CEDE

BUDGET INFLEXIBILITY

JUAN CARLOS ECHEVERRY [1]
LEOPOLDO FERGUSSON [2]
PABLO QUERUBÍN [3]

Abstract

The study of budgetary institutions has long been an important topic in the economic literature. Nonetheless, the degree of rigidity or inflexibility in budget preparation, a prime preoccupation for policy makers and in particular for finance ministers since a long time ago, has been relatively unexplored. In this paper we show that budget inflexibility can take several forms and argue that it is likely to be closely related to various types of political conflict present in the budget process. Moreover, we study one particular form of budget inflexibility and its connection with one specific (but perhaps the most important) political force driving the budget process. More specifically, we discuss some of the consequences of "expenditure inflexibility," defined as the existence of transfers to special interests enjoying constitutional or legal protection which impede their modification in the short run, in a simple model of legislative bargaining that captures the Tragedy of the Commons present in public budget allocation.

Key words: Colombia, Fiscal Policy, Budget, Inflexibility.

JEL classification: H30, H61, K00.

---

[1] Decano, Facultad de Economía, Universidad de los Andes. E-mail: jechever@uniandes.edu.co

[2] Profesor investigador, Facultad de Economía, Universidad de los Andes. E-mail: lferguss@uniandes.edu.co

[3] Profesor investigador, Facultad de Economía, Universidad de los Andes. E-mail: pquerubi@uniandes.edu.co

INFLEXIBILIDAD PRESUPUESTAL

Resumen

El estudio de las instituciones presupuestales ha sido por mucho tiempo un tema importante en la literatura económica. Sin embargo, el grado de rigidez o flexibilidad en la preparación del presupuesto, una preocupación vieja y primordial para las autoridades de política y, en particular, para los ministros de Hacienda, ha sido relativamente inexplorada. En este documento se muestra que la inflexibilidad presupuestal puede tomar diversas formas y que está estrechamente relacionada con diversos tipos de conflicto político presentes en el proceso presupuestal. Adicionalmente, se estudia una forma particular de inflexibilidad presupuestal y su conexión con una fuerza política específica (pero quizá la más importante) tras el proceso presupuestal. Más concretamente, se presenta un modelo simple de negociación legislativa que captura la Tragedia de los Comunes que está presente en la distribución del presupuesto público para discutir algunas de las consecuencias de la "inflexibilidad en el gasto", definida como la existencia de transferencias que benefician a grupos de interés particulares y que gozan de protección legal o constitucional que impiden su modificación en el corto plazo.

Palabras clave: Colombia, Política Fiscal, Presupuesto, Inflexibilidad.

Clasificación JEL: H30, H61, K00.

BUDGET INFLEXIBILITY

1   Introduction

Fiscal sustainability has been a prime preoccupation for developing economies for as far as there is a record of public finances and macroeconomic behavior. Most of the macroeconomic crises episodes have been characterized by public debt service problems, in turn related to excess expenditures or negative shocks to tax revenues. The reasons lie in the fact that emerging economies face considerable demands for aggressive public expenditure programs in order to respond to social aspirations on health, education, aqueducts, sanitation, roads, power generation and telecommunications, and finally social programs for the old, the unemployed and other vulnerable strata of population. Such expenditure programs have a structural character and can hardly be removed in the short run, when the public finances come under stress. If the country is temporarily blessed by access to world or domestic capital markets, the solution

is the accumulation of public debt, which as time passes, and interest rates start to reflect the vulnerable financial position of sovereign credit, becomes itself an aggravating element. Indeed, weak financing structures, normally denominated in hard currencies, and short maturity expose fiscal finances to devaluation and sudden stops in public debt roll-over.

In order to tackle stubborn growth underperformance and macroeconomic instability, during the nineties many Latin American countries adopted so-called market oriented reforms aimed at reducing the degree of state intervention on their economies, allowing goods and services' prices to be set by market forces, simplifying tariff structures, cutting inflation and granting central bank independence, boosting competitiveness and exports, opening room for private participation on sectors traditionally secured to public ownership, like utilities, decentralizing government and allowing capital flows a freer movement. These reforms implied a clearer focus for public sector intervention, specially oriented to wealth redistribution and poverty reduction. The new, narrower scope of the public sector and the enhanced role of sub-national public administration entities were thought to bring closer the public resources allocation decision to people who knew best their needs and could make the public officials accountable.

In spite of the original appeal of this set of reforms and the trust on their positive impact on the economy, the macroeconomic vulnerability did not decline, and in some instances increased as short term capital flows made real and nominal variables fluctuate sharply in very short spans. In the favorable ambiance of the beginning of the nineties, public expenditure found windows of opportunity in the international capital markets to finance expenditures above short term revenues. However, a sequence of international crises set off by the 1994 Tequila Crisis and hopefully terminated by the December 2001 Tango crisis, the biggest default of public debt witnessed in history, created a quite unstable international environment. The effect of reforms was tarnished by a series of external shocks that impeded these economies to perform up to the expectations.

Huge intellectual efforts have been devoted to tackle the issue of restoring credibility to public policies in these economies, to design credible strategies for reforming taxes, increasing revenues (i.e. improving the efficiency of the tax collection agencies), or reforming budgetary institutions. Following the example of seemingly successful fiscal framework adopted by the Clinton administration at the beginning of the nineties, many countries took to congress and approved the so-called Fiscal Responsibility Laws, also championed by the multilateral institutions. Such codes proposed a set of rules aimed at medium and long term fiscal sustainability. Most of the measures adopted consisted simply on making explicit the long term consequences of current expenditure and fiscal imbalances, the financial costs associated with borrowing, and the sustainability conditions of observed public debt levels. However promising and stable these laws looked at the outset, most of them could be reformed by the yearly budget law and could not avoid the issuing of new laws mandating expenditure. In democratic societies congresses would, and probably should, never surrender its competence for issuing expenditure-mandating laws. Hence, the fiscal responsibility

framework depicted by such laws was as strong as the institutional consensus for fiscal prudence within their democratic institutions. Such consensus proved weaker than originally thought. Indeed, efforts to balance the budgets have systematically under-performed vis-à-vis the voracity of the executive and the legislative.

Facing the capacity of the legislative for creating new expenditures and protecting them via law and constitutional stipulations, the economic authorities' attention turned from the aggregate imbalances to understanding the microstructure of public expenditure. Short term inflexibility became a prime preoccupation. Many expenditures were protected by law or by the constitution and made quite difficult the rational design of the public budget.

Furthermore, other worrisome inflexible outlays were found, the so-called skeletons of public finances: infrastructure investment guarantees, established at the boom of such outlays at the beginning of the nineties, when energy PPA, traffic guarantees for roads and assurances on number of calls in telecommunications were provided. Also burdensome and generous pension schemes, which became unsustainable as an aging population was coupled with a decline in the birth rate, and a reduction in young people entering the labor force, affected also by informality and low rates of contribution to pay-as-you-go pension systems. Finally, a series of contingent claims that could turn a sustainable fiscal position into an unsustainable due to changes in court rulings or sudden changes in the exchange rate.

With this findings, the flow approach to fiscal imbalances was revealed limited since the origin of excess expenditure seemed to be grounded in the balance sheet of the public sector more than in its flow accounts (see Echeverry and Navas, 1999; Polackova and Schick, 2002; Echeverry et al., 2002). Once policymakers, the academia and the multilateral institutions reached a comprehensive understanding of the variety of problems that plagued fiscal finances in Latin-American economies, it became evident that confronting them would need an all-inclusive strategy aimed to tackle deep long-term contracts like pensions, public debt and infrastructure guarantees; revenues side troubles like insufficient value added and income tax bases; tax collection deficiencies, cumbersome tax rates structures and exemptions; and finally the lack of flexibility of public expenditure.

In contrast to most of the issues mentioned, public expenditure inflexibility has received little attention in the theoretical and applied economic literature. Moreover, although the study of budgetary institutions has long been an important topic for academics, recent research has emphasized the importance of a number of features of the budget process, such as its degree of transparency, the extent of centralization or decentralization of budgetary power in the Executive vis-à-vis the Congress, the role of regions and the central government, and the existence of "balanced budget rules", whereas the degree of rigidity or inflexibility in budget preparation has been relatively unexplored. This paper aims at filling this gap. Budget inflexibilities are known to policymakers and in particular to finance ministers since a long time ago. Indeed, complaints against other members of the cabinet and the congress' insatiable appetite for

expenditure are to be found in many old writings of the officials in charge of the public finances[1]. Hence, it is remarkable the lack of formal treatment of this issue in the specialized literature. We need a better understanding of the political economy mechanisms behind budget inflexibilities.

The fact that budget inflexibility is currently an issue concerning policymakers, at least in Latin America, is confirmed by a recent IMF report on the Macroeconomic Perspective of the region since the 1990s. The report points out that budget inflexibility was an important obstacle to imposing fiscal discipline in a number of Latin American countries. It emphasizes that "the failure to reform fiscal institutions undermined efforts at fiscal consolidation. Most importantly, underlying weaknesses and rigidities in revenue and spending systems were not addressed. In addition, problems with intergovernmental relationships led to distorted incentives and additional rigidities. As a result, recourse to ad hoc adjustment efforts without dealing with these issues undermined longer-term economic growth prospects, exacerbating sustainability problems." (IMF, 2004, p.73). The report also adds that while the measures creating inflexibility were "intended to protect key spending categories, they impaired allocative efficiency and fiscal flexibility. With about 80 percent of public spending in Brazil being nondiscretionary by the end of the 1990s, the ability to adapt to changing macroeconomic circumstances was compromised" (p.63). In another paper (Echeverry et al., 2004) we have studied in detail the case of Colombia and have confirmed this diagnosis.

But, what exactly is "budget inflexibility"? In general, we can define it as the impossibility for policymakers to change the composition or size of the budget in the short run (whether it be on the revenue or expenditure side) due to the existence of constitutional or legal protection for certain revenues and/or expenditures of the government. Of course, there are a number of additional budget items which are "naturally" inflexible in the sense that the government cannot renege on them except under extreme circumstances. Such is the case of the public sector wage bill, public debt service and pensions. However, budget inflexibility can take many other forms: measures to earmark revenue to specific expenditures, constitutional and legislative mandates setting floors on different types of spending, measures linking expenditures to the movement of certain macroeconomic variables, etc.

In this sense, one way to classify budget inflexibilities is between inflexibilities stemming from the revenue and the expenditure side. On the revenue side, the most frequent source of inflexibility is earmarking of revenues to specific expenditures (legal mandates whereby the revenue of specific sources is compelled to be destined to particular and predetermined expenses). This is a source of inflexibility in the sense that not all government revenues constitute a single pool of resources which can be discretionally allocated among different uses.

---

[1] In Echeverry et al. (2004) it is shown that, in the case of Colombia, the issue of budget inflexibility was a recurrent subject in finance ministers' reports since the nineteenth century. The topic is still a current preoccupation for policy makers, as evident from press articles and other statements of recent and current policy makers (see, for instance, Restrepo, 2003, Sanguinés, M. and E. Fernández, 2003, and Hernández, 2003).

A recent noteworthy example from Colombia (where this sort of earmarking is referred to as "rentas de destinación específica") is the "impuesto a la seguridad democrática" (democratic security tax), a tax on wealth to be destined exclusively to military purposes. Another revenue-side inflexibility is the granting of a right to certain groups/associations to levy taxes to finance their specific activities. Among these so-called "parafiscales" the most frequent example is the granting of these rights to agricultural marketing boards that levy taxes on producers in exchange for services directly related to their productive activities. Consider for instance, the case of the National Federation of Coffee Growers in Colombia. This is clearly a source of inflexibility to the extent that these resources never enter the common pool of tax revenues to be allocated discretionally by authorities.

On the expenditure side, inflexibilities take the form of mandatory transfers to special interests. These transfers enjoy constitutional or legal protection which impedes their exclusion from the budget or even their reduction in the short run. Typically, the largest items in this category are mandatory and often constitutional transfers to subnational governments[2]. However, they also take the form of transfers to narrower and more specific interests ranging from associations for the prevention of specific diseases to ethnic minorities. In this paper we will focus on the study of this sort of inflexibility and its role in a model that captures in a stylized manner two key features of the political forces behind the budget process: the tragedy of the commons and the process of legislative bargaining. This is obviously far from a comprehensive analysis of budget inflexibility since, as argued in the following section, budget inflexibility is closely related to all forms of political conflict present in the budget process. Nevertheless, this is a first step in attempting to understand the consequences of budget inflexibility for policy and the political forces behind it.

2   Related literature

Surprisingly, the topic of budget inflexibility seems to have been overlooked by the academic literature on fiscal policy. Indeed, to our knowledge there is no theoretical work on the effects of budget inflexibility. Thus, although as shown in the introduction practitioners are indeed concerned with the problem, there are little (direct) theoretical grounds to discuss whether budget inflexibility is a desirable or undesirable feature of the budget process. However, the (growing) literature in the field of "new political economy" provides a number of insights regarding the possible origins and (dis)advantages of this phenomenon.

In this section, we take advantage of some of the recent contributions to the political economy literature on the determinants of fiscal policy to interpret the issue of budget inflexibility. The main conclusion that can be drawn is that inflexibility, like budget issues in general, is likely to be the result of deep

[2] In Colombia, these transfers to subnational governments, channeled through the "Sistema General de Participaciones", are not only inflexible in terms of their level. The allocation of transferred resources is also regulated.

political conflicts. Furthermore, political conflict often leads to the adoption of policies that turn out to be economically "inefficient". From this perspective, it is possible to argue that there are several political motivations that might lead, in equilibrium, to "excessive" budget inflexibility. The political economy literature also emphasizes that "institutions"–the set of rules of the game shaping the incentives of economic (and political) agents involved in the budget process–are a key determinant of overall economic results. Thus, another message stemming from this literature is that it is important to modify budget institutions so as to reduce the incentives and opportunities to generate inflexibility, rather than simply eliminate some expenses, which will, most likely, reappear in the future.

However, from another point of view, it is possible to argue that a certain degree of inflexibility is desirable in that it isolates certain important expenditures from political and fiscal fluctuations. The validity of this argument is examined and criticized in the second part of this section, where we discuss the topic of "time inconsistency" in economic policy.

2.1   Political models of fiscal policy

The literature on the political economy of fiscal policy is hardly new. Yet, recently there has been a renewed interest in incorporating political variables in the explanation of fiscal policy. This interest has been motivated mainly by the fact that strictly economic theories on the way economic policy should behave have been relatively unsuccessful in explaining real-life decision making by policymakers. Of course, this is not surprising since these "normative" theories are based upon the premise that the purpose of policymakers is to maximize "social welfare". However, in practice, these decisions arise from the interaction of various groups of society with disparate interests. Political models on the determination of economic policy explicitly incorporate the role of these groups and the implications for resulting policies of their interaction. Moreover, an important contribution of this perspective consists in examining the role that different institutional environments or "rules of the game" might have on equilibrium policies.

As we highlighted earlier, the new political economy has not studied in detail the specific problem of budget inflexibility. Nevertheless, there is a large literature on the political economy of public debt which is potentially useful for analyzing budget inflexibility, since, like debt, inflexible headings in the budget can be interpreted as an obligation that the government acquires with different groups in society. Moreover, purely economic theories on public debt give relatively little justification to the existence of inflexibility, especially if it leads to a persistent excess of expenditure over revenue. Such is the case of the "tax smoothing" theory of government deficits which implies that governments should only accumulate debt during wars or recessions in order to distribute over time the costs of distortionary taxation. As shown by Roubini and Sachs (1989) and Alesina, Roubini and Cohen (1992), the experience of OECD economies during the last three decades seems to be inconsistent with this theory which suggests that public debt should serve as a shock absorber in case the economy is hit by

unexpected (income or expenditure) shocks. On the contrary, the overall trend in OECD economies has been towards public debt accumulation, even during times of peace and economic growth (Alesina and Perotti, 1994)[3]. Developing countries have also run budget deficits systematically since the 1970s, and this has often led to unsustainable debt accumulation. (Tornell and Velasco, 1995; Larraín and Selowski, 1991). Meanwhile, several empirical studies have found that political variables play a crucial role in the determination of public debt (see, for example, Roubini and Sachs, (1989) for industrialized countries and Edwards and Tabellini (1991) and Roubini (1991) for developing countries).

For these reasons, it is worth reviewing the political theories on public debt accumulation and try to extract some lessons on the possible political determinants of budget inflexibility. Following Alesina and Perotti (1994), the contributions to this literature can be organized in the following categories:

1. **Theories of "fiscal illusion".** These theories, best represented by the "public choice" school (Buchanan and Wagner, 1977), are based on two crucial assumptions. First, policymakers want to be reelected and to do so they use the instruments of economic policy (including running fiscal deficits) to improve economic performance before elections. Second, the private sector does not fully internalize the government budget constraint and hence believes, that, in fact, running deficits boosts the economy. If, additionally, deficits are difficult to cut after elections, this theory may explain the political bias towards debt accumulation observed in many countries.

   As noted by Alesina and Perotti (1994), Buchanan and Wagner (1997) argue that different institutions may lead to more or less fiscal illusion, and thus to more or less deficit bias. For instance, if groups of voters judge politicians' performance in dispersed regions based on the number of public goods and services that are permanently awarded to them in the budget, a version of this theory can potentially explain inflexibility. In other words, inflexibility could be created by "fiscally illuded" dispersed groups in society that seek for permanent benefits from public expenditure without internalizing their cost, whereas politicians concede these benefits to gain political power.

   However, there are problems to this approach. On the one hand, in explaining differences in the degree of budget inflexibility across countries a question that could be raised is whether these differences can be based on the superior ability of groups in society in some countries to internalize the government's budget constraint or to differences in the degree of opportunism of politicians across countries. Also, it is difficult to explain the timing of the increase in budget inflexibility based on this type of theory: did voters suddenly became illuded or politicians opportunistic?

---

[3] Barro (1996) argues that the tax smoothing theory seems to fit US data reasonably well, yet Bizer and Durlauf (1990) present evidence which suggest that the political variables are also significant in this case.

2. **Debt as a strategic variable.** When there is political polarization and elections are held periodically, debt can become a strategic variable if the incumbent does not share the preferences of his opponents (Alesina and Tabellini, 1990). Public debt not only allows the incumbent to spend more resources on the policy he likes best (one type of government will prefer more butter and the other more cannons), but, additionally, debt service limits the resources available for his opponent, if he gets elected. This theory might explain the political bias towards debt accumulation in each period. Additionally, it predicts that public debt will be higher in countries with a higher degree of political polarization, where it is more likely to lose power to an opponent with different or even opposing preferences to those of the party in power.

   This theory can also explain some of the motivations behind the creation of budget inflexibility. In fact, inflexible expenditure can be seen as a strategic variable used by each government, or by different interest groups, to secure the continuity of certain resources that can be threatened by the alternation of political power. The case of Colombia is suggestive, as budget inflexibility increased dramatically in the nineties, a period characterized by a higher degree of political participation and polarization as compared to earlier years. This change in the political panorama, might have increased uncertainty with respect to the continuation of different political groups in power, thereby increasing the incentive to use strategically certain instruments of economic policy–such as public debt or the passing of laws that create inflexibility–as a form of commitment. Figure 1 shows that nearly 50% of the current total earmarked spending was created in the period 1990-1999, whereas close to 30% was created from 1999 to 2002.

3. **Intergenerational conflicts.** According to this strand of literature, debt accumulation today generates taxes for those voters who have not been born or have not yet become part of the working or entrepreneurial population and hence are not represented in the political process. This critical difference in political representation of current and future generations generates a bias towards public debt accumulation as current generations try to transfer the costs of a high level of public spending to future generations.

   When countries experience important changes in their demographic patterns, they run the risk of becoming excessively indebted as a result of the behavior of certain generations. For example, in the case of Colombia, the increase in life expectancy may have exerted pressure on the government's budget in the form increased pensional debt. To many, one of the tasks the government should undertake to tackle its fiscal problem is to reduce its pensional liabilities, particularly in those cases where the benefits of a few turn out to be "generationally" inequitable.

   An institutional innovation that would encourage the emergence of this type of "generational irresponsibility" would be the creation of a new pensional system in a country. If this rent-seeking "technology" emerges in a

certain point in time, the first generation could have the incentive to over-exploit it, contributing with small amounts but transferring to themselves generous benefits. This seems to be an accurate description of what the generation of workers (predominantly of the public sector) did from the decade of the fifties to the decade of the eighties with the pay-as-you-go pensional system in Colombia.

Some of the special pensional regimes appear in the nation's budget in the form of inflexible expenses through which certain generations were able to secure for themselves a portion of it. As shown by Echeverry (2002), the increase in Colombia's public debt since the outset of the decade of the nineties is explained mostly by the fact that "for decades, a pensional debt had been accumulated by two generations that compelled their sons and grandsons, in their absence of course, to pay these obligations when they reached the age of retirement" (p. 151).

The problem with this type of debt accumulation, and in general the problem of public finance, "does not rest on the fact that someone is spending for pleasure or irresponsibility. Rather, that someone is forced to honor some costly contracts which frequently favor a few [and most of which] have been drafted in the Constitution" (p. 157). The fact that these inflexible obligations are disproportionate becomes evident when we compare Colombia's pensional debt to its social debt-the money necessary to insure the basic unsatisfied needs of the entire nation. While the DNP (National Planning Department) estimations´ show that the latter represents 67% of GDP[4], Colombia's pension debt is nearly 200% of GDP.

4. **Distributional (intragenerational) conflicts and "wars of attrition".** According to this line of research, the distributional struggle amongst individuals can delay the adoption of fiscal adjustment. Individuals prefer issuing public debt over fiscal austerity because each one wants to pay a small fraction of the stabilization cost. In other words, even when it is clear for every member of society that there is a need for austerity and that the levels of public debt are unsustainable, stabilizations are delayed because no one is willing to give up the benefits they receive from public spending or to bear the costs of having to pay higher taxes. In this scenario, debt accumulation is the result of a "war of attrition" between different interest groups. A distributional struggle between different social groups, each trying to transfer a higher portion of the fiscal burden of stabilization to others (Alesina and Drazen, 1991), delays fiscal austerity and increases public debt.

This theory might also have some interesting implications for budget inflexibility. Indeed, budget inflexibility may be understood as a formal

---

[4] The "social debt" is defined as the financial cost of covering 100% of population with services such as basic healthcare, housing, water and sewage systems, electricity, good roads, universal primary and high school education, doubling the coverage of college education, and humane treatment to the prisoners in prisons with rehabilitation facilities.

mechanism of protection against the "wars of attrition": the groups that have been able to secure certain resources in an inflexible manner do not run the risk of being the "looser" group that has to bear the larger share of the costs of fiscal adjustment. Additionally, this theory coincides with the literature on public debt as a strategic variable, in that debt accumulation will be greater in countries with higher degrees of political polarization, where the "war of attrition" will be even more severe. In this setting, it becomes more important for groups to acquire mechanisms of protection, like budget inflexibility, against these contingencies.

Finally, this theory suggests that the elimination of inflexibility requires a political agreement on when and how the stabilization costs are to be distributed. In the case of budget inflexibility, there ought to be a step previous to this agreement in which social groups are convinced of the importance of eliminating it with the aim of attaining fiscal sustainability.

5. **The Tragedy of the Commons.** These theories explain the political bias towards debt accumulation as the consequence of the fact that demands of regions or politically dispersed groups are financed out of a "common pool" of resources (Weingast, Shepsle, Johnsen, 1991). This is simply an application of the Tragedy of the Commons in which each group worries about obtaining the greatest possible amount of resources without thinking of the aggregate consequences of this behavior. According to this set of theories, differences across countries are explained by the types of budgetary institutions and their capacity to limit the bias towards an excessive level of spending and deficit. This type of argument does not have to be limited to geographical interests nor to public debt. Indeed, in any group of individuals with differing interests and with access to collective owned resources, a tragedy of the commons may arise: the common resource is over-used because each individual tries to get a hold of a "slice of the cake" without fully internalizing its financing costs.

Velasco (2000) develops a model in this vein to explain the phenomenon of excessive public debt accumulation. Though the problem of budget inflexibility is not explicitly considered, some insights underlined by Velasco suggest some hypotheses with regard to the excessive accumulation of inflexible obligations in the budget. In his work, Velasco presents a model in which there are several interest groups, each benefiting from a different type of public expenditure. The government is "weak" in that each interest group can influence the political authorities' decision with respect to the allocation of public expenditure. Also importantly, government resources are a common property out of which interest groups can finance expenditures on their preferred items. In this setup, transfers turn out to be higher than a benevolent planner would choose them to be, fiscal deficits emerge even when there are no reasons for intertemporal smoothing, and in the long run government debt tends to be excessively high. If we loosely expand this model in order to understand the creation of budget inflexibility, Velasco's predictions turn out to be interesting.

The level of inflexibility is above the optimum because while benefits are almost exclusively received by each group, the financing costs are shared amongst all the individuals in society.

Also related is the paper by Buchanan and Yoon (2004). Buchanan and Yoon consider a model where distortionary taxation is "nondiscriminatory in all respects"; that is, where any tax levied against the general income tax base is applied to the incomes of all members of the society. Nonetheless, these general taxes finance differential transfers, favoring members of the majority coalition that impose the tax base. The familiar "Tragedy of the Commons" arises since the fiscal capacity of the whole economy becomes an exploitable resource: separate decisionmakers do not fully internalize the external effects of their decisions on the general productivity of the tax base, leading to its possible over-exploitation. That is, the tax rate may be in the "wrong side" of the Laffer Curve. Yet, the authors emphasize another element which acts to limit such over-exploitation: "membership externalities". According to the authors, the simultaneous actions taken by different majority coalitions constraints the majoritarian exploitation of fiscal income: "prospects for individual membership in more than one decisive authority will temper the behaviour of the reference member of any operative coalition, and without recourse to any relaxation of the rationality postulates" (p. 87).

6. **Budgetary Institutions.** In addition to the previous group of political theories of fiscal policy, a number of studies have tried to explicitly evaluate the role that budgetary institutions play in the fiscal performance of different countries. The emphasis has been on the influence of institutional characteristics, like the type of electoral system, the party structure, the fragmentation of the government and the degree of political polarization, on aggregate fiscal performance (measured, for example, by the government's deficit), rather than on specific topics like that of budget inflexibility (Alesina and Perotti, 1996). Nonetheless, it is clear from the theoretical literature that institutions should be important in determining fiscal outcomes and empirical work has found that this is indeed the case. Also, just as budget inflexibility might be more likely to arise in some institutional frameworks than others, budget inflexibility itself could be considered as a feature of the institutional framework affecting fiscal results.

In sum, this review of the existing literature seems to suggest that budget inflexibility is probably the result of the political conflict underlying the budget process, and that the degree of inflexibility could be "excessive" in equilibrium. However, it is worth discussing possible theoretical arguments in favor of inflexibility. More specifically, to the extent that budget inflexibility reduces the role of discretion in policymaking, the well known debate on the convenience of rules vs. discretion in economic policy can probably shed light on this topic. This debate, intimately related to the concept of time inconsistency which we

consider in turn.

2.2   The time inconsistency problem

The time inconsistency problem refers to the fact that, sometimes, policies that are chosen at a certain point in time for some period in the future, are then considered to be suboptimal and are modified, even though key elements such as preferences and technology remain the same. For instance, a frequently mentioned example of time inconsistency has to do with the incentive a government has to not honoring its debt or the incentive to "inflate away" the real value of nominal debt. *Ex ante* this policy is suboptimal because, if anticipated by the public sector, investors will demand a higher interest rate to compensate for the risk of default. However, *ex post,* once the loan has been made, there is an incentive to renege on debt and thus avoid the costs of paying it back.

Maybe the most obvious solution to the time inconsistency problem is to abandon discretion by adopting rigid rules for the implementation of economic policy. In this context, inflexibility could be considered an optimal response to the policymakers' incentives. In this vein, budget inflexibility could be understood as a convenient rule whereby policymakers' discretion is limited so that certain expenses are not modified in the future. In this sense, the principle governing budget inflexibility is mistrust in the government's commitment to certain obligations.

Despite the apparent convenience of this type of solution, there are a number of queries regarding its practical implementation. The first element that must be addressed is that, although rules may solve the time inconsistency problem, the existence of unexpected shocks might imply that a certain degree of flexibility or discretion is desirable. One possible answer to this problem is to elaborate *contingency rules* that establish a course of action for each possible "state of nature". However, not all possible states of nature can be foreseen, which means that in reality a complete rule of this sort is virtually impossible. There is also the problem of how to verify the real state of nature and enforce a rule of this sort. For instance, political authorities may be tempted to take advantage of informational asymmetries to argue in favor of certain policies, and thus they end up having discretion. Furthermore, there is likely to be a trade-off between simplicity and enforceability of contingency rules, since more complex rules (which attempt to cover all possible eventualities) are more likely to lead to arbitrary interpretations and hence discretionary behavior in practice.

An alternative solution is the creation of *escape clauses* which obliges policymakers to stick by the rules, unless something extraordinary or unexpected occurs. To prevent these clauses from being used opportunistically, some sort of cost should be paid when abandoning the rules. An example of escape clauses is the concession of special powers to the executive branch during exceptional situations such as "states of siege". The cost that governments must pay for applying these escape clauses can be, for example, a certain procedure in Congress. Nevertheless, the practical implementation of these rules is not always simple. Again, as rules become more complex, they are more open to interpretation and

escape clauses could be abused. If a government can declare the State of Siege relatively easy and draft decrees and take measures under the protection of the faculties granted by this condition, rules that try to limit the policymakers' degree of discretion become futile.

Although there are a number of applications of the rules vs. discretion debate to fiscal policy, the literature has focused on the convenience of having actively countercyclical fiscal policy. In general, the message that emerges from this literature highlights the inconvenience of discretion to stabilize production (i.e. Auerbach, 2002; Fatás and Mihov, 2003; Taylor, 2000; Wyplosz, 2002) except in very exceptional cases (i.e. Feldstein, 2002). Nonetheless, the effects of fiscal policy go beyond macroeconomic stabilization. It can significantly influence the way in which resources are allocated in the long run. Moreover, at least in a democracy, the allocation of resources should ideally reflect society's preferences and priorities. In a way, in a democracy such priorities ought to be determined by democratically elected representatives. To the extent that budget inflexibility impairs the ability of elected representatives to allocate resources, this could be an additional argument in favor of discretion (budget flexibility).

Another argument for budget inflexibility concerns certain expenditures likely to be overlooked by short-sighted governments, but crucial in the long run for society. Consider, for instance, saving for pensions. Governments can have a higher discount rate than society because they think in terms of their electoral term, while the individuals have a longer planning horizon. The adoption of laws that create inflexibility can be thus understood as a mechanism to isolate this type of expenditures from the time inconsistency problem. From this standpoint, budget inflexibility could be considered optimal. However, several objections could be raised. First, it is possible that some inflexible expenditures are not priorities for society, but rather the result of interest groups "capturing" the government budget. On the other hand, even if we are dealing with crucial expenses that should not be subject to political fluctuations, there are unexpected shocks that may justify abandoning a rule, as suggested by the literature on escape clauses discussed above.

Finally, as shown by some of the recent literature on this topic (see for example Neut and Velasco, 2003), the adoption of rules does not necessarily eliminate the problem of time inconsistency. In fact, it could magnify it when the rules adopted are too stringent and adverse shocks leave no option different to renege on previous "promises". Furthermore, as discussed above, there are political reasons that suggest that the degree of budget inflexibility is indeed likely to be excessive to the extent that, many times, these promises might become "incredible policies"[5].

---

[5] In the case of Colombia, there is ample historical evidence of "fiscal dictatorship" by the Executive branch which reneges on constitutionally mandated expenses. In the words of a former deputy director of the National Planning Department, the actual problem of budget inflexibility is the actual flexibilty of inflexible expenditures. This, of course, might reduce inflexibility, but entails a problem of lack of credibility in institutions.

3 The model: the Tragedy of the Commons and fiscal policymaking

As noted in the literature review, political incentives and conflicts in the budget process can take many forms: conflict over the distribution of the burden of stabilization, intergenerational conflicts, incentives to please "fiscally illuded" voters, etc. More importantly, the political economy of the budget process often implies that resulting policies are economically "inefficient". In this section, we examine the consequences of budget inflexibility in the context of a model that incorporates perhaps the most basic political problem present in the budget process: the Tragedy of the Commons. Also, even though as discussed in the introduction budget inflexibility can take many forms, we will concentrate in one specific type of inflexibility: "expenditure inflexibility". Of course, this is far from a comprehensive analysis of budget inflexibility since, as we suggested in the previous section, this phenomenon might be closely related to all forms of political conflict present in the budget process. Moreover, the model will not explicitly consider the possible advantages of budget inflexibility. Rather, it will illustrate the additional costs that it might generate when there is an underlying common pool problem in the budget process and budget allocation is determined through a bargaining process in Congress.

As a starting point, we consider as a benchmark the efficient allocation of publicly provided goods across groups under an utilitarian criteria and show how this efficient allocation is feasible when there is full decentralization of financing and spending. We then turn to the more frequent setting where group-specific goods are financed out of a common pool of tax resources to illustrate the "common pool" problem leading to inefficient government expenditure. To introduce the role of expenditure inflexibility we then move to a model of legislative bargaining where coalitions are formed in order to establish the level of transfers across groups in society. We show that, when compared to the flexibility case, the introduction of inflexibility (understood as the possibility of establishing transfers that cannot be reduced or eliminated in subsequent periods) not only leads to higher levels of aggregate government expenditure, but is also likely to generate an inefficiently high and growing level of expenditure as time goes by.

3.1 Efficient government expenditure

This section presents a simple model by Persson and Tabellini (2000, chapter 7) which helps us illustrates the Tragedy of the Commons arising from the fact that fiscal policy often finances a set of public goods which benefit private interests from a pool of common resources. Then we extend the model to understand the implications of budget inflexibility.

The setup of the model is as follows. To capture the conflict between different groups in society, we consider a society inhabited by J different groups of individuals, each of size N^j $(j = 1, ..., J)$. Total population is $N = \Sigma_j N^j$.

Preferences in each group are described by the following utility function:

$$w^j = c^j + H\left(g^j\right) ....j = 1, ..., J$$
$$H\left(0\right) = 0, \ H'\left(\cdot\right) > 0, \ H''\left(\cdot\right) < 0$$

where c^j is per capita consumption of private goods in group j and g^j denotes per capita consumption of a publicly provided good benefitting group j. We can think of g^j both as a good or simply as group-specific transfers. Thus, in what follows we will use the terms "group-specific publicly provided goods" and "group-specific transfers" interchangeably. The fact that groups can enjoy a "private" benefit from a publicly provided good, will be crucial in capturing the common pool problem as well as the effects of budget inflexibility. To isolate conflict between groups arising from income differences, we assume that all individuals within the same group are identical, and that income is the same across different groups, $y^j = y$.

3.1.1 The Social Planner's problem

As a starting point, consider the efficient allocation of publicly provided goods across groups under an utilitarian criteria. Imagine a benevolent social planner that maximizes a social welfare function Λ defined as the (population weighted) sum of group utilities,

$$\Lambda = \Sigma_j \frac{N^j}{N} w^j \tag{1}$$

subject to the following aggregate resource constraint:

$$\Sigma_j N^j (g^j + c^j) = Ny \tag{2}$$

The social planner's problem can be rewritten as follows, after substituting the resource constraint (2) in the objective function (1):

$$\max_{\{g^j\}_{j=1}^J} \ \Sigma_j \frac{N^j}{N} H\left(g^j\right) + y - \Sigma_j \frac{N^j}{N} g^j$$

First order conditions for optimal choice of $\left\{g^j\right\}_{j=1}^J$ are[6]:

$$H'\left(g^j\right) = 1, \qquad j = 1, ..., J$$

Intuitively, the marginal benefit of the publicly provided good in each group, $H'\left(g^j\right)$, equals its marginal cost, 1. In this setup, marginal cost of the publicly provided good is 1 since utility is linear in the consumption of the private good and we have implicitly assumed that one unit of private good can be converted costlessly into one unit of publicly provided good. In other words, the relative price of g^j (in terms of c^j) is 1, so that increasing consumption of g^j by one implies a sacrifice in one unit of private good consumption. Since utility is linear in private good consumption, the marginal cost of the provision of g^j is one.

---

[6] Second order conditions are satisfied by the concavity of $H(\cdot)$.

3.1.2 Decentralized provision and financing of expenditure

Now assume that the government may finance each good g^j by levying a group-specific lump-sum tax, τ^j. That is, private consumption for each individual in group j would be given by:

$$c^j = y - \tau^j \quad j = 1, ..., J \tag{3}$$

The government budget constraint would in turn be described by the following set of equations:

$$g^j = \tau^j \quad j = 1, ..., J \tag{4}$$

Under the maintained assumption of a benevolent social planner seeking to maximize (1) subject to (3) and (4), the efficient allocation the publicly provided goods is still feasible. Indeed, in this case the problem boils down to

$$\max_{\{g^j\}_{j=1}^J} \Sigma_j \frac{N^j}{N} \left[y - \tau^j + H\left(g^j\right) \right]$$

$$\text{subject to} \quad : \quad g^j = \tau^j, \quad j = 1, ..., J$$

Substituting the budget constraints in the objective function this problem is identical to the original social planner's problem considered before:

$$\max_{\{g^j\}_{j=1}^J} \Sigma_j \frac{N^j}{N} H\left(g^j\right) + y - \Sigma_j \frac{N^j}{N} g^j$$

Thus, once again the allocation of public goods is described by the equations $H'\left(g^j\right) = 1, \; . \; j = 1, ..., \dot{J}$. Why is the efficient allocation feasible in this new setting?. First, we have assumed that lump-sum taxation is available. Thus, taxation does not introduce efficiency-costly distortions in individual decision making. Nonetheless, this has been assumed by convenience, so as to concentrate in the inefficiency stemming from the Tragedy of the Commons. The most important condition that makes the efficient allocation feasible is the fact that there is full decentralization of financing and spending. Indeed, by charging each group for the provision of the group-specific publicly provided good, policymakers are able to internalize the cost the goods' provision for each group and finance g^j up to where marginal benefit exactly offsets marginal cost.

This institutional arrangement can be understood in several ways. One, in the vein of "parafiscales", is actually that each group levies taxes on its own members to finance g^j. Another interpretation is that a central government is able to target both taxes and expenditure to specific groups in societies. Clearly, the extent to which these arrangements can be applied is limited. Desining a tax system where taxpayers and beneficiaries can be exactly matched is a nearly impossible task, and even when the government gives away to specific groups the power to levy taxes on its own members (as in "parafiscales") it is unclear that a perfect match will be achieved. An example from the case of Colombia is again illustrative. The most important "parafiscales" are wage-taxes paid by

16

both employers and employees, and destined to the *Instituto Colombiano de Bienestar Familiar* (ICBF) and the *Servicio Nacional de Aprendizaje* (SENA). Originally, the contributions to the ICBF were supposed to directly benefit both employees and employers by financing nursery homes for employees' children. Likewise, contributions to SENA were supposed to benefit the contributors by providing technical training for employees. Nonetheless, every formal worker and his employer are obliged to pay these contributions regardless of whether they use any of these services. Thus, there is clearly not a perfect match between taxpayers and beneficiaries.

3.2 Inefficient government expenditure: the Tragedy of the Commons

As shown in the previous section, there are possible institutional arrangements where, at least in theory, publicly provided goods can be efficiently allocated by a benevolent social planner. This is the case where a complete decentralization of both financing and expenditure is available. However, more often, group-specific goods are financed, at least in part, out of a common pool of tax resources. This leads to the well known "common pool" problem which, as stated above, is perhaps the most basic political problem underlying the budget process. We now change the setup of the previous model to illustrate this point.

3.2.1 The Tragedy

To capture the Tragedy of the Commons in fiscal policy, consider the extreme case where no individual or group-specific taxes are available. Rather, group-specific transfers are financed by a lump-sum tax τ which is equal across groups. The new budget constraint of the government is described by the following equation:

$$\Sigma N^j g^j = N\tau \tag{5}$$

Moreover, imagine now that the g^j are not chosen by a social planner. Instead, expenditure is chosen by democratically elected representatives of the groups in society. Specifically, assume all groups in society have a representative in Congress who shares the group's preferences and whose objective is to choose g^j so as to maximize the utility of a representative individual in the group, $w^j = y - \tau + H(g^j)$, subject to the new government budget constraint and taking the remaining g^i, $i \neq j$, as given[7]. The problem is therefore to

$$\max_{g^j} y - \tau + H\left(g^j\right)$$

$$\text{subject to} \quad : \quad \Sigma N^j g^j = N\tau$$

---

[7]Note that if g^j is chosen by a social planner who maximizes $\Sigma \frac{N^j}{N} w^j$, then the social optimum is attained again, as the benefits and costs of publicly provided goods are fully internalized.

Substituting the restriction in the objective function:

$$\max_{g^j} y - \Sigma_j \frac{N^j}{N} g^j + H\left(g^j\right)$$

The optimal choice of g^j by each one of the representatives is described by the following first order conditions:

$$H'\left(g^j\right) = \frac{N^j}{N} \qquad j = 1, ..., J$$

Note that $\frac{N^j}{N} < 1$ and from the concavity of H this implies that each representative will seek a level of g^j that exceeds the efficient "utilitarian" level. The reason is that each group enjoys the full benefit of the public good provision, yet internalizes only a fraction $\frac{N^j}{N}$ of its cost. This is the basic common pool problem leading to a "Tragedy of the Commons". Also interestingly, the model predicts that smaller groups, since they have to contribute with a smaller share of the publicly provided good's cost, have a higher incentive to overspend.

The common pool problem stems from the fact that group-specific transfers are financed in a centralized manner, whereas expenditure decisions are decentralized. Each group chooses its preferred g^j and then τ is chosen residually to satisfy the budget constraint. In this sense, more hierarchical budgetary institutions–under which decision power of dispersed groups is minimized–should lead to lower levels of spending. Indeed, aggregate spending, $\Sigma_j N_j g_j = G_j$ is clearly higher under this institutional arrangement than in the social optimum. It is true that in this model the budget deficit is zero by construction: τ is chosen so as to satisfy the government budget constraint. Nonetheless, as long as there is an upper limit to the level of taxes that can be levied, say $\bar{\tau}$, then clearly higher levels of spending imply larger deficits and thus debt accumulation[8]. The empirical literature has indeed found that more hierarchical budgetary institutions lead to lower levels of spending and deficits (for an early review, see Alesina and Perotti, 1996; for the Latin American case see also Stein et al., 1999).

3.2.2 Legislative bargaining with flexibility

In the previous section every group in society had a representative in Congress who was able to establish its preferred level of g^j. Although this allowed us to illustrate starkly the common pool problem, it is unlikely that in reality all representatives in Congress manage to allocate the preferred level of group-specific transfers to the group they represent. More likely, coalitions between representatives of different groups are formed in Congress and the resulting policy reflects the preferences of those groups that turn out to be winners after some institutional mechanism for electing the level of transfers. This mechanisms usually involves some form of voting procedure.

---

[8] Political and social contraints indeed imply that taxes cannot be increased indefinitely.

To capture the process of allocating transfers in Congress, consider the following policymaking procedure. In every period in time, one of the representatives is given the agenda setting power for creating a particular law that will determine expenditures on group-specific publicly provided goods. That is, a group $J = a$ proposes a vector $\mathbf{g} = (g_1, g_2, ..., g_J)$ of expenditures. The legislature then votes for the proposal and if the proposal gets a majority (we assume J is odd) then $\mathbf{g}$ is implemented. Of crucial importance is what happens when the majority is not obtained. For the moment, we simply assume that a status quo policy, $\overline{\mathbf{g}} = (\overline{g}_1, \overline{g}_2, ..., \overline{g}_J)$, will be implemented.

Solving backwards, consider the decision of each one of the representatives (different from a) who are thinking on whether or not to vote for the proposal. A representative will support the proposal as long as it leaves him at least as well as in the status quo. More precisely, representative i supports the proposal as long as $w^i(\mathbf{g}) - w^i(\overline{\mathbf{g}}) \geq 0$. (Note that we have assumed that when representatives are indifferent between the proposal and the status quo, they support the proposal). Recall that $w^j = c^j + H\left(g^j\right)$ and that $c^j = y - \tau$. Also, by the government budget constraint we know that $\Sigma_j N_j g_j = N\tau$. Substituting into the utility function, this implies that representative i supports representative a's proposal as long as

$$H(g^i) - H(\overline{g}^i) - \sum_{j=1}^{J} \frac{N^j}{N}\left(g^j - \overline{g}^j\right) \geq 0 \tag{6}$$

Now consider the problem for representative a at the first stage of the game. He will choose $\mathbf{g}$ so as to maximize the utility of a representative agent in his group, $w^a = y - \sum_{j=1}^{J} \frac{N^j}{N} g^j + H\left(g^a\right)$, subject to the constraint that his proposal is approved. To that end, the representative must ensure that the constraint (6) holds for a coalition Ω of at least $\frac{J-1}{2}$ additional representatives. Also, we assume that transfers to each group must be nonnegative. In sum, the problem faced by the agenda setter representative is:

$$\max_{\mathbf{g}} w^a = y - \sum_{j=1}^{J} \frac{N^j}{N} g^j + H\left(g^a\right)$$

$$\text{subject to} \quad :$$

$$0 \leq H(g^i) - H(\overline{g}^i) - \sum_{j=1}^{J} \frac{N^j}{N}\left(g^j - \overline{g}^j\right) \quad \text{for } i \in \Omega$$

$$g^i \geq 0 \quad \text{for all } i$$

Let $Z = y - \sum_{j=1}^{J} \frac{N^j}{N} g^j + H\left(g^a\right) + \sum_{i \in \Omega} \lambda_i \left[H(g^i) - H(\overline{g}^i) - \sum_{j=1}^{J} \frac{N^j}{N}\left(g^j - \overline{g}^j\right) \right]$ be the Lagrangian associated with this problem. Kuhn-Tucker conditions imply that:

$$\frac{\partial Z}{\partial g^i} \leq 0, \ g^i \geq 0, \ \text{and } g^i \frac{\partial Z}{\partial g^i} = 0$$

$$\frac{\partial Z}{\partial \lambda^i} \geq 0, \ \lambda^i \geq 0, \ \text{and } \lambda^i \frac{\partial Z}{\partial \lambda^i} = 0, \quad i \in \Omega$$

19

Consider first the first order condition with respect to g^a,

$$-\frac{N^a}{N} + H'(g^a) - \frac{N^a}{N}\sum_{i\in\Omega}\lambda_i \leq 0, \ g^a \geq 0, \text{ and}$$

$$g^a\left[-\frac{N^a}{N} + H'(g^a) - \frac{N^a}{N}\sum_{i\in\Omega}\lambda_i\right] = 0$$

Clearly, the agenda setter will set $g^a > 0$. Thus, it must be the case that:

$$-\frac{N^a}{N} + H'(g^a) - \frac{N^a}{N}\sum_{i\in\Omega}\lambda_i = 0$$

Now consider the choice of g^i for the remaining groups in society. First, note that the agenda setter will give a positive amount of group-specific public goods only to the members of the coalition, and that this coalition will be composed of strictly $\frac{J-1}{2}$ additional representatives. Indeed, giving away resources to other groups will not influence his probability of winning and will certainly reduce its utility through the need for higher taxation. Thus, we may write:

$$g^i = 0, \quad i \notin \Omega.$$

We can also predict that members outside the coalition will be those whose support is more expensive to obtain (those with highest default payoffs, $\bar{g}^i$, as well as those with more population, N^i). The remaining $\frac{J-1}{2}$ representatives will receive $g^i > 0$ so the first order conditions imply:

$$-\frac{N^i}{N} + \lambda_i H'(g^i) - \frac{N^i}{N}\sum_{i\in\Omega}\lambda_i = 0....i \in \Omega$$

First order conditions for the Lagrange multipliers are:

$$\left[H(g^i) - H(\bar{g}^i) - \sum_{j=1}^{J}\frac{N^j}{N}\left(g^j - \bar{g}^j\right)\right] \geq 0, \ \lambda^i \geq 0, \text{ and}$$

$$\lambda^i\left[H(g^i) - H(\bar{g}^i) - \sum_{j=1}^{J}\frac{N^j}{N}\left(g^j - \bar{g}^j\right)\right] = 0, \quad i \in \Omega$$

An increase in g^i will make the agenda setter worse off. Thus, we know that he will satisfy the incentive compatibility condition with equality. That is, the previous condition will be satisfied by setting $[H(g^i) - H(\bar{g}^i) - \sum_{j=1}^{J}\frac{N^j}{N}\left(g^j - \bar{g}^j\right)] = 0$, and giving each member of the coalition the minimum necessary to buy his support. To eliminate the Lagrange multipliers, let us rewrite our previous results as follows:

$$H'(g^a) = \frac{N^a}{N}\left(1 + \sum_{i\in\Omega}\lambda_i\right)$$

$$\lambda_i H'(g^i) = \frac{N^i}{N}\left(1 + \sum_{i\in\Omega}\lambda_i\right)$$

By dividing both equations we find that $\lambda_i = \frac{H'(g^a)N^i}{H'(g^i)N^a}$. This allows us to summarize the results regarding public good allocation for the agenda setter, members of the coalition, and non-members as follows:

$$H'(g^a) = \frac{N^a}{N}\frac{1}{\left(1 - \sum_{i\in\Omega}\frac{N^i}{N}\frac{1}{H'(g^i)}\right)} \tag{7}$$

$$H(g^i) = H(\overline{g}^i) + \sum_{j=1}^{J}\frac{N^j}{N}\left(g^j - \overline{g}^j\right), \quad i \in \Omega \tag{8}$$

$$g^i = 0, \quad i \notin \Omega \tag{9}$$

It is worth reviewing some key additional features of this equilibrium. First, consider the choice of g^a. Note that the first order condition for g^a is equal to the one obtained in the Tragedy of the Commons case above, expect for the term $\left(1 - \sum_{i\in\Omega}\frac{N^i}{N}\frac{1}{H'(g^i)}\right)$ dividing $\frac{N^a}{N}$ in the right hand side of equation (7). We can think of this term as follows. In the previous setting, an increase in one unit of g^a generated a marginal benefit for group a of $H'(g^a)$ and a marginal cost of $\frac{N^a}{N}$, which was the fraction of the increase in taxes (necessary to provide the additional unit of group-specific transfer) financed by group a. Now, an increase in one unit of g^a entails an additional cost: the increase in taxes necessary for the agenda-setter to "buy off" the support from members of the coalition in order to get his proposal approved. He will provide the minimum level of transfers (and hence increase the tax rate as little as possible) which guarantees that the incentive constraint still holds for a majority of representatives. The term $\frac{1}{\left(1 - \sum_{i\in\Omega}\frac{N^i}{N}\frac{1}{H'(g^i)}\right)}$ is the minimum additional revenue that must be raised to that end.

It is also important to note that this equilibrium is suboptimal. In the case of members of the legislature who are left outside the coalition, the level of transfers received (namely, zero) is clearly below the optimal level g^i such that $1 = H'(g^i)$. The agenda-setter and members of the coalition do receive a positive amount of resources. Nonetheless, in the general case the level of transfers is also different to the optimal level. It cannot be determined unambiguously whether this level is actually below or above the optimal level. In the case of the members of the coalition, however, we can predict from (8) that this level is more likely to be above the optimal level the higher their status quo position $\overline{g}^i$. Remember, however, that representatives with a strong status quo position are the less likely to be included in the coalition as their support is more expensive. The same can be said of representatives of larger groups.

Regarding the level of transfers allocated by the agenda setter to himself, its level depends again on the shape of H and on parameter values. In this case, there are two countervailing forces that can be observed at the right hand side of (7). The first one, as captured by the term $\frac{N^a}{N}$ is the "Tragedy of the Commons effect" which tends to make equilibrium provision of transfers larger than the optimum. The second effect tends to make g^a lower than the optimum

and is captured by the term $\dfrac{1}{\left(1-\sum_{i\in\Omega}\frac{N^i}{N}\frac{1}{H'(g^i)}\right)}$. As analyzed above, this is the
"Coalition effect" which reduces available resources for the agenda setter as he
must buy off the support of other members of Congress. Which effect prevails
obviously depends on the relative magnitude of the effects. The "Tragedy of the
Commons effect" is larger the smaller is the group represented by the agenda
setter, and the "Coalition effect" is larger when coalitions are cheaper to buy.
For instance, Persson and Tabellini show that when status quo positions are
low enough that members of the coalition will receive a level of transfers that
is *below* the efficient level, then the agenda setter will be able to allocate for
himself a level that *exceeds* the efficient level.

The ambiguity with respect to the exact level of transfers for members of
the coalition and for the agenda setter clearly implies that the model's predic-
tion regarding aggregate overspending also depends on parameter values and
the shape of function H. Nonetheless, there are two important messages: first,
the larger the agenda setter's constituency (N^a) the smaller aggregate spending
since it reduces g^a; second, the smaller status quo positions, the smaller aggre-
gate spending as it reduces g^i for members of the coalition (though it leaves more
resources for the agenda setter). The first result again emphasizes the fact that
giving strong powers to a policymaker who spends little in his constituency or
whose constituency is large (such as, presumably, the Finance Ministry) should
result in lower spending.

3.2.3 Legislative bargaining with inflexibility

A key feature of the legislative bargaining model presented above is the fact that
congressmen outside the coalition are left with no transfers for their constituen-
cies. Nevertheless, our discussion of expenditure inflexibility clearly suggests
that status quo transfers to special interests often enjoy constitutional or legal
protection that impede their elimination. Therefore, it might be more realistic
to assume that an agenda setter of the sort considered above actually faces the
restriction of guaranteeing the status quo level of group-specific transfers when
making his proposal.

Consider, therefore, the following slightly modified policymaking procedure.
Like before, in every period one of the representatives $(J = a)$ is given the agenda
setting power for proposing a vector $\mathbf{g} = (g_1, g_2, ..., g_J)$ of expenditures. The
legislature votes for the proposal and if the proposal gets a majority then $\mathbf{g}$ is
implemented. Again, when the majority is not obtained the status quo policy,
$\overline{\mathbf{g}} = (\overline{g}_1, \overline{g}_2, ..., \overline{g}_J)$, will be implemented. Note that the second stage of this
game is identical to the one considered before: a representative will support the
proposal as long as it leaves him at least as well as in the status quo which implies
that representative i supports representative a's proposal as long as (6) holds.
The crucial difference occurs in the first stage of the game, when representative
a maximizes $w^a = y - \sum_{j=1}^{J} \frac{N^j}{N}\left(g^j\right) + H\left(g^a\right)$ subject to the constraint that (6)
holds for a coalition Ω_1 of at least $\frac{J-1}{2}$ additional representatives. In contrast to
the previous case he must now give each representative (regardless of whether

he is in the coalition) its status quo transfer. We call this new restriction the "inflexibility restriction":

$$\max_{\mathbf{g}} w^a \quad = \quad y - \sum_{j=1}^{J} \frac{N^j}{N} g^j + H\left(g^a\right)$$

subject to   :

$$0 \quad \leq \quad H(g^i) - H(\overline{g}^i) - \sum_{j=1}^{J} \frac{N^j}{N}\left(g^j - \overline{g}^j\right) \quad \text{for } i \in \Omega_1$$

$$g^i \quad \geq \quad \overline{g}^i \quad \text{for all } i, \qquad \text{(Inflexibility restriction)}$$

It is very easy to solve this problem in the same way we solved the model in the previous section. Indeed, by defining $g^{*i} = g^i - \overline{g}^i$ the problem boils down to

$$\max_{\mathbf{g}^*} w^a \quad = \quad y - \sum_{j=1}^{J} \frac{N^j}{N}(g^{*j} + \overline{g}^j) + H\left(g^{*a} + \overline{g}^a\right)$$

subject to   :

$$0 \quad \leq \quad H(g^{i*} + \overline{g}^i) - H(\overline{g}^i) - \sum_{j=1}^{J} \frac{N^j}{N} g^{*j} \quad \text{for } i \in \Omega_1$$

$$g^{*i} \quad \geq \quad 0 \quad \text{for all } i$$

First order conditions for the choice of g^{a*}, g^{i*} for $i \in \Omega_1$, and g^{i*} for $i \notin \Omega_1$ are analogous to the ones in the previous section:

$$H'\left(g^{*a} + \overline{g}^a\right) \quad = \quad \frac{N^a}{N} \frac{1}{\left(1 - \sum_{i \in \Omega_1} \frac{N^i}{N} \frac{1}{H'(g^{i*} + \overline{g}^i)}\right)}$$

$$H(g^{i*} + \overline{g}^i) \quad = \quad H(\overline{g}^i) + \sum_{j=1}^{J} \frac{N^j}{N} g^{*j}, \quad i \in \Omega_1$$

$$g^{*i} \quad = \quad 0, \quad i \notin \Omega_1$$

After substituting the definition of g^{*i}, the new equilibrium is described, in terms of the original g^i, by the following equations:

$$H'\left(g^a\right) \quad = \quad \frac{N^a}{N} \frac{1}{\left(1 - \sum_{i \in \Omega_1} \frac{N^i}{N} \frac{1}{H'(g^i)}\right)} \tag{10}$$

$$H(g^i) \quad = \quad H(\overline{g}^i) + \sum_{j=1}^{J} \frac{N^j}{N}\left(g^j - \overline{g}^j\right), \quad i \in \Omega_1 \tag{11}$$

$$g^i \quad = \quad \overline{g}^i, \quad i \notin \Omega_1 \tag{12}$$

Note that these conditions are the same as those of the section above. Thus, whether transfers for the agenda setter and for the members of the coalition are

23

above or below the optimum is again ambiguous. In the case of representatives outside the coalition the level of transfers might as well be above or below the efficient level as well, depending on whether status quo allocations are above or below such level. However, an important unambiguous result holds: aggregate spending is larger in this setting than in the previous one. Indeed, the agenda setter must now give $\overline{g}^i$ to representatives outside the coalition. Moreover, this implies that the agenda setter must raise more taxes than what he was obliged to when he was able to reduce group specific transfers to zero for non-members. This means that, to persuade representatives in the coalition to vote for him, he must also offer more transfers. In short, we can predict that every member of the legislature will receive more transfers in this setting and aggregate spending becomes larger.

Inflexibility over several periods In this setting, we have been able to confirm one key consequence of expenditure inflexibility: aggregate expenditure increases as compared to the flexibility case. Nonetheless, an important feature of inflexibility, perhaps its defining characteristic, is that it extends over several periods. This means that the status quo is dynamic. Once a legislator has been able to draft and pass a law allocating expenditure, the new allocation becomes the status quo and the group-specific transfers implied by such status quo cannot be reduced.

To see this more concretely, imagine we are at time 0 ($t = 0$) when the status quo is given by the vector $\overline{\mathbf{g}}$ defined above. Legislator a is given the agenda-setting power and solves the problem leading to the solution described by equations (10) to (12). Moreover, define g_a^c as the level of expenditure that the agenda setter allocates to himself (the level satisfying (10)) and g_i^c as the level he allocates to members of the coalition (the $\frac{J-1}{2}$ values of g^i satisfying equations (11)). In the next period, at time 1 ($t = 1$), any legislator may draft a new law and put it into consideration of the Congress. Nonetheless, he must now deal with the fact that laws that were previously passed guarantee a new level of expenditure for a number of groups. In other words, the status quo is no longer described by $\overline{\mathbf{g}}$. Rather, it is given by a new vector, $\overline{\mathbf{g}}^c$, in which members of the former coalition get g_i^c, the former agenda setter gets g^a, and all other members get $\overline{g}$. If we arbitrarily order $\overline{\mathbf{g}}^c$ we can write it as follows: $\overline{\mathbf{g}}^c = (g_1^c, g_2^c, g_3^c, .., g_{\frac{J-1}{2}}^c, g_a^c, \overline{g}_{\frac{J+1}{2}}, ..., \overline{g_J})$. The fact that status quo transfers have increased ($\|\overline{\mathbf{g}}^c\| > \|\overline{\mathbf{g}}\|$) will imply that transfers proposed by new legislators trying to pass their proposals will tend to be higher in order to buy the support of other representatives. As this situation is repeated over time, aggregate spending could grow and exceed the optimum.

It is instructive to consider a simple illustration of this situation in a more concrete example. Consider a special case of the model where $H\left(g^j\right) = \log\left(g^j\right)$, $J = 5$, $N^j = 1$, $\Sigma N^j = 5$ and $y^j = y = 10$. For reference, note that in this case the social optimum, described by the condition $H'(g_j^*) = 1$ for all j, implies that the optimal level of group-specific transfers and of aggregate spending (where

the superscript $*$ is used to denote the utilitarian optimum) are:

$$
\begin{aligned}
g_j^* &= 1, \ j = 1, ..., J \\
G^* &= \sum_{j=1}^{5} N^j g_j^* = 5 g_j^* = 5
\end{aligned}
$$

In contrast, when all representatives determine their preferred level of transfers in a decentralized manner and tax revenues are a common pool of resources as in the Tragedy of the Commons case, the first order conditions imply that (the letter T is used as a reference to Tragedy of the Commons):

$$
\begin{aligned}
g_j^T &= 5, \ j = 1, ..., J \\
\sum_{j=1}^{5} N^j g_j^T &= 5 g_j^T = 25
\end{aligned}
$$

As in the general case considered above, aggregate spending exceeds the utilitarian optimum since each group sets a level of transfers that is "too high". Note that our assumption of equal group size in this particular case implies that every group receives the same amount of resources.

If we turn to the legislative bargaining setting, other interesting results arise. Consider to begin the case of legislative bargaining with flexibility and assume that status quo expenditures are given by $\overline{\mathbf{g}} = (\overline{g}_1, \overline{g}_2, \overline{g}_3, \overline{g}_4, \overline{g}_5) = (0.9, 0.9, 0.9, 1, 1)$. In other words, groups $J = 1, 2, 3$ have a status quo level of transfers that is slightly below the utilitarian optimum whereas groups 4 and 5 receive the efficient level. Moreover, assume that the agenda setting power is given to representative of group $J = 1$. In other words, $a = 1$. To find the equilibrium level of transfers note that the agenda setter will seek support from representatives of groups $J = 2, 3$ who are the cheapest ones to "buy off", as they enjoy the lowest level of status quo expenditures (and group size is not an issue in this case). In other words, the set Ω is defined as: $\Omega = \{j \mid j = 2, 3\}$. Since we are considering the flexibility case, groups outside the coalition receive no transfers at all, that is $g_4 = g_5 = 0$. To find the level of transfers for the remaining groups, we must consider the first order conditions described by equations (7) and (8). In the logarithmic case we are considering, these conditions simplify to:

$$
g_1 = 5 - \sum_{i \in \Omega} g_i \tag{13}
$$

$$
\log(g_i) = \log(g_i) + \sum_{j=1}^{J} \frac{1}{5} \left(g^j - \overline{g}^j \right), \ i = 2, 3. \tag{14}
$$

Note that the countervailing effects present in the decision of the agenda setter can be clearly seen in this logarithmic case. Indeed, the amount of group-specific

transfers that the agenda setter allocates to himself is simply the difference between the "Tragedy of the Commons Effect" (5, as each group is $\frac{1}{5}$ of total population) and the "Coalition Effect" ($\sum_{i\in\Omega} g_i$, the total amount of resources that must be allocated to get supports from other groups). Also interestingly, this implies that in this specific case, aggregate expenditure with flexibility equals the social optimum. Indeed, we can write aggregate expenditure (using the subscript F to make reference to the flexibility case) as $G^F = \sum_{j=1}^{5} N^j g_j = \left(5 - \sum_{i\in\Omega} g_i\right) + \sum_{i\in\Omega} g_i + \sum_{i\notin\Omega} g_i = 5 = G^*$. Of course, this does not imply that the distribution of such expenditure is optimal. Actually, we know that groups outside the coalition receive less than the optimal level of transfers. If we solve the system of equations given by (13), (14) using the fact that $g_4 = g_5 = 0$, we find that the agenda setter is able to allocate for himself a large amount of resources exceeding the social optimum, whereas the members of the coalition demand an increased amount of transfers in exchange for their support. The amount that groups 2 and 3 receive, however, is still below the social optimum in this case. More specifically, the new allocation implies that $g_1 = 3.0887$, and $g_2 = g_3 = 0.95565$.

Moving to the more interesting case where status quo expenditures are protected, that is, the inflexibility case considered above, we find that aggregate expenditure becomes larger than optimal. Consider again the same setup as before where status quo expenditures are given by $\overline{\mathbf{g}} = (\overline{g}_1, \overline{g}_2, \overline{g}_3, \overline{g}_4, \overline{g}_5) = (0.9, 0.9, 0.9, 1, 1)$ and $a = 1$. Again, we have that $\Omega = \{j|\ j = 2, 3\}$, but in contrast to the flexibility case, representatives outside the coalition are given their status quo allocations, $g_4 = g_5 = 1$. Remember that first order conditions are analogous to the ones in the flexibility case and are given by (10) and (11). As we have seen, in this case these conditions boil down to $g_1 = 5 - \sum_{i\in\Omega} g_i$ and to $\log(g_i) = \log(g_i) + \sum_{j=1}^{J} \frac{1}{5}\left(g^j - \overline{g}^j\right)$ for $i = 2, 3,$. respectively. Note however that since members outside the coalition must receive their status quo position, the new aggregate level of expenditure is higher than optimal and is given by (using I for Inflexibility) the following expression:

$$G^I = \sum_{j=1}^{5} N^j g_j = \left(5 - \sum_{i\in\Omega} g_i\right) + \sum_{i\in\Omega} g_i + \sum_{i\notin\Omega} g_i = 5 + (\overline{g}_4 + \overline{g}_5) = 7 > G^*$$

Moreover,.note that the extent to which aggregate expenditure exceeds the optimum is simply given by the total sum of resources that must be allocated (as a consequence of budget inflexibility) to members outside the coalition. Though this result stems from the assumption of a logarithmic function, it nonetheless shows very starkly the inefficiency arising from budget inflexibility. Besides from the aggregate level of expenditure being inefficient, its allocation is different to the optimal in this case as well. When we solve the system of equations given by the first order conditions we find that $g_1 = 2.1487$, and $g_2 = g_3 = 1.4257$. Note also how, since resources must be destined to representatives outside the coalition, the agenda setter must now allocate less resources to himself and offer more resources to coalition members (to compensate for increased need for taxation) than in the flexibility case.

Inflexibility, as we argued above, spans over several periods. Consider that the previous bargaining process occurs at a certain point in time, say $t = 0$, and the resulting allocation becomes the new status quo for $t = 1$, that is $\overline{\mathbf{g}}_1 = (2.1847, 1.4257, 1.4257, 1, 1)$. In this case, various possibilities emerge depending on who is the new agenda setter. First, we could assume that the agenda setter never changes, that is $a = 1$ forever. In this case, solving the problem for $t = 1$ implies that members of the coalition change, as former members are now in a strong status quo position. More concretely, $\Omega = \{j|\ j = 4, 5\}$. Continuing with the assumption of inflexibility we have that resulting expenditures for members outside the coalition are given by the status quo allocation $g_2 = g_3 = 1.4257$. This allows us to find the new aggregate expenditure which increases moving farther away from the optimal level. Indeed, we get that $G = \left(5 - \sum_{i \in \Omega} g_i\right) + \sum_{i \in \Omega} g_i + \sum_{i \notin \Omega} g_i = 5 + (\overline{g}_2 + \overline{g}_3) = 5 + 2(1.4257) = 7.8514$. To find expenditure levels for the remaining representatives, we solve again the system of equations given by the first order condition for choice of expenditure level for the agenda setter and the (binding) incentive compatibility constraints for coalition members. After solving this system we get $g_1 = 2.6458$, and $g_4 = g_5 = 1.1771$.

This process can be repeated again for $t = 2$ where the new status quo is $\overline{\mathbf{g}}_2 = (2.6458, 1.4257, 1.4257, 1.1771, 1.1771)$. Nonetheless, as long as the agenda setter continues to be representative $a = 1$, the solution of the problem shows that he will find optimal to propose $\overline{\mathbf{g}}_2$ again as the new allocation. To understand this result, recall that, when deciding to increase expenditures, the agenda setter faces a trade-off between higher utility stemming from public good consumption and higher costs in terms of taxation to finance increased expenditure for himself and for coalition groups in order to preserve their support. It turns out that the agenda setter has already reached the point where further increases in expenditure for his group cannot compensate additional costs. Thus, aggregate expenditure stops increasing. Nonetheless, the crucial point is that inflexibility leads to inefficiently high expenditure and inflexibility over several periods may lead to even higher levels.

This situation can also occur when agenda setting powers change over time, which is probably a more realistic assumption as legislators are indeed allowed to make proposals for expenditure-mandating laws as long as they do not reduce inflexible outlays already established. As an illustration, consider the case where the agenda setting power changes over periods so that when $t = 1$ representative of group $J = 2$ has this power, at $t = 2$ representative of group $J = 3$ gets it, and so forth. Thus, in $t = 1$, when $a = 2$ and the status quo is $\overline{\mathbf{g}}_1 = (2.1847, 1.4257, 1.4257, 1, 1)$, we would have $\Omega = \{j|\ j = 4, 5\}$ and the solution to the problem would lead to: $G = 8.6104$, $g_1 = 2.1847$, $g_2 = 2.2599$, $g_3 = 1.4257$, $g_4 = g_5 = 1.3701$. That is, the new agenda setter takes advantage of his power to increase the level of expenditure allocated to his group and aggregate expenditure increases again. In the next period, $t = 2$, the status quo is described by the new allocation so that $\overline{\mathbf{g}}_2 = (2.1847, 2.2599, 1.4257, 1.3701, 1.3701)$. Our assumptions imply that the agenda setting power moves to group 3, $a = 3$, and we have again that $\Omega = \{j|\ j = 4, 5\}$.

The solution to the problem leads again to increased aggregate expenditure and higher transfers for groups in the coalition: $G = 9.4446$, $g_1 = 2.1847$, $g_2 = 2.2599$, $g_3 = 1.7623$, $g_4 = g_5 = 1.6188$. If we repeat the process once more and consider the period $t = 3$ with $a = 4$ and $\overline{\mathbf{g}}_3 = (2.1847, 2.2599, 1.7623, 1.6188, 1.6188)$, aggregate expenditure does not increase any longer (note that the same coalition has been prevailing for two periods) since the new agenda setter finds it optimal to propose the prevailing allocation. This is also the case in the subsequent period, when the agenda setting power moves to $a = 5$, the other member of the coalition that has been prevailing.

In short, the discussion from this section suggests that expenditure inflexibility may lead to inefficiently high aggregate expenditure and that this expenditure is likely to be increasing over time.

4   Conclusions

Budget inflexibility, though an old and ongoing concern for policymakers, has been relatively unexplored in the literature on the political economy of budgetary policy. Nonetheless, in this paper we have argued that, in its various forms, it is closely related to the different types of political conflict (including conflict over the distribution of the burden of stabilization, intergenerational conflicts, incentives to please "fiscally illuded" voters, etc.) present in the budget process. Amongst the different types of budget inflexibility, we have studied "expenditure inflexibility" and its connection with one specific (but perhaps the most important) political force driving budget policy: the Tragedy of the Commons. Though our analysis is far from comprehensive in that it does not consider other types of inflexibility nor additional forms of political conflict, it serves to illustrate the additional costs that inflexibility might generate when there is an underlying common pool problem in budget policy and budget allocation is determined through a bargaining process in Congress. We show that expenditure inflexibility (understood as the possibility of establishing transfers that cannot be reduced or eliminated in subsequent periods) not only leads to higher levels of aggregate government expenditure, but is also likely to generate an inefficiently high and growing level of expenditure as time goes by.

It is our interest that this paper motivates additional theoretical research on the issue of budget inflexibility. Not only other forms of inflexibility and of political conflict should be studied from a theoretical perspective, but the ones considered in this paper could be refined. For instance, the consideration of inflexibility over several periods should probably be addressed in a dynamic setting, where current legislators recognize that their actions will influence future state variables that will play a role in determining key issues such as the likelihood of being part of a coalition approving expenditure-mandating laws. Moreover, a dynamic framework plus the clear identification of an upper limit to the resources that can be raised through taxation will also allow us to examine the consequences of these circumstances for government debt and not only for the level of aggregate spending. These issues are part of upcoming work.

5 References

Alesina, A. and A. Drazen (1991), "Why are Stabilizations Delayed?" *American Economic Review*, CXXXI, 1170-1188.

Alesina, A., G. Cohen and N. Roubini (1997), *Political Cycles and the Macroeconomy*, Cambridge, MA: MIT Press.

Alesina A. and G. Tabellini (1990), "A Positive Theory of Budget Deficits and Government Debt", *Review of Economic Studies*, 57, 403-414.

Alesina, A., R. Hausmann, R. Hommes and E. Stein (1996), "Budget Institutions and Fiscal Performance in Latin America," *NBER Working Paper* No. 5586.

Alesina, A. and R. Perotti (1994), "The Political Economy of Budget Deficits," *NBER Working Paper* No. 4637.

Alesina, A. and R. Perotti (1996), "Budget Deficits and Budget Institutions," *NBER Working Paper* No. 5556.

Auerbach, A. (2002), "Is There a Role for Discretionary Fiscal Policy?" *NBER Working Paper* No. 9306.

Bizer, D. and S. Durlauf (1990), "Testing the Positive Theory of Government Finance", *Journal of Monetary Economics*, XXVI, 123-141.

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

Buchanan, J. M. and Y. J. Yoon (2004), "Majoritarian exploitation of the fiscal commons: general taxes–differential transfers," *European Journal of Political Economy,* 20: p.73-90.

Echeverry, J. C. (2002), "Las pensiones: ahorra o nunca", In *Las Claves del Futuro*, Bogotá: Oveja Negra.

Echeverry, Juan Carlos and Verónica Navas (1999) "Confronting fiscal imbalances via intertemporal economics, politics and justice: the case of Colombia", In *Sustainable Public Sector Finance in Latin America*, Federal Reserve Bank of Atlanta.

Echeverry, Juan Carlos, Verónica Navas, Juan Camilo Gutierrez and Jorge Enrique Cardona (2002) "Dealing with contingent liabilities in Colombia", In *Government at risk, Contingent liabilities and Fiscal Risk*, The World Bank.

Edwards S. and G. Tabellini (1991), "Explaining Fiscal Policies and Inflation in Developing Countries," *Journal of International Money and Finance*, X (1991), S16-S48.

Fatás, A. and I Mihov (2003), "The Case for Restricting Fiscal Policy Discretion" *CEPR Discussion Papers* No. 3277.

Feldstein, M. (2002), "The Role for Discretionary Fiscal Policy in a Low Interest Rate Environment," *NBER Working Paper* No. 9203.

Hernández, A. (2003), "Una solución permanente a la crisis fiscal: la importancia y necesidad de las normas fiscales del Proyecto de Acto Legislativo sobre Reforma Política," *Economía Colombiana*, 296, junio/julio, 61-71.

Larraín F. and M. Selowski (1991), *The Public Sector and the Latin American Crisis*, San Francisco: ICS Press.

Neut A. and A. Velasco (2003), "Tough Policies, Incredible Policies," *NBER Working Paper* No. 9932.

Persson, T. and G. Tabellini (2001), *Political Economics,* Cambridge: MIT Press.

Polackova Brixi, Hana and Allen Schick (2000) *Government at risk, Contingent liabilities and Fiscal Risk*, The World Bank.

Restrepo, Juan Camilo (2003) "Reformas al Menudeo: La Flexibilización Del Presupuesto". In *El Tiempo*, Agosto 13 de 2003.

Roubini, N. (1991), "Economic and Political Determinants of Budget Deficits in Developing Countries," *Journal of International Money and Finance*, X, S49-S72.

Roubini, N and J. Sachs (1989), "Government Spending and Budget Deficits in the Industrial Countries," *Economic Policy* 8, 100-132.

Sanguinés, M. and E. Fernández (2003), "Instituciones presupuestales," In Giugale, M., O. Lafourcade y C. LUF (eds.), *Colombia: fundamentos económicos de la paz*, Bogotá: Banco Mundial, Alfaomega

Serna, J.G (1988), *Aspectos de la política presupuestal en Colombia 1886-1987* Bogotá: Ministerio de Hacienda.

Stein, E., E. Talvi and A. Grisanti (1999), "Los arreglos institucionales y el desempeño fiscal: la experiencia Latinoamericana," In Cárdenas, M y S. Montenegro (eds.) *Economía Política de la Finanzas Públicas en América Latina*, Bogotá: Tercer Mundo.

Taylor, J. (2000) "Reassesing Discretionary Fiscal Policy," *Journal of Economic Perspectives*, 14 (3), 21-36.

Tornell A. and A. Velasco (1995), "Exchange Rate-Based and Money-Based Stabilization with Endogenous Fiscal Policy," *NBER Working Paper* No. 5300, October 1995.

Velasco, A. (2000), "Debts and Deficits with Fragmented Fiscal Policymaking," *Journal of Public Economics* 76: p. 105–125.

Weingast, B., K. Shepsle y C. Johnsen (1981), "The Political Economy of Benefits and Costs: A Neoclasssical Approach to Redistributive Politics," *Journal of Political Economy* CXXXIX, 642-664.

Wyplosz, C. (2002), "Fiscal Policy: Institutions vs. Rules" *HEI Working Paper No* 03/2002.