
TRANSPARENCY AND MANIPULATION OF PUBLIC ACCOUNTS

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Abstract

We study the policy choices of an incumbent politician when voters imperfectly observe aggregate spending and the incumbent's ability. We show that total spending is decreasing in the transparency of spending, but increasing in the transparency of the incumbent's ability. The model further provides a possible explanation of the choice of inefficient tools of redistribution, and investigates the incentives for politicians to manipulate public accounts. We show that politicians may choose inefficient and manipulable tools, but that this choice has positive welfare consequences because it leads to a reduction in spending.

1. Introduction

This paper considers a model of an incumbent politician choosing transfers in a world of incomplete transparency of spending. We discuss the politician's incentives to manipulate public accounts and its consequences when such manipulation is associated with wasteful spending.

The issue of the transparency of government activity has recently received a lot of public attention. The common perception is that most spending is performed without sufficient monitoring. For instance, "more than 90% of earmarks are specified [just in committee reports], not actually

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included in the texts [of legislation].”¹ In a recent article in the *New York Times*,² we read: “Mr. Hollings [U.S. Senator], who contends that the government hides its debt no less egregiously than Enron did, asked Mitchell E. Daniels Jr., the White House budget director, to swear personally to the accuracy of the government’s financial reports. [...] By any standard, Washington does not do a good job of keeping its own books. Mr. Daniels issued a report card this year on government performance that gave poor grades for financial management to every major cabinet department, and his own agency to boot. ‘This is a serious subject,’ Mr. Daniels said. ‘No one could attest to the accuracy of the government’s books.’”³

This lack of transparency is often associated with abuse of pork barrel spending and “earmarks,” and this has spurred a call for reform. A general theme of most reform proposals is that increasing transparency is essential for maintaining fiscal discipline. For example, a central pillar of Obama’s campaign platform was to “Shine the light on federal contracts, tax breaks and earmarks.” The Obama campaign claimed that “Too often bills are rushed through Congress and to the president before the public has the opportunity to review them. As president, Obama will not sign any non-emergency bill without giving the American public an opportunity to review and comment on the White House website for five days.”^{4,5}

In this paper, we develop a simple model that adapts standard models of career concerns à la Holmström (1999) to a political-economy context in order to capture some key features of incumbent politicians’ incentives in a world with imperfect transparency. The basic ingredients of the model are the following. An incumbent politician chooses transfers to maximize a weighted average of re-election probability and social welfare. Voters are *ex ante* identical, they are uncertain about the incumbent’s ability, and they observe an imperfect signal of aggregate spending. Since taxation is distortionary, efficiency involves zero spending on transfers. However, this efficient outcome is not an equilibrium: the incumbent has an incentive to “cheat” and provide positive transfers because this would increase voter’s beliefs

¹ “Earmarks Likely to Continue, but With Details,” *New York Times*, January 22, 2008.

² August 15, 2002.

³ Similarly, in a recent opinion piece in the *Wall Street Journal* (April 18, 2006), Senator Judd Gregg laments that the federal government “is keeping two sets of books... the nation’s elected leaders are abusing the process... The defense budget is a good example. One set of books said the Defense Department and related national security functions would require \$434 billion this year, about a 3% increase over the previous year. When emergency funding is factored into the equation, the true set of books show that defense will be provided at least \$558 billion, or almost a 12% increase above the previous year.”

⁴ <http://www.barackobama.com/issues/ethics/#earmarks>

⁵ Transparency has also been an important focus for international organizations. For instance, the International Monetary Fund (IMF; 2007) published the *Manual on Fiscal Transparency* containing recommendations on how budgetary institutions and national accounts should be organized. Similarly, the OECD (2002) published the *OECD Best Practices for Budget Transparency*.

about his ability. Thus, in equilibrium all voters are offered positive transfers. We then show that the equilibrium level of transfers is higher when voters have more precise information about the incumbent's ability, and offer a possible interpretation of this result as one negative effect of political accountability.

We next consider the possibility that the incumbent may choose wasteful means of transferring resources, *even* if nonwasteful means are available.⁶ We first describe the welfare consequences of alternative transfer tools, comparing two exogenously given regimes. In the first regime, the incumbent can only use wasteful transfers. In the second one, the incumbent can only use nonwasteful transfers. We show that, paradoxically, welfare is higher in the wasteful regime. The reason is that wastefulness endogenously constrains the size of spending, thereby reducing taxation and overall distortions. We then allow the incumbent to choose the type of transfer. Because welfare is higher in the wasteful regime, the incumbent's choice is (perhaps) counterintuitive. If the type of transfer is observable, the incumbent chooses the wasteful tool. If the type of transfer is *not* observable, the incumbent chooses the nonwasteful tool. We finally allow for the possibility that the incumbent can manipulate public accounts by choosing different transfer tools. For instance, direct lump-sum transfers are not wasteful, but relatively transparent. In contrast, distorting the construction of public projects in a way that leads to rents for some groups is a less efficient way to transfer resources to such groups, but it is harder for voters to figure out the true cost of these transfers. In this context, we show that the incumbent may favor wasteful transfers even without commitment if these are more manipulable.

This paper contributes to the large literature on the link between fiscal institutions and fiscal performance (e.g., von Hagen 1992, von Hagen and Harden 1994, Poterba and von Hagen 1999). Many early contributions to this literature do not provide formal models, but a growing formal and empirical literature examines the link between constitutions and economics policy. See Persson and Tabellini (2003) for a survey of this literature. This paper also contributes to the literature on the political economy of budget deficits, surveyed by Persson and Tabellini (2000). Recently, a small strand of the literature has connected economic policy with the transparency of the political process. Our paper is particularly close to work by Milesi-Ferretti (2004), Shi and Svensson (2006), and Alt and Lassen (2006). These papers discuss models with incumbent politicians and obtain that higher transparency reduces incentives to accumulate debt. In prior work (Gavazza and Lizzeri 2009), we considered related questions in a model of electoral campaigns (as opposed to incumbent government) in which each voter observes an imperfect signal of offers made to other voters. As in this paper, we showed that

⁶ This extension of the model is related to Coate and Morris (1995). We discuss this paper and the difference with our results in Section 3.4.

imperfect transparency of transfers leads to inefficiency, so that increasing transparency of spending is beneficial. In contrast, we showed that transparency of revenues may be counterproductive.⁷ Mattozzi and Merlo (2007, 2010) provide models in which political parties compete with the private sector to hire talented workers. They find that an increase in the transparency of politics reduces the average quality of politicians.

An important ingredient of our model is voters' uncertainty about the incumbent's (and challenger's) ability or valence. In our model, this uncertainty leads the incumbent to choose policies so as to manipulate learning by voters. This type of signal jamming mechanism was first presented by Holmström (1999) in the context of career concerns in the labor market, and has received a lot of attention in subsequent literature.⁸ We discuss this connection in more detail later. Some recent papers have considered the consequences of considering differences in valence in spatial models of elections (e.g., Ansolabehere and Snyder 2000, Groseclose 2001, Aragones and Palfrey 2002). The focus of these paper is to study how the standard predictions of the spatial model change when one allows for differences in valence among candidates. These papers do not consider the questions of transparency studied here.

2. Model

There is a representative voter who consumes a single good. The voter has payoff:

$$u = \theta - \psi(t),$$

where we interpret θ as a benefit received by the voter, and $\psi(t)$ as the disutility cost associated with taxation t . We assume that $\psi(t)$ is increasing, convex, and twice differentiable, and, in order to guarantee that taxation leads to distortions, we assume that $\psi'(0) = 1$.

The incumbent chooses the amount of spending on transfers y and taxation t . The level of spending y together with the incumbent's ability a in delivering public spending determine the benefits received by the voter in the following manner:

⁷ The questions addressed in our prior paper are quite different. The main results of the present paper are: negative effects of transparency of ability; analysis of manipulation of public accounts and related issue of use of inefficient means of redistribution; and negative effects of political competition. Our prior paper did not allow any heterogeneity of politicians so the question of transparency of ability could not be discussed. For similar reasons, our prior paper did not contain a discussion of intensity of competition. Because that paper focused on campaign platforms, it could not tackle the question of manipulation of public accounts.

⁸ See also Dewatripont, Jewitt, and Tirole (1999) for a discussion in the context of bureaucracies. This paper does not explicitly consider most of the issues of transparency discussed here.

$$\theta = y + a. \quad (1)$$

We assume that a is distributed according to the c.d.f. F with density f . Denote the support of F by $[\underline{a}, \bar{a}]$, and normalize the expectation of ability $E(a) = 0$.⁹ We assume that f is symmetric and unimodal. As in Persson and Tabellini (2000, Chapter 4) and Alt and Lassen (2006), we assume that neither the incumbent nor the voter observes the ability a at the time when they make decisions.¹⁰ The voter makes inferences about the abilities of the incumbent by observing realized values of θ and any additional signals on spending, as specified later.

There are three periods. In the first period, the incumbent chooses policies y and t that specify spending y and taxation t raised from the voter. The voter observes θ and ψ and, possibly, signals of spending (this will be made precise below). In the second period, the voter chooses to either re-elect the incumbent or elect the challenger. The challenger's ability is drawn from the same distribution as the incumbent.¹¹ In the third period, the second-period incumbent chooses optimal policies. For notational simplicity, we assume that there is no discounting.

The incumbent chooses policies in order to maximize a weighted average of probability of re-election and social welfare. Denoted by α , the weight that the incumbent places on the value of winning (even if politicians were completely unconcerned with social welfare, they may still act as if they place some weight on social welfare because of a variety of institutional constraints). We analyze the voter's optimal decision below.

2.1. Comments on Modeling Assumptions

There are two reasons for assuming that the incumbent's ability affects the voter's utilities. First, there is evidence that the characteristics of individual leaders can have a significant effect (see, for instance, Besley and Case 1995, Jones and Olken 2005). Second, as in most models of incumbent behavior, the voter conditions his voting decision on fiscal performance *because* of the effects that this performance has on their beliefs about the incumbent's ability. This conditioning generates the incentives for the incumbent to manipulate fiscal policy in order to increase their re-election probabilities.

We have made several simplifying assumptions. First, we have formulated a reduced-form payoff function over policies (e.g., disutility of taxation) rather than deriving these preferences from more basic primitives, such as

⁹ Note that, because of this normalization, and because we have assumed that there is no baseline public spending, it may be the case that $\theta < 0$ for some choice of y , and some realizations of a . For convenience, we ignore this unpleasant feature of our assumptions.

¹⁰ The fact that the incumbent and the voters have symmetric ignorance about the incumbent's abilities is in the tradition of models of career concerns à la Holmström (1999).

¹¹ Symmetry is the natural benchmark, but we will comment in Section 3.6 on what happens if the incumbent and challengers are drawn from different distributions.

taxation over labor supply. This is mainly for convenience and because of the focus of our analysis: we focus on broad inefficiencies introduced by imperfect information about policies, instead of delving into the details of the economic activities that are affected by these distortions. Second, we have made stark functional form assumptions: linearity in transfers, separability of benefits of spending and costs of taxation, and additive ability. These assumptions permit a simple characterization of equilibrium policies, and this is helpful for interpreting the effects of transparency. We could accommodate alternative interactions between ability and spending. For instance, a multiplicative form would lead to similar results. Similarly, we could allow for concave utility functions, at the cost of more burdensome formulations. Third, we have assumed that the voters and the incumbent are equally uncertain about the incumbent's ability. This is in contrast with models of political budget cycles such as Rogoff (1990), in which the incumbent has superior information about ability.¹²

3. Analysis

We first obtain an expression for social welfare over the two periods given optimal behavior in the second period. Because in the last period there are no electoral concerns, the incumbent will just maximize second-period social welfare. Thus, given any deficit cumulated in the first period, the optimal choice in period two is to repay the debt. Recalling that debt is given by $y - t$, social welfare is thus given by the sum of utilities over the two periods¹³:

$$SW = \theta_1 - \psi(t) + \theta_2 - \psi(y - t),$$

where θ_i is the voter's benefit in period $i = 1, 2$. (We will omit the time subscript when it does not generate ambiguity.)

3.1. Benchmark: Perfect Transparency

There are two cases to consider. First, we assume that there is perfect information about the incumbent's ability a (or degenerate distribution of ability). In this case, there is no electoral motive to provide positive public spending. Because of distortionary taxes, social welfare is decreasing in spending.

¹² In Rogoff's model, this information asymmetry sets up a signaling game between the government and the voters. Both assumptions introduce a link between government performance and re-election probabilities, which are key for any model of incumbent behavior. We do not have strong views about what approach is empirically more plausible. We suspect that politicians do learn about their abilities while on the job, but that they may have some superior information. Our assumption is however simpler to model, especially given that we introduce additional informational twists that are not considered in Rogoff's model.

¹³ The following expression assumes that there is never a surplus. It is easy to see that this is the relevant case.

Thus, in the case of observable ability, the best that the incumbent can do is to choose zero spending and taxes.

Second, if the voter perfectly observes transfers, the incumbent cannot fool her by manipulating fiscal policy because ability can be deduced perfectly by subtracting fiscal policy measures from payoff outcomes: $a = \theta - y$. This implies that the probability of re-election is independent of policy choices, and, once again, the best the incumbent can do is to choose zero spending and taxes.

3.2. Imperfect Transparency

From now on, we assume that the voter does not perfectly observe the incumbent's policy choice, and that a is unknown to the voter and the incumbent. The voter always observes θ and receives a signal of spending. With probability p she observes spending y perfectly, with probability $1 - p$ the voter only observes θ . In each of these two states, we need to obtain how the re-election probability depends on the incumbent's policies. We use the notation \hat{y} , and \hat{a} to denote the voter's conjectures about the variable of interest.

- (i) With probability $1 - p$, the voter has no information about aggregate policies. We show that, in this event, the incumbent's re-election probability (as perceived by the incumbent who does not know his ability) is equal to $1 - F(\hat{y} - y)$. Clearly, the following consistency conditions between observed levels, conjectured choices and conjectured abilities must hold:

$$\theta = \hat{a} + \hat{y}. \quad (2)$$

We can therefore obtain that the value of conjectured ability \hat{a} for any θ is $\hat{a} = \theta - \hat{y}$. Substituting from Equation (1) we obtain: $\hat{a} = a + y - \hat{y}$. In order to obtain the re-election probability, note that in the second period the voter gets benefit θ equal to the ability of the winner of the election. Thus, the voter's optimal choice is to vote for the incumbent as long as she believes that her next-period utility under the incumbent is higher than under the challenger. Because we assumed that the ability of the challenger has the same expectation as the incumbent's, the voter votes for the incumbent if and only if $\hat{a}_i > E(a) \equiv 0$. Thus, evaluated at the moment in which the incumbent chooses policies (recall that the incumbent does not know his ability at that point), the probability that the voter votes for the incumbent given y is

$$\begin{aligned} \Pr(\hat{a} > E(a)) &= \Pr(\hat{a} > 0) = \Pr(a + y - \hat{y} > 0) \\ &= 1 - F(\hat{y} - y). \end{aligned} \quad (3)$$

- (ii) With probability p the voter observes transfer y . We now show that, in this event, the incumbent's re-election probability is equal to $1/2$.

Given that the voter observes y , the conjecture \hat{y} must equal y . Just as above, the voter's conjecture about ability is

$$\hat{a} = \theta - \hat{y} = a + y - \hat{y} = a.$$

We can conclude that when the voter observes y , a is revealed to the voter before the election. Thus, at the time the incumbent chooses transfers, he needs to take the expectation over his ability a . Hence, the incumbent's probability of being re-elected is $1/2$, independent of the chosen policy.

We can now write down the objective function for the incumbent: in period one, the incumbent chooses transfer y and taxation t to maximize

$$\alpha \left(\frac{p}{2} + (1-p)(1-F(\hat{y}-y)) \right) + (1-\alpha)(y - \psi(t) - \psi(y-t)), \quad (4)$$

where α is the weight on the probability of winning and $(1-\alpha)$ the weight on social welfare.

The next proposition characterizes the incumbents' choice of transfers and taxes.

PROPOSITION 1: *In equilibrium:*

(i) *First-period spending y , and taxation t are characterized by the following condition:*

$$\psi'(y-t) = \psi'(t) = 1 + \frac{\alpha(1-p)}{(1-\alpha)} f(0). \quad (5)$$

(ii) *For any $p < 1$, debt and first-period spending are positive.*

Proof: By differentiating the expression in Equation (4), we obtain the first-order condition for the incumbent:

$$\alpha(1-p)f(\hat{y}-y) = -(1-\alpha)(1-\psi'(y-t)).$$

Since $y = \hat{y}$, we can simplify the above equations to obtain the following equilibrium condition:

$$\alpha(1-p)f(0) = -(1-\alpha)(1-\psi'(y-t)). \quad (6)$$

Because the incumbent's first-period choice of taxation does not affect his re-election probability, he chooses t to maximize social welfare *given* the equilibrium choice level of transfers y . Thus, he chooses t such that $t = y - t$ in order to smooth distortions across periods. Thus, rearranging Equation (6), we obtain Equation (5).

The fact that debt and first-period transfers are positive for $p < 1$ is an immediate consequence of Equation (5). ■

Equation (5) captures the conflict between the incumbent's desire to increase his re-election probability and his wish to limit the harm to the voter's welfare. Equation (5) determines the equilibrium spending y . Equation (5) equates the marginal second-period distortions due an increase in first-period transfers (and, hence, an increase in debt $y - t$) to a weighted sum of the voter's marginal benefit from an additional transfer (equal to one) and the incumbent's marginal increase in his re-election probability.

The intuition for part (ii) of Proposition 1 is the following. Transfers have to be positive in equilibrium otherwise the incumbent could increase his re-election prospect with minimal harm to social welfare. In particular, if the voter expects zero transfer in equilibrium, the incumbent could deviate by offering a small amount of positive transfers. This deviation only has a second-order effect on welfare because $\psi'(0) = 1$, but it has a first-order effect on the re-election probability. When—with probability $1 - p$ —the voter does not detect the deviation, she is more likely to vote for the incumbent because her belief about his ability increases: the voter attributes higher first-period utility to the incumbent's ability rather than to increased spending. This effect captures one key element of our model: if the voter does not perfectly observe transfers, the incumbent is held only partially accountable for the future distortions from current transfers. Therefore, the incumbent government does not fully internalize such losses. Hence, in equilibrium, transfers must increase up to the point where the marginal distortion from future taxes offsets the current electoral gain.

3.3. The Effects of Transparency

We now investigate the effects of two dimensions of information on equilibrium fiscal policy. First, we consider the effect of changing the precision of information about transfers. Second, we describe the effects of changing the precision of information about the incumbent's ability—namely, the transparency of information about the quality of politicians. We model this second dimension of transparency as an increase in the density $f(0)$. Recall that we are assuming that f is symmetric and unimodal. For all parametric classes of distributions with these characteristics, an increase in the mode corresponds to a reduction in the variance.¹⁴

PROPOSITION 2: *The equilibrium has the following comparative statics:*

- (i) *An increase in the transparency of transfers p leads to a decrease in transfers and debt, and an increase in social welfare.*

¹⁴ For instance, Normal, Laplace, Logistic, Student, Triangular, Error, and Uniform. Note that, although the Uniform distribution is not unimodal, our results can accommodate the uniform distribution. See Evans, Hastings, and Peacock (1993).

(ii) *An increase in the transparency of incumbent's ability leads to an increase in first-period transfers and debt, and a reduction in social welfare.*

Proof: To prove part (i), observe that the right-hand side of Equation (5) decreases when p increases. Hence, debt, transfers and first-period taxes decrease when p increases. Moreover, since transfers are wasteful, social welfare is increasing in p .

To prove part (ii), note that the right-hand side of Equation (5) increases when $f(0)$ increases. Hence, debt, transfers and first-period taxes increase since the function $\psi(\cdot)$ is convex. ■

Part (i) describes the comparative statics with respect to the transparency parameter p . The intuition follows closely from the intuition developed for the results of Proposition 1: when the transparency of transfers p decreases, the incumbent is more likely to offer them. Since transfers are socially wasteful, social welfare decreases as p decreases. Milesi-Ferretti (2004), Alt and Lassen (2006), and Gavazza and Lizzeri (2009) obtain a similar result.¹⁵ Part (i) of Proposition 2 also provides some justification for the importance of bodies such as the Congressional Budget Office and the General Accounting Office. Countries differ in the transparency of aggregate spending, partly because of the different role played by independent institutions that verify government accounts. Our model offers predictions about some of the effects of this heterogeneity.

Part (ii) of Proposition 2 reinterprets a classic comparative statics result in the career concerns literature (Holmström 1999) within a political-economy context in which politicians may offer wasteful transfers.¹⁶ It says that transparency of ability may be harmful because the incumbent chooses a higher level of transfers and a higher level of debt. The intuition for this result is the following. Consider the effect of a marginal increase in transfers at the equilibrium policies. When transparency of ability is higher—defined as $f(0)$ being higher—in equilibrium the voter's posterior beliefs are more

¹⁵ Our model is particularly close to Alt and Lassen (2006). However, they focus on debt, and on an empirical examination of debt across countries. Shi and Svensson (2006), Alt and Lassen (2006), and Alesina et al. (1999) also provide an empirical analysis of transparency. They look at cross-sections of countries and show that indices of transparency help predict fiscal outcomes: lower deficits are associated with better transparency. Prat (2005) studies a career concerns model where there is a distinction between information on the outcomes related to an agent's action and information directly on the agent's action. He shows that transparency of action can be detrimental to the principal. The transparency we consider is about the agent's innate ability.

¹⁶ In Holmström (1999) a reduction in the dispersion of the distribution of ability reduces the effort of the agent because potential employers update less about ability when they observe output. This effect is absent in our model because we do not need to add an extra noise term. See also Alesina and Tabellini (2007) who use a career concerns model to contrast the outcomes for politicians and bureaucrats.

sensitive to a deviation in transfers. Thus, this marginal increase in transfers has a bigger effect on the re-election probability.¹⁷ Hence, the incumbent's marginal benefit of such an increase is higher, leading to large transfers in equilibrium. Since transfers are partly financed through debt, debt also increases when transparency of ability is higher.

Remark 1: It is important to contrast this result with a result discussed in Chapter 4 of Persson and Tabellini (2000). They consider a similar career concerns model with an incumbent government of uncertain ability that faces re-election against a challenger. In their model, transparency of ability is beneficial because it leads to a reduction in corruption. When transparency of ability is higher, a marginal increase in corruption has a bigger effect on the re-election probability. Thus, the political cost of corruption is higher when transparency of ability is higher, leading to a lower level of corruption. The mechanism is very similar to the one highlighted in Proposition 2. The difference arises because in our model a deviation (in transfers) has a positive impact on the voter's perception of the incumbent's ability. In contrast, in Persson and Tabellini a deviation (in corruption) has a negative impact on the voter's perception of the incumbent's ability.

Remark 2: More loosely, the contrasting effects of transparency in the two models can also be framed in terms of political accountability. Rather than a strict interpretation of our result, this is a consideration coming from the underlying mechanism at work in the model. In both our model and in Persson and Tabellini, the re-election probability is more responsive to the incumbent's choices when transparency is higher. We can interpret this responsiveness as a feature of the political system. In some political systems, politicians are strongly accountable for their choices, in others less so. The view emerging from the analysis by Persson and Tabellini (2000) is that accountability is beneficial because it forces the politician to reduce corruption, or any activity that harms voters directly. In contrast, our result in Proposition 2 suggests that the effects of political accountability are more subtle in a world with imperfect transparency of transfers or debt. In such a world, politicians cannot be held fully accountable for intertemporal distortions. Thus, greater immediate accountability—that is, greater responsiveness of re-election probability—may lead an incumbent to increase current wasteful spending at the cost of greater future taxes. Because of the conflict between the welfare consequences of increased accountability in the two dimensions (transfers and corruption), it is not clear whether accountability is

¹⁷ This effect is similar to results in tournaments with handicaps where effort is higher the lower the handicap. See for instance Schotter and Weigelt (1992).

desirable. A possible way to resolve this conflict is to classify political systems into two broad categories according to the strength of their judicial institutions. In countries with weak institutions, there are few external constraints on corruption, so accountability is an important constraint on corruption. In countries with strong institutions, accountability is less likely to be the relevant constraint on corruption, so the negative effects of accountability may dominate.

3.4. Inefficient Means of Redistribution

In this Section, we discuss the incumbent's incentives to choose wasteful public spending and the efficiency consequences of such choices. It is well known that governments transfer resources to special interests in an inefficient manner. For instance, there are large programs of farm subsidies—considered highly distortionary—although it would be more efficient to offer direct cash transfers or tax cuts to farmers. This has long been a puzzle in public economics, generating a debate about the causes of these inefficiencies (see Coate and Morris 1995). We now present a simple variation in the model of the previous section.

Formally, we assume that the incumbent can offer transfers via two alternative tools. The first tool is as described in the previous section: when the incumbent chooses an amount of spending equal to y , the voter receives $\theta = y + a$. The second tool is wasteful: when the incumbent chooses an amount of spending equal to z , the voter receives $\theta = \lambda(z + a)$, where $\lambda \leq 1$ is a measure of the wastefulness of the z transfer.

We first obtain a result describing the welfare consequences of the two alternative transfer tools when politicians do *not* get to choose which tool to use. The next proposition compares social welfare if the politician can only use the z transfer (wasteful regime) or the politician can only use the y transfer (nonwasteful regime).

PROPOSITION 3:

- (i) *For any value of α and any distribution $F(\cdot)$, there is a probability p and a wastefulness $\bar{\lambda}(p)$ such that if $\lambda \in [0, \bar{\lambda}]$, then social welfare is higher under the wasteful regime.*
- (ii) *If $\psi''' \leq 0$, then for all λ social welfare is higher under the wasteful regime.*

Proof: See Appendix.

The assumption that $\psi''' \leq 0$ is merely sufficient. In particular, the result holds strictly for a quadratic ψ .

It may seem surprising that welfare is higher when the incumbent uses a wasteful transfer tool. Indeed, if government spending were fixed at a given level, then, of course, welfare would be lower in the wasteful regime.

However, even when transfers are not wasteful, government spending is inefficient because taxation is distortionary. There are two contrasting effects in evaluating the consequences of the choice of wasteful transfers. The direct effect is that the wasteful transfer obviously wastes resources for any given level of spending. However, when the incumbent endogenously chooses the level of spending, he chooses to reduce spending relative to the level he would choose without waste, thereby reducing the distortion from taxation. To gain some intuition for why the second effect dominates, consider the case of very wasteful transfers—that is, very low λ . In this case, the incumbent chooses to offer zero transfers because the marginal electoral gain from transfers is too low to compensate for the destruction of resources. The proof further shows that, when the marginal distortions from taxation are concave, the second effect dominates for any λ , so that welfare is higher under any level of waste. Indeed, the argument in the proof also shows that welfare is *increasing* in the degree of waste—that is, the lower λ , the higher welfare.

It is interesting to consider a counterpart to the result in Proposition 3. If the incumbent is currently operating in the wasteful regime, a reform banning the use of wasteful transfers would be harmful unless accompanied by some overall caps on spending. The reason is that the response by the incumbent would be to increase spending in such a way that the distortions due to increased taxation dominate the gains due to the elimination of wasteful transfers.

We now consider the incentives for the incumbent to choose the wasteful transfer tool. We discuss two alternative scenarios that have opposite implications. In the first scenario, the voter can observe the type of transfer chosen by the incumbent (wasteful or nonwasteful). In the second scenario, the voter cannot observe the type of transfer. These two scenarios can also be associated with credibility and commitment: observability and commitment to a particular transfer are equivalent. We believe that considering these two scenarios is useful to understand the forces underlying the incentives for politicians. Furthermore, these two scenarios map naturally into different kinds of transfer choices made by politicians. An example of observability is when the two *types* of transfers are also different *kinds* of transfers, for example, cash (more efficient) versus subsidies (more wasteful). In this case, by observing the type of transfer she receives, she observes its degree of wastefulness. The complementary case of nonobservability is also relevant in a number of situations. Specifically, voters may not be able to tell whether the politician chose the most effective way to deliver benefits, although the benefits seem indistinguishable. For instance, if the wastefulness is tied to the way the transfer is disbursed (efficient vs. inefficient bureaucracy), voters may have a difficult time ascertaining the degree of wastefulness. Analogously, it may be hard for voters to distinguish the degree of wastefulness of alternative subsidy schemes.

The next result provides a condition under which wasteful tools would prevail.

PROPOSITION 4: *If $\psi''' \leq 0$ and the type of transfer is observable, then the incumbent chooses the wasteful transfer tool.*

Proof: By Proposition 3, if $\psi''' < 0$, welfare is higher in equilibrium under the wasteful regime. The *ex ante* probability of re-election is 50% in both regimes because the voter adjusts her expectations to reflect the choice of transfer tool. Thus, the politician prefers to choose the wasteful transfer tool. ■

It is useful to contrast this result with the analysis in Coate and Morris (1995). Coate and Morris provide a related explanation for the choice of inefficient means of redistribution. In their model, voters are uncertain about whether the incumbent is honest. If the incumbent chooses to transfer money to an interest group, then voters infer that the politician is dishonest, and he is voted out of office. Instead, if the incumbent chooses to build a public project that may benefit an interest group, then voters remain uncertain about the incumbent's honesty (a key assumption is that there is a positive probability that building the public project is beneficial). Coate and Morris show that, under these assumptions, politicians may choose to redistribute resources via wasteful public projects. There are two substantive differences between the result in Proposition 4 and the analysis in Coate and Morris. First, in our model the incumbent chooses the least efficient way of transferring resources even though its wastefulness is common knowledge. Second, in our model the incumbent *commits* to the choice of the inefficient transfer. Of course, both of these differences only take place because *in equilibrium* the choice of the more wasteful transfer tool leads to more efficient outcomes.

The next result shows that the incentives for the incumbent are different when the type of transfer is unobservable.

PROPOSITION 5: *If the type of transfer is unobservable, in equilibrium the incumbent chooses the nonwasteful transfer tool.*

Proof: Assume first that the incumbent chooses the nonwasteful transfer tool and the size of transfers y^* are given by Equation (5). Suppose he deviates and chooses the wasteful tool, then, for any value of the wasteful transfers z , social welfare and re-election probability are lower than in the case in which the incumbent chooses the nonwasteful tool of the same amount—that is, $y = z$. But y is dominated by y^* .

Assume now that the incumbent chooses the wasteful tool of some amount z^* . By choosing the nonwasteful tool of the same amount—that is, $y = z^*$ —the incumbent raises both welfare and his re-election probability. ■

The result of Proposition 5 is intuitive: if the incumbent chooses the nonwasteful tool over the wasteful tool of the same size, both welfare and his re-election probability are larger.

3.5. Manipulation of Public Accounts

We now consider the possibility that the incumbent has the opportunity to manipulate the public accounts in a way that may hide the true size of transfers—that is, to “lie” to the public about the size of transfers. A common concern among international organizations such as World Bank, OECD (2002), and the IMF is the potential for abuse of public accounts. For example, in Hungary in September 2006, the prime minister Ferenc Gyurcsány accidentally revealed that his government had covered up the budget deficit’s true size. Similarly, the Greek government manipulated the fiscal accounts from 2000 to 2003 in order to gain entry into the Eurozone.

We modify the model of the previous subsection by allowing the possibility that the wasteful transfer lends itself to such manipulation. In order to capture the phenomenon of the abuse of public accounts, we assume that the wasteful tool is amenable to manipulation: in the event that voters observe total spending, instead of observing z , they observe πz , with $\pi < 1$. We assume that the probability p of observing total spending is the same for both tools. This is a useful assumption because it allows us to isolate the effect of manipulation.

The next proposition shows that the wasteful transfer is likely to be chosen when the degree of wastefulness is not too high (high λ), the level of transparency is relatively high (high p), and the manipulability is high (low π).

PROPOSITION 6: *For any $0 < p < 1$, and $\pi < 1$, there exists a wastefulness $\lambda(p, \pi) < 1$ such that if $\lambda(p, \pi) < \lambda \leq 1$, in equilibrium the incumbent chooses to manipulate public accounts and chooses the wasteful transfer. Furthermore, $\lambda(p, \pi)$ is decreasing in p and increasing in π .*

Proof: See Appendix.

In order to gain an intuition for Proposition 6, it is useful to contrast it with Proposition 5. In both cases, voters do not observe the type of transfer chosen by the incumbent. In Proposition 5, the incumbent chooses the efficient tool. However, when manipulation is possible, Proposition 6 shows that there are many scenarios in which the incumbent chooses the wasteful tool. The reason is that the incumbent cannot help but manipulate the accounts, unless wastefulness is high.

The analysis in this section suggests that forbidding the manipulation of public accounts may not be a panacea because it may induce an increase in the amount of spending. This may seem paradoxical, and is clearly counter

to common wisdom. Our results can be reconciled with the standard view of such manipulations, if we assume that voters are in fact naive about such accounts. Proposition 6 relies crucially on voters' sophistication. In an equilibrium with manipulation, voters understand that when they observe a given level of spending, the true amount spent must be inflated by $1/\pi$ to adjust for the fiscal manipulation. If instead voters took at face value the amount of spending reported, then it can be shown that the level of distortions chosen by the incumbent government would increase.¹⁸

3.6. Competitiveness of the Political System

Thus far, we have assumed that the challenger and the incumbent are *ex ante* identical—that is, they have abilities that are drawn from the same distribution. We now consider what happens if the challenger is “weaker” than the incumbent (or *vice versa*). We model this by assuming that the challenger's ability has a lower mean than the incumbent's. Namely, we assume that the incumbent's ability has mean 0 and the challenger's ability has mean $-c < 0$. We also assume that the incumbent's ability has density f that is symmetric and single peaked around its mean. We can think of the degree of inferiority of the challenger as describing the average competitiveness of the race.

PROPOSITION 7: *The level of spending is increasing in the degree of competitiveness of the political system.*

Proof: The equilibrium level of spending $y^*(c)$ is given by

$$\psi'(y^*(c)) = 1 + \frac{\alpha(1-p)}{1-\alpha} f(c).$$

Since ψ is convex and f is single peaked at zero, we obtain that $y^*(c)$ is increasing in c . ■

The intuition for this result is the following. In this setting, the incumbent's re-election concerns determine the incentive to offer wasteful transfers. If the challenger presents a lower threat (because of lower ability), the incumbent's incentive to manipulate the electoral process are reduced.¹⁹

¹⁸ Milesi-Ferretti (2004) studies the effects of fiscal rules when the government has a margin for “creative accounting.” He shows that the effects of increased transparency on the cyclical response of the budget to shocks are ambiguous.

¹⁹ There is a growing literature that addresses the effects of electoral competition on government policy. Thus far, the literature has presented two distinct notions of electoral competition. Lizzeri and Persico (2005) define competition as the number of competing candidates. They show that increasing the number of competing candidates lowers welfare by shifting spending toward targetable transfers and away from beneficial public goods. Polo (1998) shows that candidates' uncertainty about the position of the median

Our measure of competitiveness is consistent with the one used by Alt and Lassen (2006). They use a measure of turnover as an instrument for their transparency variable. One of their tables shows a negative relation between turnover and debt. This is in contrast with Proposition 7. One possible way to reconcile our theoretical result with the correlation in Alt and Lassen (2006) is to allow for a reason for turnover that is unrelated to the difference in abilities among competing politicians. To model this, we assume an exogenous probability ζ of government termination. As ζ increases, our incumbent politician would endogenously place more weight on social welfare, and, as a result, reduce debt. Thus, this simple extension can reconcile the result of our model with the correlation in Alt and Lassen (2006).

It is interesting to contrast Proposition 7 with the literature on spatial models with valence advantage. For instance, Groseclose (2001) and Aragonés and Palfrey (2002) show that the candidate with valence advantage chooses more moderate policies. One could argue that low level of spending is similar to the choice of a moderate policy. The mechanism in our model is different. The easiest way to see this is that, although we have focused for concreteness on the case where the incumbent has a valence advantage, the result is the same if the incumbent has an ability *disadvantage* (the equilibrium is perfectly symmetric with respect to advantage and disadvantage). Our result is driven by the fact that closer abilities lead to stronger responsiveness of voters' posterior beliefs to the incumbent's policy choices.

4. Conclusion

We have provided an analysis of the transparency of a political system that shows that some aspects of transparency may have unexpected negative consequences. Specifically, transparency of ability of politicians may lead to larger wasteful transfers. When politicians can choose among several tools to transfer resources, we have shown that, paradoxically, they would commit to the most wasteful tool, but they would fall back on the least wasteful tool if they could not commit. Moreover, welfare is highest when the tool is most wasteful because wastefulness constrains equilibrium spending. We then associated wastefulness with the manipulation of public accounts as in several recent scandals, and argued that more wasteful tools can be favored if they lead to less observable spending. We provide conditions for manipulation to occur. Finally, we considered the effects of electoral competition,

voter can relax political competition, thereby allowing candidates to retain rents. Rogers and Rogers (2000) look at data from U.S. gubernatorial elections, and find some evidence that closer elections are associated with tighter budgets. Besley, Persson, and Sturm (2010) present a probabilistic voting model in which increasing the dominance of one party leads to the selection of candidates of inferior ability, increased corruption, and lower economic performance. They present evidence from the U.S. South that is consistent with the model.

showing that, in some circumstances, more intense competition leads to lower welfare.

While we believe that this paper delivers some useful insights concerning the consequences of various aspects of transparency, there are many limitations of our analysis that warrant caution in interpreting the results, but also leave scope for new research.

We believe that recent events emphasize the importance of the issue of transparency and open up interesting avenues that should be explored in future research. The Greek crisis of the Winter of 2009–2010 is closely linked with the issue of transparency. Following the election of the socialist government, Greece revealed that the size of its deficit was 12.7% of GDP as opposed to the forecast of 3.7% announced by the previous government. The unsustainability of the Greek fiscal situation brought the entire European Union (EU) to a fiscal/political crisis. On February 13, 2010 the *New York Times* published a story highlighting the lengths to which the conservative Greek government went to manipulate fiscal accounts. “Mr. Kontopirakis [Head of Greek National Statistical Service] said that soon after the government came to power in early October he was shocked when senior members of the Finance Ministry—including the finance minister himself—sat in on meetings between the statistics service and the General Accounting Office.” Goldman Sachs was implicated because it offered the Greek government a way to use derivatives to circumvent EU national accounting rules. EU finance ministers insisted on new mechanisms to supervise Greek accounts before agreeing to a “bailout.” The Greek case makes clear that our model misses two potentially important issues to understand fiscal crises that are linked to lack of transparency. It appears that the Greek manipulation was partly designed to mislead its EU partners, partly to fool the capital markets. We believe that it would be interesting to incorporate these ingredients in future research.

Appendix: Omitted Proofs

Proof of Proposition 3. First, note that in the nonwasteful regime Social Welfare is given by $SW(y^*) = y^* - \psi(y^*)$, while in the wasteful regime it is given by $SW(z^*) = \lambda z^* - \psi(z^*)$, where y^* and z^* are the equilibrium choices under the nonwasteful and wasteful regimes, respectively.

In order to prove the results, we first need to characterize y^* and z^* , that is, the equilibrium choices under the two regimes. Assume first that the voter expects the incumbent to choose y . This is a special case of the analysis above and we obtain that the first-order condition is

$$\psi'(y^*) = 1 + \frac{\alpha(1-p)}{1-\alpha} f(0). \quad (\text{A1})$$

Assume now that the voter expects the incumbent to choose z . In the event that she observes nothing, consider a voter who receives θ . If she conjectures \hat{z} , then

$$\theta = \lambda(\hat{z} + \hat{a}) \quad \text{so} \quad \hat{a} = \frac{\theta}{\lambda} - \hat{z} = z + a - \hat{z}$$

implying that candidate wins if $\hat{a} > 0$, that is, $z + a - \hat{z} > 0$, that is, $a > \hat{z} - z$ so, probability of victory is given by

$$1 - F(\hat{z} - z).$$

In the event that the voter observes z , then probability of winning is $1/2$.

Since social welfare is given by $\lambda z - \psi(z)$, we obtain that the candidate seeks to maximize

$$\alpha \left((1-p)(1-F(\hat{z}-z)) + p \frac{1}{2} \right) + (1-\alpha)(\lambda z - \psi(z)).$$

The first-order condition for an interior solution is

$$\alpha(1-p)f(0) = (1-\alpha)(\psi'(z) - \lambda).$$

Rearranging this equation and taking into account the fact that, for some parameter values, the incumbent chooses the corner solution of $z = 0$, we obtain the characterization:

$$\psi'(z^*) = \max \left\{ 1, \lambda + \frac{\alpha(1-p)}{1-\alpha} f(0) \right\}. \quad (\text{A2})$$

This implies that, under the wasteful regime, if $\lambda < 1$, then for p sufficiently high, the incumbent chooses $z^* = 0$ whereas, for any $p < 1$, in the no waste regime, $y^* > 0$. Thus, there is always a set of parameters for which welfare is higher under the wasteful regime. This proves part (i).

As for part (ii), we now compare $SW(y^*)$ and $SW(z^*)$. First notice that welfare is clearly the same in the two regimes if $\lambda = 1$. Moreover, if $\lambda = 0$, then obviously there is no electoral gain in offering transfer z but only costs in terms of welfare; the incumbent thus chooses $z^* = 0$. Similarly, as long as

$$\lambda + \frac{\alpha(1-p)}{1-\alpha} f(0) \leq 1,$$

the incumbent chooses $z^* = 0$.

Thus, consider any interior λ , that is, $\lambda \in [1 - \frac{\alpha(1-p)}{1-\alpha} f(0), 1]$. In that range, the difference in welfare is equal to

$$SW(y^*) - SW(z^*) = y^* - \psi(y^*) - \lambda z^* + \psi(z^*).$$

where z^* solves $\psi'(z^*) = \lambda + \frac{\alpha(1-p)}{1-\alpha} f(0)$. We now show that $SW(y^*) - SW(z^*)$ is increasing in λ . Since at $\lambda = 1$, the difference is equal to 0, this

implies that for all interior λ strictly less than 1, social welfare is higher under the fraudulent regime.

Taking the derivative with respect to λ of the difference $y^* - \lambda z^* - \psi(y^*) + \psi(z^*)$, we obtain

$$-z^* - \lambda \frac{\partial z^*}{\partial \lambda} + \frac{\partial \psi}{\partial z^*} \frac{\partial z^*}{\partial \lambda} = -z^* + (\psi'(z^*) - \lambda) \frac{\partial z^*}{\partial \lambda}. \quad (\text{A3})$$

From the equilibrium condition $\psi'(z^*) = \lambda + \frac{\alpha(1-p)}{1-\alpha} f(0)$, we obtain that

$$\psi'(z^*) - \lambda = \frac{\alpha(1-p)}{1-\alpha} f(0) \quad \text{and} \quad \frac{\partial z^*}{\partial \lambda} = \frac{1}{\psi''(z^*)}.$$

Thus, Equation (A3) is equal to

$$-z^* + \frac{\alpha(1-p)}{1-\alpha} f(0) \frac{1}{\psi''(z^*)} \quad (\text{A4})$$

We want to obtain the sign of Equation (A4). We can multiply Equation (A4) by $\psi''(z^*) > 0$, and the sign of Equation (A4) is then the same as the sign of

$$-\psi''(z^*)z^* + \frac{\alpha(1-p)}{1-\alpha} f(0). \quad (\text{A5})$$

Using a Taylor expansion, we know that

$$\psi'(0) = \psi'(z^*) - \psi''(z^*)z^* + \frac{\psi'''(k)z^{*2}}{2} \quad (\text{A6})$$

for some k between 0 and z^* . Thus, rearranging Equation (A6), we obtain

$$\psi''(z^*)z^* = \psi'(z^*) - \psi'(0) + \frac{\psi'''(k)z^{*2}}{2}.$$

Substituting the expression for $\psi'(z^*) = \lambda + \frac{\alpha(1-p)}{1-\alpha} f(0)$ and $\psi'(0) = 1$, we obtain

$$\psi''(z^*)z^* = \lambda + \frac{\alpha(1-p)}{1-\alpha} f(0) - 1 + \frac{\psi'''(k)z^{*2}}{2}. \quad (\text{A7})$$

Substituting Equation (A7) in Equation (A5),

$$\begin{aligned} -\psi''(z^*)z^* + \frac{\alpha(1-p)}{1-\alpha} f(0) &= -\left(\lambda + \frac{\alpha(1-p)}{1-\alpha} f(0) - 1 + \frac{\psi'''(k)z^{*2}}{2}\right) \\ &\quad + \frac{\alpha(1-p)}{1-\alpha} f(0) \\ &= -\left(\lambda - 1 + \frac{\psi'''(k)z^{*2}}{2}\right) > 0 \end{aligned}$$

since $\lambda - 1 < 0$ and $\psi'''(k) < 0$. ■

Proof of Proposition 6. We characterize the conditions under which an equilibrium with wasteful transfers exists. Similar calculations show that the same conditions necessitate such an equilibrium.

Assume that the voter believes that the incumbent chooses the wasteful transfer. Then, the equilibrium z^* is given by Equation (A2). Consider a deviation in which the incumbent chooses the nonwasteful transfer with a level y . Then, there are two events. In the event that the voter observes θ , we have

$$\theta = y + a,$$

but the voter believes that $\theta = \lambda(z^* + \hat{a})$. Thus, $\hat{a} = \frac{\theta}{\lambda} - z^* = \frac{y+a}{\lambda} - z^*$, implying that the probability of re-election is given by the probability that $\frac{y+a}{\lambda} - z^* > 0$, or that $a > \lambda z^* - y$. Thus, probability of re-election in this event is

$$1 - F(\lambda z^* - y).$$

In the event that the voter observes y , she believes that, in fact, spending is $\frac{y}{\pi}$. Thus, the voter believes that $\hat{a} = \theta - \frac{y}{\pi} = y + a - \frac{y}{\pi}$, so that the probability of re-election in this event is

$$1 - F\left(y \frac{1 - \pi}{\pi}\right).$$

Since welfare is given by $y - \psi(y)$, we obtain that the incumbent's payoff from this deviation is

$$\alpha \left[(1-p)(1-F(\lambda z^* - y)) + p \left(1 - F\left(y \frac{1 - \pi}{\pi}\right) \right) \right] + (1-\alpha)(y - \psi(y)).$$

This implies that the difference in payoffs relative to the candidate equilibrium is given by

$$\alpha \left[(1-p)(1-F(\lambda z^* - y)) + p \left(1 - F\left(y \frac{1 - \pi}{\pi}\right) \right) - \frac{1}{2} \right] + (1-\alpha)(y - \psi(y) - (\lambda z^* - \psi(z^*))).$$

We want to find the set of parameters such that, the maximized value of the above expression with respect to y , is negative. The expression is decreasing in λ and increasing in π . Furthermore, it is easy to verify that, if $y > \lambda z^*$, then the expression is decreasing in p . Since the optimal y satisfies the inequality, the result follows. ■

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