

Elections and the Strategic Use of Budget Deficits

Roland Hodler

July 2009

Research Paper Number 1074

ISSN: 0819-2642

ISBN: 978 0 7340 4038 1

Elections and the Strategic Use of Budget Deficits

Roland Hodler*

July 23, 2009

Abstract

We present a model in which a conservative incumbent with preferences for low public spending can strategically run a budget deficit to prevent the left-wing opposition candidate from choosing high public spending if elected, and possibly also to ensure his own reelection. We find that the incumbent never manipulates the opposition candidate's public spending if he can ensure his reelection; and that a conservative incumbent who runs a budget deficit to ensure his reelection may somewhat paradoxically choose high public spending before the election.

Keywords: Voting, Budget deficits, Public Debt, Political Economics

JEL classification: H62, H63, D72, C72

*Department of Economics, University of Melbourne. Email: rhodler@unimelb.edu.au. This paper has benefited from comments of Rosemary Humberstone, Simon Loertscher, and seminar and conference participants at Deakin University, La Trobe University, the University of Tasmania, and the Econometric Society Australasian Meeting 2009 in Canberra.

1 Introduction

It is well known that a conservative incumbent who prefers low public spending may strategically run a budget deficit to prevent the left-wing opposition candidate from raising public spending after getting into office (Persson and Svensson, 1989). It is however not obvious why an incumbent should target the opposition candidate if he can use the budget deficit to manipulate policy preferences of others. He may alternatively target decisive voters. A conservative incumbent, for example, may run a budget deficit to ensure that these voters prefer his low future public spending to the opposition candidate's higher public spending. Getting reelected does after all not only allow him to choose low public spending in the future, but also ensures the perks from office for another term.

We present a stylized two-period model to study when and how a conservative incumbent runs a budget deficit to influence the election outcome or the future public spending of a left-wing opposition candidate. In this model, voters derive utility from private consumption and public spending as well as from the charisma or other exogenous characteristics of the politician in office. The incumbent and the opposition candidate are office- as well as policy-motivated. The incumbent has weaker preferences for public spending than the median voter, while the opposition candidate has stronger preferences. In the first period the incumbent chooses both the level of public spending and the budget deficit. In the second period the voters (re)elect one of the two politicians. The elected politician then chooses the level of public spending and repays public debt.

We find that the incumbent can be in one of three situations, depending on how inclined the voters are to reelect him due to his charisma and other exogenous factors. First, if the voters really want him in office, then he is in the best possible situation and gets reelected after choosing his preferred policies: a balanced budget and low public spending.

Second, if the voters strongly prefer the opposition candidate, the incumbent does not

get reelected no matter what policies he chooses. In this situation, he can either accept that his successor chooses high public spending and run a budget surplus to smooth private consumption over time; or he can run a budget deficit to induce his successor to keep public spending low. He runs a budget deficit if and only if he is sufficiently averse to high public spending and the opposition candidate not too enthusiastic about it.

In the third scenario, the incumbent is not reelected when choosing a balanced budget. He is however reelected if he runs a sufficiently high budget deficit, because the median voter then prefers his low future public spending to the opposition candidate's high public spending. In this situation, the incumbent either runs a budget surplus to smooth private consumption, or a distortionary budget deficit targeted at the median voter. He does not target the opposition candidate since this would require an even more distortionary budget deficit and may not ensure his office rent. Exactly because of this office rent, even a conservative incumbent who is not overly averse to public spending may run a budget deficit to ensure his reelection. This gives rise to the somewhat paradoxical possibility that the incumbent chooses a distortionary budget deficit and high public spending before the election, and is then reelected because the voters anticipate that he will reduce public spending once the public debt that he accumulated must be settled. We will discuss later how this result may explain, for example, why some Republican presidents increased the budget deficit before their reelection, and why they used the budget deficit not only to cut taxes, but also to raise public spending.

This paper builds on the seminal contribution of Persson and Svensson (1989). They study how a conservative incumbent can use the budget deficit to manipulate the public spending decision of a left-wing government that will be elected into office. However, they abstract from the possibility that the voters' choice could depend on the anticipated public spending decisions of future conservative and left-wing governments and, therefore, on the level of public debt. We extend their model by allowing the election outcome to be

endogenous to the budget deficit chosen by the incumbent government.

There are other contributions extending the Persson-Svensson model to allow for endogenous election outcomes. Aghion and Bolton (1990) show that a conservative incumbent may run a budget deficit to improve his reelection prospects if and only if the median voter is afraid that the opposition candidate would default on the outstanding debt; a possibility from which we abstract. Persson and Tabellini (2000, ch. 13) present a simplified version of the Persson-Svensson model as well as an extension in which a conservative incumbent can improve his reelection prospects by running a budget deficit if there are fewer swing voters among his supporters than among the opposition candidate's supporters. We show that the incumbent can use a budget deficit to improve his reelection prospects in close elections even in the absence of any asymmetry in the voting population.¹

Inspired by the Persson-Svensson model, Pettersson-Lidbom (2001) studies how budget deficits depend on the reelection prospects of incumbent governments. Using panel data from Swedish municipal elections, he finds that conservative governments run higher budget deficits when facing lower reelection chances (and the opposite effect for left-wing governments). This finding is consistent with our prediction that conservative incumbents choose higher budget deficits when targeting their successors because of dim reelection prospects than when targeting the median voter before close elections.

Our paper further relates to contributions suggesting how distortionary policies may improve an incumbent's reelection prospects. Milesi-Ferretti and Spolaore (1994) show that an incumbent who likes to channel funds to his constituency may refrain from tax reforms to ensure that public spending decisions remain unimportant in elections. Besley and Coate

¹Alesina and Tabellini (1990a) study a model in which an incumbent may run a budget deficit because he and the opposition candidate differ in their preferences for different types of public goods (rather than different levels of public spending; see also Alesina and Tabellini, 1990b). Most other contributions on the political economy of budget deficits and public debt differ from our paper and the literature discussed above by assuming that politicians have no policy preferences and care only about being in office (e.g., Lizzeri, 1999), or the rents they can appropriate while in office (e.g., Battaglini and Coate, 2008, Caballero and Yared, 2008, and Yared, 2009).

(1998) present a citizen-candidate model in which the elected candidate may refrain from efficient public investments if the subsequent change in the income distribution translates into policy changes that he dislikes. Biais and Perotti (2002) show that a conservative incumbent may underprice shares when privatizing public firms to reduce the appeal of redistributive policies to the middle class. Dellis (2009) presents a model in which the incumbent may not address policy issues on which the voters like his stance before the election. In addition, an incumbent may use distortionary policies in an attempt to mislead voters who are imperfectly informed about his competence (Rogoff and Siebert, 1988), his preferences (Alesina and Cukierman, 1990), or the optimal level of public spending (Hodler et al., 2007).

The remainder of the paper is structured as follows: Section 2 presents the model. Section 3 derives and discusses the equilibrium. Section 4 presents circumstantial evidence from the United States and concludes. All proofs are in the appendix.

2 The Model

We study a two-period model with complete information in which there is a conservative incumbent R , an opposition candidate L , and a measure-one continuum of voters i that differ in their preferences for public spending. The income of the two politicians and the voters is exogenous and, for simplicity, equal to 1 in each period $t \in \{1, 2\}$.²

In period one R chooses the budget deficit $b \in \mathbb{R}$ and the level of public spending $g_1 \in \{\underline{g}, \bar{g}\}$, where $\bar{g} > \underline{g} > 0$. The budget deficit b is financed on international capital markets at a zero interest rate, with $b < 0$ representing a budget surplus that is invested in these markets. The dichotomy of g_1 simplifies the analysis and helps us to illustrate

²The assumption that all voters earn the same income, but differ in their preferences for public spending is not crucial. The model could easily be transformed into one in which voters differ in their incomes and, therefore, in the effects of public spending on private consumption, but not in the utility they derive from public spending itself. The assumption that income is constant over time can also be relaxed.

under what circumstances R may somewhat paradoxically choose high public spending. The policy bundle (g_1, b) determines the lump-sum tax $\tau_1 = g_1 - b$ in period one. After observing (g_1, b) , the voters (re)elect R or L at the beginning of period two. The elected politician then repays public debt b if $b \geq 0$, or collects public savings $-b$ if $b < 0$, and chooses public spending $g_2 \in \{\underline{g}, \bar{g}\}$. The lump-sum tax is $\tau_2 = g_2 + b$ in period two.

Following Persson and Svensson (1989, section IV) and Persson and Tabellini (2000, ch. 13), we assume that private citizens cannot access international capital markets, which is a simple way of guaranteeing that the budget deficit affects the path of private consumption.³ Hence, private consumption is $c_1 = 1 - \tau_1 = 1 - \underline{g} + b$ and $c_2 = 1 - \tau_2 = 1 - g_2 - b$ in periods one and two, respectively. The requirement that public debt must be repaid in period two and the non-negativity constraint $c_t \geq 0$ put an upper bound on b : $b \leq \bar{c} \equiv 1 - \underline{g}$. They also imply that only $g_2 = \underline{g}$ is feasible in period two if $b \in (\underline{c}, \bar{c}]$, where $\underline{c} \equiv 1 - \bar{g}$. Observe that \bar{c} and \underline{c} are equal to private consumption in case of a balanced budget when public spending is \underline{g} and \bar{g} , respectively.

In each period t , politicians and voters derive utility from private consumption and public spending:

$$\omega_i(c_t, g_t) = u(c_t) + \alpha_i h(g_t), \quad (1)$$

where $\alpha_i > 0$ measures the intensity of their preferences for public spending, and where $u(c_t)$ and $h(g_t)$ are continuous with $u' > 0$, $u'' < 0$ and $h' > 0$. We assume for technical reasons that $u' \rightarrow 0$ if $c_t \rightarrow \infty$, and $u(\bar{g} - \underline{g}) - u(0) > \alpha_i [h(\bar{g}) - h(\underline{g})]$ for all α_i .⁴ For simplicity, we abstract from discounting, and we introduce the tie-breaking rules that indifferent politicians act as if they preferred \underline{g} to \bar{g} , and indifferent voters as if they preferred R to L .

³Persson and Svensson (1989) show that the budget deficit has similar effects on the path of private consumption in such a simple model as in a richer model in which private citizens can access the international capital market but their labor supply is endogenous.

⁴These two assumptions, which are reminiscent of standard Inada conditions, guarantee the existence of the thresholds β_R and β_L introduced later (see Proposition 1 and its proof).

The distribution of the voters' preferences for public spending α_i is given by $F(\alpha_i)$. The median voter M is characterized by α_M , where $F(\alpha_M) = \frac{1}{2}$. It is standard in political economy models with partisan politicians that the median voter's preferences are in-between the preferences of the two (major) parties and their candidates (e.g., Persson and Tabellini, 2000, ch. 5). We follow this tradition and assume

$$\alpha_R < \alpha_M < \alpha_L. \quad (2)$$

Politicians and voters do however not only care about public spending and private consumption. Politicians also like to be in office, and they enjoy a rent $\Psi \geq 0$ in every period in which they are in office.⁵

The voters' decisions depend partly on the public spending $g_2^j(b)$ chosen by politician $j \in \{R, L\}$ if elected, and the consequences for private consumption $c_2^j(b) = 1 - g_2^j(b) - b$, but also on the politicians' exogenous characteristics such as their charisma, integrity, competence and leadership skills.⁶ Voter i thus votes for R if and only if

$$\omega_i(c_2^R(b), g_2^R(b)) + \gamma\theta^R \geq \omega_i(c_2^L(b), g_2^L(b)) + \gamma\theta^L, \quad (3)$$

where θ^j measures the exogenous characteristics of politician j , and $\gamma \geq 0$ the importance of these characteristics in the election. We subsequently use $\Delta \equiv \gamma(\theta^R - \theta^L)$ and simply refer to it as R 's relative charisma. More generally, we could view Δ as R 's competitive edge in the election due to exogenous characteristics.

Our model nests the following two special cases: The election outcome depends exclusively on public finance issues if $\gamma = 0$, and it is exogenous if $\gamma \rightarrow \infty$. It is this second

⁵Results only depend on R 's office rent and are independent of L 's office rent. If R could not stand for reelection himself, e.g. due to a binding term limit, Ψ would represent his preferences for a successor from his own party rather than the opposition party (conditional on both politicians choosing the same g_2).

⁶Similarly, we could assume that voters care about the politicians' fixed positions in some policy dimension orthogonal to public spending, e.g. abortion.

case that Persson and Svensson (1989) study.

We finally impose some restrictions on α_R and α_L to ensure that R has strong preferences for low public spending \underline{g} , and L strong preferences for high public spending \bar{g} . We want to ensure that R prefers \underline{g} and L prefers \bar{g} in any period with a balanced budget $b = 0$. We moreover want that R and L have strong enough preferences for \underline{g} and \bar{g} , respectively, such that neither of them would be interested in having \bar{g} in one period and \underline{g} in the other period even if private consumption were perfectly smoothed over time, i.e., if $c_1 = c_2 = \tilde{c} \equiv \frac{\bar{c} + \underline{c}}{2}$. Note that such consumption smoothing would require a budget deficit $b = \tilde{b} \equiv \frac{\bar{g} - \underline{g}}{2} > 0$ if $g_1 = \bar{g}$ and $g_2 = \underline{g}$, and $b = -\tilde{b} < 0$ if $g_1 = \underline{g}$ and $g_2 = \bar{g}$. We assume $\omega_R(\tilde{c} + \bar{g} - \underline{g}, \underline{g}) > \omega_R(\tilde{c}, \bar{g})$ or, equivalently,

$$\alpha_R < \frac{u(\tilde{c} + \bar{g} - \underline{g}) - u(\tilde{c})}{h(\bar{g}) - h(\underline{g})}. \quad (4)$$

This assumption implies that R 's preferences for public spending are so weak that he prefers \underline{g} in period two for any $b \geq -\tilde{b}$. That is, he prefers \underline{g} even if public savings are so high that private consumption raises to $\tilde{c} + \bar{g} - \underline{g} > \bar{c}$, while it would again be \tilde{c} if he chose \bar{g} . Similarly, we assume

$$\alpha_L > \frac{u(\tilde{c}) - u(\tilde{c} - \bar{g} + \underline{g})}{h(\bar{g}) - h(\underline{g})}. \quad (5)$$

Hence, L chooses \bar{g} in period two for any $b \leq \tilde{b}$. That is, he prefers \bar{g} even if public debt b is so high that private consumption drops to $\tilde{c} - \bar{g} + \underline{g} < \underline{c}$, while it would again be \tilde{c} if he chose \underline{g} .

3 Equilibrium

We solve for the Subgame Perfect Nash Equilibrium of our model using backward induction. We therefore start by looking at period two, before deriving the policy choices of the

conservative incumbent R in period one.

3.1 Election outcome and public spending in period two

We first establish what level of public spending g_2 the two politicians choose if (re)elected. For politician $j \in \{R, L\}$, the benefit of high public spending is $u(\underline{c} - b) + \alpha_j h(\bar{g})$, and the benefit of low public spending is $u(\bar{c} - b) + \alpha_j h(\underline{g})$. Politician j thus chooses $g_2^j(b) = \underline{g}$ if and only if $U(b) \geq \alpha_j H$, where

$$U(b) \equiv u(\bar{c} - b) - u(\underline{c} - b) = u(1 - \underline{g} - b) - u(1 - \bar{g} - b) > 0 \quad (6)$$

and

$$H \equiv h(\bar{g}) - h(\underline{g}) > 0. \quad (7)$$

While H is independent of public debt b , $U(b)$ increases in b due to the concavity of $u(c_i)$. If b is high, private consumption c_2 tends to be low in period two. A consumption difference of $\bar{g} - \underline{g} > 0$, which may make the difference between starving and getting by, therefore results in a large utility difference $U(b)$. However as b decreases, c_2 tends to increase, and a consumption difference of $\bar{g} - \underline{g}$ translates into a smaller utility difference $U(b)$. For this reason, $U(b) \geq \alpha_j H$ is satisfied if and only if public debt b exceeds some threshold β_j . This is illustrated in Figure 1.

Proposition 1 *When in office in period two, R chooses low public spending $g_2^R(b) = \underline{g}$ if public debt $b \geq \beta_R$, and high public spending $g_2^R(b) = \bar{g}$ otherwise. L chooses $g_2^L(b) = \underline{g}$ if $b \geq \beta_L$, and $g_2^L(b) = \bar{g}$ otherwise. The unique thresholds β_R and β_L increase in α_R and α_L , respectively, and satisfy $\beta_R < -\tilde{b}$ and $\beta_L > \tilde{b}$.*

Proposition 1 states that politician $j \in \{R, L\}$ already chooses low public spending \underline{g} for lower public debt b , the weaker his preferences for public spending are. Figure 1 illustrates

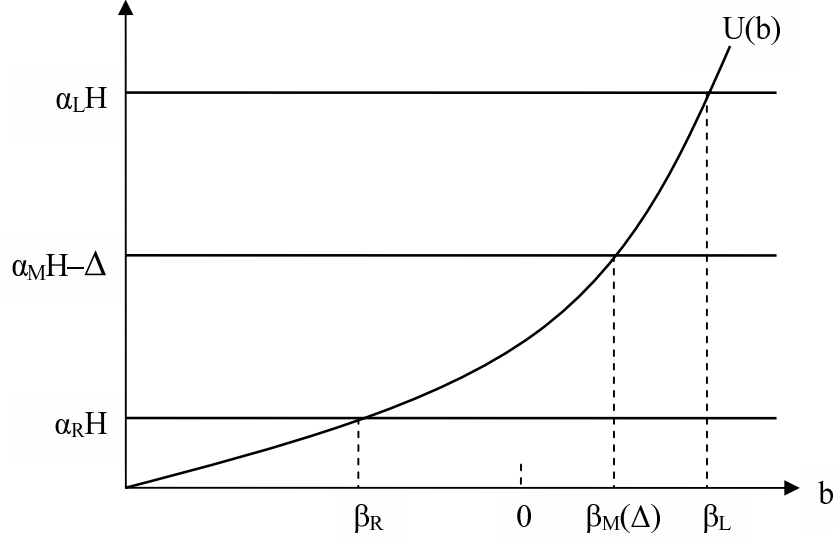


Figure 1: Public debt and the players' thresholds in period two

that β_j must be increasing in α_j , as a rise in α_j results in an upwards shift of $\alpha_j H$, such that $\alpha_j H$ intersects $U(b)$ at a higher b . This also explains why R already chooses \underline{g} for lower b than L does, i.e., why $\beta_R < \beta_L$. The substantial difference between β_R and β_L , with $\beta_R < -\tilde{b}$ and $\beta_L > \tilde{b}$, follows from assumptions (4) and (5).

Before the election at the beginning of period two, the voters observe public debt b (as well as g_1 and τ_1), and they correctly anticipate the levels of public spending g_2 that the two politicians choose if (re)elected. They anticipate that $g_2^R(b) = g_2^L(b)$ if $b < \beta_R$ or $b \geq \beta_L$. In these cases, the voters base their decisions solely on the politicians' charisma. They all vote for R if $\Delta \geq 0$, and for L otherwise.

The voters' decision problem is slightly more involved if the two politicians choose different levels of public spending g_2 since $b \in [\beta_R, \beta_L)$. Different voters may support different politicians, and the median voter M becomes decisive. She votes for R who then chooses low public spending \underline{g} if and only if her benefits of his low public spending and his relative charisma Δ exceed her benefit of L 's high public spending. Hence, she votes for R if and only if $U(b) \geq \alpha_M H - \Delta$. Since she faces a similar decision problem in the

election as the elected politician faces afterwards when choosing g_2 , we can also illustrate her problem in Figure 1. There exists a threshold $\beta_M(\Delta)$ such that M votes for R if and only if $b \geq \beta_M(\Delta)$. It is easy to see that this threshold must decrease in Δ , but increase in α_M . Let us define $\bar{\Delta} \equiv (\alpha_M - \alpha_R)H > 0$ and $\underline{\Delta} \equiv (\alpha_M - \alpha_L)H < 0$. It follows that $\beta_M(\Delta) \geq \beta_R$ if and only if $\Delta \leq \bar{\Delta}$, and that $\beta_M(\Delta) < \beta_L$ if and only if $\Delta > \underline{\Delta}$.

Proposition 2 *R is reelected for any public debt b if $\Delta \geq \bar{\Delta}$, for $b < \beta_R$ and $b \geq \beta_M(\Delta)$ if $\Delta \in [0, \bar{\Delta})$, for $b \in [\beta_M(\Delta), \beta_L)$ if $\Delta \in (\underline{\Delta}, 0)$, but never if $\Delta \leq \underline{\Delta}$. L is elected otherwise. The threshold $\beta_M(\Delta)$ decreases in Δ but increases in α_M .*

Proposition 2 shows that the type of the election depends on R 's relative charisma Δ . If $\Delta \geq \bar{\Delta}$ or $\Delta \leq \underline{\Delta}$, the more charismatic politician has a competitive edge that is sufficiently large to win the election independently of the level of public debt. The election outcome however depends on public debt if the voters consider charisma to be unimportant or the two politicians to be similarly (un)charismatic such that $\Delta \in (\underline{\Delta}, \bar{\Delta})$. In any case, the election outcome is independent of public spending g_1 in period one.

3.2 Budget deficit and public spending in period one

In period one the conservative incumbent R chooses public spending g_1 and the budget deficit b . He thereby takes into account how the budget deficit affects the election outcome (Proposition 2) and, if he is not reelected, his successor's public spending decision (Proposition 1).

We start by specifying R 's preferred series of actions:

Lemma 1 *R 's utility is maximized if he is reelected, and if $g_1 = g_2 = \underline{g}$ and $b = 0$.*

Hence, R chooses low public spending \underline{g} and a balanced budget $b = 0$ in period one if this leads to his reelection. Proposition 2 implies that R is reelected after choosing $b = 0$ if

$\Delta \geq \bar{\Delta}$, and also if $\Delta \in (\underline{\Delta}, \bar{\Delta})$ and $\beta_M(\Delta) \leq 0 < \beta_L$. Let us define $\tilde{\Delta}$ by $\beta_M(\tilde{\Delta}) = 0$, such that $\beta_M(\Delta) \leq 0$ if and only if $\Delta \geq \tilde{\Delta}$. It must hold that $\tilde{\Delta} \in (\underline{\Delta}, \bar{\Delta})$ since $\beta_R < 0 < \beta_L$. Consequently, a balanced budget leads to R 's reelection if and only if $\Delta \geq \tilde{\Delta}$.

Proposition 3 *If $\Delta \geq \tilde{\Delta}$, R chooses low public spending $g_1 = \underline{g}$ and a balanced budget $b = 0$ in period one. The threshold $\tilde{\Delta}$ increases in α_M and satisfies $\tilde{\Delta} \in (\underline{\Delta}, \bar{\Delta})$.*

Proposition 3 implies that R can and does get his preferred series of actions ($g_1 = g_2 = \underline{g}$, $b = 0$ and his reelection) if he is relatively charismatic and also if the median voter has relatively weak preferences for public spending.

We next look at the case $\Delta \leq \underline{\Delta}$, in which the conservative incumbent R does not get reelected regardless of the budget deficit b . In this case, R has to decide whether to accept that his successor L chooses high public spending \bar{g} and to run a budget surplus $b \leq 0$ to smooth private consumption; or to strategically run a distortionary budget deficit $b \geq b_L$ that induces L to choose low public spending \underline{g} . Since R has relatively weak preferences for public spending, we suppose for the moment that he chooses $g_1 = \underline{g}$ (which we verify below), and we focus on his choice of b . The budget deficit $b = -\tilde{b} < 0$, which corresponds to a budget surplus of \tilde{b} , smoothes private consumption if $g_1 = \underline{g}$ and $g_2 = \bar{g}$. The least distortionary budget deficit satisfying $b \geq \beta_L$ is $b = \beta_L$ if $g_1 = g_2 = \underline{g}$. When choosing $g_1 = \underline{g}$, R therefore runs either the budget deficit $b = \beta_L$ to ensure $g_2 = \underline{g}$, or he accepts $g_2 = \bar{g}$ and chooses $b = -\tilde{b}$.

Proposition 4 *If $\Delta \leq \underline{\Delta}$, R chooses low public spending $g_1 = \underline{g}$ and a budget deficit $b = \beta_L$ or $b = -\tilde{b}$ in period one. He chooses $b = \beta_L$ if α_R and α_L are relatively low, and $b = -\tilde{b}$ otherwise.*

Proposition 4 highlights that R runs the budget deficit $b = \beta_L$ to manipulate L 's policy choice g_2 if L 's preferences for public spending are moderate. The reason is that in this case L can be manipulated to choose $g_2 = \underline{g}$ with a lower budget deficit and, therefore,

less distortions in the intertemporal path of private consumption. R also chooses $b = \beta_L$ if his own preferences for public spending are low. However if α_R and α_L are relatively high, R accepts that his successor L chooses $g_2 = \bar{g}$, and he runs a budget surplus of \tilde{b} to smooth private consumption over time. These results mirror Persson and Svensson's (1989) finding that only a stubborn conservative incumbent runs a budget deficit to manipulate his successor's policy, with stubbornness defined as putting more weight on reaching the preferred level of public spending than on the welfare costs of distortionary tax profiles.

Proposition 4 also confirms that R always chooses low public spending \underline{g} in period one if he cannot be reelected. The main reason is, of course, that his preferences for public spending are weak. He would nevertheless be indifferent between the policy bundles $(\underline{g}, -\tilde{b})$, which is followed by $g_2^L(b) = \bar{g}$, and (\bar{g}, \tilde{b}) if followed by $g_2^L(b) = \underline{g}$. But L 's preferences for public spending are so strong that a more distortionary budget deficit $b \geq \beta_L > \tilde{b}$ would be necessary to ensure $g_2^L(b) = \underline{g}$. R therefore prefers $(\underline{g}, -\tilde{b})$ in period one to any policy bundle that includes \bar{g} .

Let us now discuss the case $\Delta \in (\underline{\Delta}, \tilde{\Delta})$ in which the conservative incumbent R cannot ensure his reelection with a balanced budget, but by running a budget deficit $b \in [\beta_M(\Delta), \beta_L)$, where $\beta(\Delta) \in (\beta_R, \beta_L)$. In this case, R also considers various policy bundles (g_1, b) . First, he again considers choosing $(\underline{g}, -\tilde{b})$, which leads to L being elected and choosing $g_2 = \bar{g}$, but smoothes private consumption over time. Second, he again considers choosing $g_1 = \underline{g}$ and the least distortionary budget deficit that ensures $g_2 = \underline{g}$ in period two. This deficit budget is now $b = \beta_M(\Delta)$, which ensures his reelection and thereby allows him to choose \underline{g} himself in period two. It is less distortionary than $b = \beta_L$, and it moreover guarantees the office rent Ψ . The budget deficit $b = \beta_L$ would lead to his reelection and Ψ only if $\Delta > 0$. Lastly, R may choose high public spending $g_1 = \bar{g}$ and the least distortionary budget deficit that ensures his reelection and thereby also $g_2 = \underline{g}$ in period two. This budget deficit is $b = b^* \equiv \max\{\tilde{b}, \beta_M(\Delta)\}$. We have seen above that R prefers

$(\underline{g}, -\tilde{b})$ to any policy bundle containing $g_1 = \bar{g}$ if he cannot get reelected anyway. However this may no longer hold. R may prefer (\bar{g}, b^*) to $(\underline{g}, -\tilde{b})$ because the former guarantees his office rent Ψ while the latter does not.

Proposition 5 *If $\Delta \in (\underline{\Delta}, \tilde{\Delta})$, R chooses one of the following three policy bundles (g_1, b) in period one: $(\underline{g}, -\tilde{b})$, $(\underline{g}, \beta_M(\Delta))$, or (\bar{g}, b^*) . He chooses $(\underline{g}, -\tilde{b})$ if Ψ is low while α_R and α_M are high; $(\underline{g}, \beta_M(\Delta))$ if Ψ is high while α_R and α_M are low; and (\bar{g}, b^*) if Ψ and α_R are high while α_M is low.*

Proposition 5 confirms that if the conservative incumbent R runs a budget deficit to affect period two outcomes, he now targets the median voter M rather than the opposition candidate L . He only refrains from targeting M if his office rent Ψ is relatively small, if he is not too averse to high public spending, and if M has relatively strong preferences for public spending such that manipulating her decision would require a highly distortionary budget deficit. But unlike in the situation in which he could not get reelected, R might now run a distortionary budget deficit even if his preferences for public spending α_R are relatively high. The reason is that by manipulating M 's decision, he cannot only ensure low public spending \underline{g} in period two, but also the office rent Ψ .

The possibility that a conservative incumbent R who is not overly averse to high public spending may run a budget deficit to ensure his office rent explains why R may now choose high public spending \bar{g} in period one. Manipulating M 's electoral decision requires a budget deficit $b = \beta_M(\Delta)$, which may be substantial and therefore allow for high total (i.e. private and public) expenditures in period one. R may thus prefer high public spending \bar{g} in period one if he is not overly averse to high public spending, as the utility loss from a consumption decrease of $\bar{g} - \underline{g}$ matters little if consumption c_1 is high anyway. Even if R chooses $g_1 = \bar{g}$, M still reelects him because she anticipates that he chooses lower public spending than L in period two, and because she prefers low public spending if excessive debt $b = \beta_M(\Delta)$

must be repaid.

It directly follows from Propositions 3 to 5:

Corollary 1 *R runs a distortionary budget deficit $b > 0$ if and only if he wants to manipulate the election outcome or the public spending g_2 chosen by his successor L. It holds:*

- 1. If R can manipulate the election outcome, he never manipulates L's public spending.*
- 2. If R manipulates the election outcome, the budget deficit is lower than necessary to manipulate L's public spending.*
- 3. If R manipulates the election outcome, he may choose high public spending in period one, which he never does when manipulating L's public spending.*

Corollary 1 highlights various implications of our model. Statement 1 underlines that the conservative incumbent R prefers to run a strategic budget deficit to manipulate the election outcome rather than to manipulate future policies of his opposition candidate L . One reason is that when being reelected, he can choose his preferred policy and also enjoy the office rent. Another reason, emphasized by statement 2, is that if ensuring his reelection is possible, it requires a lower and less distortionary budget deficit than manipulating L 's future policies.

Statements 2 and 3 of Corollary 1 imply what pattern of fiscal policies we should observe depending on how close the upcoming elections are. If the candidate of the conservative incumbent's party loses independently of economic and public finance issues, possibly because the candidate of the opposition party is much more charismatic, then the incumbent chooses low public spending before the election and possibly a distortionary budget deficit to ensure that public spending also remains low in the future. However when the election outcome depends on economic and public finance issues, the conservative incumbent runs a somewhat smaller and less distortionary budget deficit (if he runs a deficit at all). In

addition to a budget deficit, he may also choose high public spending before the election. As discussed above, this seemingly paradoxical choice follows from the interaction of various forces: The perks from office may even motivate a conservative incumbent who is not overly averse to high public spending to strategically run a distortionary budget deficit to ensure his reelection; and the necessary budget deficit may make plenty of funds available before the election, such that this incumbent may prefer to use these borrowed funds not only to finance private consumption by cutting taxes, but also to increase public spending.

4 Concluding Remarks

In this paper, we have shown how and when a conservative incumbent with preferences for low public spending strategically runs a distortionary budget deficit to ensure his reelection or, if this is not possible, to manipulate the public spending decision of the left-wing opposition candidate who has stronger preferences for public spending.

Results for the reverse case of a left-wing incumbent are symmetrical. By running a sufficiently distortionary budget *surplus*, a left-wing incumbent can make sure that the conservative opposition candidate chooses high public spending if elected. The incumbent however prefers to target the median voter instead to ensure his reelection if that is possible. This requires a less distortionary budget surplus and guarantees the perks from office for another term. Moreover, a left-wing incumbent may somewhat paradoxically choose low public spending before the election when running a budget surplus targeted at the median voter. The reason is that the necessary budget surplus would lead to very low private consumption if it were entirely financed by higher taxes. A left-wing incumbent who is not overly keen on a large public sector may therefore decide to finance the budget surplus partly by keeping public spending low. Nevertheless he gets reelected because the voters anticipate that he will raise public spending after the election when public savings can be

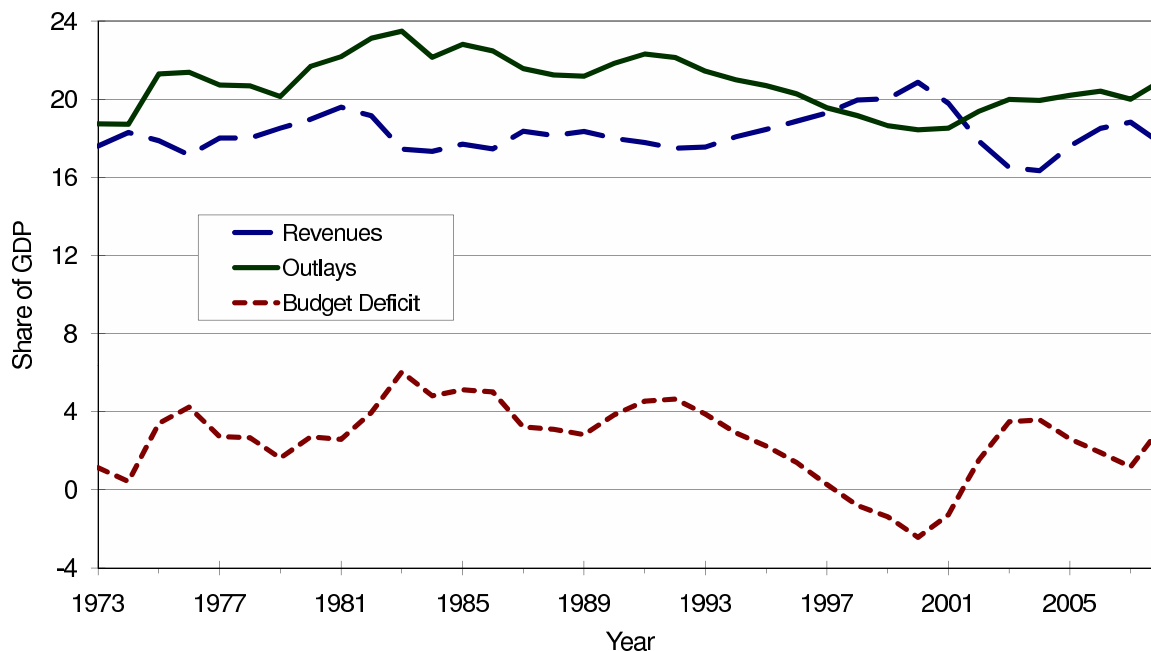


Figure 2: US government finances in the recent past (Source: CBO, 2009)

consumed.

Figure 2 shows the development of the United States' government finances over the last 35 years. Three presidents were reelected during this period: the Republican presidents Ronald Reagan and George W. Bush, and the Democratic president Bill Clinton. Looking at the first terms of these presidents, we observe an interesting pattern. The budget deficit increased rapidly during the first terms of Ronald Reagan (1981-1985) and George W. Bush (2001-2005). These increases resulted mainly from lower tax revenues, but also from higher public spending (i.e., outlays). The reverse happened during Bill Clinton's first term (1993-1997). The budget deficit decreased as a result of higher tax revenues and lower public spending.

This pattern is not predicted by the Persson-Svensson model or any other model on the political economy of budget deficits and public debt. Our model however offers an explanation for this pattern: The Republican presidents may have raised the budget deficit to win the middle class' support in the election at the end of their first terms. These high

budget deficits increased the available funds by so much that any conservative incumbent who is not overly averse to public spending would have preferred to use these funds not only to cut taxes, but also to raise public spending. Similarly, Bill Clinton may have used the budget surplus to ensure the middle class' support in the upcoming election and may have preferred to finance this surplus not exclusively by raising revenues but also by lowering public spending because he was not overly keen on high public spending.

While our model offers an explanation for this interesting aspect of budget deficits and public spending in the recent US history, it is clear that this evidence is circumstantial at best, and that forces not captured by our stylized model also impact upon government finances. More theoretical and empirical work is certainly necessary to fully understand how office- and policy-motivated governments can and do use public spending, budget deficits and public debt to influence election outcomes and future policies.

Appendix

Proof of Proposition 1: It holds that $U'_b(b) > 0$ since $u'_c > 0$, $u''_{cc} < 0$ and $\bar{c} > \underline{c}$; that $U(b) \rightarrow 0$ as $b \rightarrow -\infty$ since $u_c \rightarrow 0$ as $c_t \rightarrow \infty$; and that $U(\underline{c}) > \alpha_j H$ since $u(\bar{g} - \underline{g}) - u(0) > \alpha_j H$. Consequently, there exists a unique β_j satisfying $U(\beta_j) = \alpha_j H$, with $\beta_j < \underline{c}$. It follows from $U'(b) > 0$ that $U(b) \geq \alpha_j H$ if and only if $b \geq \beta_j$, and that β_j strictly increases in α_j . Hence, $\beta_R < \beta_L$. Assumptions (4) and (5) imply $\beta_R < -\tilde{b}$ and $\beta_L > \tilde{b}$. ■

Proof of Proposition 2: We define $\beta_M(\Delta)$ by $U(\beta_M(\Delta)) = \alpha_M H - \Delta$. It follows from $U'(b) > 0$ that $U(b) \geq \alpha_M H - \Delta$ if and only if $b \geq \beta_M(\Delta)$, and that $\beta_M(\Delta)$ is strictly increasing in α_M and strictly decreasing in Δ . It follows from the definitions of $\underline{\Delta}$ and $\overline{\Delta}$ that $\beta_M(\underline{\Delta}) = \beta_L$ and $\beta_M(\overline{\Delta}) = \beta_R$. It remains to prove our results for the four regions of Δ mentioned in the proposition. First, if $\Delta \geq \overline{\Delta}$, R is reelected for $b \notin [\beta_R, \beta_L)$ because $\overline{\Delta} > 0$, and also for $b \in [\beta_R, \beta_L)$ because $\beta_M(\Delta) \leq \beta_R$. Second, if $\Delta \in [0, \overline{\Delta})$, R is reelected for $b \notin [\beta_R, \beta_L)$ because $\Delta \geq 0$, and for $b \in [\beta_M(\Delta), \beta_L)$, but L is elected for $b \in [\beta_R, \beta_M(\Delta))$, where $\beta_M(\Delta) \in (\beta_R, \beta_L)$. Third, if $\Delta \in (\underline{\Delta}, 0)$, L is elected for $b \notin [\beta_R, \beta_L)$ because $\Delta < 0$, and for $b \in [\beta_R, \beta_M(\Delta))$, but R is reelected for $b \in [\beta_M(\Delta), \beta_L)$, where again $\beta_M(\Delta) \in (\beta_R, \beta_L)$. Fourth, if $\Delta \leq \underline{\Delta}$, L is elected for $b \notin [\beta_R, \beta_L)$ because $\underline{\Delta} < 0$, and also for $b \in [\beta_R, \beta_L)$ because $\beta_M(\Delta) \geq \beta_L$. ■

Proof of Lemma 1: If reelected, R gets Ψ and is thus better off than otherwise. It follows from the concavity of $u(c_t)$ that for any g_1 and g_2 , R 's utility is maximized if b ensures $c_1 = c_2$. It remains to show that $u(\bar{c}) + \alpha_R h(\underline{g}) > u(\underline{c}) + \alpha_R h(\bar{g})$ and $2u(\bar{c}) + 2\alpha_R h(\underline{g}) > 2u(\tilde{c}) + \alpha_R [h(\bar{g}) + h(\underline{g})]$. It directly follows from the concavity of $u(c_t)$ and assumption (4) that the first of these inequalities holds. To see why the second inequality holds, observe that assumption (4) implies $u(\tilde{c} + \bar{g} - \underline{g}) + u(\tilde{c}) + 2\alpha_R h(\underline{g}) > 2u(\tilde{c}) + \alpha_R [h(\bar{g}) + h(\underline{g})]$, and that the concavity of $u(c_t)$ and $2\bar{c} = 2\tilde{c} + \bar{g} - \underline{g}$ imply $2u(\bar{c}) > u(\tilde{c} + \bar{g} - \underline{g}) + u(\tilde{c})$. ■

Proof of Proposition 3: It follows from the definition of $\tilde{\Delta}$ that $\tilde{\Delta}$ must increase in α_M since $\beta_M(\Delta)$ increases in α_M but decreases in Δ , and that $\tilde{\Delta} \in (\underline{\Delta}, \overline{\Delta})$ since $\beta_M(\overline{\Delta}) < 0 < \beta_M(\underline{\Delta})$. Lemma 1 implies that R chooses $g_1 = 0$ and $b = 0$ if this leads to his reelection. Proposition 2

and the definition of $\tilde{\Delta}$ imply that R is reelected when $b = 0$ if and only if $\Delta \geq \tilde{\Delta}$. Hence, R chooses $g_1 = 0$ and $b = 0$ if $\Delta \geq \tilde{\Delta}$. ■

Proof of Proposition 4: It follows from the concavity of $u(c_t)$, the definition of \tilde{b} and $-\tilde{b} < 0 < \beta_L$ that R strictly prefers $b = -\tilde{b}$ to any other $b < \beta_L$ if $g_1 = \underline{g}$ and $g_2 = \bar{g}$, and $b = \beta_L$ to any other $b \geq \beta_L$ if $g_1 = g_2 = \underline{g}$. Similarly, R prefers $b = 0$ to any other $b < \beta_L$ if $g_1 = g_2 = \bar{g}$, and β_L to any other $b \geq \beta_L$ if $g_1 = \bar{g}$ and $g_2 = \underline{g}$ since $\beta_L > \tilde{b}$. We next show that R strictly prefers $(g_1, b) = (\underline{g}, -\tilde{b})$ to both $(\bar{g}, 0)$ and (\bar{g}, β_L) . Since $2u(\bar{c}) > u(\bar{c}) + u(\underline{c})$, and since assumption (4) implies $u(\bar{c}) + \alpha_R h(\underline{g}) > u(\underline{c}) + \alpha_R h(\bar{g})$, it must hold that $2u(\bar{c}) + \alpha_R [h(\underline{g}) + h(\bar{g})] > 2u(\underline{c}) + 2\alpha_R h(\bar{g})$, i.e., that R strictly prefers $(\underline{g}, -\tilde{b})$ to $(\bar{g}, 0)$. Since $u(c_t)$ is concave and $\beta_L > \tilde{b}$, he also strictly prefers $(\underline{g}, -\tilde{b})$ to (\bar{g}, β_L) . Hence he chooses either (\underline{g}, β_L) or $(\underline{g}, -\tilde{b})$. He prefers $(\underline{g}, -\tilde{b})$ if and only if

$$2u(\bar{c}) + \alpha_R [h(\bar{g}) + h(\underline{g})] \geq u(\bar{c} - \beta_L) + u(\bar{c} + \beta_L) + 2\alpha_R h(\underline{g}).$$

A higher α_R increases the LHS of this inequality by more than the RHS since $h(\bar{g}) > h(\underline{g})$. It therefore makes $(\underline{g}, -\tilde{b})$ relatively more attractive. Proposition 1 implies that a higher α_L raises β_L . Together with the concavity of $u(c_t)$, this implies that a higher α_L decreases the RHS and makes $(\underline{g}, -\tilde{b})$ more attractive. ■

Proof of Proposition 5: Similarly as in the proof of Proposition 4, we can show that R chooses $b \in \{-\tilde{b}, \beta_M(\Delta)\}$ if $g_1 = \underline{g}$, and $b \in \{0, b^*\}$ if $g_1 = \bar{g}$, and that R prefers $(\underline{g}, -\tilde{b})$ to $(\bar{g}, 0)$. This proves the first statement. For the second statement, observe that R benefits from a higher Ψ if and only if he chooses $b \geq \beta_M(\Delta)$, i.e., $(\underline{g}, \beta_M(\Delta))$ or (\bar{g}, b^*) . A higher α_R leads to a higher increase in his utility when playing $(\underline{g}, -\tilde{b})$ or (\bar{g}, b^*) than when playing $(\underline{g}, \beta_M(\Delta))$, as only the latter leads to $g_1 = g_2 = \underline{g}$. A higher α_M , which raises $\beta_M(\Delta)$, lowers his intertemporal utility from private consumption, $u(c_1) + u(c_2)$, when playing $(\underline{g}, \beta_M(\Delta))$ and possibly also when playing (\bar{g}, b^*) , but not when playing $(\underline{g}, -\tilde{b})$. ■

References

- [1] Aghion, P., and P. Bolton, 1990, Government Domestic Debt and the Risk of Default: A Political-Economic Model of a Strategic Role of Debt, in: R. Dornbusch and M. Draghi (eds.), *Public Debt Management: Theory and History*, Cambridge University Press, Cambridge.
- [2] Alesina, A., and A. Cukierman, 1990, The Politics of Ambiguity, *Quarterly Journal of Economics* 105, 829-850.
- [3] Alesina, A., and G. Tabellini, 1990a, A Positive Theory of Fiscal Deficits and Government Debt, *Review of Economic Studies* 57, 403-414.
- [4] Alesina, A., and G. Tabellini, 1990b, Voting on the Budget Deficit, *American Economic Review* 80, 37-49.
- [5] Battaglini, M., and S. Coate, 2008, A Dynamic Theory of Public Spending, Taxation, and Debt, *American Economic Review* 98, 201-236.
- [6] Besley, T., and S. Coate, 1998, Sources of Inefficiency in a Representative Democracy: A Dynamic Analysis, *American Economic Review* 88, 139-156.
- [7] Biais, B., and E. Perotti, 2002, Machiavellian Privatization, *American Economic Review* 92, 240-258.
- [8] Caballero, R.J., and P. Yared, 2008, Future Rent-Seeking and Current Public Saving, *NBER Working Paper* 14417.
- [9] CBO, 2009, *Historical Budget Data*, Congressional Budget Office, Washington DC.
- [10] Dellis, A., 2009, The Salient Issue of Issue Salience, *Journal of Public Economic Theory*, 11, 203-231.

- [11] Hodler, R., S. Loertscher and D. Rohner, 2007, Inefficient Policies and Incumbency Advantage, *Cambridge Working Paper in Economics* 0738.
- [12] Lizzeri, A., 1999, Budget Deficits and Redistributive Politics, *Review of Economic Studies* 66, 909-928.
- [13] Milesi-Ferretti, G.M., and E. Spolaore, 1994, How Cynical can an Incumbent be? Strategic Policy in a Model of Government Spending, *Journal of Public Economics* 55, 121-140.
- [14] Persson, T., and L. Svensson, 1989, Why a Stubborn Conservative would Run a Deficit: Policy with Time-Inconsistent Preferences, *Quarterly Journal of Economics* 104, 325-345.
- [15] Persson, T., and G. Tabellini, 2000, *Political Economics: Explaining Economic Policies*, MIT Press, Cambridge.
- [16] Pettersson-Lidbom, P., 2001, An Empirical Investigation of the Strategic Use of Debt, *Journal of Political Economy* 109, 570-583.
- [17] Rogoff, K., and A. Sibert, 1988, Elections and Macroeconomic Policy Cycles, *Review of Economic Studies* 55, 1-16.
- [18] Yared, P., 2009, Politicians, Taxes, and Debt, *Review of Economic Studies*, forthcoming.