-0.5 (99)	0.6 (93)
Mexico	12.5	0.24	-6.0 (95)	5.1 (00)	-1.7 (95)	1.4 (00)
Nicaragua	26.3	0.26	-6.8 (80)	6.9 (87)	-1.2 (89)	2.1 (84)
Panama	14.5	0.15	-12.9 (89)	7.0 (86)	-1.1 (88)	0.9 (86)
Paraguay	11.1	0.11	-4.5 (86)	5.1 (81)	-0.3 (86)	0.4 (81)
Peru	13.6	0.14	-11.2 (92)	15.9 (87)	-1.6 (92)	1.5 (87)
Dominican R.	16.3	0.16	-6.1 (91)	7.3 (00)	-0.8 (91)	1.0 (00)
Uruguay	23.2	0.23	-8.7 (84)	9.5 (81)	-1.2 (85)	2.1 (98)
Venezuela	9.4	0.09	-4.1 (90)	6.0 (92)	-0.3 (99)	0.5 (97)
Denmark	49.0	0.80	-3.6 (81)	3.8 (86)	-2.4 (81)	2.6 (86)
Sweden	53.2	0.65	-4.6 (93)	3.7 (90)	-4.1 (93)	3.2 (90)
Netherlands	39.9	0.65	-3.4 (83)	2.4 (74)	2.9 (83)	1.8 (74)
Belgium	45.3	0.60	-2.9 (93)	2.0 (90)	-2.1 (93)	1.3 (90)
United Kingdom	37.4	0.50	-4.0 (82)	5.1 (88)	-2.7 (82)	3.1 (89)
Germany	36.4	0.50	-3.8 (67)	4.3 (91)	-1.8 (67)	2.4 (91)
Italia	41.8	0.45	-3.4 (75)	3.1 (80)	-1.2 (75)	1.1 (80)
France	45.4	0.40	-2.1 (85)	3.2 (90)	-1.1 (85)	1.6 (90)
Spain	35.2	0.40	-4.5 (60)	5.3 (74)	-2.1 (85)	2.7 (90)
Greece	40.8	0.40	-2.7 (94)	2.9 (89)	-1.2 (94)	1.3 (89)
Portugal 2/	34.5	0.35	-1.8 (94)	3.4 (90)	-0.7 (94)	1.2 (90)
European Union 2/	41.6	0.50	-2.2 (83)	3.2 (73)	-1.3 (83)	1.6 (90)
New Zealand	34.8	0.57	-5.2 (92)	1.9 (86)	-3.2 (92)	1.3 (86)
Canada	35.2	0.41	-4.6 (88)	4.0 (88)	-2.3 (92)	1.7 (88)
Australia 2/	31.5	0.28	-2.8 (92)	2.1 (89)	-0.9 (92)	0.6 (89)
United States 2/	29.6	0.25	-1.8 (91)	2.0 (89)	-0.6 (91)	0.6 (89)
Japan 2/	27.1	0.26	-2.3 (95)	3.1 (91)	-0.5 (95)	0.4 (91)
OECD average 2/	37.4	0.49	-4.6 (90)	2.7 (86)	-3.1 (90)	1.6 (86)

Source: Calculations of the authors for Latin American countries. European Commission (2002) for European countries. OECD (2000) for other OECD countries. For Tax Revenues for OECD countries: "Revenues Statistics 1965-2001", OECD (2002 Edition) Central Government; General Government for Argentina, Bolivia, Brazil; PS: Public Sector.

1/ The marginal sensitivity is calculated multiplying tax burden in 2001 by tax revenue elasticity. Tax revenue elasticity is estimated in Table 7 for Argentina, Bolivia, Brazil, Chile, Mexico and Peru. For the other countries we assume that tax revenue elasticity is 1. 2/ 2000.

Figure 15
CYCLICAL BALANCES OF SELECTED COUNTRIES
(Percentage of GDP)
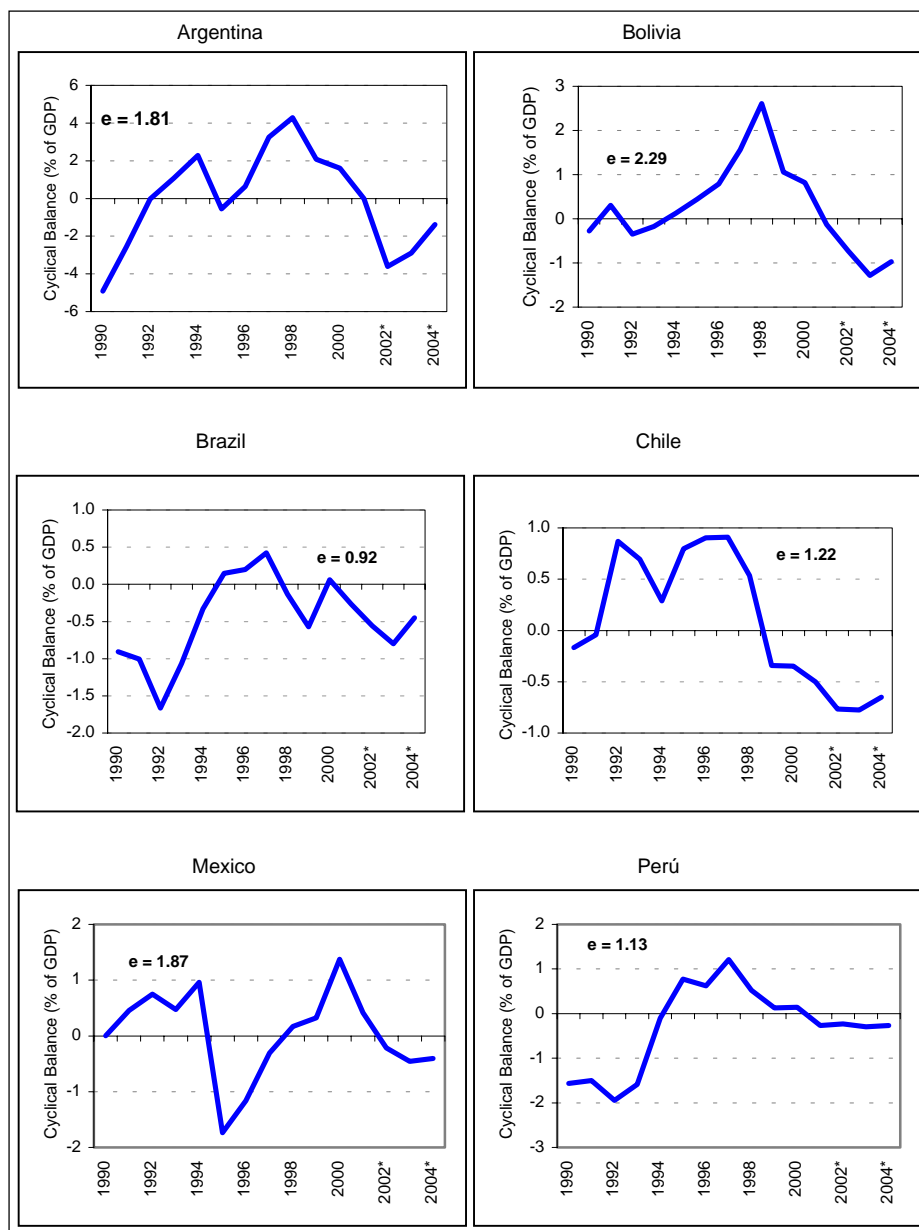
Source: Calculations of the authors based on data from ECLAC

IV. Conclusion

In this paper we emphasized the diversity of situations of public finances in Latin American countries. Clearly there are three groups of countries. In the first one the debt problem has already exploded (Argentina, Ecuador, Uruguay, Venezuela); these countries will have to generate or maintain for many years significant primary surplus and will have to be apply some kind of Sovereign debt restructuring mechanisms. A second group of countries live dangerously in a context of poor growth, volatile exchange rates and very high spreads, with an urgent need to put into operation (Colombia, Costa Rica) or to maintain and even enhance (Brazil, Peru) tight fiscal policies. The third group (Chile, Dominican Republic, Mexico) managed to reduce their stock debt in the nineties, hence applying anti-cyclical policies in the good times and permitting to face the cyclical reversion in better terms.

Despite the substantial progress of tax systems in the last decade, there remain crucial issues that have to be addressed in the near future. In general terms, the situation is puzzling: the deceleration of economic growth and the reversion of capital flows has deteriorated the public finance situation, especially in terms of refinancing debt at reasonable interest rates. Meanwhile, the "tax gap", significant in some cases, is very difficult to fulfill, mainly because of snowball effects that impede public expenditure adjustment and because of the impossible task of increasing tax revenues in crisis situations.

At the domestic level, clearly in the medium term the enhancement of public finances can only be attained with a substantial improvement of tax levels, particularly through the reduction of tax evasion and the decline of generalized exemptions and other tax expenditure mechanisms.

But even if these duties were completed, the structural problem of public finance in Latin America remains, which is the significant vulnerability of tax collection to the economic cycle, and of course the high volatility of output itself. In this situation, it would be efficient to combine - particularly in the agreements with IMF - credibility with flexibility in the design of fiscal rules, taking into account the necessary cyclical safety margin in the conduction of fiscal policy.

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