

# **Fiscal policy reform in Latin America<sup>1</sup>**

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## **Abstract**

Despite recent improvements in fiscal solvency, Latin America still faces serious challenges in this area. Structural balance estimates show that the region is still vulnerable to adverse shocks, and could benefit from reforms to improve solvency, reduce procyclicality and improve efficiency and equity of public spending and taxes. In this paper I propose and attempt to quantify the impact of reforms based on recent economic literature. The proposals include improving debt management by using contingent debt instruments, improving solvency and reducing procyclicality by implementing effective fiscal rules, creating a regional policy evaluation office and reforming tax systems to eliminate distortionary taxes and replace corporation taxes with personal income taxes.

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## ***1. Introduction***

Latin America has historically been a fiscal basket case. Since the 1970s, debt crises, hyperinflations and balance of payments crises have recurred, hampering growth prospects and affecting the welfare of low income households the most<sup>2</sup>. Furthermore, public spending and the tax system are inefficient and regressive, and fiscal policy is procyclical, augmenting the already high macroeconomic volatility.

Although fiscal reforms in the 1990s combined with high growth and rising commodity prices have significantly improved fiscal outcomes over the past 4 years, it is not yet clear that a break with the past has occurred. High debt levels persist<sup>3</sup>, and as I shall show in the next section, an important part of the recent increases in revenue are transitory, while increases in expenditures tend to be permanent. This implies that the structural fiscal balance paints a less rosy picture than current figures, and that a downturn in economic activity could lead to a new bout of fiscal solvency problems.

In this paper I suggest four reforms to improve fiscal outcomes in Latin America, and attempt a quantification of the potential impact of these reforms based on the recent literature. The proposals are:

- using contingent debt instruments to improve debt management
- implementing fiscal rules, in particular, Fiscal Responsibility Rules and structural balance rules
- creating a regional public policy evaluation agency
- tax reform, particularly eliminating distortionary taxes and replacing corporate taxes with personal income taxes

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<sup>2</sup> Poor households are more affected by inflation since they cannot use financial instruments to protect their assets and income, they tend to be employed in the informal sector and thus lack employment protection, and social spending tends to decline during crises.

<sup>3</sup> The average for the region is around 50%, and many analysts suggest that for countries with weak institutions, the recommended level is well below this figure. (see section 4 below).

The paper is organized as follows. In section 2 I argue that the main challenge to be addressed in Latin America is consolidating fiscal solvency and making fiscal policy countercyclical. In section 3 I present specific proposals to contribute to solving the challenge, and in section 4 I attempt a quantification of the impact of these reforms. Section 5 concludes.

## ***2. The challenge***

Latin America's most important fiscal challenge is to consolidate the recent gains in fiscal solvency<sup>4</sup> and reduce the procyclicality of fiscal policy. The region has a history of fiscal profligacy, in which deficits were covered by printing money – resulting in high inflation, and in extreme cases, hyperinflation – or by tapping financial markets, leading to exploding debt ratios, often ending in debt crises.

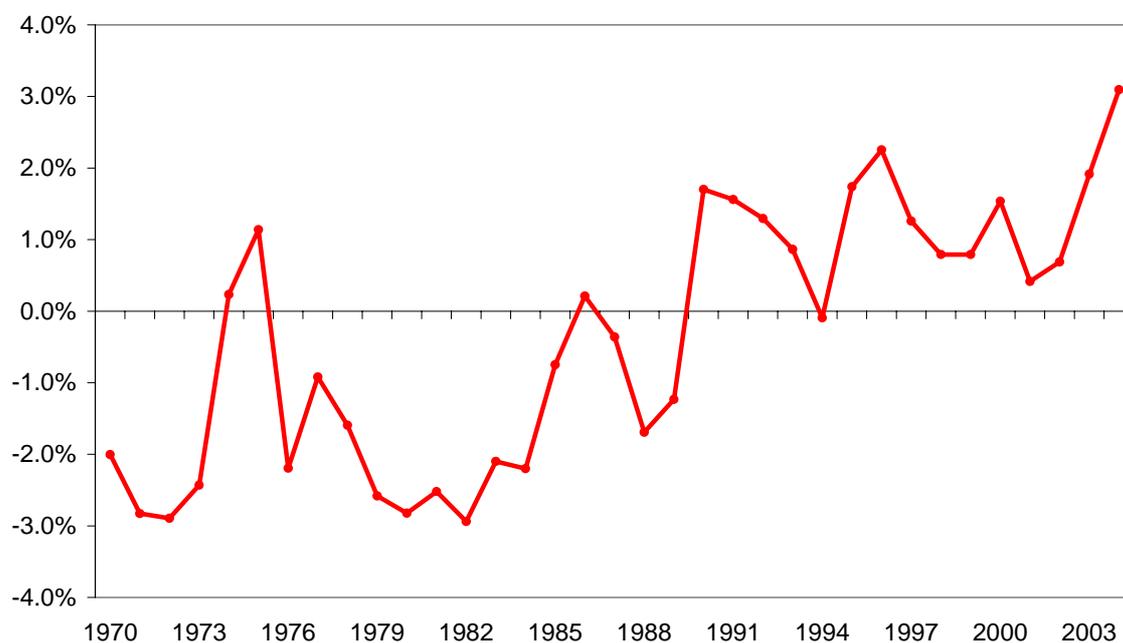
In Figure 1, I document primary fiscal outcomes from 1970 to the present<sup>5</sup>. The figure shows the well known fact that until the early 1990s, the region suffered from systematic deficits.

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<sup>4</sup> It is of course also key to improve efficiency and equity of spending and tax systems. However, since in this project there are other papers that deal more directly with these issues, I will focus mainly on the challenge of fiscal solvency.

<sup>5</sup> Unless otherwise specified, the sample of countries included for calculations is Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

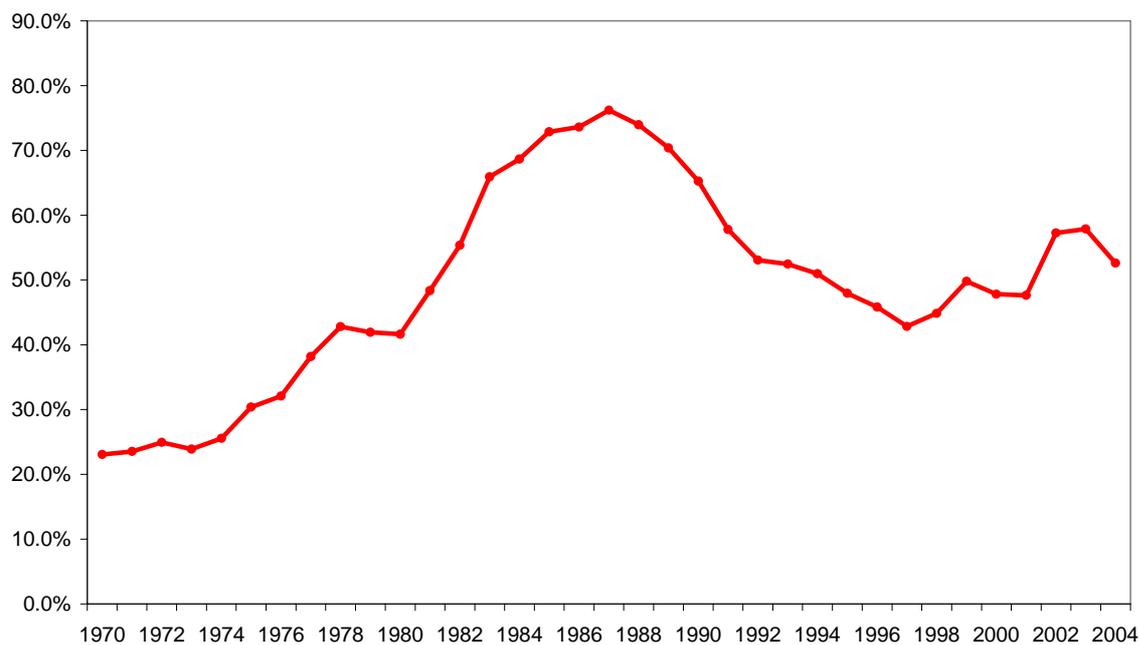
**Figure 1: Primary fiscal balance in Latin America: 1970-2004 (% of GDP)**



Source: IMF-World Economic Outlook

The consequences of fiscal profligacy are shown in Figure 2 and Table 1. Average gross external debt surpassed 75% of GDP in 1987, when 20 years before it had been around 20%. The monetization of deficits following the 1982 debt crisis led to high inflation during the decade, and episodes of hyperinflation in Argentina, Bolivia, Brazil, Nicaragua and Peru.

**Figure 2: Gross external debt in Latin America, 1970-2004 (% of GDP, simple average)**



Source: World Bank – World Development Indicators

**Table 1: Inflation in Latin America 1980-2006 (by decade)**

Annual variation in CPI			
	80's	90's	00-06
<b>Regional average<sup>1</sup></b>	<b>333.7%</b>	<b>148.3%</b>	<b>8.0%</b>
<b>Regional average (w/o hyperinflations)</b>	<b>26.4%</b>	<b>21.4%</b>	<b>8.0%</b>
Argentina	566.6%	253.8%	8.9%
Bolivia	1368.1%	10.5%	3.5%
Brazil	332.3%	854.8%	7.8%
Chile	21.4%	11.8%	2.9%
Colombia	23.4%	22.1%	6.6%
Costa Rica	27.1%	16.9%	11.2%
Ecuador	34.0%	39.0%	23.2%
El Salvador	18.5%	10.6%	3.3%
Guatemala	12.3%	15.3%	7.2%
Honduras	7.4%	19.7%	8.4%
Mexico	69.1%	20.4%	5.4%
Nicaragua	2437.9%	321.4%	7.6%
Panamá	3.1%	1.1%	1.3%
Paraguay	20.5%	14.1%	8.8%
Perú	651.4%	813.2%	2.2%
Uruguay	57.6%	48.9%	9.0%
Venezuela	23.1%	47.4%	19.1%

Source: own calculations based on IMF-WEO

1/ Simple average

High debt levels and high inflation had a pernicious effect on growth, poverty and income distribution in Latin America. Fischer (1993), for instance, found that growth was negatively correlated with inflation and large budget deficits in a large sample of countries. Edwards (2007) shows that crises have cost the region up to 7% of GDP per decade since the 1970s, and that a significant contributor to the probability of facing a crisis is the fiscal balance.

Over the past 15 years, and especially in the past five years, fiscal outcomes have improved dramatically in the region. Since the mid-1990s, high inflation has no longer been a problem, and debt ratios have improved. These results might suggest that fiscal solvency is no longer a serious challenge in Latin America. However, crises, in many cases motivated by sudden stops<sup>6</sup> in capital flows are still a major risk, as witnessed by the Mexican peso crisis in 1994, the Brazilian devaluation in 1998 and more recently the Argentine collapse in 2001. As mentioned above, these crises are costly, and loose fiscal policy makes them more likely.

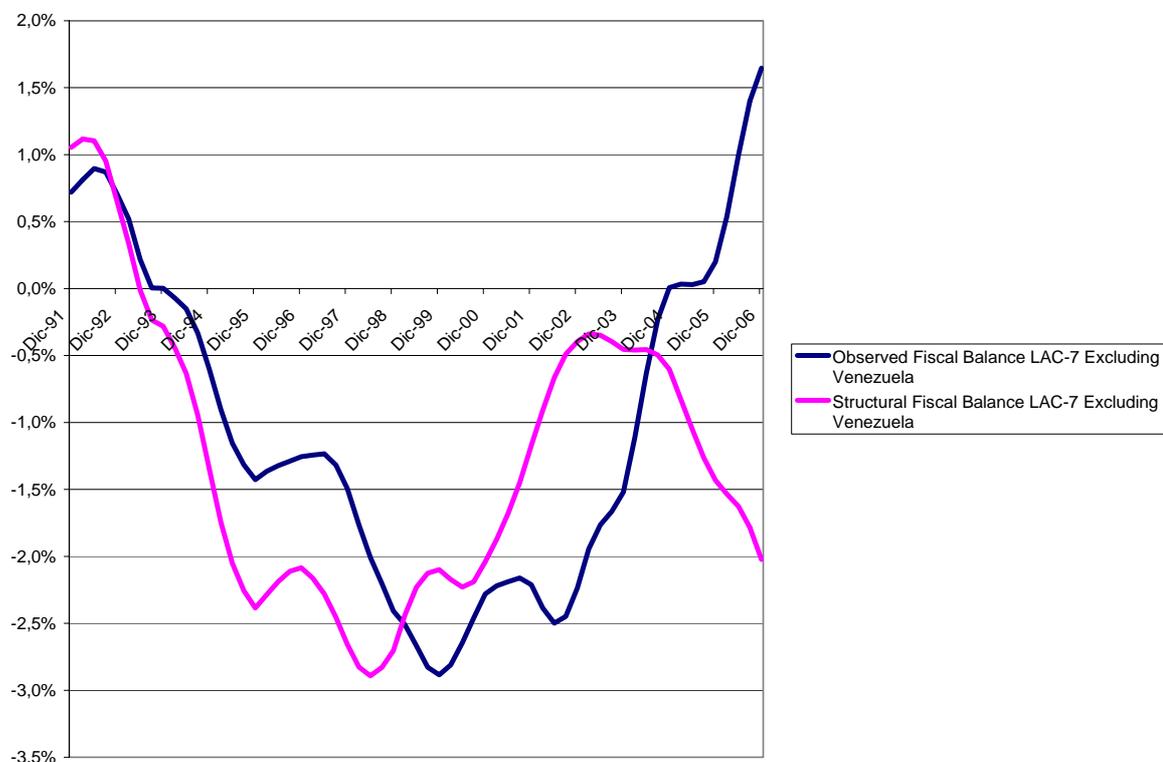
Furthermore, the recent favorable international context leads to an overstatement of the region's alleged fiscal virtue. The combination of favorable terms of trade and low interest rates has contributed to economic growth and therefore higher tax revenues, and to reduce debt payments. However, as shown by Talvi (2007), the recent improvements in revenues appear to be mostly transitory, whereas increases in expenditures are permanent. In other words, the structural budget balance for the region paints a less rosy scenario, and a reversal of fortunes could quickly lead to poor fiscal outcomes. In Figure 3 I show the structural fiscal balance for the seven largest Latin American economies<sup>7</sup> estimated by Talvi (2007). Whereas the observed fiscal balance for the fourth quarter of 2006 is 1,6% of GDP, the estimated structural balance is -2,0% of GDP.

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<sup>6</sup> See, for instance, Calvo (1998).

<sup>7</sup> Venezuela is excluded so as to avoid the large effect of its increased oil revenues. When Venezuela is included, the structural balance is -4,0% of GDP.

**Figure 3: Observed and Structural Budget Balance, LAC-7 countries excluding Venezuela (quarterly data, % of GDP)**



Source: Talvi (2007)

Note: LAC-7 refers to Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela

The Structural Fiscal Balance is calculated by replicating Chile's structural balance calculation for LAC-7 countries. (see Talvi 2007 for details)

The risk of a sudden stop, combined with the structural fragility of fiscal balances, lead me to argue that Latin America still faces a significant solvency challenge.

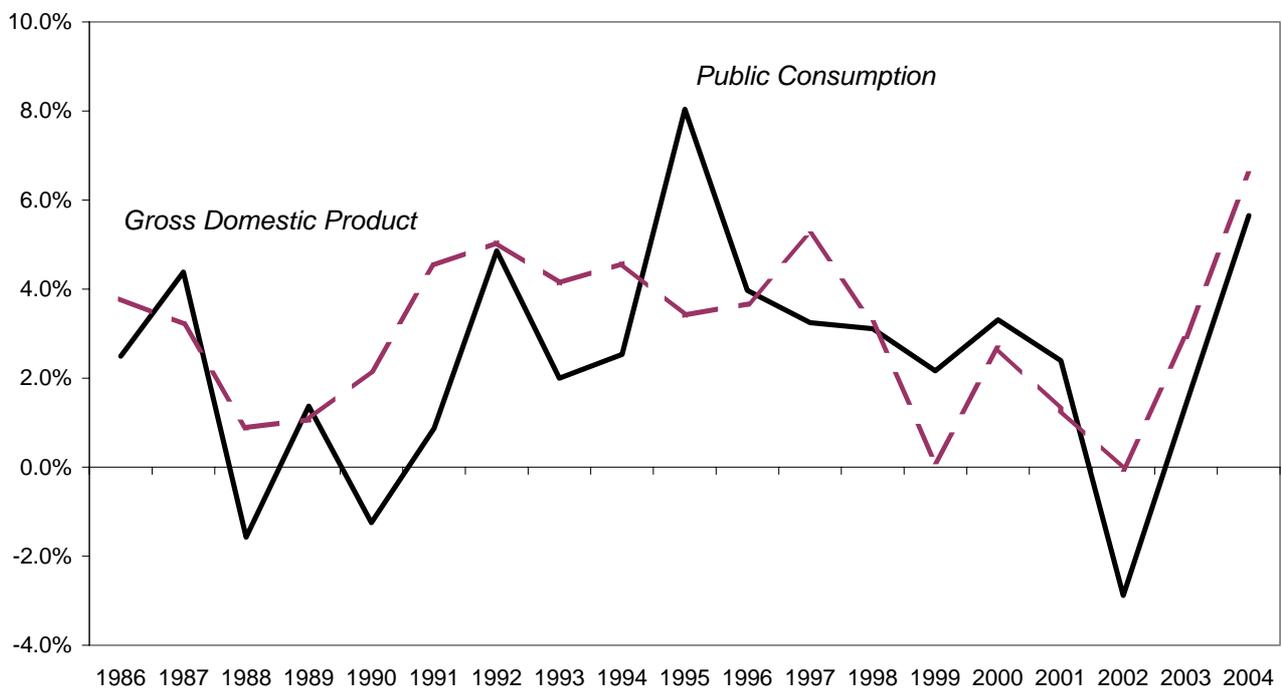
In addition to solvency problems, fiscal policy in Latin America is dramatically procyclical. Gavin and Perotti (1997) showed that, contrary to theoretical predictions<sup>8</sup> and the experience in developed countries, fiscal policy tends to be expansionary during economic expansions and contractionary during recessions in Latin America. Talvi and Vegh (2000) showed that this was in fact true for a larger sample of developing countries. Using a careful definition of procyclicality, focusing on policy instruments rather than

<sup>8</sup> Both Keynesian stabilization prescriptions and neoclassical tax-smoothing arguments would lead to countercyclical fiscal policy (see Braun 2001).

endogenous outcomes, Kaminsky, Reinhart and Vegh (2004) confirm that fiscal policy, in particular government expenditure, is procyclical in Latin America<sup>9</sup>.

A first look at procyclicality is presented in Figure 3, where I show the similar pattern of changes in real GDP and real government consumption in the region.

**Figure 4: Procyclicality of government consumption in Latin America, 1985-2004 (% change in real GDP and real government consumption)**



Source: IMF - WEO

In Table 2 I present more rigorous results from Kaminsky et al (2004) for the correlation between the cyclical component of GDP and real government expenditure. Except for Colombia, all other countries in Latin America have a positive correlation, implying that government spending increases during good times, and falls during recessions. Compared to OECD countries, the average correlation is more than double. Furthermore, the amplitude of the fiscal cycle is significantly larger. Spending varies by almost seven

<sup>9</sup> See also Alberola and Montero (2007) for an estimate of procyclicality in Latin America that tries to separate structural from transitory factors in revenue changes.

percentage points between good and bad times in Latin America, compared to almost zero for OECD countries (in fact, for OECD countries the difference is negative, meaning that expenditures are actually higher during bad times).

**Table 2: Procyclicality of government spending and amplitude of the spending cycle in Latin America and other regions**

Country	Correlation between the cyclical component of GDP and Real central government expenditure	Amplitude of the cycle of central government expenditure	
		Level (percentage points)	percentiles
Argentina	0.25	5.35	17%
Bolivia	0.09	3.43	11%
Brazil	0.11	9.50	30%
Chile	0.22	3.69	12%
Colombia	-0.01	0.99	4%
Guatemala	0.54	6.13	19%
Honduras	0.17	4.62	15%
Mexico	0.02	7.05	22%
Nicaragua	0.40	15.92	50%
Panama	0.10	7.06	22%
Paraguay	0.57	4.97	16%
Peru	0.59	5.12	16%
Uruguay	0.58	10.98	34%
Venezuela,	0.46	8.67	27%
<b>LATAM average</b>	<b>0.29</b>	<b>6.68</b>	<b>21%</b>
<b>OECD average</b>	<b>0.13</b>	<b>-0.26</b>	<b>8%</b>
<b>Other developing</b>	<b>0.34</b>	<b>7.19</b>	<b>21%</b>

Source: Kaminsky, Reinhart and Vegh (2004)

Note: The cyclical components of GDP and spending are obtained with a Hodrick-Prescott filter. The amplitude of the spending cycle is the difference between spending in good and bad times, where good (bad) times are defined as years of above (below) median growth.

This means that fiscal policy amplifies the already high economic volatility in the region, negatively affecting growth.

In the current expansionary cycle, expenditures are rising, consistent with the historic tendency towards procyclicality. Therefore, I argue that combating the procyclicality of fiscal policy remains a significant challenge for Latin America's development.

## **2.1 The determinants of insolvency and procyclicality**

Recommendations for overcoming the challenge must of course start from an understanding of the cause of the problems. The recent literature has identified two types of causes for current fiscal policy problems: 1) economic volatility, caused in part by external shocks, combined with high levels of foreign currency debt (ie: past fiscal problems), and 2) politico-institutional factors.

### ***Volatility, sudden stops and original sin***

In a context of economic volatility, a country with high levels of foreign currency debt can quickly become insolvent. If a sudden stop or a rapid deterioration in terms of trade causes a recession and a devaluation, the dollar-denominated debt payments of the government – or the necessary bailout of the private sector - can cripple public finances and force a fiscal adjustment during bad times. This means that both insolvency and procyclicality can ensue.

Calvo and Talvi (2005) show that in Latin America, GDP is highly correlated with financial flows. Following the Russian crisis in 1998, financial flows to all emerging markets plummeted, forcing macroeconomic adjustment in most, and causing a crisis in some. They argue that depending on the domestic financial structure, the exchange rate regime and the fiscal stance, the impact of these sudden stops in capital flows will be different. They compare Chile and Argentina, and argue that the former didn't suffer a crisis while the second did, because in Chile, the private and public sectors' liabilities were less dollarized, the exchange rate was flexible and the fiscal position was more solid. Furthermore, more open economies require a smaller exchange rate adjustment to re-establish current account balance following a sudden stop (see Calvo et al 2003). Therefore, more open economies suffer less the impact of these sudden stops.

One might argue that poor past fiscal policy outcomes lead to a high level of debt and low credibility, forcing governments to borrow in foreign currency. If this were the case,

then proposals should focus exclusively on addressing the underlying causes of fiscal deficits (see below). However, Hausmann and Panizza (2003) find no significant correlation between debt / GDP or debt / revenue ratios and their measures of “original sin”, ie, the foreign currency fraction of debt.

This discussion leads us to identify economic volatility, debt dollarization (both in the private and public sectors), a closed economy and a history of debt intolerance and low credibility as potential determinants of fiscal problems, both insolvency and procyclicality. In fact, IDB (2007) and Campos et al (2006) calculate that 20% of the variation in public debt not explained by fiscal deficits is due to episodes of devaluation with highly dollarized debt and banking crises. At the same time, fiscal insolvency contributes to increasing the probability and impact of sudden stops, and leads to increases in the debt burden, creating a vicious cycle.

Proposals to address this source of fiscal problems should focus on limiting economic volatility, increasing the participation of local-currency debt and improving credibility<sup>10</sup>.

### ***Political economy***

Turning to political economy considerations, since the costs of fiscal insolvency and procyclicality are so evident, it is hard to imagine a social planner with a reasonable social welfare function enacting these policies<sup>11</sup>. Recent research has pointed to underlying political causes for insolvency and procyclicality. I therefore turn to a discussion of the political economy determinants of fiscal policy.

The political problems identified in this literature as underlying poor fiscal behavior could be summarized in two categories: principal-agent problems and cooperation

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<sup>10</sup> We do not discuss proposals to open the economy further and make exchange rates more flexible, because these proposals would have multiple impacts whose quantification is beyond the scope of this paper.

<sup>11</sup> However, Talvi and Vegh (2000) for theoretical arguments opposing this view.

problems.<sup>12</sup> By principal-agent problems we refer to the potential abuse that arises in the relationship between the citizens (principal) and their elected representatives (agent). Imprudent fiscal behavior is often the result of actions taken by public officers who are not maximizing the welfare of their constituencies, but rather pursuing private interests. The complexity of public policy decisions, the institutional framework of representative democracy<sup>13</sup> and the free-rider problem faced by voters when deciding whether to invest time and resources to monitor government activity lead to asymmetric information and delegation of power. This is basically a variation of the classic principal-agent problem: if it were possible to limit policymakers' discretion by "contracting" clear rules, then the abuse of public office for personal or partisan gain would be limited. Furthermore, adequate transparency and accountability would allow voters to monitor and control their representatives more effectively. An example related directly to fiscal policy is when governments overspend during an election year in order to stimulate the economy and convince voters that they are competent<sup>14</sup>.

By cooperation problems we refer to the game played by multiple political actors with heterogeneous preferences that maximize objectives that, to some extent, include the welfare of their constituencies. A classic example of cooperation problems is the well-known common pool problem. In fiscal policy, this problem arises due to the following factors: i) an important characteristic of many government programs is that while they tend to generate benefits that are concentrated, they are often financed from a common pool of resources, and ii) fiscal policy is not designed by a benevolent social planner but rather is the result of a collective decision process with several actors involved: the president, spending ministers, legislators, bureaucrats, pressure groups, etc.

Each of these actors represents specific interests, and faces diverse incentives with respect to fiscal solvency. For example, presidents and finance ministers have more incentives to internalize the aggregate, intertemporal government budget constraint vis a vis other political actors (legislators, spending ministers, governors). The president is

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<sup>12</sup> See, for instance, Alesina and Perotti (1995), von Hagen (2006) and Eslava (2006) for surveys.

<sup>13</sup> See, Persson, Roland and Tabellini (1997) for a model analyzing this problem.

<sup>14</sup> See Rogoff and Sibert (1988)

elected in a single national constituency and cares about national issues such as macroeconomic stability. Given that macroeconomic crises are blamed mainly on presidents, the Executive is more likely to prioritize fiscal solvency as a policy objective than other political actors. In contrast, legislators, spending ministers and subnational actors cater to specific constituencies in order to advance their political careers. For example, the constituencies of spending ministers are groups who benefit from government programs. As such, they do not internalize the aggregate costs of spending programs and have incentives to overspend.

As suggested by the discussion above, common pool and principal-agent problems with fiscal policy can vary across countries and over time due to variations in the underlying incentives faced by key players in the fiscal policymaking process (PMP). These incentives are in turn shaped by political and budget institutions. Thus, the political economy literature that will be reviewed in the following sections analyzes the contribution of institutions in aggravating or reducing common pool and principal agent problems among voters and politicians, and thus, specifies the institutional sources of deficit biases and procyclicality in fiscal policy outcomes.

### ***I. Common pool problems: on the consequences of fragmented fiscal PMPs***

A general theme treated in the literature is the degree of fragmentation of the fiscal PMP (Velasco 2000). The basic proposition is that as the number of players drawing from a common pool of resources increases, the fiscal balance deteriorates. However, any procedure that forces the players to consider the full tax burden will reduce spending and budget deficits.

The problem of the commons has been studied in a variety of contexts. At the level of the legislature, Weingast, Shepsle and Johnsen (1981) show how public expenditure can increase due to the common pool problem inherent in the political interaction between regions represented in Congress. Congressmen have an incentive to propose spending increases that accrue to their region, because resources are collected from the entire

country, and thus the marginal benefit of an extra dollar of local spending is positive. At the level of the cabinet, Velasco (1999) illustrates how the common pool problem operates in a dynamic setting resulting not only in higher spending, but also in higher deficits and debt accumulation.

As argued by von Hagen (2006), this tendency for excessive spending, deficits, and debt increases with the number of players drawing from the common pool. A key question is then, what determines the degree of fragmentation, and hence, the size of the common pool problem in the fiscal PMP? The answer is institutional: electoral rules, government types, party systems, federalism, and budget institutions are among the key institutional variables affecting fiscal performance.

*a) Electoral rules, government types, and the number of parties*

Electoral systems refer to the set of rules under which members of legislatures and the executive are elected. The basic components of any electoral system are *district magnitude* (number of representatives elected per district) and *electoral formula* (plurality, PL, or proportional representation, PR). Under PL, all seats go the candidate/list winning the most votes. Under PR, seats are allocated in proportion to the votes received by each party list.

Another important consideration is whether legislators are elected from closed or open lists. In the first case, voters can only choose among party lists but they cannot choose among the candidates within a list. Therefore, the order in the list (established by party leaders) is determinant for deciding which legislators win a seat to the legislature. In the second case, voters can choose individual candidates from the list according to their preferences. Seats are allocated first to parties, based on the sum of the votes of all the candidates of that party, and then the most voted candidates from that party win those seats (Cox and McCubbins 2001).

The ballot structure has important implications, as it could affect electoral strategies, the degree of party discipline, and the link between voters and representatives (Carey and

Shugart 1995). Assuming that party labels are meaningful, closed list systems provide party leaders greatest control over rank and file legislators, encouraging party discipline (Mainwaring and Shugart 1997). As party leaders decide the order of the list, this may also weaken the nexus between legislators and voters.

By contrast, in open list systems, as candidates of the same party compete against one another, they face incentives to form *factions*, that is, organized groups within parties that compete for control of valued resources. Thus, challenging the party line is less costly than in closed list system where party leaders enjoy more carrots and sticks. Summarizing, while closed list system encourage party votes, in open list systems legislators face incentives to cultivate “personal votes” (Carey and Shugart 1995). Such personal votes encourage politicians to provide particularistic goods to specific groups to get reelected (Hallerberg and Marier 2004).

Electoral rules matter for fiscal performance as they affect the number of parties represented in legislatures, the type of government in place (single party or coalition, majority or minority), the likelihood that the executive enjoys a majority in Congress, and the extent to which legislators face incentives to consider full or only a small part of the total tax burden. Thus, all these variables have an impact on the degree of fragmentation of the fiscal PMP, and as a result affect fiscal outcomes.

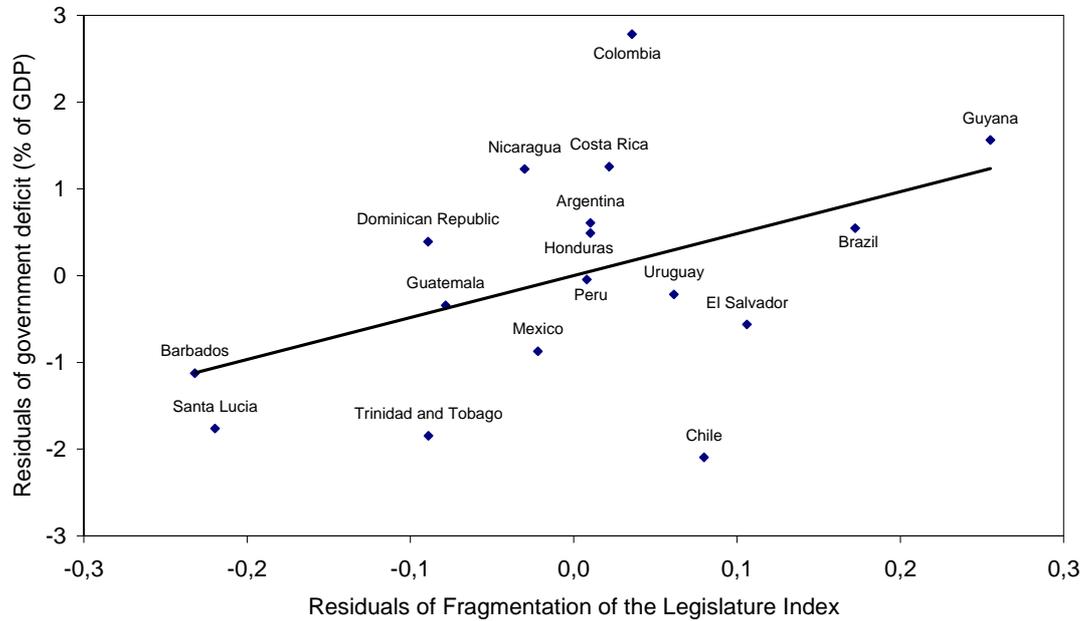
In a sample of 26 Latin American countries for the period 1990-1995, it has been found that countries with large district magnitude<sup>15</sup>, a large number of effective parties in the legislature, and weak support for the governing party in Congress tend to be associated with larger fiscal deficits (Stein, Talvi and Grisanti 1998). In contrast, plurality systems lead to smaller government deficits (Persson and Tabellini 2003). The relationship between legislative fragmentation<sup>16</sup> and deficits is illustrated in Figure 5.

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<sup>15</sup> District magnitude is the size, in number of voters, of jurisdictions in which legislators are chosen. A large district magnitude will generally imply that there are many legislators per district, increasing the probability that multiple parties are represented in Congress.

<sup>16</sup> Legislative fragmentation is measured by IDB (2007) as the negative of the Herfindahl index for the fraction of seats held by different parties. The Herfindahl index takes a value of negative one if all seats are held by the same party and a value of zero if there are as many seats as parties represented in parliament.

**Figure 5: Fiscal outcomes and legislative fragmentation**



Source: IDB (2007)

Neto and Borsani (2004) find that a president enjoying strong legislative support and a stable team of ministers had a favorable impact on fiscal balance in a sample of 10 LA countries between 1980 and 1998. The fact that cabinet stability plays a role in determining budget outcomes points towards the importance of political actors' time horizons in the fiscal PMP: political instability, measured by frequency of government changes, appears to lead to larger deficits in both developed and developing countries (Roubini 1991).

Fiscal deficits are also the outcome of electoral rules that provide incentives for legislators to cultivate a personal vote<sup>17</sup> (Hallerberg and Marier 2004). This is consistent with the idea that common pool problems are exacerbated when politicians only consider a small fraction of the total tax burden and interact in fragmented settings. We now turn to a different set of institutions regulating the relationships between the central and

subnational governments (federalism and decentralization) and examine their role in exacerbating the commons problem.

Regarding procyclicality, the number of actors has also been found to be a relevant determinant. Tornell and Lane (1999) present a model in which competition among powerful groups leads to an increase in overspending of a common resource when this resource increases – for example, procyclical public spending. This pressure increases as the number of groups increases. Braun (2001) finds evidence consistent with this hypothesis for developing countries: as the number of political veto players increases, fiscal policy becomes more procyclical.

#### *b) Federalism and Decentralization*

In this section we analyze the incentives on fiscal discipline created by federal fiscal arrangements. In particular, we explore the potential of decentralization to aggravate the commons problem. These issues are of particular relevance not only for formally federal countries in Latin America (Argentina, Brazil, Mexico, Venezuela) but for the region as a whole: since the mid 80s a wave of decentralization reforms has swept the continent empowering regional politicians with more fiscal resources than in the past (Daughters and Harper 2007).

Federal fiscal arrangements define tax and expenditure assignments between different levels of government, the design of intergovernmental transfers and the borrowing autonomy of subnational units (Stein 1999). In Latin America, decentralization is typically much higher in the expenditure dimension than in the revenue sphere (IADB 1997). This asymmetry between expenditure responsibilities and revenue capacity at the subnational level generates a gap, known as vertical fiscal imbalance, which is typically bridged through the use of transfers from the central government.

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<sup>17</sup> By personal vote we understand the vote for an individual candidate rather than a party.

As should be clear by now, such institutions create an incentive for subnational governments to over spend the common pool of resources, enjoying the full benefit of expenditures without internalizing the costs. This problem may become even more serious in cases where subnational governments have a large degree of borrowing autonomy, in particular if the central government finds it difficult to commit not to bail them out in case of financial trouble (Rodden 2002). In this case, bailout expectations and the commitment problem affect the behavior of subnational governments and under certain configurations they will tend to overborrow and overspend, and then shift the burden onto the central government (Inman 2003, Rodden et al. 2003). Under what conditions is this possible?

The degree of vertical imbalance and level of borrowing autonomy are key indicators of how soft or hard subnational budget constraints can be. If subnational actors face soft budget constraints, they would have the incentive to be fiscally irresponsible. On the contrary, hard budget constraints impose limits on fiscal profligacy. For example, Rodden (2002) shows that subnational governments tend to achieve balanced fiscal accounts when either the federal government imposes tight borrowing constraints or when subnational governments have wide ranging taxing autonomy (low level of common pool).

As a final point, one should also note that political federalism also plays a role in the fiscal PMP. In cases where electoral districts coincide with territorial units (e.g. states, provinces), the degree of “partisan harmony” (the extent of support for the president throughout the territorial units) affects fiscal policymaking. As shown by Rodden and Wibbels (2002) a federation’s capacity to control deficits increases as the share of subnational units controlled by the party of the chief executive increases.

Another key factor is the overrepresentation of smaller subnational units in the national legislature (malapportionment). Malapportionment strengthens the political power of the least populated states relative to the most populated units. It is interesting to note that malapportionment is not a unique feature of territorial chambers. In fact, several lower

houses in federal systems show a certain degree of overrepresentation even in population-based lower chambers (Samuels and Snyder 2001).<sup>18</sup> As a consequence, overrepresented units may skew the distribution of fiscal resources in their favor and typically receive higher resources per capita (Gibson, Calvo and Falleti 2004).

Federal fiscal arrangements can also contribute to enhance procyclicality. If federal transfers to subnational governments are a fixed percentage of federal tax collection, then transfers will increase automatically during expansions. If subnational governments have less incentives to save this increase than the federal government (for example, if they expect a bailout if problems arise down the line) then the procyclicality of spending will increase.

### *c) Budget institutions*

In addition to the set of political institutions reviewed above, budget institutions are also considered key determinants of fiscal discipline. Budget institutions can be defined as all the rules and regulations according to which budgets are drafted, approved, and implemented (Alesina and Perotti 1996). One can identify three types of budget institutions: *fiscal rules*, which establish numerical restrictions on certain fiscal indicators (such as balanced budget laws), *procedural rules*, which determine the prerogatives of the actors involved in drafting, approving and implementing the budget, as well as the rules of engagement throughout these phases, and *transparency rules* define the degree of comprehensiveness of the budget as well as the availability of information and ex post control of budget execution (Alesina et al. 1996, Filc and Scartascini 2007).

Budget procedures have been classified along a “hierarchical-collegial” continuum (Alesina et al. 1996). Hierarchical procedures attribute strong prerogatives and powers to the finance minister in the budget preparation stage within the executive branch, and severely limit the prerogatives of the legislature in amending the budget. In contrast, collegial procedures emphasize the prerogatives of spending ministers vis a vis the

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<sup>18</sup> This is a result of the existence of, among other things, lower and upper limits to the number of deputies that a certain region may have.

treasury, and do not limit the extent of possible legislative amendments to the proposed budget.

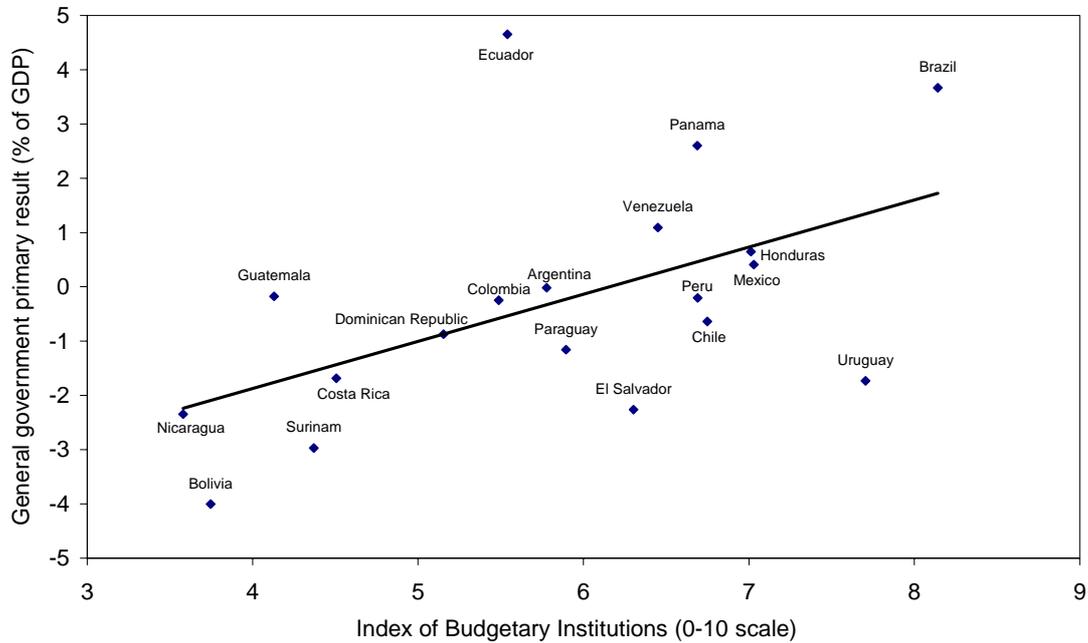
Given that hierarchical procedures provide a leading role to the Executive branch in the budget process, and that presidents and treasury ministers have more incentives to internalize the government intertemporal budget constraint, hierarchical rules should promote fiscal discipline.

In order to test this hypothesis in Latin America<sup>19</sup>, Alesina et al. 1996 construct a “budget institutions index” with several components which refer to all the stages of the budget making process (preparation, approval and implementation). Higher values of the index correspond to more hierarchical and transparent budget institutions. They find that countries that rank higher in the index have also lower deficits. Filc and Scartascini (2007) confirm these results for a larger time period and sample of countries (see Figure 6).

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<sup>19</sup> See Bohn and Inman (1996) for a test of the impact of fiscal rules in US states.

**Figure 6: Budget Institutions and Fiscal Outcomes**



Source: IADB (2007)

So far, we have discussed coordination problems between policymakers (the common pool). We now turn to an example of a typical principal-agent problem found in fiscal policymaking: that of the political business cycle.

## ***II. Principal-Agent problems: the political business cycle***

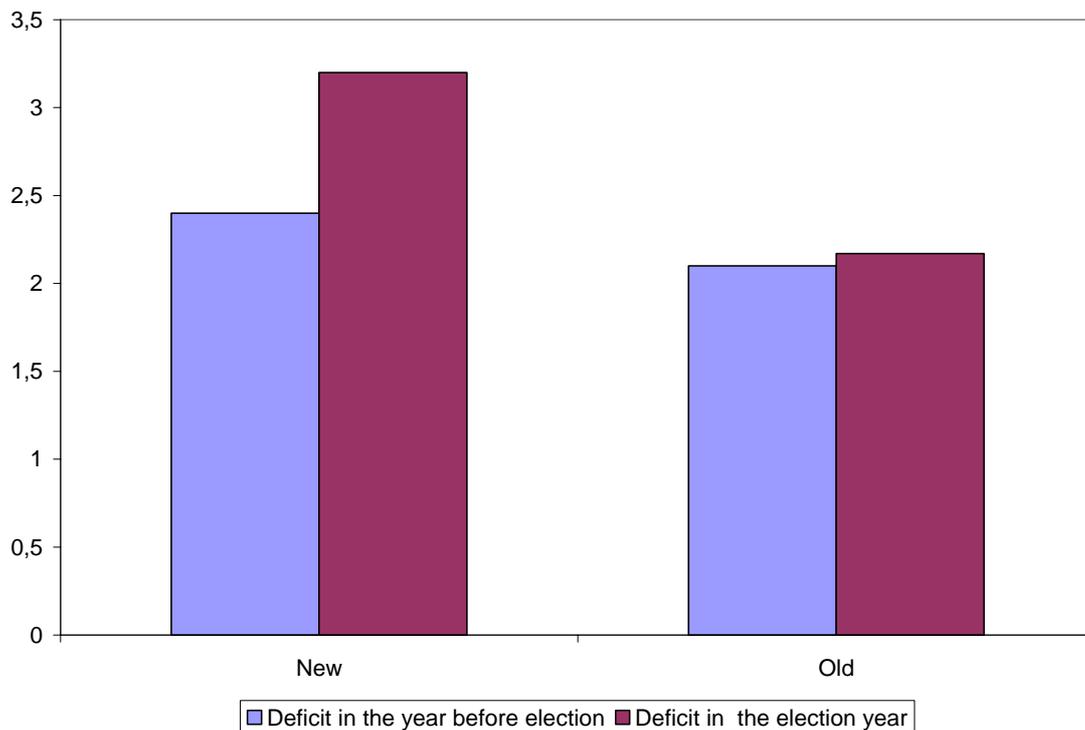
The literature on political business cycles deals with the incentives of policymakers to manipulate fiscal policy during election times. Classic studies argue that all governments increase spending and reduce taxes before elections in order to increase their reelection prospects.<sup>20</sup> Thus, electoral opportunism may be another source of deficit bias in representative democracies.

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<sup>20</sup> See Drazen (2000) for a summary of the evidence on political budget cycles.

However, recent empirical evidence shows that political budget cycles only accrue under certain specific circumstances. Given that these conditions are present in Latin America, we turn to the literature's main findings. First, Brender and Drazen (2005) find a political budget cycle in a large cross-section of countries, but this fact is driven by the experience of "new democracies" in the first few years after their transition to democratic regimes (see Figure 7). The authors argue that in these settings, fiscal manipulation may work because voters are inexperienced with electoral politics or may simply lack the information needed to evaluate fiscal manipulation that is produced in more established democracies

**Figure 7: Average budget deficits in the election year and in the previous year**



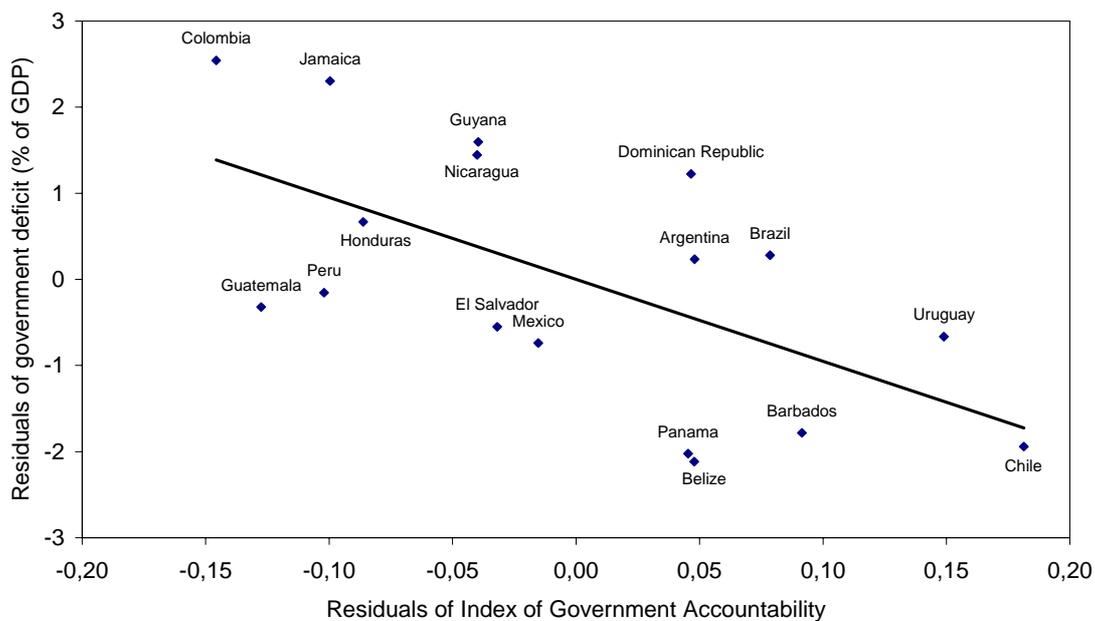
Source: Branden and Drazen (2005)

Additionally, Shi and Svensson (2006) find that the size of political budget cycles is much larger in developing countries than in developed countries. To explain this difference they focus on two factors: politicians' rents from remaining in power (proxied by level of corruption) and the share of informed voters in the electorate (proxied by

access to media data). Higher levels of corruption and a small share of informed voters imply larger deficit increases in election years for developing countries.

The discussion above suggests that the ability of voters to monitor fiscal policy is a key determinant of fiscal outcomes. Lack of budget transparency and accountability provide incentives for opportunistic politicians to incur in fiscal deficits and debt accumulation. For example, Eslava (2006) shows for Latin American and Caribbean countries that an accountability index<sup>21</sup> has a negative impact on the deficit (See Figure 8).

**Figure 8: Government Deficit and Accountability**



Source: IADB (2007)

Overall, there is evidence that political and budget institutions are key determinants of fiscal outcomes in general, and the budget balance and cyclical stance in particular. Fiscal discipline and stabilizing fiscal policy results when fragmentation of fiscal responsibility

<sup>21</sup> This index draws from the World Bank's Governance indicators, measuring among other things, political rights, freedom of the press and press development.

is limited and voters are able to monitor politicians' behavior. On the contrary, fiscal profligacy, debt accumulation and procyclicality are the outcome of common pool and principal-agent problems in the fiscal PMP. These problems can be exacerbated by institutional arrangements that provide opportunities for politicians to ignore or shift the full tax burden of their fiscal decisions.

In sum, rules such as electoral systems, federalism, or budget institutions shape the behavior of politicians in the fiscal PMP and hence, matter for understanding fiscal performance. The relevance of political and fiscal institutions for fiscal solvency and procyclicality must therefore be taken into account for the design of specific solutions.

### ***3. The proposed solutions***

If the determinants of insolvency and procyclicality are related to economic volatility caused by external shocks, high levels of foreign currency external debt and politico-economic factors, then proposals should explicitly address these issues. I therefore propose three types of solutions to the challenge of improving fiscal solvency and reducing procyclicality. They are 1) improving debt management, 2) consolidating the budget process, and 3) improving the efficiency and equity of taxes and expenditures.

I first briefly describe the reforms, then I discuss the potential impact they would have and in the next section, attempt a quantification of this impact based upon the empirical literature studying fiscal policy and growth.

#### ***1) Improve debt management***

In the previous section, we argued that one of the determinants of sudden fiscal solvency problems and sharp adjustments during bad times that lead to procyclical fiscal policy was the interaction of volatility with domestic balance sheet effects. In particular, the level of foreign currency debt appears as a relevant factor.

Of course, simply increasing the proportion of local currency debt is not something countries can do by fiat, there has to be a demand for that debt. There are several proposals in the literature that seek to reduce the burden of foreign currency debt by using contingent contracts of different types. (see IDB 2007 for a survey) For example, Eichengreen and Hausmann (2005) argue for a global initiative by International Financial Institutions (IFIs) and developed countries to create a market for local-currency debt by first creating a unit of account indexed to developing country inflation, and then having IFIs issue debt denominated in this unit, whilst lending to individual countries in inflation-indexed local currency. Borenztein and Mauro (2002) call for the use of GDP-linked bonds, that would essentially make bondholders partners in the economic success or failure of the borrowing country, reducing debt payments during bad times and increasing them during good times. Caballero and Kowan (2007) argue for the use of contingent contracts that are not linked to emerging-market instruments.

The proposal in this section then is for governments to take advantage of opportunities to *use contingent debt instruments* as part of their debt-management policies.

Using contingent debt would reduce the probability of a crisis, reduce the size of the fiscal adjustment necessary were a crisis to occur, and therefore would reduce the likelihood of sudden fiscal insolvency problems arising. At the same time, the forced procyclicality of fiscal policy would be reduced, since fiscal adjustments during bad times would be lower. Of course, these mechanisms have costs, since they perform the function of insurance. These costs must be paid up-front, with benefits accruing in the future, which often makes politicians wary of implementing these mechanisms.

## ***2) Consolidate the budget process***

The political economy roots of insolvency and procyclicality point us in the direction of modifying the rules and institutions by which fiscal policy is decided. In the previous section we identified electoral rules, federalism and budget procedures as some of these

key institutions. I hesitate in proposing changes in electoral rules and federal arrangements, since the consequences of these changes span well beyond fiscal issues<sup>22</sup>. Furthermore, they often require constitutional changes or a special majority, since they reflect political equilibria regarding fundamental issues such as political representation and regional autonomy.

With this caveat in mind, I focus on proposals to improve budget procedures and transparency in Latin America. The region has already made progress in this aspect. Filc and Scartascini (2007) document the reforms made during the last 15 years. They show that several countries have improved their procedural rules, making them more hierarchical, implemented numerical rules that limit deficits, spending and debt levels, and increased budget transparency.

However, there is still much that can be done. Several countries still lag in reforming the budget process. Filc and Scartascini (2007), following the methodology of Alesina et al (1996) find that the difference in fiscal surplus between a country in the first and fourth quartiles of an index of fiscal institutions is 2.3% of GDP. Countries with more hierarchical budget procedures, numerical limits on deficits and spending, and more transparent fiscal policy obtain better fiscal outcomes.

Specific proposals in this area include the following:

- ***Implement fiscal responsibility laws***

These laws usually bundle together several of the desirable characteristics of budget procedures. They call for independent revenue estimates, limit the ability of legislatures and line ministries to increase spending, impose numerical limits on deficits, spending and debt, and include transparency clauses to improve the access to fiscal information by

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<sup>22</sup> Also, most Latin American countries are not federal, except for Mexico, Brazil, Argentina and Venezuela.

the public. The best example of a fiscal responsibility law in the region to date is Brazil (see, for example, Braun and Tommasi (2004) and Braun and Di Gresia (2002) for analyses).

A well-designed fiscal responsibility law will limit the common-pool problem by limiting the pool of common resources that agents have access to (deficit and spending limits), and by constraining the capacity of agents – especially subnational governments – of indirectly obtaining part of the common pool (eg: borrowing constraints for subnational governments). Furthermore, it will limit the principal-agent problem by increasing transparency and accountability (eg: independent revenue estimates, timely publication of fiscal information)<sup>24</sup>.

- *Structural deficit rules:*

Chile has followed a policy of calculating its structural fiscal balance, ie, the fiscal balance that would result absent cyclical fluctuations. The policy goal, first stated as an informal rule, and recently passed into law, was to maintain a structural surplus of 1% of GDP<sup>25</sup>. This means that during recessions, the country can run deficits as long as the structural surplus remains at 1% of GDP. This of course implies that during good times, the surplus must be higher than that which would simply result from cyclical increases in revenue. (see Fiess 2002 for a discussion of the rule).

The advantage of this kind of rule is that in addition to limiting the overall deficit, just as well-enforced numerical rules would, it would also lead to countercyclical fiscal policy. The reason is that during good times, when revenues increase, a higher surplus is demanded by the rule, since growth is above trend. During recessions, a deficit is allowed to the extent that income and revenues are below trend.

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<sup>23</sup> See IDB (2006) for a deep analysis of political institutions in Latin America. The study warns about the risk implied in proposing reforms based on “partial equilibrium” analysis, that is, not considering the full effects of reforms.

<sup>24</sup> See Alt and Lowry (2006) for a theoretical discussion of the different effects of transparency on fiscal policy.

<sup>25</sup> This limit has very recently been reduced to 0,5% of GDP.

- ***Create a Congressional Budget Office***

An office of this kind would aim to increase the technical capability of parliaments in the region to analyze budgets and evaluate the impact of laws with fiscal consequences<sup>26</sup>. It is important to note that this kind of office should have an informative function for Congress, not actual authority to influence the budget, so as to avoid the possibility of reducing the hierarchical nature of the budget process. Also, authorities should be selected following technical criteria so as to avoid simple capture by factions in Congress. This proposal should be considered as an integral part of a FRL, as a mechanism to increase transparency and accountability.

As a final note, it is worth emphasizing that a very important caveat in designing fiscal rules, both fiscal responsibility rules and structural surplus rules, is credibility and enforceability of reforms. In contexts in which laws and regulations are often violated by governments with no serious consequences ensuing, ie, where enforcement of laws is weak, then fiscal rules will probably have little impact on fiscal outcomes, and in fact might be counterproductive. Braun and Tommasi (2004) argue that in weak institutional environments, fiscal rules do not significantly affect the incentives of policymakers in the fiscal policymaking process, and therefore, if the pre-rule equilibrium involved a deficit bias, fiscal outcomes will probably not comply with the limits set in the rule. Furthermore, the violation of the rule can actually further reduce policy credibility in the country, which could justify not passing the rule in the first place<sup>27</sup>.

**3) *Improve efficiency and equity of spending and taxes***<sup>28</sup>

Although efficiency and equity of spending and taxes are not necessarily directly related to fiscal solvency and countercyclicality, given the pervasive problems in these areas, I

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<sup>26</sup> See Braun et al (2006) for discussions of CBOs in Latin America.

<sup>27</sup> See Braun and Gadano (2007) for an example of this problem in Argentina.

believe it is important to contribute suggestions<sup>29</sup>. Furthermore, even in the presence of poor fiscal institutions, by finding good fiscal policies, the negative impact on growth can be reduced.

#### *a. Spending*

- ***Create an independent agency to provide rigorous and systematic evaluations and cost-benefit and distributive impact analysis for government programs.***

An agency of this kind, that should initially be regional in nature due to limited technical capabilities in several countries<sup>30</sup>, would perform evaluations, cost-benefit analysis and distributive impact analysis of government programs, generate databases to monitor and evaluate social conditions and government programs over time, compare the impact of programs in different countries and share information on effective policies. The existence of this kind of information and analysis should influence policymakers and the public to prioritize more effective programs<sup>31</sup>

- ***Increase the proportion of automatic stabilizers in the budget***

Braun (2001) finds that almost 10% of the difference in the cyclical behavior between developed and developing countries can be accounted for by differences in the composition of their budgets. Developed countries have a stronger prevalence of transfers in their budgets. Many of these transfers act as automatic stabilizers. For example, well-functioning unemployment insurance programs automatically increase their spending during recessions as unemployment increases, and decrease their spending during

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<sup>28</sup> Note: in this section I have excluded sectoral reforms such as reforms to health and education spending, because these are addressed in the other papers. I focused on reforms one would think would be implemented by the Economics Ministry.

<sup>29</sup> In fact, Berkman and Cavallo (2006) find that inefficiency of public spending, tax evasion and inefficiency of the tax structure were the three highest ranking fiscal problems in a survey of 308 regional public policy experts.

<sup>30</sup> See Galiani (2006)

<sup>31</sup> However, see Galiani (2006) for a discussion of the necessary conditions for impact evaluation to affect policy. Among others, he suggests that a network of universities, think tanks, independent media, etc that actually analyzes these evaluations is key.

expansions as jobs are created. Therefore, automatic stabilizers can actually help reduce the procyclicality of fiscal policy in the region.

The risk of course is that if the problem of fragility of public finances in the face of sudden stops is not resolved, then automatic stabilizers would increase the size of the necessary fiscal adjustment in more flexible areas of the budget, probably making the fiscal adjustment politically more costly and therefore less likely, increasing the probability of a full-blown crisis.

Furthermore, it is not straightforward to implement a well-functioning unemployment insurance scheme in Latin American countries, where a high percentage of workers are in the informal sector. Workfare programs are typical replacements, but it is often harder to reduce spending in these programs during good times, since recipients typically receive informal sector employment. This makes it difficult to detect the recipients that should be leaving the program during expansions.

Overall, automatic stabilizers should probably be used in moderation, and phased in only after financial risks are reduced and the extent of formal employment has increased sufficiently. For this reason, I believe that this proposal should not yet be considered as part of the solution package.

### ***b. Tax reform***

I focus on issues of tax policy, and purposely avoid tax administration, since these proposals would overlap with administrative reform proposals in other chapters of this study, and because it is likely that many issues of tax administration will solve themselves, to the extent that electronic transactions become more widespread.

- *Eliminate excessively distortionary taxes*

Although the neutrality of tax systems in Latin America has improved significantly over the past 15 years (see Lora 2007), there are still a number of excessively distortionary taxes that limit economic activity, for example, financial transactions taxes, which have become increasingly popular in the region. Coelho et al (2001) document how following economic crises in the late 1990s, six Latin American countries adopted taxes on financial transactions. They argue that these taxes can have serious allocative efficiency problems. First, since the tax is levied on each financial transaction, it taxes the payments in each stage of a productive process, becoming a turnover tax, with the well-known distortion of taxing activities with a larger number of stages more heavily. But more importantly for the Latin American context, financial transactions taxes generate incentives to operate outside the financial system, contributing both to increasing informality in the economy and to reducing financial intermediation.

In most cases, financial transactions taxes were instated during fiscal crises, as a means to prop up revenues in the face of falling tax collection. However, they have not been removed during the recent expansion. Instead, expenditures have increased, as shown above, making it difficult to remove these taxes without negatively affecting the fiscal balance. Therefore, the elimination of these taxes should be gradual, and will require a commitment to moderate future spending increases.

- *Modify the income tax by a) reducing corporate taxation and offsetting lost revenue by including dividends and capital gains in the personal income tax base, and b) replacing complex personal income taxes with a constant marginal rate*

Typically, in Latin America corporations pay corporate income taxes, but dividends and capital gains are exempt from personal income taxation. The problem with this arrangement is twofold. First, given that Latin American countries are generally small, open economies and that capital is significantly more mobile than labor, we can expect

the incidence of corporate taxes to fall mainly on workers (see the classic study of Harberger 1962). Second, it limits incentives to re-invest profits.

If instead reinvested profits were exempt of corporate income tax (as in Chile until the early 90s – see Hsieh and Parker 2006) and dividends were included in the personal income tax base, there would be stronger incentives by companies to reinvest profits, leading to higher growth. Lost revenue would be recovered via dividend taxation and higher growth.

Regarding simplification of the personal income tax schedule, this proposal is a classic in public finance (see, for example, Friedman (1962)). Progressive income tax schedules have disincentive effects to work, especially by the most productive workers. (see Gruber and Saez 2002). Furthermore, the complexity of tax systems generate a compliance cost in terms of time that is not insignificant<sup>32</sup>. The main criticism against an income tax with a constant marginal rate would be that it would make the tax system less progressive. However, if there is an exemption, or a universal transfer, then even though the marginal rate is constant, the average tax rate will be progressive, ie, people with higher income will pay a higher percentage of their income relative to low-income people.

#### ***4. The impact of the proposed solutions***

In this section I attempt a quantification of the impact of the reform proposals. I focus on the impact of the proposals on economic growth. For a full evaluation, one would also want to study distributive consequences, ideally mapping the impact of the reforms on the distribution of individual income<sup>33</sup>. However, as will be evident from the discussion below, even for the more straightforward connection between fiscal policies and growth, precise estimates are scarce in the literature. The extra step of calculating impact on individual income would compound the problem beyond what I believe is productive.

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<sup>32</sup> Hodge et al (2006) calculate the compliance cost for US federal taxes at \$244 billion, or 24% of revenue.

<sup>33</sup> In fact, one would ideally take this one step further and evaluate the impact on individual welfare, and evaluate this impact using a social welfare function.

Coming up with a precise number for the costs and benefits of the proposed solutions, even when we focus on economic growth, is a daunting task given the current state of knowledge. Fiscal policy affects the economy in numerous ways, and in general there is no professional consensus on the magnitude – and sometimes even on the sign – of the coefficients, even for broad issues such as the size of taxation and spending. Domenech (2004) surveys the literature that relates government spending and taxes with growth, and finds highly variable results. For example, Engen and Skinner (1996) find a negative correlation between a balanced budget increase in spending and taxes and economic growth, whereas Easterly and Rebelo (1993) and Levine and Renelt (1992) find that the correlation between size of government and growth is in general statistically insignificant.

This uncertainty increases even more when we consider reforms that have only recently been attempted and for which insufficient time has passed to have a precise evaluation, such as the implementation of financial transactions taxes. The same happens for policies that have been attempted in very few countries, such as the Chilean corporate tax exemption for reinvested profits.

To add to the problem, in some of the cases we have to compound estimates. For example, a Fiscal Responsibility Law will affect growth indirectly through its effect on fiscal solvency. To get an estimate on the final effect then we need to first estimate the effect of the implementation of the FRL on fiscal outcomes (not easy, since FRLs are recent and not too common in the region), and then multiply this by the effect of fiscal solvency on growth, a contentious issue in itself, at least in terms of magnitude.

Finally, as mentioned in the previous section, since credibility and enforcement of reforms is a key issue, measuring what policies actually do is sometimes even more complex. The de facto impact of a reform may well be different from the de jure expectation in contexts of weak institutions.

With these caveats in mind, I assess the existing empirical estimates to attempt an approximation of the possible impact of the proposed reforms.

In Table 3 I present a summary of the results, and then develop the calculations below.

**Table 3: Summary of impact estimates**

<b>Proposal</b>	<b>Potential impact</b>
Contingent debt instruments	0,7 – 0,8% of GDP per year
Fiscal rules	0,3 – 0,6% of GDP per year
Policy evaluation agency	No available estimates
Tax reform	0,47 – 1,82% of GDP per year

### *1) Improve debt management*

Eichengreen (2004) makes a rough estimate of the benefit of eliminating currency crises at around 0,7% of GDP per year for developing countries. This number could be interpreted as an upper-bound for the benefit of the proposal to incorporate contingent debt instruments to debt management policies since, at best, these policies would eliminate currency crises.

Caballero and Pangeas (2006) calculate that for a country like Chile, with good fundamentals, hedging the probability of suffering a sudden stop can be equivalent to a reduction in the stock of debt of 10 percentage points of GDP. However, IDB (2007) shows that the benefit of debt reduction varies by country, depending on the current stock of debt and the quality of policies and institutions. They show recent empirical estimates that have found a non-linear relationship between external debt levels and growth<sup>34</sup>. Low levels of debt appear to be beneficial for growth up to a point, and then the correlation turns negative. The problem is that estimates for this turning point range between 10 and

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<sup>34</sup> See for example Patillo et al (2002), Clements et al (2003), Cordella et al (2005) and Imbs and Ranciere (2005).

60% of GDP! In addition, Imbs and Ranciere (2005) find that the threshold level at which debt becomes negative for growth is higher for countries with better institutions.

To make an optimistic calculation, assume that Latin American countries are in the negative coefficient territory of the above non-linear relationship between debt and growth, so reducing debt would be beneficial – a not too unreasonable assumption, given an average level of external debt to GDP of almost 50% in 2004, excluding Argentina and Nicaragua that were above 110%. Following IDB (2007), this would mean that a 10 percentage point reduction in the debt / GDP ratio could generate a growth benefit of around 0,8 percentage points per year. However, the shakiness of this estimate cannot be stressed enough<sup>35</sup>.

## *2) Consolidate the budget process*

To estimate the impact of the proposals to improve the budget process, we need first an estimate of the impact of fiscal rules on budget outcomes, and then an estimate of the impact of fiscal outcomes on economic growth.

For the first part of the calculation, we rely on Filc and Scartascini (2007), who replicate the cross-country estimates of Alesina et al (1998) with newer information and a larger data set. Their dependent variable is the average fiscal balance between 2000 and 2002, and the relevant independent variable is an index of budget institutions measuring the degree of hierarchy and transparency of the budget process, and the existence of numerical limits to fiscal variables<sup>36</sup>. They find that countries in the top quartile of the budget index have a fiscal result 2.3 percentage points of GDP better than countries in the bottom quartile.

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<sup>35</sup> First, it would mean extrapolating the 10% estimate of Caballero and Pangeas, which they already claim to be a very rough estimate, to the whole sample of Latin American countries. Second, it would mean believing an average of recent estimates, most of which have not been published in peer-reviewed journals, actually applies to Latin American countries today. Both of these assumptions are beyond heroic.

<sup>36</sup> The authors also control for the stock of debt, terms of trade shocks and the dependency ratio.

This calculation has of course many problems. For starters, it is based on only 19 observations for Latin American countries. Second, it covers a short time period, and the true coefficients could be time-variant. Third, there is a fundamental problem of potential endogeneity in the estimates of the impact of fiscal rules that has not been addressed in the literature<sup>37</sup> – and is not addressed by the authors. Namely, both good fiscal outcomes and solid fiscal institutions could be reflecting voter preferences rather than good institutions causing good outcomes. A final problem is posed by the fact that it is not clear how a Fiscal Responsibility Law or structural balance rule would actually map into the index of fiscal institutions. Would it really be an increase from the bottom to the top quartile? It is far from obvious. This final problem is composed by the fact that enforcement issues might severely limit the impact of the reform.

For the second part of the calculation, I take the estimated coefficients for the effect of fiscal surplus on growth from Fischer (1993), who estimates cross-section and panel growth regressions for a sample of 94 countries. These range from 0,133 for the cross-sectional estimates to 0,241 for panel estimates with standard controls. Compounding the impact of rules on the fiscal surplus with these coefficients would indicate that a successful fiscal rule, that could take a Latin American country from the lowest to the highest quartile in the Filc-Scartascini index, could increase growth by 0,3 to 0,6% per year<sup>38</sup>.

### ***3) Improve efficiency and equity of spending and taxes***

#### ***a. Spending***

Theoretical models of growth suggest that more efficient public spending, especially in human capital and infrastructure, can improve growth<sup>39</sup>. This has been confirmed by some empirical estimates. (see, for example, Baffes and Shah 1998). However, the

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<sup>37</sup> See Braun and Tommasi (2004) for a critique.

<sup>38</sup> The growth coefficients of course could vary depending on time period selected, sample of countries and estimation methodology, so these results should also be considered very tentative.

<sup>39</sup> See, for instance, Lucas (1988) and De Long and Summers (1991)

impact of improved cost-benefit evaluation on public spending efficiency has not been estimated to my knowledge, and in fact would be very hard to estimate, since isolating the effect of evaluation on program productivity would not be straightforward. For this reason, I believe it would be unreasonable to present even a rough estimate as with the other proposals.

### *b. Tax reform*

For the tax reform proposals, I will focus on the reform of income taxes, since the creation of financial transaction taxes in Latin America is too recent to allow a serious quantification of their negative impact.

Taxes can affect growth in several ways. Heckman et al (1998) argue that a progressive income tax discourages investment in education, thus affecting human capital negatively. The recent economic growth literature emphasizes the importance of innovation and investment in research and development for economic growth. Furthermore, it can be expected that entrepreneurship is linked to these drivers of growth. A burgeoning public finance literature based on US data shows a significant negative effect of corporate taxes and progressive personal income taxes on risk-taking and innovation. For instance, Gentry and Hubbard (2000) show that a progressive personal income tax reduces risk-taking, and Gordon (1998) shows that a low corporate tax rate relative to the personal income tax rate encourages risk-taking. Cullen and Gordon (2002) show using individual tax returns for the US during 1964-1993 that income taxation harms entrepreneurial activity.

Motivated by this literature, Lee and Gordon (2004) estimate the impact of personal income and corporate tax rates on growth in a panel of 70 countries for the period 1970-1997. They find that GDP growth is negatively correlated with corporate tax rates, but find little effect for personal income taxes. Their estimates imply that a 10 percentage point decline in the tax rate leads to a 0,47 to 1,82 percentage point increase in the annual growth rate, depending on the controls included and the estimation strategy employed.

I take this calculation as the benchmark estimate for the impact of tax reform, since it is unlikely that a much larger decline in the tax rate than 10 percentage points can be politically feasible.

## ***5. Conclusions***

Despite the recent upswing in economic activity that has improved fiscal accounts throughout the region, Latin America still faces serious challenges in terms of fiscal solvency and procyclicality. These challenges are masked by the current favorable environment, but a deeper look at structural balances give us cause for concern.

Serious solutions to these problems must be based on a solid understanding of the underlying determinants of fiscal problems, namely, problems of volatility and debt structure and political economy issues.

In this paper I have proposed policy measures based on the existing economic literature to address these challenges. These measures include improving debt management by using contingent debt instruments, the use of fiscal rules to overcome deficit bias problems and procyclicality, improving public spending efficiency by creating a regional policy evaluation agency and tax reform to eliminate recently created distortionary taxes, reduce corporate taxes and simplify and generalize personal income taxes.

I have attempted a rough quantification of the potential impact of these measures on economic growth based on the existing literature. A simple addition of these calculations lead to a potential benefit in terms of growth of up to 3 percentage points of GDP per year<sup>40</sup>. However, these estimates should be considered as extremely tentative, and any attempt to guide policy action based on these estimates should apply the utmost caution. This work presents a challenge to the economics profession, to come up with ever better estimates of the impact of public policies to better guide policy decision-making.

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<sup>40</sup> Apart from the mentioned limitations of calculation, simple addition of these benefits is likely to be wrong, since there is probably important overlap in the benefit of the proposed solutions.

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