

Political Disagreement, Lack of Commitment and the Level of Debt*

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Abstract

This paper analyzes optimal fiscal policy in an economy where different policymakers alternate in office. We consider several cases, in which successive governments do not agree on the goals of economic policy and cannot commit on behalf of their successors. In such framework, we can disentangle and quantify how political disagreement, political instability and lack of commitment affect the level of debt. In our theoretical exercises, we find that the debt is sensibly increasing in the degree of political disagreement. Lower degree of commitment drives debt toward zero, while the frequency of political turnover does not produce relevant effects.

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1 Introduction

There are several factors that can lead policymakers to make inefficient choices. In macroeconomic models, the optimal (second-best) allocation is usually characterized as the solution of a Ramsey planner. It is implicitly assumed that the planner is always in charge, it can commit to future policies and maximizes the welfare of a representative agent. Policymaking in practice can be more suitably characterized by relaxing some of these assumptions.

In this paper, we build a framework to analyze the cases where governments with different preferences alternate in office. Studying an economy characterized by political turnover also requires to address the problem of lack of commitment in the following respect. It seems natural that current governments cannot commit on behalf of their incumbents, who generally have different objectives. As a consequence, the full commitment assumption should also be relaxed. The purpose of our work is to identify how the degree of polarization among political parties, the frequency of political turnover and level of commitment affect the choices over the level of debt.

As discussed below, these forces may drive debt in opposite directions. As discussed Persson and Svensson (1989) and Alesina and Tabellini (1990), disagreement amongst alternating governments provide incentives to have an inefficiently high level debt and public expenditure. Intuitively, the current government is willing to use resources for its objectives and leave less resources (i.e. higher debt) to its incumbents, provided that it will use such resources to pursue objectives that the current government values less or does not value at all.

The effects of lack of commitment are related to the time inconsistency problem in optimal policy choices. Following the seminal paper of Kydland and Prescott (1977) and Barro and Gordon (1983), it has been commonly assumed in the literature

that policymakers either have full commitment or act with full discretion. The predictions of many economic models, however, may differ dramatically under these two assumptions. In a standard model of debt, as in Lucas and Stokey (1983), the time inconsistency problem arises because a planner, when reoptimizing, is willing to manipulate the interest rate to reduce the burden on its outstanding debt. As it is well known, under the assumption of full commitment, the long-run level of debt is not determined, in the sense that it crucially depends on the initial condition. On the contrary, as shown below, small departures from the full commitment case imply that the optimal average long-run level of debt is zero, independently on the initial condition. That is, apart from the full-commitment case, governments tend to accumulate surpluses (deficits) until the level of outstanding debt (assets) is zero. Indeed, once reached this level, the time inconsistency problem is not an issue anymore and thus government overcome all the problems associated with the lack of commitment.

Few studies in the political economy literature have analyzed how policy decisions are formulated when policymakers with different political views alternate in office. The work of Alesina and Tabellini (1990), shows how political uncertainty and turnover lead to an inefficiently high steady state level of debt and public expenditure and how these political factors can account for the differences in debt management among countries and across time. Azzimonti-Renzo (2004), as we do here, extended the previous works to an infinite horizon problem. This allows to compare the properties of the model with the empirical data. The author, considers a fiscal policy model with balanced budget, and public but no private capital. Instead, we focus on the effects of political disagreement on the level of government debt in a dynamic framework.

As anticipated, analyzing optimal policy choices in an economy with political disagreement is closely linked with the problem of lack of commitment.¹ It is natural to think that current policymakers cannot commit on the behalf of their successors who have different political views. For the sake of tractability but not of plausibility, the works mentioned above has only considered the other extreme assumption, namely that governments can never commit to any plan. In this paper, as in Debortoli and Nunes (2006), we will assume that policymakers have some ability to commit during their own tenures but cannot credibly commit on the behalf of their incumbents. This more realistic *loose commitment* assumption allows us to distinguish and quantify the effects of lack of commitment from those of political disagreement. As a consequence, our analysis can provide a guideline to measure the relative importance of political divergences and to understand in which circumstances building reputation is important.

The paper is organized as follows: section 2 introduces the model and illustrate the solution under different regimes, namely full commitment and full discretion and *loose commitment*. In Section 3 we describe the model under political disagreement. Section 4 illustrates the results and section 5 concludes.

2 The model

We first introduce a simple optimal debt policy where time-inconsistency issues arise, but with no political disagreement and no-uncertainty.² We consider an

¹Alesina and Tabellini (1990) consider a case where the time-inconsistency problem is not an issue, because the solution under commitment and under discretion coincide.

²This last assumption is only for notational convenience. In presence of exogenous shocks our considerations are still valid under the assumption of complete financial markets.

economy where labor is the only factor of production, and technology is linear.

$$c_t + g_t = 1 - x_t \quad (1)$$

where c_t , g_t and x_t denote private consumption, public consumption and leisure, respectively.

The representative household derives utility from leisure and the consumption of private and public goods. The latter are provided by a benevolent government and financed through a proportional tax (τ) on labor income and/or by issuing a one-period bond b_t^G .

In a decentralized equilibrium, given taxes, prices and the quantities of public expenditure, the representative household make its choices over saving/consumption and leisure to:

$$\begin{aligned} \max_{\{c_t, x_t, b_t^P\}} \sum_{t=0}^{\infty} \beta^t u(c_t, x_t, g_t) \\ \text{st : } c_t + p_t^b b_t^P = (1 - x_t)(1 - \tau_t) + b_{t-1}^P \end{aligned} \quad (2)$$

where p_t^b is the price at time t of private bond holdings (b_t^P), paying one unit of consumption at time $t+1$.

The household's first order conditions are:

$$\frac{u_{x,t}}{u_{c,t}} = (1 - \tau_t) \quad (3)$$

$$p_t^b = \beta \frac{u_{c,t+1}}{u_{c,t}} \quad (4)$$

together with the budget constraint (2).

In the next two sections we analyze the problem of the government and characterize its solution under the assumptions of full commitment, full discretion and loose commitment.

2.1 The case of full commitment

If the government has full commitment, for a given initial level of debt (b_0), it solves the following problem:

$$\begin{aligned} & \max_{\{c_t, b_t\}} \sum_{t=0}^{\infty} \beta^t u(c_t, 1 - c_t - g_t, g_t) \\ \text{s.t.} \quad & c_t u_{c,t} + \beta u_{c,t+1} b_t = (c_t + g_t) u_{x,t} + b_{t-1} u_{c,t} \end{aligned} \quad (5)$$

where we made use of the household's optimality conditions (2) and (4), the resource constraint (1) and the market clearing condition $b_t^P + b_t^G = 0 \forall t$, to substitute for taxes, public expenditure, leisure and government debt.

The source of time-inconsistency in this problem is the fact that the government, in period-zero, would like to use taxes and public expenditure can manipulate the bond price, as given by 3. For a generic $t > 0$, consumption determines both p_t and p_{t-1} . Using taxes and public expenditure the government can increase (decrease) the price of the bond p_t only by decreasing (increasing) the price at $t - 1$. At an optimum, the costs of such procedure clearly offsets the benefits. However, at $t = 0$ things are different. Since previous prices (p_{-1}) are irrelevant for the problem, if the initial level of debt is positive (negative), the government can benefit from an increase (decrease) in the price of the bond, without incurring in any additional cost. Therefore, unless the initial level of debt is zero, there is a time-inconsistency problem.

As discussed in Lucas and Stokey (1983), in the full commitment case after an initial jump, the amount of debt reaches its (deterministic) steady-state level, and is kept constant from then on. However, such steady state is generally not determined, in the sense that it depends on the initial condition b_{-1} .

2.2 The case of full discretion

We now describe the solution under discretion, focusing only on Markov-perfect equilibria, as defined in Klein et al. (2004). The problem of the government is:

$$V(b_{t-1}) = \max_{\{c_t, b_t, g_t\}} \{u(c_t, 1 - c_t - g_t, g_t) + \beta V(b_t)\} \quad (6)$$

$$s.t. \quad c_t u_{c,t} + \beta u_c(\Psi(b_t) b_t - (c_t + g_t) u_{x,t} - b_{t-1} u_{c,t}) \quad (7)$$

where $\Psi(b_t)$ denotes the quantity of consumption that will be implemented by the planner when reoptimizing at date $t+1$. Being the function $\Psi(b_t)$ unknown, finding the solution of such problem relies on solving a fixed point problem in such function.³

For our purposes, we now restrict our attention to the interior solutions of the problem, and in particular to the so called generalized Euler equation (GEE):⁴

$$\gamma_t(u_{cc,t+1}\Psi_{b,t}b_t + u_{c,t+1}) = u_{c,t+1}\gamma_{t+1}$$

where γ_t indicates the lagrange multiplier attached to the constraint (7). The inspection of such equation allows us to describe the behaviour of the economy in a (deterministic) steady state. In particular, for the GEE to be satisfied in steady state, it must be that:

$$\gamma u_{cc} \Psi_b b = 0$$

As a result, in the case of full discretion there is a unique steady state, associated with a level of debt equal to zero.⁵ As a consequence, if the initial level of debt is

³See Klein et al. (2004) and Judd (2004) for a detailed dicussion on this topic.

⁴In our case the generalized Euler equation is the derivative of the Lagrangean associated with the problem 6 w.r.t. b_t

⁵In principle, the previous condition can be satisfied in three other cases that can be ruled out. $\Psi_b = 0$ is not plausible because, around the steady state, higher debt would imply higher taxes and lower consumption. $u_{cc} = 0$ because of the standard assumption of strictly concave utility function, and $\gamma = 0$ because it would generally violate the first-order conditions with respect to consumption and public expenditure.

positive (negative) a government will run surpluses (deficits) until the zero level is reached. This means that with full discretion the exposure of the government in terms of debt/assets will be lower than in the case of commitment.

This result may seem counterintuitive when compared with our discussion for the case of full commitment. Indeed, while in the latter case whenever a reoptimization occurs there is an incentive to push debt further away from zero, in the case of full discretion the opposite happens. In general, however, there is no reason why the behaviour under discretion should mimic the policy implemented in a one-time deviation from full commitment. In our case, the government with full discretion realizes that it is optimal to reach a level of debt of zero, a level at which the time-inconsistency problem will not be an issue anymore.

From a positive point of view, both the full commitment and the full discretion case are unappealing. In the first case the level of debt is not determined, while in the other case the implications of the model are at odds with the empirical evidence. From a normative point of view, our analysis implies that building credibility not only is not useful, but also counterproductive, to reduce debt.

3 Political Disagreement

As discussed in Alesina and Tabellini (1990), the presence of political disagreement and uncertainty gives an incentive to accumulate an excessive level of debt with respect to the standard (Ramsey) case. However, such political disagreement necessarily implies a lack of commitment. As explained above, this leads *per se* to a reduction of debt. In what follows we describe a framework that allows to distinguish and quantify these two opposite effects, namely lack of commitment and political disagreement.

Firstly, we introduce *loose commitment* into the basic model of the previous sections, following the technique developed in Debortoli and Nunes (2006). We consider an institutional setting where political turnover is driven by an exogenous shock $s_t \in 0, 1$.⁶ In particular, we assume that at any point in time t , each government only faces a probability π of being reelected ($s_{t+1} = 1$), while with probability $1 - \pi$ another government will come into power ($s_{t+1} = 0$). During its tenure the government can commit to its future policies. However, if a new government is elected, then past promises are no longer kept, since a new party will be in charge.

Taking into account that next period either the current party will be in charge or a new party is elected, the implementability condition (5) can be written as follows:

$$c_t u_{c,t} + \beta \pi u_{c,t+1} b_t + \beta (1 - \pi) u_c(\Psi(b_t)) b_t = (c_t + g_t) u_{x,t} + b_{t-1} u_{c,t} \quad (8)$$

Note that we are just expanding the term $\beta \pi u_{c,t+1}$ in eq. 5. With probability π , the current government will stay in power for another period. In that case, we are assuming that a commitment technology is operational and future variables can be directly controlled by the government. With probability $1 - \pi$, a new government is elected. In that case, it is anticipated that the new government will implement new policies, which are a function of next period's state variable b_t . We thus anticipate that $c_{t+1} = \Psi(b_t)$ will be implemented by a newly elected government. The functions Ψ will be specified later.

There are alternative interpretations of the parameter π . It is indeed also related to the average duration of a tenure, which is namely $1/\pi$. Therefore, a higher π implies a higher probability of being re-elected, a lower frequency of political

⁶For simplicity, we will abstract from other shocks hitting the economy.

turnover and a larger horizon over which the current government is expected to commit.

We now introduce political disagreement. We consider an economy where there are two types of public goods g^1 and g^2 . This implies that the resource constraint (1) take the form

$$c_t + g_t^1 + g_t^2 = 1 - x_t \quad (9)$$

Moreover, two political parties, A and B , with different preferences about the composition of a public good alternate in office. Parties derive utility from leisure (x) and consumption of a private good (c) and the two public goods, g^1 and g^2 . However, party A has a preference for public goods of type 1, while party B prefers the public good. g^2 .

More formally, we assume that period utility, for party $i = A, B$, is given by

$$u(c_t, l_t, g_t^i) = \gamma_c(1 - \gamma_g) \frac{c_t^{1-\sigma} - 1}{1 - \sigma} + (1 - \gamma_c)(1 - \gamma_g) \frac{l_t^{1-\sigma} - 1}{1 - \sigma} + \gamma_g \frac{(g_t^i)^{1-\sigma} - 1}{1 - \sigma}$$

where α_c and α_g denote the preference weights on private and public consumption. Preferences for the composite public good g_t^i are specified as follows:

$$g_t^A = g_t^1 + \alpha g_t^2 \quad (10)$$

$$g_t^B = g_t^2 + \alpha g_t^1 \quad (11)$$

The parameter $\alpha \leq 1$ measures the degree of disagreement between the two parties. In the limiting cases, a value of $\alpha = 1$ means no disagreement, while $\alpha = -\infty$ indicates complete disagreement. As shown in a technical appendix, the problem of a party $i = A, B$ can be written as:

$$V(b_{-1}) = \max_{\{c_t, b_t, g_t^1, g_t^2\}_{t=0}^{\infty}} \sum_{t=0}^{\infty} (\beta\pi)^t \{u(c_t, 1 - c_t - g_t^1 - g_t^2, g_t^i) + \beta(1 - \pi)\xi(b_t)\} \quad (12)$$

subject to (8) and the specification of g^i as in (10) or (11).

The objective function of the government contains two parts. First, current government can make its own plans for the cases in which it will be in charge. This is represented by the first term in the summation. Uncertainty about being in office in the future makes government to discount next periods' utilities at the rate $\beta\pi$. Second, with probability $1 - \pi$ a new government is elected. The current government can only influence the incumbent's decisions through the state variables b . This effect is captured through the the function ξ . In other words, the function $\xi(b_t)$ is the lifetime utility that party i obtains if the other party is elected at $t + 1$.

Perfect substitutability between the two public goods implies that, at an optimum, party A only chooses public good of type 1 good, while and party B only chooses type 2 good. This assumption, together with separability between private and public consumption and our assumption about political turnover imply that the problem faced by the two parties is fully symmetric. As a result, in a given state of the world, the two parties will always choose the same level of debt, private and public consumption. Only the composition of the public good will be different. Since one and only one of the public goods is produced in each period, we can make the simplification that g_t denotes g_t^1 or g_t^2 . This symmetry allows us to define the lifetime utility derived by a party i when the other party is in charge $\xi(\cdot)$ as:

$$\xi(b_0) = \sum_{t=0}^{\infty} (\beta\pi)^t [u(c_t^*, 1 - c_t^* - g_t^*, \alpha * g_t^*) + \beta(1 - \pi)V(b_{t+1}^*)] \quad (13)$$

where stars denote variables evaluated with the policy functions solving problem (12). In the case there is no disagreement ($\alpha = 1$), we have that $\xi(\cdot) = V(\cdot)$.

Our formulation (12) is quite general in the sense that it nests as special cases all the possible combination of degree of commitment and political disagreement.

For example, if $\pi = 1$ and $\alpha = 1$ we have full commitment and no disagreement among planners, as in the standard Ramsey formulation of section 2.1. On the other extreme, when $\pi = 0$ and $\alpha < 1$ we have political disagreement with full discretion. By changing the values of the parameters π and α we are therefore able to disentangle the effects of these two sources of inefficiency.

Debortoli and Nunes (2006) prove that such kind of problems can be cast into the framework of Marcet and Marimon (1998). Doing so, one can prove that the problem is recursive and that the policy functions are time-invariant and only depends on some finite set of state variables. For the current purposes, it is worth to mention that constraint (8) is associated, in a lagrangian formulation, with a lagrange multiplier, which we denote as γ . Marcet and Marimon (1998) show that such lagrange multiplier measures the values of past commitments. In our formulation, when a new government is appointed, the lagrange multiplier is set to zero since past commitments do not need to be fulfilled.

We will next define our concept of equilibrium. We will restrict attention to Markov equilibria.

Definition 1 *A Markov Perfect Equilibrium with Loose Commitment and Political Disagreement must satisfy the following conditions:*

1. Given $\Psi\{b\}$ and $\xi(b)$, the government optimizes problem (12);
2. The value function ξ is described by Eq.(13) and V is the maximum of problem (12);
3. The policy function $\psi(b, \gamma)$ solving problem (12) are such that $\Psi\{b\} = \psi(b, 0)$.

The first part of the definition is a simple optimality requirement. The second part states that the functions ξ and V to be consistent between themselves. The

third part of the definition, states that the functions that the future government is expected to implement are optimal. Since the current and future governments face the same problem, the functions that the current government and future governments implement are equal. Nevertheless, as stated previously, when a new government is elected the lagrange multiplier is set to zero.

It must be emphasized that the policy function Ψb and the value function $\xi(b)$ are unknown and need to be found as a solution of a fixed point problem. In particular, the fact that $\xi(b)$ and $V(b)$ are not equal does not allow to apply envelope results as can be done in absence of disagreement.

4 Results

We use a standard calibration for an annualized model of the US economy. Table 1 summarizes the parameter values.

Table 1: Parameter values				
σ	β	δ	γ_c	γ_g
0.99	0.96	0.08	0.7	0.25

In order to detect the importance of the degree of commitment and political disagreement, we solved the optimal policy problem under different regimes.

4.1 The Effects of Loose Commitment

We first abstract from political disagreement (setting $\alpha = 1$) and focus on the effects of lack of commitment alone. In table 2 we show average allocations for several degree of commitment, as measured by the parameter π .⁷ An interesting

⁷Averages are taken with respect to the realizations of the shock $\{s_t\}_{t=0}^\infty$.

Table 2: Average Allocations under Loose Commitment

	COM.	0.75	0.5	0.25	DISC.
b	0.365	0.0259	0.0193	0.0173	0.0168
g	0.2121	0.2139	0.2138	0.2136	0.2134
c	0.4923	0.4966	0.4968	0.497	0.4972
y	0.7044	0.7105	0.7106	0.7107	0.7107
τ	0.3218	0.3035	0.3029	0.3025	0.3022
l	0.2956	0.2895	0.2894	0.2893	0.2893
λ	-0.1584	-0.1081	-0.0724	-0.036	0

result stands out. Even small departures from full commitment lead to an average value of debt that is close to zero. In other words, apart from the special case of full commitment, the long run level of debt is roughly the same as in the case of full discretion. Interestingly, and as opposed to the full commitment case, this result holds no matter the initial level of debt.

Figure 1 shows the transition dynamic. Our numerical exercises show that for any level of $b_0 > 0$ ⁸, and at any point in time t , the lower is the degree of commitment, the lower is the average level of debt. Somewhat surprisingly, other things equal, loosing credibility implies a reduction in debt, since reaching a the zero-debt level allows to overcome the time-inconsistency problem.

4.2 The Effects of Political Disagreement

We now consider the effect of political disagreement, abstracting from commitment issues. In other words, as in Alesina and Tabellini (1990), we keep the extreme assumption that governments can never commit, no matter if they are re-elected or not, and act with full discretion. It is worth to emphasize that in this case the

⁸If $b_0 < 0$, that is the government holds asset in the initial period, the average level of debt under *loose commitment* will approach zero from below.

parameter π is therefore unrelated to the degree of commitment and only measure the probability of being re-elected.

As argued by Alesina and Tabellini (1990), the presence of political disagreement and uncertainty gives an incentive to overissue debt. In particular, they show that disagreement on the composition of the public good (i.e. $\alpha < 1$) and more frequent political turnovers (lower π) lead to a higher steady state level of debt than in the standard (Ramsey) case. These two channels may help to explain why the level of debt is so different among countries and across time. As explained in the previous section, our framework allows to quantify the effects of these two forces. To do so, we computed the long-run average level of debt with several combinations of the parameters (α) and (π). Figure 2 summarizes the results.

First, we can observe that a higher degree of disagreement (i.e. lower α) and more frequent turnover (lower value of π), both imply a higher level of debt. However, while the effects of different degrees of disagreement are relevant, the frequency of turnover seems of little importance for the level of debt. Indeed, for a given α the difference in the level of debt between having $\pi = .75$ and $\pi = 0$ is at most 10% of GDP.

From our analysis we can conclude that countries with more divisions among the political forces should experience higher level of debt than more homogenous countries. If governments dislike the public services provided by their potential successors, they are willing to spend more in the current period and leave less resources (i.e. more debt) as inheritance.

On the other hand, the frequency of political turnover does not have relevant effects. There is an intuitive explanation for this result. It is true that a lower probability of being re-elected reduces the interests of current government about

the next period. However, it is also the case that a lower probability of re-election π implies a higher probability to come into power again at a future date.

To summarize, the predictions of the model suggest that it is the different degree of polarization among the political forces, rather than the degree of political stability, what really matters to explain the differences in the debt level among countries and across time.

4.3 Political Disagreement and Loose Commitment

So far, our analysis focused on the effects of political disagreement, abstracting from any commitment issue that can be related to political turnover. From now on, we investigate the case where a government do commit over its mandates, but cannot commit on the behalf its successors.

Beside being a more realistic depiction of reality, there are two main reasons to investigate this case. First, from a static point of view, to determine the effects of these two opposite forces on the long-run level of debt. Second, from a dynamic perspective, adding *loose commitment* to political disagreement generates volatility of our variables as a consequence of political cycles, even in the fully symmetric model introduced in section 3. At the moment, we only focus on the first aspect.

We analyze the consequences of disagreement and loose commitment on the level of debt. We should first note that, in this context, a higher political turnover also necessarily implies a lower degree of commitment. The lower is the probability of being re-elected, the shorter is the horizon over which the government is expected to commit. In other words, there are now two effects related to the parameter π . A higher π first implies less frequent turnover which leads, *ceteris paribus* to slightly higher debt. But it also means a higher degree of commitment that, as we explained

above in absence of disagreement/turnover issues, would increase debt. It seems therefore worth exploring which of the two opposite effects dominates.

As shown in figure 3, in the case of political disagreement and *loose commitment*, the level of debt is considerably increasing in the degree of disagreement, as in the previous case. However, debt is now decreasing in the parameter π . This means that, by increasing (decreasing) the value of π , the effects of having a higher (lower) degree of commitment dominates those of having a (higher) probability of being re-elected. This results in a higher (lower) level of debt. We should also note that, beside the change in sign with respect to the case of full discretion, the effects of changes in the parameter π are quite small. Debt only reduces by roughly 5% passing from $\pi = .75$ to $\pi = 0$.

To summarize, according to our model, differences in the frequency of political turnover cannot account for the differences in the level of debt among countries and across time. There are mainly two reasons for this result. First, from a qualitative point of view, the relationship between frequency of turnover and the level of debt seems unclear. This crucially depends on the relative importance of the opposite effects of having a longer (shorter) tenure versus those of having a longer (shorter) commitment horizon. Second, from a quantitative point of view, such effects seems of minor importance.

We also want to emphasize another reason why it is important to consider loose commitment as opposed to full discretion. In figure 4, we compare directly these two cases, together with the standard (Ramsey) case taken as a benchmark. In this picture we show the average dynamics for a given initial level of debt. As we can see, at any point in time, the level of debt is considerably higher for the

case of loose commitment than in the case of full discretion.⁹ Moreover, while in the case of loose commitment debt is higher than in the Ramsey case, under full discretion debt always stands a bit below such level.¹⁰ This is telling us that, when considering political disagreement, the assumption regarding the commitment level of the government is relevant to determine the level of debt.

In general, the (extreme) assumption of full discretion, typical in the literature, leads to underestimate the level of debt under political disagreement and uncertainty. This is because, as stressed above, reducing commitment and increasing disagreement drive debt in opposite directions.

We are currently working to compare the static and dynamic properties of our model with the empirical data.

5 Conclusions

As it has been documented in the literature, lack of commitment and political disagreement and uncertainty are two important sources of inefficiency. In this work we develop a framework that allows to distinguish and quantify the effects of each of these forces on the level of debt in a dynamic context. Moreover, we are able to solve the dynamic model, so that the prediction of the model can be compared with empirical data.

Political disagreement and uncertainty are strictly connected with commitment issues. The horizon over which a government is expected to commit cannot exceed the time over which it is supposed to stay in power. In the literature, political

⁹In this picture b_0 is set to the level of output in the Ramsey case, $\alpha = .25$ and $\pi = .75$. This qualitative result do not change for other initial conditions and parameters.

¹⁰Given the indeterminacy of debt in the Ramsey case, and the determinacy in the case of political disagreement, it is always possible to find an initial level of debt such that this happens.

disagreement and turnover has always been analyzed under the assumption of full discretion. However, it must be the case that countries with more frequent political turnovers are also characterized by a shorter commitment horizon. The main contribution of this work is to develop a framework that allows to take into account such interactions.

Our exercise is relevant to the extent that, when considered separately. These forces drive debt in opposite directions. It is therefore worthy to study the combined effect. We find that debt is considerably increasing in the level of disagreement among political parties and in the level of commitment. By assuming full discretion, the level of debt is underestimated and, for some initial conditions, can be lower than in the standard (Ramsey) case.

On the other hand, the frequency of turnover do not seem to have relevant effects. This suggests that, from a quantitative point of view, the degree of political instability cannot account for the differences in the level of debt among countries and across time. On the other hand such differences can be better explained by the different degrees of political polarization.

We are currently improving and extending our work to compare the predictions of our model with the empirical data.

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Figure 1: Debt with Loose Commitment

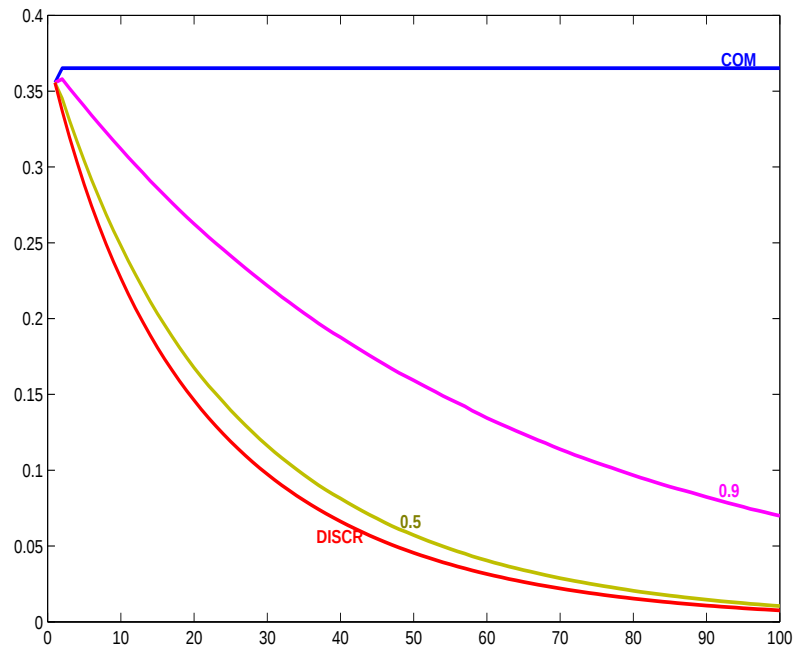


Figure 2: Debt with Political Disagreement and Discretion

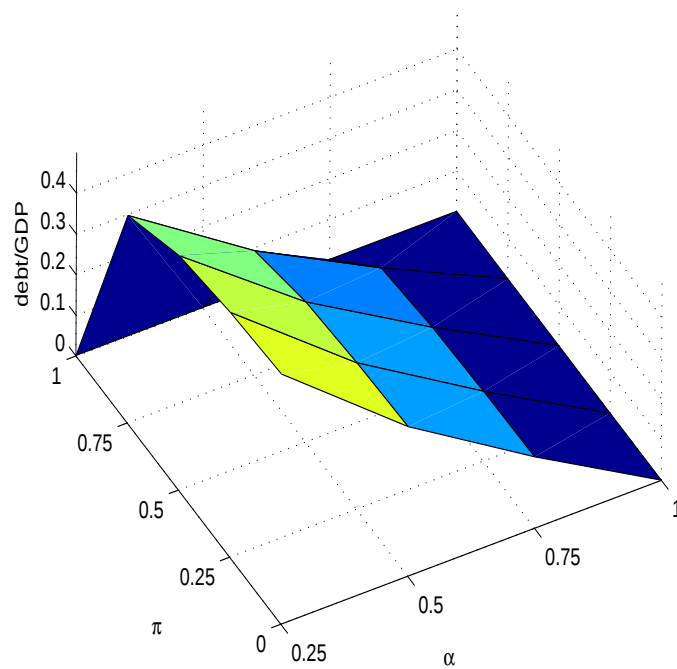


Figure 3: Debt with Political Disagreement and Loose Commitment

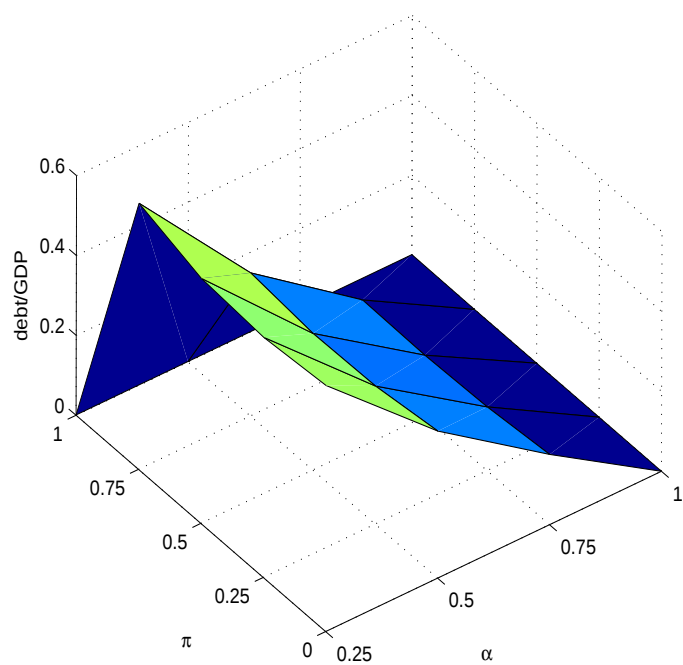


Figure 4: Debt with Political Disagreement: Discretion vs. Loose Commitment

