Bureaucrats and short-term politics

Marcus Drometer

Received: 4 February 2009 / Accepted: 26 October 2010 / Published online: 10 November 2010
© Springer Science+Business Media, LLC 2010

Abstract This paper proposes a simple probabilistic voting model where the society consists of three groups of voters belonging to different generations. Since the youngest generation is excluded from participating in elections, the political process results in an allocation of public expenditures that is shifted towards public consumption. We show that the influence of bureaucrats who favor an excessive supply of public goods increases investment expenditures and limits the leeway of politicians to capture rents for themselves. Finally, we discuss the conditions under which the impact of bureaucrats is welfare-enhancing.

Keywords Political agency · Voting · Bureaucracy

JEL Classification D 72 · D 73 · H 11

1 Introduction

Beginning with Barro (1973) and Ferejohn (1986) political agency models demonstrate the importance of elections as an incentive device for disciplining the self-interest of politicians.¹ However, there are important contributions to the literature that highlight potential distortions resulting from the incentives politicians face when striving for reelection. An example are political budget cycle models following Nordhaus (1975), which argue that politics becomes short-sighted whenever elections are pending. Recent evidence provided by Alt and Lassen (2006) and Shi and Svensson (2006) suggests that such distortions are a widespread phenomenon even in advanced democracies. Against this background, the question arises as to which institutional conditions might compensate for the negative side-effects of elections and alleviate short-term politics.

In the following, we argue that bureaucracies, which are widely regarded as a cause of inefficiently large government expenditures by economists, might (up to certain limits)

M. Drometer (✉)
Department of Economics, University of Munich, 80799 Munich, Germany
e-mail: marcus.drometer@lrz.uni-muenchen.de

¹For a recent survey see Besley (2006).

mitigate short-term politics. To study this issue, we propose a simple probabilistic voting model where electoral incentives are inherently distorted. We show that in such a situation, voters benefit from the presence of an independent bureaucracy for two reasons. Firstly, as bureaucrats increase public expenditures excessively, they also raise the level of public investment which is beneficial if the level of public investments is too low in the first place. Secondly, the additional expenditures induced by the bureaucracy increase the excess burden of taxation thereby reducing the leeway of politicians to capture rents for themselves.

To begin with, we set up a probabilistic voting model with two periods where the society consists of three groups of voters belonging to different generations.² Therein, we assess the level of public investments that are provided by the government in the first period, but only yield returns in the second period. Since the members of the oldest generation are no longer present in the second period, they have no interest in the provision of public investment goods.³ The youngest generation of voters with an immediate interest in public investments, however, is excluded from voting as is generally stipulated by the existing voting laws. This in turn gives the incumbent politician an incentive to shift public expenditures towards present consumption in order to be reelected.⁴ Consequently, the allocation of public goods provided by office-seeking politicians is short-sighted when seen from a normative benchmark that considers all generations alike. Naturally, this ‘short-term’ distortion towards present consumption prevails even if political competition becomes increasingly stiff and politicians can no longer appropriate any rents for themselves. In contrast, the ‘imperfect agency’ distortion, i.e., the rents appropriated by the incumbent politician disappear completely if political competition increases sufficiently. The crucial point is that political competition is no remedy for a distortion that is inherent to the incentive structure of elections.

After showing that the exclusion of the youngest generation from the election results in distorted policy choices, we analyze how the institutional setting shapes the influence of short-term politics. In doing so, we focus on non-elected political institutions and bureaucracies in particular. More precisely, we think of top bureaucrats in ministries and at other government agencies who have a considerable influence on political decisions due the special knowledge of ‘their’ policy area. Building on Kessing and Konrad (2008), we argue that bureaucrats have a bias for high government expenditures that is not curbed by electoral constraints as bureaucrats are often appointed for a long time.⁵ Consequently, bureaucrats are less sensitive to the citizens’ preferences as correctly criticized by public choice scholars.⁶ In our setting, however, this deviation from the will of the electorate is not welfare-decreasing in general, but may entail a welfare-improving flip-side: If bureaucrats increase public expenditures excessively, they also raise the level of public investment, which is beneficial if political competition induces politicians to provide too little public investments in the first place. A priori it is not clear whether this beneficial effect dominates the detrimental over-

²Regarding the probabilistic voting framework see Lindbeck and Weibull (1987).

³We exclude altruism between the different generations to render the effects more clearly.

⁴Besley and Coate (2003) confirm that elections align the interests of the electorate and politicians.

⁵Kessing and Konrad (2008) analyze budget competition among bureaucrats whereas we focus on the interaction between elected and non-elected branches of the government.

⁶For a summary of the empirical evidence see Mueller (2003).

all expenditure increase caused by bureaucrats. Yet, it can be shown that starting from a situation where politicians have full control, a small increase in the bureaucrats' influence increases voters' utility. This result is based on a typical second-best argument: The increase in public consumption is a second order loss, whereas the increase in public investment is a first-order gain. Moreover, we find that the presence of a bureaucracy reduces the leeway of politicians in capturing rents for themselves. This argument builds on the idea that the marginal excess burden of taxation increases with the level of taxation. Therefore, voters are more sensitive with respect to additional expenditures if the tax rate is already higher because of bureaucrats.

Most importantly our paper contributes to the discussion of the role of bureaucrats in economics. In contrast to sociologists like Weber (1922–2001) who emphasized the importance of bureaucracies for the functioning of the modern state, economists have mainly pointed out the potential drawbacks of bureaucracies. Both Niskanen's (1971, 2001) analysis and the modified version by Migué and Bélanger (1974) conclude that bureaucracies become too large according to the government's preferences and evaluate these expenditure increases as detrimental.⁷ However, we find that the influence of bureaucracies can be welfare increasing if preexisting political distortions are present and the excess burden of taxation is taken into account.

A number of recent contributions to the economics literature analyze whether political agents should be appointed rather than elected. Alesina and Tabellini (2007) investigate the normative criteria that guide the allocation of a policy task to an elected politician versus an independent bureaucrat in a career concern model. In a companion paper with multiple policy tasks, Alesina and Tabellini (2008) come to the conclusion that bureaucrats are preferable if short-termism is prevalent. In contrast to their work, our paper focuses on the interaction between bureaucrats and politicians.

The empirical literature on the impact of bureaucrats on policy choices is very limited, but its findings comport nicely with the conclusions of our theoretical analysis. Rauch (1995), for example, shows that the establishment of professional bureaucracies instead of politically appointed bureaucracies was crucial for growth when analyzing municipal reforms in US cities at the beginning of the 20th century. He argues that professional bureaucracies lengthened the time horizons of public decision makers. In a subsequent investigation, Rauch and Evans (2000) identify the key institutional characteristics of the successful 'Weberian' bureaucracies, which includes meritocratic recruitment through competitive examinations, civil service procedures for hiring and firing rather than political appointments and dismissals, and filling higher levels of the hierarchy through internal promotion.

The paper is organized as follows: Sect. 2 presents the baseline model of politicians under electoral constraints and derives the corresponding policy choices. Section 3 incorporates a bureaucracy into the decision-making process and analyzes its impact on public spending. The normative implications of our model are discussed in Sect. 4. Section 5 concludes with an outlook on possible future research.

⁷A more recent example of this view is provided by Fuest (2000), who discusses the welfare effects of tax coordination in the case where politicians have limited control over fiscal policy and need to bargain with bureaucrats over the budget.

2 The model

In this section, we provide a framework where an age limit for voting inherently distorts the incentives of elections therefore fostering short-term political decision making.⁸ For that purpose, we present a simple probabilistic voting model where the society consists of three groups of voters belonging to different generations.

In our model, voters are backward-looking and decide on whether to reelect an incumbent politician. In the first period an incumbent already is in office and decides on public policies, including his rents. In particular, the politician sets a certain tax rate to finance the provision of a public consumption good and a public investment good. Elections are held at the end of the first period. If reelected, the incumbent stays in office for another term without taking any further action and only receives the benefits from office as stated below. In the second period citizens also obtain the benefits from the public investments undertaken in the first period. Thereafter the game ends.

In order to model the idea that the exclusion of young citizens from the electorate distorts the incentives inherent to elections, we require at least a young generation that is excluded from the franchise and an old generation that does not benefit from public investments. A further middle-aged generation is necessary to avoid corner solutions. Accordingly, the society in our setting consists of a continuum of voters belonging to different generations A_J with $J \in (y, m, o)$. In period one, there is a young generation A_y , a middle-aged generation A_m , and an old generation A_o . The size of each generation is $\alpha_J > 0$. The total population in period one is $\alpha_y + \alpha_m + \alpha_o = 1$. Each generation ages from period one to period two. Whereas A_y and A_m just grow older, A_o is deceased in the second period. Finally, we assume that no new generation enters in the second period. The latter does not restrict the generality of our results since it is more demanding to reach our conclusions when abstracting from future generations as will become clearer in the next section.

For ease of exposition, we assume that the members of all generations receive the same exogenous income Y in the first period.⁹ The government levies a proportional income tax with tax rate τ to finance the provision of two public goods G and I . To introduce a trade-off between the short run and the long run, we assume that the public consumption good G increases the utility of voters immediately in period one. Public investments I , however, do not become effective until the next period. One might think of subsidies and transfers as public consumption goods and of expenditures for education and infrastructure as public investment goods.¹⁰

In period one all tax revenue is generated and all public goods are provided. Including the incumbent's (monetary) rents r the budget constraint of the government in period one can be written as¹¹

$$T = \alpha_y \tau Y + \alpha_m \tau Y + \alpha_o \tau Y = \tau Y = G + I + r. \quad (1)$$

The individual preferences of the three generations' members regarding public goods provision are denoted W_J . Note that these refer to the total payoff in both periods and are assumed

⁸Alternatively, distortions towards short-term expenditures could also originate from time-inconsistency problems or distributional conflicts among the electorate (cf. Fernandez and Rodrik 1991).

⁹It could equally be assumed that the income of the youngest generation is lower than that of the other two. In that case our results become even more pronounced.

¹⁰Empirically, the distinction between public consumption and investment may be difficult to draw. We define G as the sum of all public expenditures that become effective in the short term.

¹¹We assume that tax revenues always suffice to cover the costs of public goods provision.

to take the following forms:

$$W_y = W_m = (1 - \tau)Y + H(G) + \delta F(I) \quad (2)$$

and

$$W_o = (1 - \tau)Y + H(G), \quad (3)$$

where $H_G > 0$, $H_{GG} < 0$ and $F_I > 0$, $F_{II} < 0$. The parameter δ represents a standard discount factor necessary to adjust the value of future payoffs.

The incumbent cares only about (monetary) rents and about being reelected. The monetary rents r are taken from the government's tax revenues and are therefore captured in period one. In contrast, the ego rent R , which represents the utility of being in power, accrues to the incumbent only when remaining in office for another period. Accordingly, R is exogenously determined and, in particular, independent of the current level of rent extraction r . The incumbent's reelection probability $P(G, I, r)$ is influenced both by the provision the two public goods, G and I , and the level of rents r . Hence, the incumbent's pay-off can be written as

$$\Omega = u(r) + \delta P(G, I, r)R, \quad (4)$$

where the utility function u captures the incumbent's valuation of rents with $u_r > 0$, $u_{rr} < 0$. The parameter δ is the same standard discount factor as before.

In line with the existing voting rights regulations in most countries, we assume that there is an age below which individuals are not eligible to vote. At the same time, we assume that no upper bound for the voting age exists. Importantly for our model, the youngest generation A_y is below the voting age threshold and hence excluded from taking part in elections. Empirically, one could think of juveniles as the counterpart of A_y or all individuals below 18 years of age. Yet, for our results to hold it is only necessary that a part of the society with systematically different preferences from the remaining individuals is barred from voting. Hence, the electorate in our model consists only of A_m and A_o . These voters base their election decisions both on the policies chosen by the incumbent and on the non-policy-related aspects of the incumbent and his opponent. Specifically, voter i in group J votes for the incumbent if

$$W_J(G, I, r) + \epsilon \geq \omega_{ji}, \quad (5)$$

where ϵ characterizes the average popularity of the incumbent politician relative to the opponent in the overall population and is assumed to be uniformly distributed on $[-\frac{1}{2\psi}, \frac{1}{2\psi}]$.¹² The popularity of the incumbent is probabilistic and beyond his influence like the oil price is for a national politician. The higher is the value of ψ , the higher is the density of swing voters and the more competitive is the election. The parameter ω_{ji} denotes the threshold level above which a voter favors the incumbent and is assumed to be uniformly distributed on $[-\frac{1}{2\phi_J}, \frac{1}{2\phi_J}]$, where ϕ denotes the average reservation utility level. The reservation utility level depends on non-policy issues like ideology or personal characteristics. Note that ω_{ji} is a group-specific parameter; the two groups of voters thus are allowed to have different demands and also can differ in their political influence. Finally, the opposition candidate

¹²For the microfoundation of the probability function, we apply a simple reformulation of the standard probabilistic voting model as proposed by Svaleryd and Vlachos (2009). Regarding the generalization of the special distributional assumption, see Persson and Tabellini (2000) and Lindbeck and Weibull (1987).

is assumed to be identical to the incumbent politician. Hence, the voters' sole motive for ousting the incumbent is the ex post punishment of bad policy choices.

Given the previous assumptions, the share of voters from generation A_J voting for the incumbent is given by

$$v_J = \alpha_J \left(\frac{1}{2\phi_J} W_J + \epsilon \right). \quad (6)$$

Correspondingly, the incumbent's total vote share reads

$$\pi_I = \sum_J \alpha_J v_J. \quad (7)$$

Note that the vote share (7) is a random variable depending on the realized value of ϵ .¹³ When making policy decisions, the incumbent knows only the distribution of the popularity shock ϵ and of the voters' threshold utility levels ω_{ji} . Due to the uncertainty regarding the median voter's optimal policy, the incumbent's probability of winning becomes a smooth function of the policy variables and is given by

$$P(G, I, r) = \text{Prob} \left[\pi_I \geq \frac{\alpha_m + \alpha_o}{2} \right] = \frac{1}{2} + \frac{\psi}{\phi} \left[\sum_J \alpha_J \phi_J W_J(G, I, r) \right]. \quad (8)$$

When choosing the optimal policy platform, the incumbent politician takes the above re-election probability as given and solves the following optimization problem

$$\text{Max}_{G, I, r} \Omega = u(r) + \delta P(G, I, r) R. \quad (9)$$

Since the opponent candidate is assumed to be identical to the incumbent, the equilibrium policy choices G^* , I^* and r^* are characterized by the first-order conditions resulting from (9)

$$\frac{\partial \Omega}{\partial G} : H_G = 1, \quad (10)$$

$$\frac{\partial \Omega}{\partial I} : F_I = \frac{\alpha_m \phi_m + \alpha_o \phi_o}{\delta \alpha_m \phi_m} \quad (11)$$

and

$$\frac{\partial \Omega}{\partial r} : u_r = \delta R \psi. \quad (12)$$

Since both groups of voters have identical costs and benefits from the provision of the public consumption good, condition (10) and the related level of G^* are independent of group characteristics. Correspondingly, the incumbent politician provides G such that the marginal utility of an additional unit of the public good equals the marginal cost of providing it. In contrast, the optimal provision of the public investment good I^* , determined by (11), depends both on the population share of the two groups of voters as well as on their political influence. Ceteris paribus, I^* is smaller the larger is the share and the stronger is the political influence of the oldest generation A_o . Moreover, I^* is smaller, the less patient voters are (smaller δ). Condition (12) states that rents in the political equilibrium, r^* ,

¹³ The distribution of ϵ is assumed to be wide enough to rule out corner solutions.

decrease if the candidates are more patient (δ increases), if the value of holding office is larger (R increases), or if the uncertainty of the electoral outcome is reduced (ψ increases). Intuitively, the uncertainty of the election can be interpreted as a measure of the intensity of political competition. Finally, r^* also depends on the characteristics of the candidates' utility function $u(r)$.

3 Sharing power with a bureaucracy

In this section, we extend the above model and analyze how the behavior of the incumbent politician changes if a second institution, in our case a bureaucracy, influences policy decisions. In doing so, we build on the idea that the administrative units, which the government requires in order to actually provide public goods, are to a certain extent able to influence the allocation of tax revenues. In the first part of this section, we analyze how the influence of a bureaucracy alters the composition of the public goods provided. The conditions under which a bureaucracy effectively constrains politicians are analyzed in the second part.

3.1 Impact on public goods provision

So far we have assumed that politicians not only possess the right to decide on public policies, but are also able to implement these without any costs. In reality, however, politicians depend on the expertise and knowledge of bureaucrats when executing their decisions. Due to this expertise, bureaucrats have an informational advantage which can be exploited when preparing policy proposals or implementing the corresponding policies. As there is little scope for exchanging an established bureaucracy, bureaucrats are likely to affect policy decisions in their own favor as suggested by Niskanen (1971), who describes the relationship between bureaucrats and politicians as a bilateral monopoly.

When analyzing the functioning of bureaucracies, economists have generally pointed out the potential drawbacks of non-elected administrations. Niskanen (1971), for example, maintains that bureaucrats are mainly interested in the size of their budget, which is positively correlated to certain privileges like power.¹⁴ Accordingly, the presence of bureaucrats leads to excessive public expenditures. In the same way, Kessing and Konrad (2008) argue that bureaucrats derive utility from the absolute size of the budget ($G + I$ in our case). We follow this account and also argue that the influence of a bureaucracy increases government expenditures. When adding a bureaucrat to our model, we define his utility function as

$$B = K(G - G^*) + K(I - I^*), \quad (13)$$

where $K_G > 0$, $K_{GG} < 0$ and G^* and I^* are the equilibrium levels of public goods provision in the political equilibrium which serve as a natural reference point for the following bargaining game. Our specification of the bureaucrat's objectives incorporates the main characteristic of bureaucracies as mentioned in the economics literature, in particular their primary interest in the size of the budget. For our purpose, we require only that bureaucrats have at least a small interest in public investment goods which is highly plausible given their long time horizon. Kessing and Konrad (2008), for example, show that bureaucratic budget

¹⁴Niskanen (2001) emphasizes that bureaucrats maximize their discretionary budget rather than budget or output as proposed by Migué and Bélanger (1974). However, we restrict our analysis to allocation inefficiencies and do not take into account production inefficiencies.

competition leads to an excessive employment of durable factors of production. Therefore, one could even justify a specification of the bureaucrat's objective function that includes a bias towards public investment expenditures which would strengthen our results even further. Moreover, the division of power within bureaucracies should exclude a deal between the politician and the bureaucrat to expand the budget exclusively for public consumption as long as the 'investment department' is influential enough. To ensure that our specific construction is concise enough to allow the subsequent analysis of the interaction between an incumbent politician and a bureaucrat, we assume that the bureaucrat values both kinds of expenditures alike and allocates any funds at his disposal equally on both goods.

In order to analyze the interaction between the government and the bureaucrat, we model the latter as a monopoly bureaucrat. In doing so, we build on earlier work by Romer and Rosenthal (1978), who analyze this bargaining game in detail and define a reversion level of the budget that will be maintained if there is no agreement on a new budget.¹⁵ In our case, the government is forced to adjust its policies, because it needs to seek the bureaucrat's willingness to cooperate. Consider the following stylized arrangement: the incumbent proposes public goods spending of $[G, I]$. If the bureaucrat approves the proposal, he cooperates with the government in implementing the respective policies. If the bureaucrat is dissatisfied with the proposal, he exploits all his bargaining power in order to boycott the incumbent's plans. In that case, the incumbent loses the disposal power over an amount $a > 0$ of the budget. The parameter a denotes the bargaining power of the bureaucrat and might practically be determined both by the size of a bureaucracy and institutional features like budgeting rules. In addition, resources in the amount of $x > 0$ are lost during the boycott.¹⁶ To make the bureaucrat's threat effective, we need to rule out the possibility that the incumbent announces a public good allocation that undercuts the outcome of the unrestricted political equilibrium in order to neutralize the bureaucracy.¹⁷

We denote the equilibrium outcome in the case where the incumbent is constrained by a bureaucrat by G_B^* , I_B^* and r_B^* . Assume for a moment that the incumbent sticks to the policies as derived in Sect. 2. Obviously, the corresponding proposal $[G^*, I^*]$ is rejected by the bureaucrat. Using his bargaining power, the bureaucrat is going to raise the provision of both public goods up to the default level $\bar{G} = G^* + \frac{a}{2}$ and $\bar{I} = I^* + \frac{a}{2}$ as implied by the above reasoning and (13). In doing so, the parameter a determines the mark-up on G^* and I^* that the bureaucrat can force the incumbent to concede. Due to the costly boycott, the incumbent's effective rent shrinks to $\tilde{r} = r^* - a - x$. Thus, the incumbent's best response is to announce the provision of $\bar{G}$ and $\bar{I}$ in the beginning, securing the approval of the bureaucrat and allowing him to capture a larger effective rent $\tilde{r} = r^* - a$.

Anticipating the bureaucrat's impact, the incumbent needs to revise his policy proposals. Effectively, he cannot do otherwise but announce to provide $G_B^* = \bar{G}$ and $I_B^* = \bar{I}$. At the same time, voters need to adjust their demands. Though already knowing that the size of public goods exceeds the political optimum, voters cannot alter the outcome as the opponent candidate faces the same constraint. Hence, $G_B^* = G^* + \frac{a}{2}$ and $I_B^* = I^* + \frac{a}{2}$ are the equilibrium public goods provision levels in the case where the incumbent is constrained by a bureaucrat. We sum up this result in

¹⁵Our analysis also refers to the modeling of the separation of powers by Persson et al. (1997). Alternatively, one could generate a similar, but less tractable result via a Nash bargaining model.

¹⁶We assume $T > a > x$.

¹⁷Our formulation implies that the default levels $\bar{G}$ and $\bar{I}$ are exogenous to the announcements of the candidate at stage one as is generally the case in the literature on separation of powers (cf. Persson et al. 1997).

Proposition 1 *The presence of a bureaucracy increases the provision of both public goods in the political equilibrium.*

3.2 Impact on rents

Before entering the normative discussion, we first analyze the impact of the presence of a bureaucracy on the rents of the incumbent politician. We need to determine the extent to which the incumbent re-optimizes the level of rents, r_B^* , under the new constraints. To start with, we assume that the incumbent continues to choose r^* and finances the additional public goods out of “its own” pocket. Yet, with an effective rent $\tilde{r} = r^* - a$ condition (12) is no longer fulfilled as evident from

$$u_r(r^* - a) < \delta R\psi. \quad (14)$$

Equation (14) clearly indicates that the incumbent is not going to reduce his rents at all in this setting, i.e., $r_B^* = r^*$. Consequently, the tax rate has to be increased by a to finance the additional expenditures. Note that the decision regarding r does not affect the levels of public goods provided as the bureaucrat always forces the incumbent politician to provide $G_B^* = \bar{G}$ and $I_B^* = \bar{I}$.

The result that the presence of a bureaucracy does not restrict the incumbent politician depends on the availability of a tax that is free of any distortions. In reality, however, taxation is not costless since citizens undertake unproductive activities in order to avoid or to reduce taxes, causing the so-called excess burden. Since more tax revenue can be generated only by taxing increasingly less suitable sources, the excess burden is not constant but increases in the level of taxation. To account for the excess burden in our model, we assume that taxes of $(1 + \kappa)$ need to be collected in order to generate one unit of tax revenue. Moreover, κ is specified as an increasing function of T . Accordingly, the budget constraint of the government becomes:

$$T = (1 + \kappa)(I + G + r), \quad (15)$$

where $\kappa(T)$ with $\kappa_T > 0$ and $\kappa_{TT} > 0$, i.e., the marginal excess burden increases in the level of taxation. This formulation implies that additional funds become increasingly more expensive for the incumbent politician.¹⁸

Of course, with the additional cost of taxation, the new optimal level of rents r^* in the unconstrained political equilibrium is lower than without an excess burden. The same holds true for the levels of public goods provision which are generally lower than before. The only qualitatively important change in our analysis concerns the level of rents captured by the incumbent politician in the constrained political equilibrium. Let us denote the corresponding equilibrium rent in the presence of a bureaucracy and under the consideration of the excess burden of taxation by r_{BE} . When being forced by the bureaucracy to increase the provision of public goods, the incumbent has to decide whether to finance the additional expenditures by increasing taxes or by reducing his own rents. With an excess burden cost of taxation, the incumbent is still not willing to give up an amount a of his equilibrium rents (implying $r_{BE} = r^* - a$) in order to keep taxes at the previous level ($T = T^*$) since

$$\frac{u_r(r^* - a)}{1 + \kappa_r(T^*)} > \delta R\psi. \quad (16)$$

¹⁸ Alternatively, one could argue that voters are averse to excess expenditures like the incumbent politician's rent and the bureaucrat's mark-up. See Svaleryd and Vlachos (2009), who introduce a similar cost which depends on whether voters are informed or not.

At the same time, it is no more optimal for the incumbent to compensate for the impact of the bureaucrat fully by increasing taxes up to $\hat{T} > T^*$ in order to secure $r_{BE} = r^*$ since

$$\frac{u_r(r^*)}{1 + \kappa_r(\hat{T})} < \delta R\psi. \quad (17)$$

As a consequence, r_{BE} needs to be between $r^* - a$ and r^* while the tax rate increases less than in the case without an excess burden of taxation. Thus, the introduction of a bureaucrat does not lead only to an improved provision of public goods but also reduces rents when considering the excess burden of taxation. The exact level of r_{BE} depends on the curvature of u and κ . Ceteris paribus, the steeper κ is, the more limited is the leeway of the incumbent. Intuitively, the incumbent can obtain a larger rent without the bureaucrat, because the marginal cost of public funds is comparatively small as long as taxes are low. The bureaucrat, however, already causes expenditures to rise well above optimal levels. Hence, the incumbent faces a higher marginal cost of capturing rents in the constrained case, i.e., more votes are lost for each additional unit of rents. We can state

Proposition 2 *When considering the excess burden of taxation, the additional expenditures necessary for an increase in public goods provision are financed partly at the cost of the incumbent politician's rents.*

4 Evaluating the impact of a bureaucracy

We have seen that the incorporation of a bureaucracy tends to increase public expenditures. This result is in line with the previous literature on bureaucrats which generally regarded the additional expenditures as a waste of resources. We also take into account that political competition might lead to suboptimal policy choices and that the presence of a bureaucracy might constrain an incumbent's ability to capture rents. For these two potential positive side-effects, the influence of a bureaucracy might be beneficial up to a certain extent.

There are many possibilities to assess the outcome of the political equilibrium, but a natural starting point is to include the utility of the young generation which is neglected in the electoral process. This formalizes the wide-spread notion that politics often neglects the interests of young citizens who do not yet possess the right to vote. Accordingly, the normative benchmark can be determined by the maximization of the joint utility of the three generations:

$$\text{Max}_{G,I} W = \alpha_y W_y + \alpha_m W_m + \alpha_o W_o \quad (18)$$

subject to the budget constraint $G + I = T$. The corresponding first-best provision of the two public goods G_S^* and I_S^* is characterized by the subsequent first-order conditions

$$\frac{\partial W}{\partial G} : H_G = 1 \quad (19)$$

and

$$\frac{\partial W}{\partial I} : F_I = \frac{1}{\delta(\alpha_y + \alpha_m)}. \quad (20)$$

Condition (19) states that the efficient amount of the public consumption good G_S^* is defined by the equality of the marginal utility of an additional unit of G and the marginal costs of

public funds. As before, this condition is independent of the differing characteristics of the three generation as all face the same costs and benefits regarding G . The efficient amount of the public investment good I_S^* depends on the relative sizes of the different generations, but not on the political influence parameters since the social welfare weights are equal for all groups. I_S^* declines in the share of the old generation α_o and rises in the share of the young generation α_y and the share of the middle-aged generation α_m . Moreover, I_S^* is smaller the less patient voters are (smaller δ). As immediately obvious, no rents exist in the social optimum ($r_S^* = 0$).

The comparison of the normative benchmark and the political equilibrium shows that the provision of G is efficient in the political equilibrium ($G^* = G_S^*$) since (10) and (19) are identical. This result is due to our specification that individuals from all three generations face the same costs and benefits with respect to G . When assessing the level of I by comparing (11) and (20), we find that I^* is inefficiently low ($I^* < I_S^*$) as long as

$$\frac{\alpha_m \phi_m + \alpha_o \phi_o}{\alpha_m \phi_m} > \frac{1}{(1 - \alpha_o)}. \quad (21)$$

When assuming that all groups are equally influential ($\phi_m = \phi_o$), condition (21) is always fulfilled except for the extreme cases where either $\alpha_y = 0$ or $\alpha_o = 0$, i.e., if either the old or the young generation does not exist. When considering the case where all generations are of equal size ($\alpha_J = 1/3$), which is quite plausible in our context, we obtain $I^* = I_S^*$ only if $\phi_m/\phi_o = 2$, i.e., if the middle-aged generation has twice the political influence of the old generation.¹⁹ At that point, the influence of the middle-aged generation just compensates for the negligence of the young generation's preferences in the political process. In general, $I^* < I_S^*$ is valid, unless the political influence of the old generation is weak in comparison to its size. Since this is unlikely the case, we henceforth assume equally influential groups ($\phi_m = \phi_o$) which implies $I^* < I_S^*$.

The intuition for this result is as follows: As the old generation finances the public investment good only, but does not benefit from its provision, the incumbent can increase its vote share among the old generation by distorting public policies towards short-term valuable expenditures. As no rents are captured in the optimum ($r_S^* = 0$), all rents accruing to the government in the political equilibrium r^* constitute a welfare loss. As evident from (12), this “imperfect agency” distortion decreases in the level of political competition. Yet, political competition is obviously no remedy for the distortion towards public consumption since this distortion is inherent to elections in our model. To sum up the results until now, we state

Proposition 3 *If the young generation is excluded from the electorate, political competition leads to a level of public investment goods that is too low when compared to a normative benchmark that takes all generations equally into account. Moreover, the incumbent politician captures rents, which represents a pure welfare loss.*

To evaluate the changes induced by a bureaucrat, we first ask whether its impact is at least beneficial at the margin, i.e., when starting from a situation where the incumbent is unconstrained ($a = 0$). Consequently, we are interested in the change in total welfare at G^* ,

¹⁹Note that the underprovision of I becomes more pronounced, the more influential is the old generation (the higher is ϕ_o).

I^* and r^* if a increases marginally. In general, this effect is determined by

$$\frac{\partial W(G^*, I^*, r^*)}{\partial a} = (-1 + H_G(G^*)) \frac{1}{2} + (1 - \alpha_o)(-1 + \delta F_I(I^*)) \frac{1}{2} - \frac{\partial r}{\partial a}. \quad (22)$$

As displayed in (22), the overall effect of a change in the bargaining power of the bureaucrat depends on two issues: First, its effect on provision of public goods, and second, its effect on the level of total rents r .

To isolate the first beneficial effect of a bureaucracy, let us abstract from the excess burden of taxation. In that case, we can ignore the impact of the bureaucrat's bargaining power on the rents appropriated by the incumbent since these remain unaffected by the bureaucracy, i.e., $\frac{\partial r}{\partial a} = 0$. Therefore, the welfare effect of the bureaucracy depends only on its impact on the provision of public goods. This allows us to put forward the following line of arguments: As public consumption is provided optimally when the incumbent politician determines policies alone, a marginal increase in its provision has no first-order welfare effects. Yet, the marginal increase in public investment is a first-order gain as public investment is underprovided in the beginning. Hence, the first beneficial effect of a bureaucracy consists in an improved level of public investment goods.

The second beneficial effect of a bureaucracy becomes evident when considering the excess burden of taxation. As shown in Sect. 3.2, the increasing cost of taxation forces the incumbent to finance part of the increase in public goods at the expense of "his own" rents, which effectively reduces the marginal costs of public funds. Hence, an increase in the bargaining power of the bureaucrats effectively constrains the incumbent's ability to capture rents in addition to the increase in public investments as discussed above. Thus, a bureaucracy becomes even more valuable. We sum up our results in

Proposition 4 *Starting from $a = 0$, a marginal rise in the bureaucrat's bargaining power increases voters' overall welfare for two reasons: First, due to the improved provision of public investment goods, and second due to the additional constraint imposed on the incumbent politician. Proof see Appendix.*

Evidently, the benefit of an increase in public investment due to the bureaucrat's influence is less important, the higher the previously existing level of public investment is. At the same time, the costs of excessively supplying public consumption increase in the level of public consumption. Consequently, the above result is valid only if the bureaucracy's bargaining power is limited. At some point, the cost of excessively providing G just compensates for the benefit from improving the level of I . This result can be shown under very weak conditions. Intuitively, the benefit from constraining the incumbent's tendency to capture rents by the presence of a bureaucracy needs to be decreasing or at least constant in the level of the bureaucracy's influence. This assures that the excessive expenditures caused by the bureaucracy outweigh its benefits at some point, which is empirically highly plausible.

Proposition 5 *There exists an optimal influence level of a bureaucracy. This illustrates that the level of a bureaucracy's influence needs to be strictly limited. Proof see Appendix.*

5 Conclusion

This paper starts from the observation that public budgets in many countries are biased towards consumption expenditures. We set up a model in which this feature results from electoral competition in a society where the youngest of three generations is excluded from the

franchise. Under these circumstances, the same electoral constraints that discipline politicians on the one hand, induce them to allocate too many resources to present consumption and too little to public investment. Bureaucrats, however, are not directly responsible to voters, but appointed for life. The corresponding insensitivity regarding the interests of voters induces an increase in public expenditures. Consequently, the influence of bureaucrats leads to a beneficial mix of distortions where the political bias towards present expenditures is mitigated by the expenditure bias of bureaucrats. Moreover, we find that the additional expenditures caused by the bureaucracy reduce the incumbent's ability to capture rents when considering the excess burden of taxation.

We conclude that the independence of bureaucracies from political competition does not always need to be detrimental—even though it gives rise to an expenditure bias. Given that elections tend to make politics short-sighted, an independent bureaucracy might even be welfare-enhancing. In other words, bureaucrats' limited responsibility to the electorate does not only have a negative impact on the size of the public budget as in our model. It also creates a long-term perspective which might be highly valuable in an environment of fierce political competition. Moreover, we find that the presence of a bureaucracy reduces the ability of the incumbent politician to capture rents.

Our finding demonstrates that the welfare effects of institutions like the bureaucracy need to be considered in the broader context of public decision-making, i.e., in the context of the interaction between different political agents. Furthermore, our model offers a way to reconcile Rauch's (1995) empirical results with Niskanen's view of budget-expanding bureaucrats. A small and limited level of bureaucratic influence generates Rauch's results, whereas an excessive influence confirms Niskanen's hypothesis.

The above model can be extended to a multi-period model where a new type of political business cycle could be derived. If some investments yield a return during the period in which the elected government is in power, we would expect that the bias towards present consumption increases as the election date approaches. This implication could be tested empirically.

Acknowledgements For valuable comments and discussion, I would like to thank Andreas Haufler, Christian Traxler and Mikael Priks as well as numerous seminar participants at the University of Munich, the XIth Spring Meeting of Young Economists, the 16th Silvaplana Workshop in Political Economy and the 62nd Congress of the International Institute of Public Finance. I also thank the two anonymous referees for their constructive comments and the editors for their efficient handling of the manuscript. Financial support from the Bavarian Graduate Program in Economics is gratefully acknowledged.

Appendix

Proof of Proposition 4 Given the definition of the bureaucrats' default levels as defined in Sect. 3, we can easily derive $\frac{\partial G}{\partial a} = 1/2$ and $\frac{\partial I}{\partial a} = 1/2$ as displayed in (22).

From Sect. 2, we know that $H_G(G^*) = 1$ and $F_I(I^*) > \frac{1}{\delta} + \frac{\alpha_Y^1 - \alpha_Y^1}{(\alpha_Y^1 + \alpha_M^1)\delta}$.

Correspondingly, we can state $\frac{\partial W(G^*, I^*, r^*)}{\partial G} = 0$ and $\frac{\partial W(G^*, I^*, r^*)}{\partial I} > 0$ which completes our proof of $\frac{\partial W(G^*, I^*, r^*)}{\partial a} > 0$. $\square$

Proof of Proposition 5 The optimal influence level of the bureaucrat, a^* , is determined by the maximization of the total welfare in the constrained political equilibrium with respect to

the bureaucrat's level of influence, i.e.,

$$\text{Max}_a W(G_B^*, I_B^*, r_B^*), \quad (23)$$

which yields

$$\frac{\partial W}{\partial a} = H_G \left(G^* + \frac{a}{2} \right) - 1 + \delta(1 - \alpha_o) F_I \left(I^* + \frac{a}{2} \right) - 1 + \frac{\partial r}{\partial a} = 0. \quad (24)$$

Starting from $a = 0$, $H_G(\cdot) - 1$ becomes more and more negative as a increases due to $H_{GG} < 0$. At the same time the positive $F_I(\cdot) - 1$ becomes smaller as a increases due to $F_{II} < 0$.

To prove the existence of an optimum, consider the second-order condition of the above maximization problem which reads

$$\frac{\partial^2 W}{\partial a^2} = \frac{1}{2} \left[H_{GG} \left(G^* + \frac{a}{2} \right) + (1 - \alpha_o) F_{II} \left(I^* + \frac{a}{2} \right) \right] + \frac{\partial^2 r}{\partial a^2}. \quad (25)$$

Since $F_{GG} < 0$ and $F_{II} < 0$, an optimal level of the bureaucrat's influence a^* exists as long as $\frac{\partial^2 r}{\partial a^2} \leq 0$. $\square$

References

- Alesina, A., & Tabellini, G. (2007). Bureaucrats or politicians? Part I. A single policy task. *American Economic Review*, 97, 169–179.
- Alesina, A., & Tabellini, G. (2008). Bureaucrats or politicians? Part II. Multiple policy tasks. *Journal of Public Economics*, 92, 426–447.
- Alt, J., & Lassen, D. (2006). Transparency, political polarization, and political budget cycles. *American Journal of Political Sciences*, 50, 530–550.
- Barro, R. (1973). The control of politicians: An economic model. *Public Choice*, 14, 19–42.
- Besley, T. (2006). *Principled agents?* London: Oxford University Press.
- Besley, T., & Coate, S. (2003). Elected versus appointed regulators: Theory and evidence. *Journal of the European Economic Association*, 1, 1176–1205.
- Ferejohn, J. (1986). Incumbent performance and electoral control. *Public Choice*, 50, 5–26.
- Fernandez, R., & Rodrik, D. (1991). Resistance to reform: Status quo bias in the presence of individual-specific uncertainty. *American Economic Review*, 81, 1146–1155.
- Fuest, C. (2000). The political economy of tax coordination as a bargaining game between bureaucrats and politicians. *Public Choice*, 103, 352–382.
- Kessing, S., & Konrad, K. (2008). Time consistency and bureaucratic budget competition. *Economic Journal*, 118, 1–15.
- Lindbeck, A., & Weibull, J. (1987). Balanced-budget redistribution as an outcome of political competition. *Public Choice*, 52, 273–297.
- Migué, J., & Bélanger, G. (1974). Towards a general theory of managerial discretion. *Public Choice*, 17, 27–43.
- Mueller, D. (2003). *Public Choice III*. Cambridge: Cambridge University Press.
- Niskanen, W. (1971). *Bureaucracy and representative government*. Aldine-Aherton: New York.
- Niskanen, W. (2001). Bureaucracy. In W. F. Shughart & L. Razzolini (Eds.), *The Elgar Companion to Public Choice*. Cheltenham: Edward Elgar.
- Nordhaus, W. (1975). The political business cycle. *Review of Economic Studies*, 42, 169–190.
- Persson, T., & Tabellini, G. (2000). *Political economics: Explaining economic policy*. Cambridge: MIT Press.
- Persson, T., Roland, G., & Tabellini, G. (1997). Separation of powers and political accountability. *Quarterly Journal of Economics*, 112, 1163–1202.
- Rauch, J. E. (1995). Bureaucracy, infrastructure, and economic growth. *American Economic Review*, 85, 968–979.

- Rauch, J. E., & Evans, P. B. (2000). Bureaucratic structure and bureaucratic performance in less developed countries. *Journal of Public Economics*, 75, 49–71.
- Romer, T., & Rosenthal, H. (1978). Political resource allocation, controlled agendas, and the status quo. *Public Choice*, 33, 27–43.
- Shi, M., & Svensson, J. (2006). Political budget cycles: do they differ across countries and why? *Journal of Public Economics*, 90, 1367–1389.
- Svaleryd, H., & Vlachos, J. (2009). Political rents in a non-corrupt democracy. *Journal of Public Economics*, 93, 355–372.
- Weber, M. (1922/2001). *Wirtschaft und Gesellschaft*. Tübingen: Mohr Siebeck.