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# From Volatility to Stabilization: Cyclicality of Fiscal Policy in Latin America over the last decades[1]

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**Abstract**

Latin American countries experienced important changes over the last decade. The implementation of fiscal reforms, public debt reduction and the high level of accumulated reserves gave them more policy space than in the past. As a result, Latin American countries were able to implement countercyclical policies to face the negative economic and social consequences associated with the recent macroeconomic shock. Some countries performed better than others. In particular, Social Democratic and Centrist governments enjoyed more fiscal space; they had realized larger budget surpluses over the good years and were able to cope with the crisis without impairing their fiscal conditions.

**Keywords**: fiscal policy, fiscal space, countercyclical policy, policy regime, Latin America
**JEL classification**: E62, E63, O23

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## 1. Introduction

Historically, fiscal policy in Latin American countries had a procyclical behavior (Kaminsky et al, 2004). Indeed, several scholars highlight that the coexistence of a strong dependence on external conditions, a weak tax structure and multiple public expenditure rigidities reduced the policy space in the region. As a result, the public sector used to expand during booms and contract during recessions (Gavin and Perotti, 1997). This situation was also fueled by the process of fiscal decentralization, as local government exacerbated procyclical spending (Braun and Di Gresia, 2003). According to several authors, government behavior did not change during the recent economic crisis (Ocampo, 2011) – also called the *Great Recession* – highlighting that the implementation of countercyclical fiscal policies was the exception rather than the rule in the region (Bello and Jiménez, 2008). Thus, the lack of discipline and the low credibility of fiscal policy fueled macroeconomic volatility, preventing the possibility of following a sustained path of economic development.

Nonetheless, not all the scholars agree with these conclusions and argue that something changed over recent years. In particular, the successful implementation of fiscal reforms that favored the containment of public spending (Singh, 2006) and the strengthening of tax structures (Vladkova-Hollar and Zettelmeyer, 2008) represented a *great fiscal transformation* for the region (Cornia et al, 2011). Moreover, the improvements in debt management and the sharp accumulation of reserves generated the necessary fiscal space to implement countercyclical fiscal policies during the recent economic recession (Daude et al 2011, Fernández-Arias and Montiel, 2010).

Thus, the goal of this paper is to investigate the fiscal behavior of Latin American countries over the last two decades. In particular, it aims to measure the cyclicality of fiscal policy with special attention paid to recent years. To do so, I investigate different fiscal variables and carry out an econometric analysis using macro data for 14 Latin American countries over the period 1990-2011[2]. The paper is organized as follows: Section 2 discusses the main changes in fiscal balance and factors contributing to these changes; Section 3 explores differences between countries

[2] Countries included are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Honduras, Mexico, Nicaragua, Peru, Uruguay and Venezuela.

during the recent crisis; Section 4 develops an empirical analysis, while Section 5 concludes.

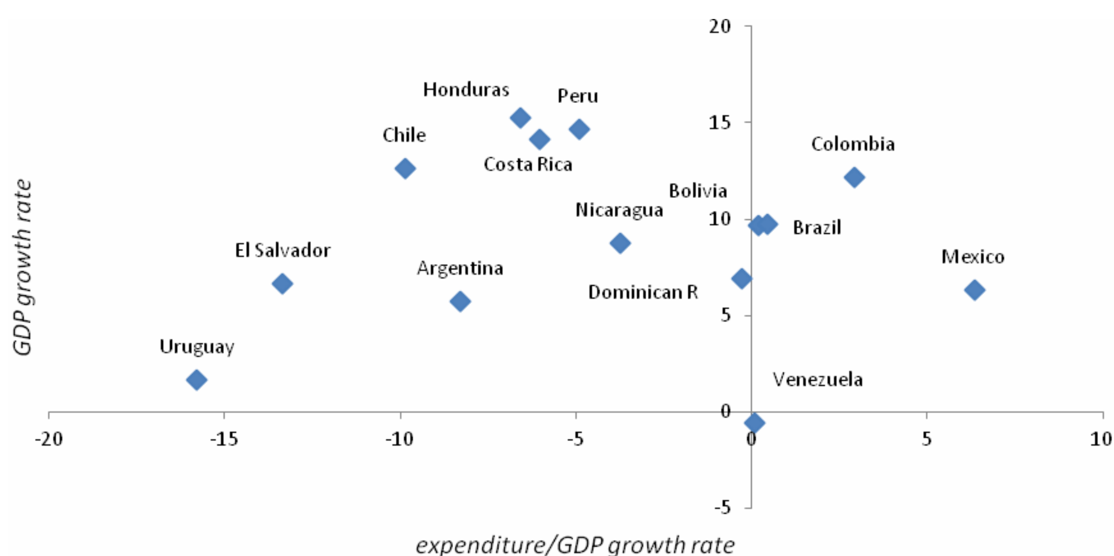
## 2. The change in fiscal position over the last decade

As reported above, the Latin American countries recorded good fiscal results over the last decade (see Cornia et al, 2011; Powell, 2012; Vladkova-Hollar and Zettelmeyer, 2008). Primary fiscal balances began by turning positive in the early 2000s, then negative in more recent years, as a consequence of government reactions to the economic crisis. In particular, the last decade recorded a big change in the history of the region because of the growing capacity to contain expenditure together with a new capacity to mobilize revenue. As a consequence, Latin American countries were better positioned with respect to the past, or to other countries, when the international crisis hit their economies. In particular, they enjoyed the necessary fiscal space to implement countercyclical fiscal policy in order to face the economic crisis in the proper way.

### 2.1. The first phase 2001-2004: the growing capacity to control public expenditure

As reported above, changes in public expenditure generated an important contribution to the improvement of fiscal conditions in the 2000s. Between 2001 and 2004, the majority of Latin American countries – excluding Colombia and Mexico – reduced public expenditure although they recorded a positive economic performance (Figure 1). As highlighted by Singh (2006), this represents a significant change with respect to past boom episodes, such as in the early 1990s or after the *Tequila crisis*.

Figure 1. GDP change vs. Expenditure change between 2001 and 2004



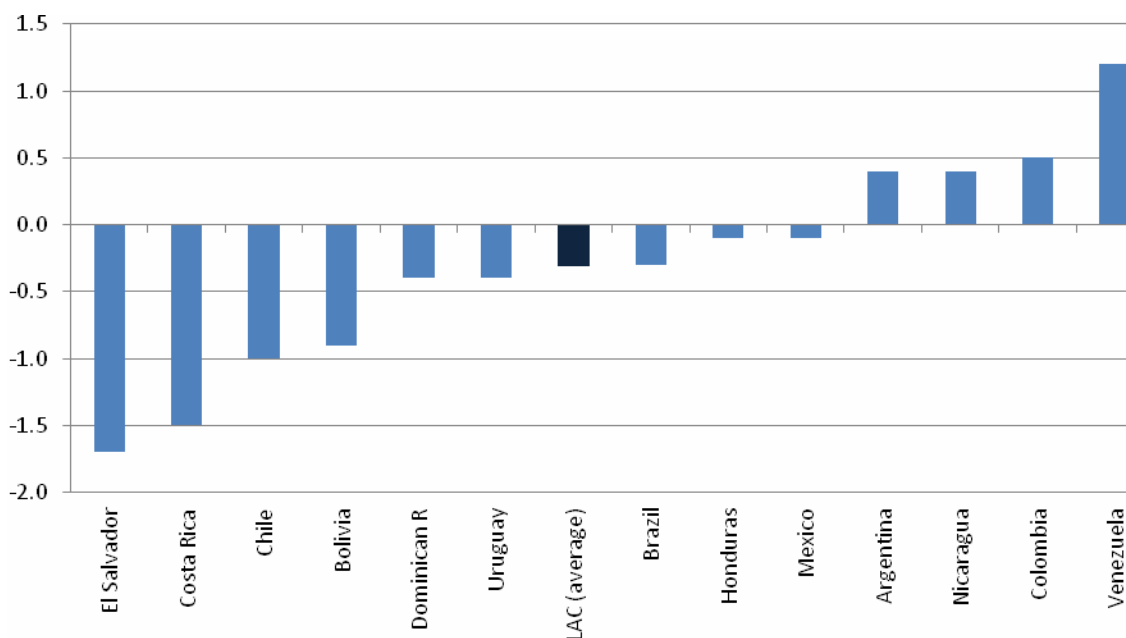

Source: author's elaboration on CEPALSTAT data

More generally, public spending remained stable at around 18 per cent of GDP in the mid-2000s and started to grow only in 2008, as a consequence of government reactions to the negative macroeconomic shock in the late 2000s. Nonetheless – when analyzing public expenditure by function – it is possible to observe the asymmetric behavior of current and capital expenditures. The latter rose by about 2 percentage points over the 1990s and kept on increasing over the last decade (by about 1.3 percentage points). In particular, it doubled from 2.7 per cent of GDP in 1991 to 5.5 per cent of GDP in 2010, reversing the trend recorded in the 1980s (see Fay and Morrison 2005).

Also, current expenditure sharply increased by about 3 percentage points of GDP over the 1990s. However, it started to decrease from the early 2000s until the years of the Great Recession, recording an average drop of 0.5 percentage points of GDP. Obviously, there were differences across countries. Current expenditure decreased more than 1 point of GDP in Argentina, Brazil, Chile and Uruguay, while it rose by 2.5 points of GDP in Colombia and Mexico. The reductions in current spending could be

related to the process of reform of the public administration, implemented by many Latin American countries from the late 1990s onwards. As illustrated by Lora (2007), many governments tried to improve the efficiency of public administration by increasing the accountability, independence and technical capacity of state bureaucracy. As shown by Figure 2, public employment cuts were implemented in several countries in order to reduce the deficit of public administration (ILPES – CEPAL, 2012), while new rules and merit-based criteria were introduced to increase the capacity to hire people with adequate skills[3] (Lora, 2007).

Figure 2. Changes of the share of public employment on total employment over the period 2000-2005




Source: author's elaboration on SISPALC data
(Sistema de Indicadores del Sector Público para América Latina y el Caribe)

"A silent revolution" (Lora's description, 2007) evolved in many Latin American countries that implemented fiscal reforms both to increase discipline and to improve

[3] For example, "between 1997 and 2000 in Uruguay the state payroll was cut as part of a program that included the restructuring of functions, voluntary retirement with incentives for numerous officials, and the redesign of the pay systems. The program successfully supported the relocation of around 3,500 workers outside the public sector, cut the operating costs of the public system, and facilitated functional reorganization" (Lora, 2007: 16).

the credibility of public finance (Table 1). For example, "since 2000, Brazil's targets of primary surplus are set for three years in the pre-budget law; in Colombia, since 2003, the structural primary balance has to be consistent with medium term debt sustainability; in Peru and Ecuador, primary expenditures have a maximum growth of 3.5 per cent per year; in Argentina, current expenditures cannot surpass GDP growth" (Martner, 2006; 165). Moreover, several countries introduced funds to stabilize revenue (Argentina and Peru), while other countries created or strengthened pre-existing oil stabilization funds (Colombia, Ecuador, Mexico and Venezuela).

Table 1. Fiscal and debt rules in selected countries

| Country | Implementation date | Fiscal rules | Debt rules | Additional rules | Legal status |
|---|---|---|---|---|---|
| Argentina | 1999-2001 - 2004 | Nominal growth of primary expenditure must not exceed nominal GDP growth | Annual borrowing limits to ensure that debt servicing does not exceed 15% of current resources | | Law |
| Brazil | 2001 | Current equilibrium (sub-national); primary surplus (federal) | Annual borrowing limits | Limits on wage expenditure (% of total) | Higher level law |
| Chile | 2000-2006 | Overall structural surplus (1% of GDP) | | Pension Reserve Fund and Social Stabilization Fund | Law |
| Colombia | 1997-2001 | Current equilibrium | Borrowing limits determined by solvency and liquidity indicators | National Coffee Fund Petroleum Saving and Stabilization Fund | Law |
| Mexico | 2006 | Current equilibrium | | Oil Revenues Stabilization Fund (FEIP) | Law |
| Peru | 2000-2003 | Deficit below 1% of GDP; real growth of primary expenditure no more than 3% per year | | Fiscal Stabilization Fund | Law |
| Venezuela | 2000 | Current equilibrium | | Macroeconomic Stabilization Fund (FEM) | Law |

Source: Jiménez and Tromben (2007) quoted in Cetrángolo and Jiménez (2009)

The federal countries also tried to discipline the relationships between central and sub-national governments. Fiscal decentralization increased the fiscal responsibility of the different level of governments. Nonetheless – in the late 1990s and early 2000s – this process was halted due to poor economic conditions and the irresponsible fiscal behavior of local governments. As a result, countries like Argentina and Brazil implemented restrictions on the fiscal policies of local governments to eliminate potential conflicts and to establish an adequate fiscal coordination among the different levels of government (Cetrangolo and Jimenez, 2009). Moreover, new transparency

rules aimed at increasing the availability of information and the accountability of governments, while hierarchical rules increased the power and responsibility of the ministry in charge of public finance (Lora, 2007).

Although there is no consensus about their effectiveness, fiscal and procedural rules helped to promote both discipline and the credibility of fiscal policy in Latin American countries, especially in the years of *economic bonanza*. However, the implementation of fiscal rules generated a clear trade-off. Indeed, the gain in credibility reduced the flexibility of fiscal policy (Dos Reis et al, 2007). This problem became evident especially where fiscal restrictions did not include escape clauses to tackle unexpected shocks. Thus, the surge of the recent economic crisis highlighted the deficiencies in the first generation of fiscal rules implemented by Latin American countries. As a consequence, fiscal rules were reformed "incorporating escape clauses to limit the application of numerical rules or to suspend them following *ad hoc* procedures because there was little room to adjust to shocks" (Berganza, 2012: 36). For example, the Brazilian government was able to implement a countercyclical fiscal policy by excluding some kinds of expenditure (i.e. some of the components of expenditure on investment) from the computation of the fiscal target (Berganza, 2012). Countercyclical fiscal policies were also implemented by Chilean and Peruvian governments, which introduced changes to the calculation of the balance or relaxed some of their fiscal rules. The Mexican government also adapted the *Ley Federal de Presupuesto y Responsabilidad Hacendaria,* while in Argentina the validity of fiscal rules was suspended from 2009.

### 2.2. The second phase (2003-2008): the new ability to mobilize revenue

It is interesting to observe that these good results in terms of fiscal balance were also explicitly related to the increase recorded in the revenue, considering that revenue/GDP ratio grew by 3 points between 2003 and 2008. Kacef and Lopez-Monti (2010) explain that the sharp increase in revenue represents one of the most important differences with respect to past episodes of economic growth in the region. Although revenue also increased over the period 1991-1994 and 1995-1998, it was not able to compensate the dramatic growth in expenditure and the resulting deterioration of the primary balance.

Latin American countries certainly benefited from positive external conditions (Fricke and Süssmuth, 2014). Indeed, the revenue capacity of exporters of oil and non-oil commodities was affected by the changes in commodity prices and the demand on international markets. Venezuela is the country that recorded the highest variation, since "non-tax revenue" increased from 7 per cent of GDP in 2003 to 13 per cent of GDP in 2007, decreasing to 10 per cent of GDP in 2011. Between the early and late 2000s, favorable external conditions also positively affected Colombia, Peru and especially Bolivia. In particular, Latin American governments used different strategies to take advantage of the situation (Table 2). As reported in Cornia et al (2011: 18): "The usual way governments transform the wealth of natural resources into fiscal revenue is through their exploitation by state companies or via the control of part of the stock of private companies operating in this sector, as in the case of *Corporación Nacional del Cobre* (CODELCO) in Chile, and *Pemex* in México which transfer part of their profits to the public budget".

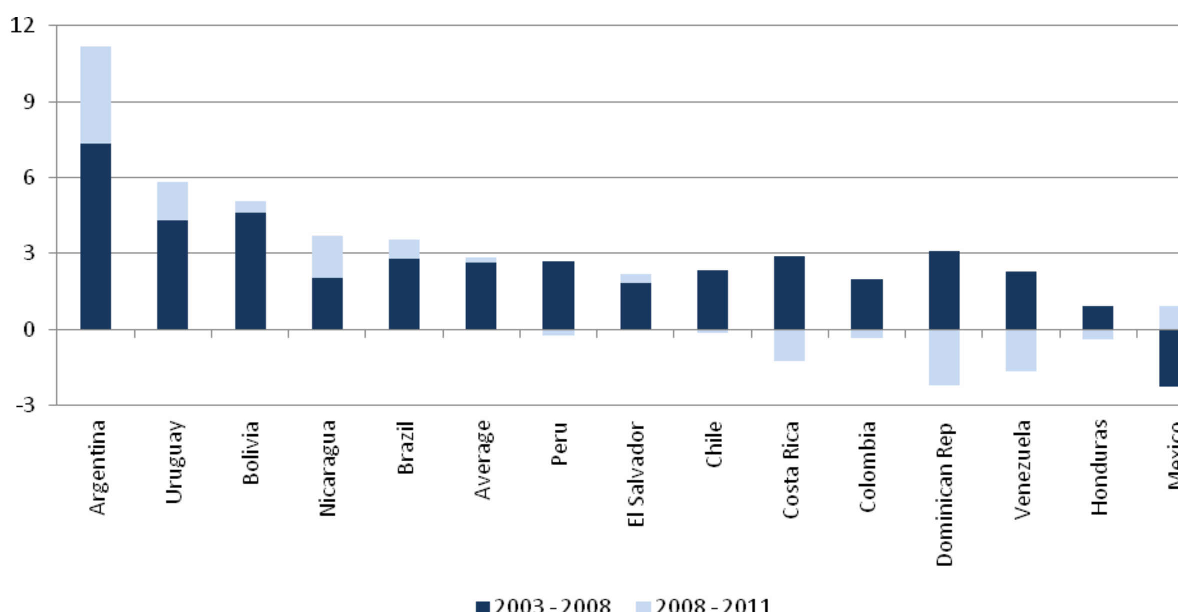
Table 2. Non-Renewable Products: Fiscal Regimes applied in selected countries in the 2000s

| **Country (product)** | **Royalties (rates)** | **Income tax (general rate)** | **Other taxes on income (rates)** | **Other levies** | **Public participation** |
|---|---|---|---|---|---|
| Argentina (oil and mining) | 12%-15%; or 5% for marginal deposits (oil) 0%-3% (mining) | Profits tax: 35% | | Export duties. Taxes on liquid fuels, natural gas, gas oil, liquefied gas, naphthas and compressed natural gas. Mining duty | YPF (hydrocarbons) |
| Bolivia (hydroc.) | Departmental royalties: 11%. National royalties: 6% | Tax on the profits of state enterprises: 25% | Tax on profits beneficiaries abroad: 12.5% | Direct and special tax on hydrocarbons and derivatives | YPFB (hydrocarbons) |
| Chile (mining) | | Tax on first-category income: 20% | Taxes on profits (35% and 40% for public enterprises) and interest remittances (4%). | Specific tax on the operating income of mining activity. Tax with revenue earmarked for the Armed Forces. | CODELCO (copper) |
| Colombia (oil and mining) | 8%-25% (oil) and 1%-12% (mining) | Company tax: 25%. Income tax for equity: 9% for 2013-2015, 8% thereafter | | Oil Pipeline Transport Tax. National Gasoline Tax and ACPM ANH duties | Ecopetrol (hydrocarbons) |
| Mexico (oil and mining) | | Oil Revenue Tax: 30%. Income Tax: 30% | Flat Rate Business Tax: 17.5% | Mining duties. Hydrocarbons duties. Special Production and Services Tax. Merchandise Import Duty | PEMEX (hydrocarbons) |
| Peru (mining) | 1%-12% on operating profit | Income tax: 30% | Dividends and profit distribution: 4.1% | Special Mining Tax (IEM) and Special Mining Levy (GEM) | |
| Venezuela (oil) | 30% of the value extracted | Tax on oil revenue: 50% | | Additional tax on oil production. Unemployment tax (5% of profits obtained from oil production) | PDVSA (hydrocarbons) |

Source: ECLAC (2013)

Nonetheless, important changes were also realized in the field of taxation. Indeed, revenue from taxes grew in almost all the countries between 2003 and 2008. The highest variation was recorded by Argentina (+ 7.3 percentage points) followed by Bolivia (+ 4.6 points) and Uruguay (+ 4.3 points), while Mexico was the only country that recorded a negative variation (- 2.3 points) (Figure 3). Over the period 2008 – 2011, tax revenue kept stable or decreased in all the Latin American countries, with the exception of Argentina, Brazil, Nicaragua and Uruguay (Figure 3).

Figure 3. Changes on tax revenue/GDP (including social security contributions) over the periods 2003-2008 and 2008-2001 in 14 Latin American countries




Source: author's elaboration on CEPALSTAT. Notes: The data for Argentina, Bolivia, Brazil, Chile, Colombia and Costa Rica and Mexico refer to the general government while for the other countries they refer to central government

Different factors contributed to this extraordinary performance, such as the good economic conditions as well as "social policies which, in addition to encouraging formal-employment growth in several countries, also succeeded in reducing levels of inequality and fuelled an expansion in private consumption and taxes on goods and services" (ECLAC, 2013: 13)

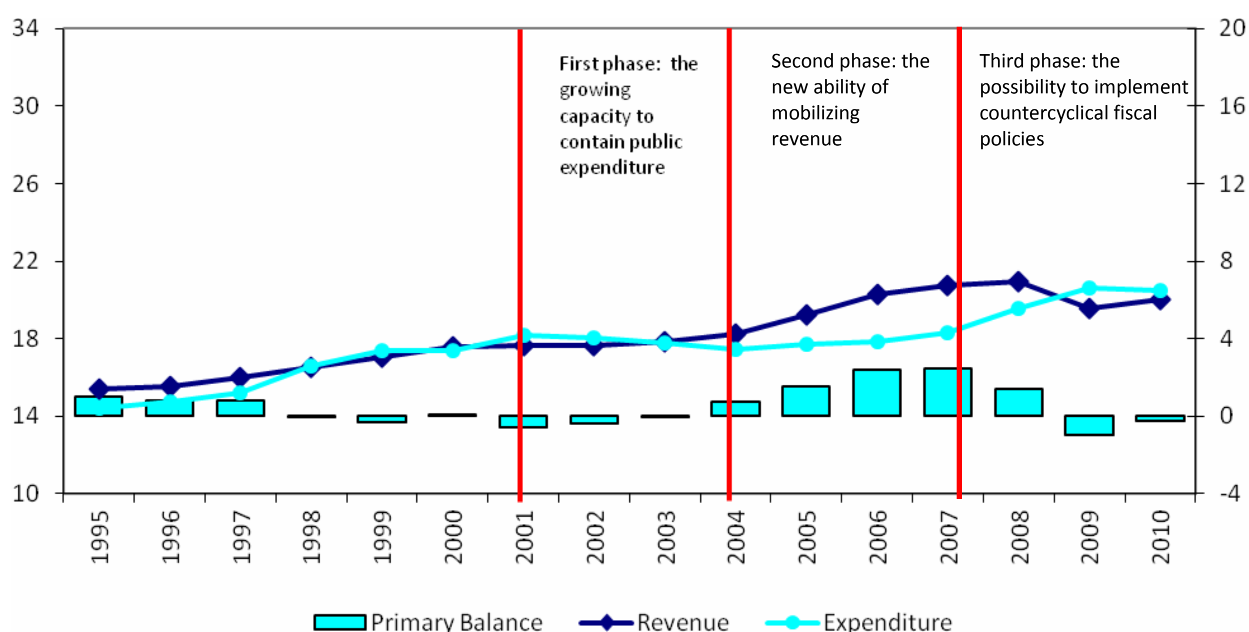
Furthermore, many governments aimed at reforming their tax system, marking an explicit turning point with respect to the past. As explained by Tanzi (2013: 7), "with a closer look, it could be maintained that the changes that took place over the years, in the tax systems of many Latin American countries, have made those tax systems far better than they had been in the past in some aspects". Especially in the late 2000s, many countries reformed their direct tax system. The most emblematic case is represented by the 2007 Uruguayan Tax Reform, which introduced a dual tax system based on a progressive taxation on labor income and a flat rate on capital income (Martorano, 2012). Several countries enlarged their tax base, reducing numbers of exemptions and removing several forms of deductions. Moreover, many governments used several instruments to mobilize revenue, considered as an expression of heterodox taxation. One of the most interesting examples is related to the adoption of a simplified presumptive regime of taxation to reduce the size of tax evasion. While this kind of taxation is related to small taxpayers or informal activities, governments also tried to levy taxes on financial transactions considered similarly a heterodox form of taxation.

Finally, administrative reforms were implemented in the majority of the countries in order to improve the efficiency of tax collection. In particular, many countries switched toward a functional rationalization of their administrative structures, adopted a Semi-Autonomous Revenue Authority (SARA), and established large taxpayer units (Cornia et al, 2011). As explained by Tanzi (2013), tax administration improvements were also related to the introduction of new technologies, the increase of resources available and the reduction of political interference.

### 2.3. The third phase (2008 onwards): the implementation of countercyclical fiscal policies

The effects of the crisis were evident, beginning at the end of 2008, because of the changes in external conditions, and the reduction in private consumption and investment (ECLAC, 2009). In contrast to the previous period, the Latin American governments had a similar reaction during the more recent crisis. In particular, fiscal balance moved close to zero or turned negative following the implementation of fiscal stimulus packages (Figure 4).

Figure 4. Fiscal indicators (% of GDP), between 1995 and 2010




Source: author's elaboration on Cornia, Gomez-Sabaini and Martorano (2011) and CEPALSTAT data

As illustrated in Table 3, it is possible to distinguish between three main groups of measures: "First, countercyclical measures were launched in order to sustain aggregate demand. Those include cutting taxes, infrastructure investments and other measures in support of the private sector. Second, a series of emergency measures were put in place in order to support labor demand, as in the case of workfare programs. Third, existing social protection programs were expanded in order to protect the incomes of those most vulnerable to falling into poverty as a consequence of the economic downturn" (Powell, 2012: 25). For example, Brazil operated on both the taxation and the expenditure sides. In particular, the government extended unemployment benefits, the coverage of existing conditional cash transfer programs and introduced new ones, such as *Minha Casa Minha Vida,* in order to protect vulnerable groups. It reduced the tax burden on low income taxpayers, as well as taxation on consumption and financial activity (Kacef and Lopez-Monti, 2010).

Given the extraordinary events of the crisis, the majority of the measures introduced through the stimulus packages had a temporary character and were scaled back when economic conditions improved.

Table 3. Countercyclical fiscal measures for selected countries

| Country | Workfare | Social protection | Fiscal stimuli |
|---|---|---|---|
| Argentina | Subsidy of 10% of labor cost for 12 months extendable by a further 12 months (at 5%). Promotion of worker formalization (through incentives). | | |
| Bolivia | Increase of minimum wage of 12% (14% in education and health sector). | Cash grants to pregnant and lactating mothers (Bono Juana Azurduy). | |
| Brazil | Extension of unemployment insurance for fired workers from December 2008. | Expansion of CCTs. New housing program "Minha Casa Minha Vida." | Various tax reductions |
| Chile | Employment subsidy for low-wage young workers. Extension of unemployment Solidarity Fund. | Additional cash transfers to low income households. | Public investments in infrastructures and housing. Various tax reductions. |
| Colombia | | Increased number of families covered by Famílias en Acción. | Investment in public works |
| Honduras | Minimum wage increased to 290 USD in urban and 215 USD in rural regions. | Increased coverage of CCT program Red solidaria. | |
| Mexico | The temporary employment program was expanded. Launch of Employment Preservation Program. | Launch of the Programa de Apoyo Alimentario and expansion of Oportunidades. | Investments in infrastructure, support to private sector and reduction in energy price for households. |
| Nicaragua | Launch of Programa Nacional de Inserción Laboral | Various nutritional supplement programs | |
| Peru | Incentives schemes for workers formalization, workfare programs. | | Investment in infrastructure and support of the private sector. |
| Uruguay | Workfare and training programs. | | Investment Incentives; Increase of Public Investment; Gasoil VAT Exemption for Industry; Corporate income tax exemption for industries that employ "quality workers" |

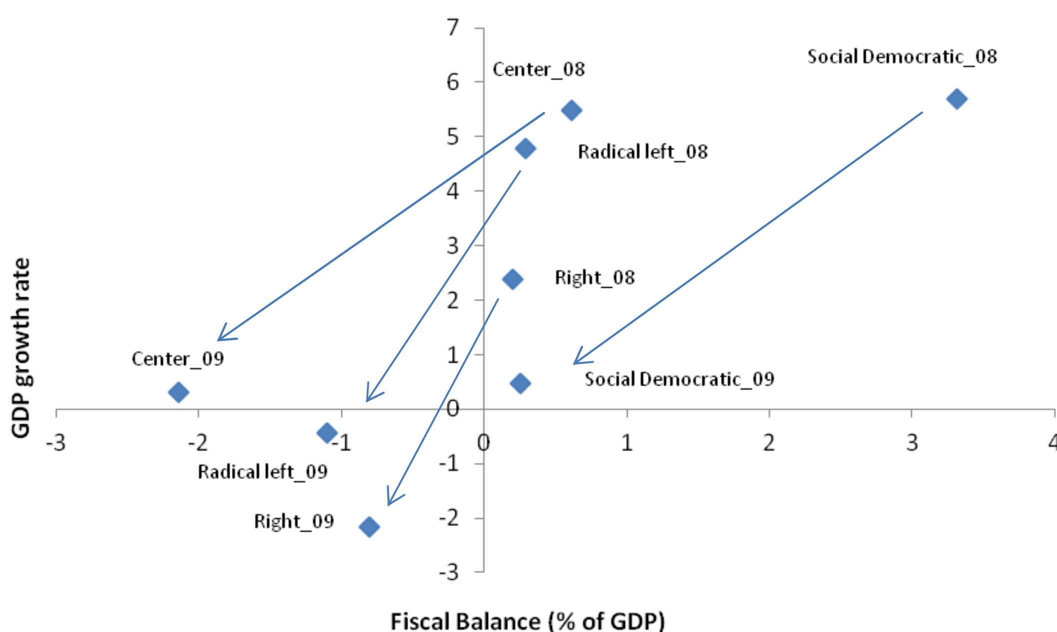
Source: Powell (2012)

## 3. Political regimes and fiscal space

The implementation of stimulus packages – in addition to the impact of the global recession and the reduction in commodity prices – generated a fiscal deficit in several countries. However, it is possible to identify some differences across the region as some countries reacted more strongly than others.

First of all, these differences could be explained by a different ideological position. Cornia (2012) distinguishes between four groups of countries according to their political regime: Centrist countries such as Costa Rica, the Dominican Republic, Honduras and Peru; Radical Left countries, i.e. Bolivia, Nicaragua and Venezuela; countries run by a Right-wing party, i.e. Colombia, El Salvador and Mexico; finally, countries run by Social Democratic governments, i.e. Argentina, Brazil, Chile and Uruguay. As explained by Cornia (2012), Left and Centrist countries implemented a new policy model that favored the achievement of a positive performance both in terms of economic and social conditions. In particular, Social Democratic governments emphasized more than others the role of fiscal policy in pursuing macroeconomic stabilization (Cornia et al, 2011). Indeed, Figure 5 shows that Social Democratic countries produced the largest fiscal effort: even though they recorded a deceleration of economic growth, fiscal balance dropped from 3.3 of GDP in 2008 to 0.5 of GDP in 2009. More interesting is the reaction of Centrist countries, which experienced a negative primary balance generating much the same fiscal effort as Social Democratic countries. Although they recorded a positive economic performance in 2009, the implementation of the stimulus packages produced a fiscal deficit higher than 2 per cent of GDP (Figure 5). In contrast, the fiscal balance turned into the negative, even though Radical Left and Right countries produced a smaller fiscal effort.

Figure 5. Changes in Primary Fiscal Balance and GDP between 2008 and 2009



Source: author's elaboration on CEPALSTAT data. Notes: This classification is mainly based on the period before, or the first years of, the recent economic crisis. There were Social Democratic governments in Argentina, Brazil, Chile and Uruguay; Costa Rica, the Dominican Republic, Honduras and Peru were considered Centrist countries; Radical Left parties ran governments in Bolivia, Nicaragua and Venezuela; lastly, countries run by the Right were in Colombia, El Salvador and Mexico. For more details see Cornia (2012).

However, the differences in each country's reactions were also related to the unique initial fiscal conditions. Indeed – since the early 2000s – Latin American countries experienced a sharp reduction of indebtedness and a rapid accumulation of reserves, thanks to the combination of favorable external conditions, low interest rates and good economic performance (Cornia and Martorano, 2011). In particular, total debt dropped from 60 to 30 per cent of GDP while the level of reserves rose from 10 to 15 per cent of GDP (Table 4).

Moreover, the fiscal sustainability of Latin American economies was assured by the results recorded in their structural balance[4]. In particular, it is undeniable that, especially in the mid-2000s, almost all Latin American countries consolidated their fiscal positions. Indeed, the majority of them recorded a fiscal surplus and the structural balance was not very distant from the observed balance in 2007 (Table 4)[5].

[4] Not all the scholars agree that these changes were structural. Suggesting that "all that glitters is not gold", Izquierdo and Talvi (2008) argue that the improvements in fiscal conditions were strictly related to the favorable economic conditions experienced by Latin American countries over the last decade. Also Braun (2007) argues that the positive changes in fiscal positions in the region were not structural, while Zambrano (2008) explains that at least a part of them were related to the "fiscal bonanza". However, Singh (2006) explains that the fiscal improvements of Latin American countries are more than a simple cyclical rebound. In the same way, Daude et al (2010) and Vladkova-Hollar and Zettelmeyer (2008) argue that changes are "real" even though the structural balance is weaker than the observed balance.

[5] The structural balance (B*) is given by the difference between the revenue (R*) and expenditures (E*) sterilized by their transitory components. Daude et al (2010) highlight that for some Latin American countries – such as Argentina, Bolivia, Colombia, Ecuador, Mexico, Peru and Venezuela – it is also necessary to distinguish between tax revenue and revenue from non-renewable products (CR*). As a result, the structural balance is defined as:

$$B* = R[Y*/Y]^{\alpha} + CR[p*/p]^{\gamma} - E[Y*/Y]^{\beta} \quad (1)$$

where, *Y*/Y* is the ratio between potential and actual output, which is measured by applying the Hodrick-Prescott filter, while α and β are respectively the elasticity of revenue and expenditure to output; *p*/p*

Thus, Table 4 confirms that, on average, Latin American countries enjoyed the necessary fiscal space. In particular, this situation gave them the possibility to avoid dangerous cuts and to implement stimulus packages in order to protect vulnerable groups and boost the economy. However, the average masks some important differences between these countries. While Social Democratic and Center countries – excluding Argentina and Honduras – started off in better fiscal condition, Right and Radical Left countries could count on a lesser fiscal space. Some of the commodity exporter countries, such as Chile and Peru, began from a good fiscal position, since they were able to finance stimulus packages thanks to the resources accumulated during the years of *economic bonanza*. Yet, the situation was more complicated in other countries, like Mexico, where government had to increase taxes from 2010.

Table 4. Fiscal indicators for 14 Latin American countries in 2007

| Regime | Countries | Public Debt (% of GDP) | Primary balance (% of GDP) | Target primary balance | Structural primary balance | Required Structural adjust. | Total debt service (% of GNI) | EMBI Spreads | Reserves (% of GDP) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | (a) | (b) | **(a-b)** | | | |
| **Radical Left** | **Bolivia** | 37.06 | 3.54 | 2.48 | -2.26 | **4.74** | 5.87 | | 35.09 |
| | **Nicaragua** | 32.43 | 1.47 | 2.30 | -1.54 | **3.84** | 3.59 | | 20.56 |
| | **Venezuela** | 19.13 | 4.5 | 0.77 | 0.64 | **0.13** | 2.57 | 350 | 11.06 |
| **Social Demcrat.** | **Argentina** | 55.74 | 2.73 | 3.23 | 2.13 | **1.10** | 3.51 | 300 | 17.06 |
| | **Brazil** | 57.97 | 3.82 | 3.32 | 3.13 | **0.19** | 4.11 | 200 | 13.13 |
| | **Chile** | 3.89 | 8.52 | 0.16 | 5.59 | **-5.43** | 8.17 | 100 | 10.25 |
| | **Uruguay** | 49.98 | 2.14 | 3.00 | 2.13 | **0.87** | 5.13 | | 17.18 |
| **Center** | **Costa Rica** | 27.59 | 4.95 | 1.10 | 4.53 | **-3.43** | 3.54 | | 15.63 |
| | **Dominican R** | 18.26 | 1.35 | 0.73 | 0.91 | **-0.18** | 9.18 | | 6.21 |
| | **Honduras** | 17.37 | -2.41 | 0.69 | -3.99 | **4.68** | 5.54 | | 20.41 |
| | **Peru** | 26.16 | 3.22 | 1.05 | 1.90 | **-0.85** | 7.34 | 150 | 25.03 |
| **Right** | **Colombia** | 32.94 | 0.79 | 2.32 | -0.81 | **3.13** | 4.33 | 150 | 10 |
| | **El Salvador** | 34.92 | 2.26 | 2.40 | 1.60 | **0.79** | 3.52 | | 10.42 |
| | **Mexico** | 20.86 | -0.51 | 0.83 | -2.26 | **3.09** | 2.91 | 150 | 8.52 |

Source: author's elaboration on CEPALSTAT data, Fernández-Arias and Montiel (2010), World Development Indicators database. NOTE: Target primary balance is computed as in Fernández-Arias and Montiel (2010).

represents the ratio between the expected prices and actual prices, while γ represents the elasticity that is assumed to be equal to 1 as in Vladkova-Hollar and Zettelmeyer (2008).

## 4. Empirical Test on the Cyclicality of Fiscal Policy

In this section, I test whether fiscal policy in Latin American countries could be considered procyclical and whether there were some differences according to the different groups of countries. For this purpose, I built a dataset for 14 Latin American countries over the period 1990-2011. Starting from the empirical literature – see Gavin and Perotti (1997), Alesina et al., (2008) and Clements et al. (2007) on Latin America – I estimate the following model:

$$B_{it} = \alpha_0 + \alpha_1 B_{it-1} + \alpha_2 g_{it} + \alpha_3 EX_DEBT_{it} + \alpha_4 ToT + \alpha_5 RULES + \alpha_6 Political_\mathrm{var} + u_{it} \qquad (2)$$

where *i* identifies the country while *t* the year. *B* represents the primary fiscal balance which is regressed on a set of independent variables.

First of all, I include the output gap (*g*) to proxy the business cycle. It is measured applying the Hodrick-Prescott filter to estimate the potential output. As suggested by Ravn and Uhlig (2002), I apply a smoothing parameter of 6.25 since the use of annual data referred to the period 1960-2012. A negative and statistically significant $\alpha_2$ parameter shows that fiscal policy is procyclical, meaning that fiscal balance is strongly conditioned by the cyclical component of the output. Nonetheless, I suppose that fiscal policy was really countercyclical during the recent *Great Recession* as shown by Figure 5. Thus, I try to test this hypothesis interacting the output gap for the years of the crisis (2008 onwards).

Second, the external debt/GDP ratio provides information on government solvency behavior. Third, I consider the terms of trade (*ToT*) to analyze in what way primary

balance was affected by the changes in external conditions. More than other countries, Bolivia, Colombia, Peru, and especially Venezuela, took advantage of the changes in commodity prices and the demand on international markets in the mid-2000s. Thus, I test a further hypothesis interacting the terms of trade for the dummy variable that identifies this group of countries during the period of *economic bonanza,* 2003-2007 (*ToT*rentiers*). Finally, my analysis is completed with a set of institutional and political variables. I introduce a dummy to measure in which way fiscal balance was affected by the implementation of fiscal rules (*Rules*). In addition, a dummy variable is introduced to define countries run by a Left government party (*Left*). However – as explained by Cornia (2012) – this group of countries did not perform in the same way; it is therefore necessary to distinguish between countries run by Social Democratic Governments (*Social_Dem*) and those run by Radical Left governments (*Radical*).

To test the specification reported above, a panel estimation methodology is one possible solution because of the structure of the data. However, the presence of the lagged dependent variable, as well as the inclusion of the output gap (*OUTPUT GAP*) and the level of external debt (*EXTERNAL DEBT/GDP*), generates clear problems of endogeneity. To overcome these problems, I consider the application of the "system GMM" estimator the most suitable strategy, even though I am aware of its limitations in small samples (Blundell and Bond, 1998). As expected, the Arellano-Bond test (AR) indicates that there is no autocorrelation of the first order (AR1), while the hypothesis of autocorrelation of the second order (AR2) is not rejected. Moreover, the Sargan Test of over-identifying restrictions confirms the validity of our instruments since the null hypothesis is not rejected.

Table 5 shows the results of our analysis. First of all, the output gap is never significant. In contrast to the past (Gavin and Perotti, 1997), fiscal policy was not procyclical in the region. As reported by Clements et al (2007), Dos Reis et al (2007) and Suescún (2008), Latin American countries recorded *acyclical* fiscal policy behavior. Indeed, Cornia (2012) explains that democratic governments still faced some problems, in the 2000s, in convincing people about the necessity to implement a prudent macroeconomic policy entailing a containment of public spending in good years. In contrast, fiscal policy was countercyclical during the recent crisis, as shown by the interaction of the output gap and a dummy for the crisis years (2008-2011) in

Table 5. Indeed, all Latin American countries implemented several fiscal measures to cope with the negative consequences of the recent macroeconomic shock, marking a significant turning point in the history of the region.

This result also originated from the changes experienced by the Latin American countries over recent decades. As reported above, the *great fiscal transformation* (Cornia et al, 2011) refers more to a structural transformation than to a change in current conditions. One of the most emblematic examples is related to the improvements in debt management. Indeed, Table 5 confirms that respecting the condition of budget constraint has highlighted a new period in a region historically affected by debt crises. In addition, Table 5 shows that the terms of trade have not played a significant role in the fiscal balance results. Thus, it is possible to argue that the good performances recorded by Latin American countries are not only related to favorable economic conditions but also to revenue and expenditure policies. However, Model 3 shows that changes in the international market favorably affected the fiscal conditions of countries such as Bolivia, Colombia, Peru and Venezuela.

Moreover, several Latin American countries implemented fiscal rules. Table 5 shows that they also played a positive and significant role in fiscal results. Although there is still no consensus in the empirical literature about their direct capacity to contribute to macroeconomic stability (Dos Reis et al, 2007), it is reasonable to expect that fiscal rules helped Latin American countries to produce more fiscal discipline and credibility, which contributed to improve their fiscal condition, at least in the early 2000s.

Finally, Table 5 confirms that it is possible to differentiate between countries according to the political regime. In particular, Model 4 shows that there is no difference between Left regimes and the others. Nonetheless, Cornia (2012) explains that a fiscally-prudent macroeconomic policy was a central pillar of the new policy model implemented by Social Democratic governments. Thus, the results are different when distinguishing between Radical Left and Social Democratic countries (Model 5). Indeed, the latter performed better than others, confirming that political changes also affected fiscal conditions.

Table 5. Response of Fiscal Policy to the output gaps for 14 Latin American countries, 1990-2011 (dependent variable: Primary Fiscal Balance/GDP)

| | 1 | 2 | 3 | 2 | 3 | 5 |
|---|---|---|---|---|---|---|
| Primary bal (t-1) | 0.7471*** | 0.7476*** | 0.7562*** | 0.7258*** | 0.7011*** | 0.6836*** |
| | [0.039] | [0.039] | [0.048] | [0.037] | [0.038] | [0.047] |
| g | -0.2742 | -2.758 | -2.6674 | -2.6173 | -2.3843 | -2.2846 |
| | [1.363] | [1.801] | [1.796] | [1.610] | [1.507] | [1.469] |
| g*years of crisis | | 5.3413** | 5.2482** | 5.2720*** | 5.0362*** | 4.9552*** |
| | | [2.332] | [2.350] | [1.934] | [1.810] | [1.721] |
| Ex_Debt | 0.0042 | 0.0038 | 0.0045* | 0.0056** | 0.0062** | 0.0057** |
| | [0.003] | [0.002] | [0.003] | [0.003] | [0.002] | [0.002] |
| ToT | -0.0013 | -0.0012 | -0.0026 | -0.0023 | -0.0028 | -0.0026 |
| | [0.006] | [0.006] | [0.006] | [0.006] | [0.006] | [0.006] |
| ToT*Rentiers | | | 0.0103*** | | | |
| | | | [0.003] | | | |
| Rules | | | | 0.4278*** | 0.3404*** | 0.2924*** |
| | | | | [0.112] | [0.113] | [0.103] |
| Left | | | | | 0.3274 | |
| | | | | | [0.200] | |
| Social_dem | | | | | | 0.5722** |
| | | | | | | [0.278] |
| Radical | | | | | | -0.0361 |
| | | | | | | [0.174] |
| Constant | 0.057 | 0.0698 | 0.093 | -0.0261 | -0.0666 | -0.0495 |
| | [0.669] | [0.659] | [0.643] | [0.670] | [0.637] | [0.636] |
| Observations | 273 | 273 | 273 | 273 | 273 | 273 |
| Number of countries | 14 | 14 | 14 | 14 | 14 | 14 |
| AR(1) | 0.013 | 0.013 | 0.010 | 0.015 | 0.013 | 0.013 |
| AR(2) | 0.659 | 0.592 | 0.495 | 0.596 | 0.578 | 0.589 |
| Sargan | 0.306 | 0.324 | 0.440 | 0.280 | 0.203 | 0.162 |

Source: Authors' calculations. NOTES: Robust standard errors in brackets * significant at 10%; ** at 5% and *** at 1%. OUTPUT GAP, EXTERNAL DEBT/GDP are considered endogenous variables.

## 5. Conclusions

Historically, the Latin American countries were characterized by high economic volatility prompted by the inconsistency of their policies in the field of public finance. The dramatic dependence on external conditions, and the weakness in spending and tax structure, reduced the space of policy. Consequently, fiscal policy was mainly dependent on the economic cycle, losing, in this case, its role of macroeconomic stabilizer.

However, something changed during the last decade. The implementation of fiscal reforms favored the improvement of fiscal positions in Latin American countries. Thanks to policies based on containing public spending and the sharp increase in their revenue, these countries also recorded a positive fiscal balance. Public debt reduction and the high level of reserves accumulated gave them more policy space than in the past. As a result, Latin American governments were able to implement *countercyclical* policies in order to face the negative economic and social consequences associated with the recent macroeconomic shock.

Yet, not all countries performed in the same way. In the late 2000s, fiscal conditions in some commodity exporter countries were still far too much affected by external conditions. In addition, Radical left and Right countries had fewer possibilities to implement countercyclical policies because of their pre-crisis conditions. In contrast, countries run by Social Democratic and Centrist governments enjoyed more fiscal space, as they had realized larger budget surpluses during the good years and so were able to cope with the crisis without impairing their fiscal condition.

To sum up, this paper shows that Latin American countries have offered a good policy lesson to other developing countries. Indeed, their experiences highlight the crucial role of fiscal policy in promoting macroeconomic stabilization. In particular, prudent fiscal policy in normal times assures the necessary conditions to better face macroeconomic challenges once they arise.

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