

The political advantage of soft budget constraints

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Abstract

Why do soft budget constraints persist in many transition economies? We submit that they may serve the political purpose of hiding the incumbent's inability to promote job creation. We present a voting model with adverse selection in which politicians who are unable to implement productivity-enhancing reforms resort to firm subsidies to decrease the rate of job destruction. We characterize the equilibrium size of subsidies and its composition into explicit and implicit subsidies. We find that the equilibrium size and composition of subsidies, among other things, depend on government rents, political transparency, political expectations and firms labour unit costs. [Keywords: political economy, transition, soft budget constraints] [JEL-codes: D72, D78, H3, P3]

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1 Introduction

In several formerly socialist transition economies, two related problems have characterized a decade of enterprise reform: the persistence of soft budget constraints (SBCs) for loss-making firms, and the replacement of cash transfers from state budgets with less transparent forms of enterprise support such as barter, offsets, and promissory notes in enterprise transactions, the accumulation of arrears to tax authorities, and soft bank loans. This paper argues that a particular political logic underlies these phenomena: if some citizens can only observe aggregate employment levels but not the instruments used to maintain employment, then politicians who find it difficult to generate new employment will resort to providing "hidden" enterprise subsidies. These subsidies accomplish three political imperatives: (i) they avoid politically costly job losses; (ii) they mask political leaders' true inabilities to implement reform; and (iii) as a consequence, they increase incumbents' public support and/or prospects for reelection.

The existence of SBCs has been explained in different ways. In early work (Kornai 1979; 1980), the soft budget constraint was considered an optimal fiscal response of governments seeking to avoid unemployment and to continue the provision of social welfare. A more recent view considers SBCs a result of time-consistency problems politicians face in enforcing hard budget constraints (Maskin and Xu 2001; Kornai, Maskin, and Roland 2003). The central argument in these models is that the failure to commit to such a strategy *ex ante* often results in bailouts for failing firms *ex post*, when initial financing is already a sunk cost. Yet another view emphasizes the explicit private benefits politicians derive from job creation and the resulting incentives to subsidize firms in order to maintain employment levels (Shleifer and Vishny 1994; Boycko, Shleifer, and Vishny 1995).

We use a probabilistic voting model with rational voters to derive a political explanation for the persistence of SBCs. Our approach differs in two important ways from earlier political models of firm subsidies. First, we incor-

porate different types of politicians—who may or may not be able to promote job creation—in our model. Second, we demonstrate how voter information and political competition can affect the nature of SBCs. The model derives both the size and composition of subsidies, suggesting that they often take an economically inefficient form due to the political benefit of less transparent subsidies. We stress in particular two results. First, an increase in government revenues from externally-generated income sources such as natural resource exports, foreign aid, or remittances, may not only increase the level of subsidies but also shift them in favour of implicit subsidies. Second, increased ability of the electorate to monitor the actions of the politicians will decrease the level of total subsidies, but it may also cause a shift towards implicit subsidies. It follows that increased political accountability, at least in the short run, may prompt politicians to choose less transparent instruments to maintain public support.

In section two we discuss the underlying assumptions of our model in the context of the politics of transition countries. Section three presents the model. In section four we define a partially pooling equilibrium and derive some comparative statics for the level and form of subsidies. In section five, by way of conclusion, we discuss the implications of the model and the extent to which it is supported by available evidence.

2 Soft budget constraints in the transition

In all transition countries, SBCs have been costly. Earle and Estrin (1998) report an unrealized labor productivity growth of 5.7 percent in Russia, and Alfandari et al. (1996), find that Russian firms receiving subsidies report a labor productivity growth rate that is 6 percent lower than that of firms that do not receive subsidies. Claessens and Peters (1997) find that SBCs resulted in a reduction of labor shedding by 4 percent annually during 1992-94 in Bulgaria, whereas Coricelli and Djankov (2001) find the effect in Romania during 1993-95 to be 4.6 percent annually. Although subsidies from government budgets have persisted in some countries such as Kazakhstan and Lithuania (Djankov and

Nenova 2000; Grigorian, 2000), most support to private or privatized firms has taken the form of "implicit" subsidies that do not appear on the budgets of the public-sector institutions responsible—central or local governments, off-budget funds, or state-owned enterprises. These hidden transfers have generally been provided by allowing firms to accumulate arrears or "non-payments" to tax authorities, or to lenders and utilities who are themselves subsidized directly or indirectly (Shleifer and Treisman, 2000; Brown and Earle, 2000; Pinto, Drebensov and Morozov, 2000). Additionally, allowing the settlement of these arrears using non-cash instruments with inflated prices has also provided "concealed" transfers to firms. The shift from explicit budgetary support towards implicit subsidies has characterized the reform trajectories of several countries. While budgetary subsidies to the enterprise sector in Russia fell from 10.2 percent of GDP in 1994 to 5.9 percent in 1998, implicit subsidies rose from 0.7 percent of GDP to 10.4 percent (Pinto, Drebensov, and Morozov 2000). The system of non-payments, moreover, is doubly harmful: for propping up loss-making firms that should be closed, as well as for creating incentives for insolvent firms to continue operations, fueling asset theft and capital flight from these firms. Despite these economic costs, implicit subsidies have remained politically valuable instruments of redistribution.

2.1 Reform effort and restructuring

Our model builds on the political economy models of career concern emanating from the work on political budget cycles by Rogoff and Sibert (1988) and Rogoff (1990). In this set of models, voters care about the competence of the politicians, broadly defined, but competence is private information. It follows that incumbents seeking reelection will try to choose policies that signal high competence. In particular, less-competent politicians have incentives to choose policies that make them indistinguishable from more competent politicians, generating pooling equilibria. Our model differs, however, in three ways from the standard setup.

First, following recent analyses of government responsiveness, we assume that politicians differ not mainly in their ability to implement policies, but in their underlying motivations (e.g., Besley and Burgess, 2002; Besley and Smart, 2003). In Max Weber’s words, some politicians live “off” politics, others live “for” politics (Weber, 1946). In our application, politicians can use two different instruments to influence short-run employment. They can identify and implement reform packages that spur job creation (reforms that stabilize prices, that improve competition in factor and product markets, that protect property rights, and that solidify the rule of law). Or, they can make transfers to failing firms, enabling these firms to maintain excess employment and avoid job losses. In this context we identify politicians in the Weberian sense who do not require personal rewards for their political work, and those who must be rewarded (the professional politicians). The former are more likely to be willing to identify and implement reform packages (often facing tough opposition from other politicians, bureaucrats and private vested interests) regardless of personal reward, while the latter will only be willing to exert the necessary effort if it increases their reelection chances.¹ These two types will be referred to as “reformers” (τ) and “opportunists” (o).²

Second, instead of assuming that all voters are incompletely informed, we assume that although all voters can observe aggregate labor market results, only a fraction of voters are sufficiently informed to identify the instruments used—namely, reform effort or implicit firm subsidies. The fraction of uninformed voters is assumed to be decreasing with the size of total subsidies as well as with the monitoring capacity of the voters. The more subsidies there are, the more likely it is that these subsidies are going to be observed (by mass media,

¹These types can also be thought of as differences in the marginal cost of reform effort (zero and positive but finite), which more closely follows the set-up of Rogoff, 1990.

²The appeal of Besley’s approach is that it deals with two issues of Rogoff’s model that has been criticized (Alesina and Roubini (1997)). First of all, the “good” types do not need to distort policies to separate themselves from the “bad” types in order to get reelected. Rather, “bad” types will distort policies (subsidize failing firms in this case) in order to mimick “good” types and thereby get the opportunity to get reelected. Secondly, rather than assuming that there are only fully separating and fully pooling equilibria, the Besley approach assumes that there exists partially pooling equilibria in which a share of the voters can tell the difference between the two types, but the rest cannot.

opposition parties or NGO's for instance). And the less constrained the media, opposition parties, or watchdog groups, the more likely are voters to be aware of these specific policy instruments.

Third, we introduce an additional set of players in addition to politicians and voters, namely firm managers who, responding to incentives given them by politicians' choice of reform and firm subsidies, determine the level of restructuring in the economy.³ Following Grosfeld and Roland (1997), we distinguish "defensive" from "strategic" restructuring. Defensive restructuring involves cutting operational costs and eliminating directly unprofitable activities, generally through labor shedding, and aims to assure the short term survival of the firm. Strategic restructuring, by contrast, involves activities aimed at enhancing enterprise performance and productivity in the long run, and generally requires greater effort, skill, and resources from managers. It is also riskier, the outcome depending more heavily on the economic and legal environment in which the firms operate, namely, on the level of reform effort. Thus under defensive restructuring, employment is decreasing while profits are increasing, while under strategic restructuring both employment and profits may increase. Strategic restructuring requires a higher cost of effort and expected profits are assumed to depend on the level of reform implemented by the incumbent.

2.2 Unemployment and the political choice of subsidies

The centrality of employment in our treatment of the decision politicians make in choosing to enforce hard budget constraints is based on evidence of the political cost of high unemployment in the transition economies. The fear of unemployment has overwhelmed all electoral considerations in several countries in the region, particularly in Eastern and Central Europe, where unemployment has been politically more lethal than in other parts of the world (Przeworski, 1991; Tommasi and Velasco, 1995). In state-socialist countries, of course, unemployment

³We make no distinction between the type or concentration of ownership. There is ample evidence of that ownership matters for firm restructuring (for a recent survey, see Djankov and Murrell (2002), or for a recent contribution, see Svejnar and Lizal (2002)), but the important distinction for our purpose is that private owners need incentives to choose restructuring.

was more or less an unknown phenomenon. In several transition economies, particularly the former Soviet republics, the paltry nature of publicly-funded welfare programs has forced governments to rely on enterprises for some continued provision of social benefits and services, including social insurance, housing, education, and health care.

As in other lower- and middle-income countries, there is evidence that private-sector job growth creates a wellspring of support for reform agendas—particularly among workers in down-sizing public firms and among the unemployed (e.g. Fidrmuc, 1998; Rodrik, 1995). Mach and Jackson (2003), looking at voting behavior in Polish elections, observe that the demonstration effect from the total level of job creation within voters' regions is a better predictor of support for a reform agenda than the voters' individual employment status. Fidrmuc (2000a, 2000b) shows that there is persistence in the levels of support for different parties, but that support is based primarily on the delivered level of employment. Additionally, while groups of citizens base their voting on traditional allegiances, swing voters act retrospectively based on the incumbent's job growth record. Voter preferences, therefore, depend not merely on the expectations of the incumbents' abilities but also on inherent ideological biases or "valence" characteristics.

Implicit subsidies are generally viewed as a less transparent, but also less efficient, means of subsidizing failing firms. Implicit subsidies can take many different forms. In the early transition years, loan guarantees, controlled interest rates, or other cheap-credit programs from banks that were wholly or partially state-owned constituted a major transfer—particularly in East and Central Europe. By the mid 1990s this type of "soft lending" constituted a staple of firm-bank relations in Romania and Bulgaria (Coricielli and Djankov 2002; Claessens and Peters 1997). By the mid 1990s in the Czech Republic, over 35% of outstanding credits to enterprises were "non-performing" despite the perceived successes of reforms in that country (Desai 1996). In countries with smaller financial markets, enterprises were often subsidized through controlled prices for electricity and fuel. In countries such as Russia, moreover, the use

of "non-cash" settlements such as barter, promissory notes (*veksel*), or other offsets typically functioned as a de facto subsidy since prices for these non-cash instruments were generally set above the value of the nominal payment required.

⁴ Finally, enterprises often accumulated large stocks of outstanding arrears to both national and sub-national tax authorities. At peak in 1998, over 40% of tax receivables in Russia were in arrears. As energy prices (at least for enterprise customers) have been liberalized throughout much of the region, tax arrears have increasingly become concentrated among utility companies that do not pay taxes and that, in turn, are not being paid by their enterprise customers. This web of arrears with multiple actors—the so-called "virtual economy" (Gaddy and Ickes 1998)—is highly opaque, hiding the profits and losses of firms, as well as their true value-added. Recent evidence suggests that tax arrears continue to be accumulated by more politically-influential firms, particularly at the regional level (World Bank 2004).

There are also several reasons why this form of subsidies is likely to be more harmful to the economy than cash subsidies. Wyplosz (1999) argues that the cycle of non-payments may be responsible for the budget crises and weak recovery of the transition economies with the worst records, due to the distortionary effect of non-payments on public revenue projections. Among the additional consequences of subsidizing unproductive firms through hidden mechanisms: a rise in corruption, asset stripping and capital flight, a bias in firm spending on items more readily financed through non-cash payment, and a general worsening of the effectiveness of policy making (Pinto, Drebensov and Morozov, 2000, p. 16). ⁵

⁴The reason why trade arrears from the energy sector are effectively equivalent to tax arrears, is that the energy sector firms get compensated for the service they deliver to the government (keeping unproductive firms afloat) through tax arrears and tax offsets.

⁵The following quote, from Schleifer and Treisman (2000, p 107), nicely conveys both the political importance of keeping up the employment level, and the intrinsic web developed in order to achieve that. "The government developed complicated games to avoid admitting out loud that these enterprises were simply bankrupt and their resources and past investment hard to salvage. Would it have been more honest simply to inform the inhabitants of hundreds of rust-belt towns that their only means of livelihood was unprofitable and had to be closed down? Definitely. Would it have been more efficient to pay displaced workers welfare benefits than to keep inefficient plants running, turning valuable energy and raw materials into products that could not be sold at a profit? Probably, although in Russia's context it is important to keep in mind that much of the cash destined for welfare might have been diverted before it got to the designated recipients. Would it have been politically feasible? We doubt it."

Nevertheless, there are clear political motives for choosing less transparent means to channel subsidies to special interests, even if they are economically more costly. Coate and Morris (1995), for example, argue that politicians may choose less efficient means of transferring resources because the reputation penalty is less (see also Magee, Brock and Young, 1989; Alesina et al., 1998; Acemoglu and Robinson, 2002). Similarly, our signalling framework suggests that the opacity of implicit subsidies makes them politically desirable if the use of implicit subsidies increases the share of uninformed voters—i.e., voters who cannot accurately gauge the incumbent’s performance in office.

3 The model

We present a two-period model where the political incumbent can be one of two types, and where policy in the first period serves as an imperfect signal to the voters about this type. The model features both adverse selection and moral hazard, but it is the former concern that dominates; voters primarily care about what the incumbent is expected to do once chosen. Voters would optimally want to select and retain only reformers, but, in the most interesting equilibrium, opportunists can mimic reformers and thereby increase their electoral support. We model reform as a gradual process, in which part of the economy in each period is required to restructure in order to survive unless it is subsidized.⁶ To avoid unnecessary notation, we focus on the dynamics within this sector, assuming that a portion of the economy is exposed to the shock in each period, and that labor demand in the rest of the economy is constant (and therefore ignored).

3.1 *Politicians*

The incumbent’s actions in the first period will send a signal of his type, which the voters use to assess their expected utility of reappointing the incumbent to

⁶Measures of the share of manufacturing industries in economic distress also show that this share has been gradually increasing over time (Gaddy and Ickes, 1998).

a second period. There are two types of potential incumbents, "reformers" and "opportunists," $\rho \in \{\tau, o\}$. The strategy of the incumbent in each period is to choose a level of reform, $r \in [0, 1]$, and a per-firm size of firm subsidies, $s \in [0, \bar{s}]$, that generates an aggregate level of employment $L(s, r)$.⁷ The reformer will always choose $(s_t, r_t) = (0, 1)$, where $t \in \{1, 2\}$, while the opportunistic type will choose the combination of s_t and r_t that maximize his inter-temporal expected utility function, given by

$$Pr(s_1, r_1) \Omega - c(R) S(s_1) - \sigma r_1 - c(R) S(s_2) - \sigma r_2. \quad (1)$$

$Pr(s_1, r_1)$ stands for the probability that the incumbent wins the election, which is going to be endogenously determined by voting behaviour as a function of r_1 and s_1 . The parameter Ω represents the incumbents ego rents from being in power. The opportunity cost of firm subsidies are given by the total level of such subsidies, S (which depends on s_t both directly and indirectly through its impact on the number of firms choosing not to restructure), times its marginal cost, given by the function $c(\cdot)$, which is assumed to be decreasing with external government revenues, R .⁸ By external we refer to revenues that are not endogenous to the restructuring process, such as windfalls from natural resources or inflows of foreign aid. Finally, the parameter σ represents the opportunistic type's marginal cost of identifying and implementing reforms. The incumbent and the opponent in the election are both drawn from a common pool and the prior probability that they will be of either type is given by $\mu = \{\mu_\tau, \mu_o\}$, $\sum \mu_i = 1$. The vector of updated expectations after signals have been received is denoted as $\tilde{\mu}$.

⁷To simplify notation we model total employment as a function only of the decisions in firms in need of restructuring, and disregard the employment level in the rest of the economy, which we consider to be constant.

⁸The argument here is that the marginal utility of revenues for the politician is positive but diminishing, so the opportunity cost of any given level of subsidies is smaller when revenues are greater. For instance, a politician in a country rich in natural resources faced with windfalls from an improvement in the terms of trade, may find it less costly to keep employment up in other sectors through government subsidies. One can also think of this cost as an effort cost of raising the necessary revenues to finance the subsidies, though.

3.2 Voters

There is a continuum of voters of measure n who care about labor demand as well as ideology. Ideological bias is modelled by a valence characteristics, following the probabilistic voting model developed by Lindbeck and Weibull (1987), with both an individual-specific bias, β_j , distributed uniformly according to the density function $F(\beta)$ between $[0, 1]$, and a common shock, z , the realization of which is unknown to the incumbent, distributed according to $H(z)$. We can express the updated expected utility of voter j in period 2, were the incumbent to be reelected, as ⁹

$$L_2(\tilde{\mu}) + \beta_j - z, \tag{2}$$

where $L_2(\tilde{\mu})$ stands for the expected aggregate labor demand in period two if reelecting the incumbent. Voters will then compare their expected utility of reelecting the incumbent versus what they expect from a randomly drawn opponent, and vote sincerely. We define their strategy space as $\omega_v(\cdot) \in \{0, 1\}$, where 0 stands for voting for the opponent and 1 stands for voting for the period 1 incumbent

3.3 Firms

To model the need for restructuring, we assume that firms are initially facing excessive employment levels, given the current labor productivity. The firms strategy space contains three elements: no restructuring (nr), defensive restructuring (dr) or strategic restructuring (sr), $\omega_f \in \{nr, dr, sr\}$. Each strategy is associated with a distinct profit as well as employment level, with $l_{nr} > l_{sr} > l_{dr}$, but also different effort costs. ¹⁰ With defensive restructuring the profit is given by π , while in the case of no restructuring the profit is decreased with the cost of

⁹This specification of preferences can be derived from a simple static set up with a utility function that is linear in consumption, a constant return to scale production technology (so real wages are independent of labour demand) and where the probability to get a job is given by the aggregate labour demand as share of the total work force.

¹⁰The assumptions that managers differ in their quality and that restructuring requires costly effort is common in the literature (e.g. Roland and Sekkat (2000) and Lambert-Mogiliansky, Sonin and Zhuravskaya (2000)). In particular, Colombo (2002) assumes, as we do, that the source of heterogeneity across firm managers is in terms of their personal cost of undertaking restructuring.

excessive employment, given by $w(l_{nr} - l_{dr})$, where w measures the unit labor cost and l_i stands for firm level employment in the case of choosing strategy i . In case of no restructuring, the firm is also offered a subsidy, s , to keep up employment. The expected profit in case of strategic restructuring is given by $r2\pi + (1 - r)\pi$. The firm specific effort cost of defensive restructuring is given by θ_i , where $\theta \sim U[0, 1]$, whereas the cost of strategic restructuring is given by $2\theta_i$.¹¹ The utility of a manager of type θ_i in each state is then given by:

$$U(\theta_i) = \begin{cases} (1+r)\pi - 2\theta_i & \text{if } \varpi_f = sr \\ \pi - \theta_i & \text{if } \varpi_f = dr \\ \pi - w(l_{nr} - l_{dr}) + s & \text{if } \varpi_f = nr \end{cases} \quad (3)$$

Note that the incentives to choose no restructuring is increasing in the size of the subsidy offered, whereas the incentives to choose strategic restructuring is increasing in reform effort.¹² The heterogeneity in effort costs means that for a given set of (s, r) firms with low effort cost will choose strategic restructuring, those with high effort cost will choose no restructuring, while firms with intermediate effort costs will choose defensive restructuring. Reform effort and firm subsidies are thus two different instruments to avoid unemployment, one through creating an environment conducive to job creation, and one through avoiding job destruction.¹³

3.4 Information

We assume that all voters can observe the unemployment level, but only a fraction of them can observe the size of the subsidies, and that this fraction is

¹¹In the distinction between defensive and strategic restructuring, we focus on the differences in labour demand and adjustment costs, rather than the need of external finance for the latter. However, our specification of the managers utility function makes it possible to interpret θ as a financial cost as well, i.e. a necessary investment, indicating that strategic restructuring requires a greater investment than defensive restructuring. Furthermore, we model the cost of effort as being dependent of manager characteristics but one can equally well think of this as being firm specific.

¹²Coricelli and Djankov (2001) find empirical support for the notion that hard budget constraints foster labour shedding, i.e. defensive restructuring, but not new investments, i.e. strategic restructuring.

¹³Gaddy and Ickes (1998) argue that two alternative explanations for the failure of Russian enterprises to restructure are the inadequacy of Russian management, or that rational managers react to an environment that induces them to avoid restructuring. Our setting allows us to incorporate both the impact of inability and incentives.

increasing in the size of the subsidies as well as in the monitoring ability of the voters, measured by the parameter φ . The fraction of the voters that do not observe the size of the subsidies is formally given by

$$g(s, \varphi). \tag{4}$$

We assume that $g(0, \varphi) = 1$, $g(\bar{s}, \varphi) = 0$, $g_s(\cdot) < 0$, $g_\varphi(\cdot) < 0$, $g_{ss}(\cdot) < 0$, $g_{s\varphi}(\cdot) < 0$. Finally, some notation. We define an indicator function I that takes on the value of one to indicate informed voters, and zero to indicate uninformed voters.

4 Soft budget equilibria

The model is a sequential-move game with signalling and asymmetric information, and we solve the game for a Perfect Bayesian Equilibrium (PBE). The timing of the game is as follows. First the period 1 incumbent chooses (s_1, r_1) , followed by the firms choosing between no restructuring, defensive restructuring, or strategic restructuring. Voters update their beliefs about the incumbents type, based on the aggregate signal of labor demand and, for informed voters, the exact level of (s_1, r_1) , before they cast their vote. Finally, in period two, the incumbent chooses (s_2, r_2) once again followed by a decision of firms generating an aggregate level of employment in period two. The specific equilibrium will depend on parameter values. We focus initially on what we refer to as a partially pooling equilibrium in which the opportunistic type chooses a combination of reform and (strictly positive) subsidies that generates an employment level identical to that generated by the reformer in equilibrium. Subsequently we also define the condition under which a separating equilibrium exists.

4.1 *Characterizing the partially pooling equilibrium*

The partially pooling equilibrium is defined in Definition 1 below.

Definition 1 The *Partially Pooling Perfect Bayesian Equilibrium* is a set of strategies and a set of beliefs such that:

i) The period 1 incumbent chooses firm subsidies and reform effort according to

$$(s_1^*, r_1^*) = \begin{cases} (0, 1) & \text{if } \rho = \tau \\ \arg \max_{(s_1, r_1)} Pr(s_1, r_1) \Omega - c(R) S(s_1) - \sigma r_1 & \text{if } \rho = o \\ \text{s.t. } L_1(s_1, r_1) = L_1(0, 1) & \end{cases} \quad (5)$$

ii) The firms choose the state of restructuring that yields the highest utility, given their firm specific cost of effort.

$$\omega_f^*(\cdot) = \begin{cases} nr & \text{if } \theta_i \geq w(l_{nr} - l_{dr}) - s_1 \\ dr & \text{if } r_1\pi < \theta_i < w(l_{nr} - l_{dr}) - s_1 \\ sr & \text{if } \theta_i \leq r_1\pi \end{cases} \quad (6)$$

iii) The voters update their beliefs according to ¹⁴

$$(\tilde{\mu}_r, \tilde{\mu}_o) = \begin{cases} \{0, 1\} & \text{if } L_1(\cdot) \neq L_1(0, 1) \\ \{u_r, u_o\} & \text{if } L_1(\cdot) = L_1(0, 1) \text{ and } I = 0 \\ \{1, 0\} & \text{if } L_1(\cdot) = L_1(0, 1), I = 1 \text{ and } (s_1, r_1) = (0, 1) \\ \{0, 1\} & \text{if } L_1(\cdot) = L_1(0, 1), I = 1 \text{ and } (s_1, r_1) \neq (0, 1) \end{cases} \quad (7)$$

iv) The voters vote sincerely on the candidate they expect to maximize their utility.

$$\omega_v^*(\cdot) = \begin{cases} 1 & \text{if } L_2(\tilde{\mu}) + \beta_j - z \geq L_2(\mu) \\ 0 & \text{otherwise} \end{cases} \quad (8)$$

v) The period 2 incumbent chooses firm subsidies and reform effort according to

$$(s_2^*, r_2^*) = \begin{cases} (0, 1) & \text{if } \rho = r \\ (0, 0) & \text{if } \rho = o \end{cases} \quad (9)$$

¹⁴The first condition puts restrictions on out-of-equilibrium beliefs.

To see that this is indeed an equilibrium, we need to look at the incentives of voters, firms and opportunistic types of politicians. In period 2, there are no reelection incentives, so the opportunistic type will have no incentives to put down costly effort to promote labor demand within the private sector. It follows that voters' support for the current incumbent depends on the probability they assign to him being a reformer. If $L_1(\cdot) \neq L_1(0, 1)$ then all voters will realize that the current incumbent is the opportunistic type, so their expectations of labor demand in period two in case they reelect him, will be low. On the other hand, when $L_1(\cdot) = L_1(0, 1)$ then uninformed voters don't know if the incumbent is a reformer or an opportunist. In expectations terms, though, labor demand in period two is expected to be substantially higher than after receiving the alternative signal, so a greater share of this group of voters will support the incumbent for reelection. This, in turn, explains the underlying motivation for the opportunistic type to mimic the reformer.

Finally, firms will partition themselves into three sets depending on the firm specific level of effort costs. The thresholds defined in Definition 1 correspond to the levels of θ_i that makes firms indifferent between strategic restructuring and defensive restructuring, and between defensive restructuring and no restructuring, respectively. Hence, firms with $\theta_i \in [0, r_1\pi]$ will optimally choose strategic restructuring, firms with $\theta_i \in [w(l_{nr} - l_{dr}) - s_1, 1]$ will optimally choose no restructuring, and the firms in between, with $\theta_i \in (r_1\pi, w(l_{nr} - l_{dr}) - s_1)$, they will choose defensive restructuring.

4.2 *The size of subsidies*

Aggregate employment as a function of s and r is given by

$$L(r, s) = \int_0^{\tilde{\theta}_{sr}(r)} l_{sr} f(\theta) d\theta + \int_{\tilde{\theta}_{sr}(r)}^{\tilde{\theta}_{nr}(s)} l_{dr} f(\theta) d\theta + \int_{\tilde{\theta}_{nr}(s)}^1 l_{nr} f(\theta) d\theta, \quad (10)$$

where $\tilde{\theta}_{sr}(r)$ and $\tilde{\theta}_{nr}(s)$ define the threshold levels of θ_i such that these types are indifferent between strategic restructuring and defensive restructuring, and between defensive restructuring and no restructuring respectively. These thresh-

olds can be solved for explicitly from equation (3), which yields ¹⁵

$$\tilde{\theta}_{sr}(r) = r\pi, \quad (11)$$

$$\tilde{\theta}_{nr}(s) = w(l_{nr} - l_{dr}) - s.$$

Following these definitions of the threshold levels and the assumption of a uniform distribution, aggregate employment can be developed as

$$L(r, s) = r\pi l_{sr} + (w(l_{nr} - l_{dr}) - r\pi - s)l_{dr} + (1 - w(l_{nr} - l_{dr}) + s)l_{nr}. \quad (12)$$

We can then set $L_1(s_1, r_1) = L_1(0, 1)$ and solve this equality for r_1 to get the following labor market constraint,

$$r_1 = 1 - \frac{s_1 \tilde{l}_{nr}}{\pi \tilde{l}_{sr}}, \quad (13)$$

where $\tilde{l}_{nr} = (l_{nr} - l_{dr})$ and $\tilde{l}_{sr} = (l_{sr} - l_{dr})$. Equation (13) shows that the reform that the opportunistic type must achieve to be able to mimic the reformer is decreasing in the size of subsidies. This constitutes the trade-off between the cost of reform and the decrease in votes, and opportunity cost, of financing greater subsidies. We can also derive the size of total subsidies, S_1 , as a function of per firm subsidies, s_1 , from equation (12). Note that the number of firms choosing not to restructure is increasing in the size of the offered per firm subsidy. The total cost of subsidies is thus given by

$$S_1 = (1 - w(L_{nr} - L_{dr}) + s_1) s_1. \quad (14)$$

To derive electoral support, we look at the conditions under which a representative voter from each of the two different groups, the informed ($I = 1$) and the uninformed ($I = 0$), choose to vote for the opportunistic type in this equilibrium. Given the restriction that $L_1(s_1, r_1) = L_1(0, 1)$, voter j will support the current incumbent if and only if

$$L_2(\tilde{\mu}) + \beta_j - z \geq L_2(\mu) \quad (15)$$

¹⁵We assume that $0 < r\pi < k(L_{nr} - L_{dr}) - s < 1$.

where $\tilde{\mu}$ will depend on whether the voter is informed or not. Based on this, we can derive the differences in expected labor demand from electing the random opponent instead of the incumbent as

$$L_2(\mu) - L_2(\tilde{\mu}) = \begin{cases} \mu_\tau \pi \tilde{l}_{sr} & \text{if } I = 1 \\ 0 & \text{if } I = 0 \end{cases}. \quad (16)$$

The reelection rule can therefore be restated as worker j voting to reelect the incumbent if and only if

$$\beta_j \geq \begin{cases} z & \text{if } I = 0 \\ z + \mu_\tau \pi \tilde{l}_{sr} & \text{if } I = 1 \end{cases} \quad (17)$$

The share of voters from each group that will vote for reelection of the incumbent is given by $1 - F(\tilde{\beta}_j)$, where $\tilde{\beta}_j$ is the level of the individual specific bias that makes the voter indifferent between the current incumbent and the random opponent. It follows from the assumptions put on the distribution $F(\cdot)$ that $F(\tilde{\beta}_j) = \tilde{\beta}_j$. The condition for the incumbent to win the election can therefore be written as

$$g(s_1, \varphi) n(1 - z) + (1 - g(s_1, \varphi)) n \left(1 - z - \mu_\tau \pi \tilde{l}_{sr}\right) \geq \frac{1}{2}n, \quad (18)$$

which can be simplified as

$$1 - z - (1 - g(s_1, \varphi)) \mu_\tau \pi \tilde{l}_{sr} \geq \frac{1}{2}. \quad (19)$$

The left hand side of equation (19) thus represents the vote share of the incumbent, which depends on the common stochastic term z . It follows that the probability that the incumbent wins the election is given by the probability that $z \leq \frac{1}{2} - (1 - g(s_1, \varphi)) \mu_\tau \pi \tilde{l}_{sr}$, where the right hand side is the expected plurality for a given s_1 and exogenous variables. This can equivalently be expressed as the cumulative distribution function¹⁶

$$H\left(\frac{1}{2} - (1 - g(s_1, \varphi)) \mu_\tau \pi \tilde{l}_{sr}\right). \quad (20)$$

¹⁶The reason why this is not a function of r_1 is that equation (20) has been derived under the restriction that $L_1(s_1, r_1) = L_1(0, 1)$, which pins down the value of r_1 for any chosen value of s_1 .

Facing this, the opportunistic type chooses the vector of (s_1, r_1) that maximizes his expected utility function, subject to the condition that $L_1(s_1, r_1) = L_1(0, 1)$ and the opportunity cost of financing subsidies, which can be expressed as

$$\begin{aligned} \max_{s_1, r_1} H\left(\frac{1}{2} - (1 - g(s_1, \varphi)) \mu_r \pi \tilde{l}_{sr}\right) \Omega - C(S_1) - \sigma r_1 \\ \text{s.t.} \quad r_1 = 1 - \frac{s_1 \tilde{l}_{nr}}{\pi \tilde{l}_{sr}} \end{aligned} \quad (21)$$

$$C(S_1) = c(R) \left(1 - k \tilde{l}_{nr} + s_1\right) s_1$$

Substituting the constraints and solving for s_1 yields the following first order condition

$$h(\cdot) \mu_r \pi \tilde{l}_{sr} g_s(s_1, \varphi) \Omega - c(R) \left(1 - k \tilde{l}_{nr} + 2s_1\right) + \frac{\sigma \tilde{l}_{nr}}{\pi \tilde{l}_{sr}} = 0. \quad (22)$$

In equilibrium, subsidies are chosen such that the marginal gain from extending less reform effort is set equal to the marginal cost in terms of a smaller probability of reelection and a greater opportunity cost of financing the subsidies.

The effect of shifts in exogenous variables will generally depend on the assumptions about the cumulative distribution function $H(z)$. Whenever the density of the distribution is not constant across the support of z , there is an additional effect that depends on whether the exogenous change makes it more or less likely that the election will be close.¹⁷ However, we prefer to highlight the more straightforward results derived when assuming that $H(\cdot)$ is uniform.

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Proposition 1 *The equilibrium subsidies increase as: i) the cost of reform effort (σ) is increasing; ii) the value of holding office (Ω) is decreasing; iii)*

¹⁷If the expected plurality is positive, then an exogenous shift that decreases this plurality will make the probability of a close election greater. In this case the "election closeness" effect will reinforce the incentives to increase reform (decrease subsidies) in response to the negative shock. On the other hand, if the expected plurality is negative, then a similar shift will make a close election less likely, which will diminish the incentives to respond by more reform effort (less subsidies). One can conceive that the "election closeness" effect in general can be assumed to be smaller, but this is not necessary. The logic of the latter case is that of a contender who responds to a greater challenge, not by working even harder to assure success, but rather by decreasing effort since the probability of success now is so small anyway, that it is not worth the effort.

¹⁸This also guarantees that the second order condition is always negative.

monitoring capacity (φ) is decreasing; iv) government revenues (R) are increasing; v) the probability that the opponent is a reformer (μ_τ) goes down; vi) the labor unit cost (w) is increasing; vii) the employment level in a non restructured firm relative to a defensively restructured firm (\tilde{l}_{nr}) is increasing; viii) the employment level in a strategically restructured firm relative to a defensively restructured firm (\tilde{l}_{sr}) is decreasing.

The paths to harder budget constraints and greater reform are, therefore, potentially numerous. As the value of holding office increases, the incumbent lowers subsidies and expends greater reform, to increase the probability of reelection. An increase in monitoring capacity—a greater share of the voters being informed about the incumbent’s true type (for any given level of firm subsidies)—better enables voters to hold incumbents accountable, and an incumbent will similarly respond by lowering subsidies and increasing reform. Meanwhile more government revenues flowing into the treasury lowers the opportunity cost of financing subsidies; subsidies remain politically costly but their relative fiscal cost has decreased. An increase in the probability that the random opponent is a reformer will decrease the relative advantage, for uninformed voters, of retaining the incumbent. It follows that some of the voters who disfavor the current incumbent due to ideological bias will vote for the opponent instead. Again, the incumbent responds by decreasing subsidies and increasing reform.

Note that total subsidies (S) are influenced both by the per-firm subsidy as well as by the number of firms choosing not to restructure, and that the combined effect on total subsidies is not always certain. An increase in excessive employment pushes both per firm and total subsidies upwards. This is because the *marginal effect* of an increase in per firm subsidies on the number of firms that choose not to restructure is independent of the amount of excessive employment, but with more excessive employment this means that more jobs are saved (the politician gets more bang for the buck). An increase in the labor unit cost (\tilde{L}_{nr}) will increase the cost to firms of doing nothing. More firms will choose to restructure defensively, decreasing both employment and total sub-

sidy payments. But the politician will respond by increasing the offered per-firm subsidy (s). By contrast, an increase in the relative labor demand from strategic restructuring (\tilde{L}_{sr}) means that the marginal effect on total labor demand from an increase in reform is greater, allowing the incumbent to reduce subsidies in order to increase his chances of getting reelected.

4.3 *Pooling and separating equilibria*

Under what conditions is the partially pooling equilibrium—which motivates the existence of a soft budget constraint—more likely than a separating equilibrium?

¹⁹ There exists a partially pooling equilibrium if there exists no set of $(\tilde{s}_1, \tilde{r}_1)$ such that; 1) $L_1(\tilde{s}_1, \tilde{r}_1) \neq L_1(0, 1)$, and 2) the opportunistic type is better off by choosing $(\tilde{s}_1, \tilde{r}_1)$ than by choosing (s_1^*, r_1^*) , where (s_1^*, r_1^*) are the optimal values of (s_1, r_1) given that the opportunist prefers to mimic as derived in the previous section. It is straightforward to see that among the potential set of such $(\tilde{s}_1, \tilde{r}_1)$, the opportunistic type is best off by choosing $(s_1 = 0, r_1 = 0)$ since that minimizes his costs and he is no longer mimicking anyway. The condition for the existence of a partially pooling equilibrium therefore boils down to

$$\Pr(0, 0) \Omega < \Pr(s_1^*, r_1^*) \Omega - c(R)S(s_1^*) - \sigma r_1^*. \quad (23)$$

The probability that the opportunistic type wins the elections when choosing $(0, 0)$ can be derived in a similar way as in the previous subsection. This time all voters are informed about the fact that the incumbent is an opportunist, so the probability that he wins the elections is given by

$$H\left(\frac{1}{2} - \mu_\tau \pi \tilde{l}_{sr}\right). \quad (24)$$

By assuming a uniform distribution $H(\cdot)$, equation (23) can now be expressed as

$$c(R) \left(1 - k \tilde{l}_{nr} + s_1^*\right) s_1^* + \sigma \left(1 - \frac{s_1^* \tilde{l}_{nr}}{\pi \tilde{l}_{sr}}\right) < g(s_1^*, \varphi) \mu_\tau \pi \tilde{l}_{sr} \quad (25)$$

¹⁹A third potential equilibrium of the game is a fully pooling equilibrium in which the opportunist chooses $s = 0$ and $r = 1$.

From equation (25) it is straightforward to see that factors that increase the political gain and decrease the economic/effort costs of mimicing makes a partially pooling equilibrium more likely. More specifically, a decrease in φ or an increase in μ_τ will increase the political gains from mimicing by making the share of uninformed voters in case of mimicing bigger and by increasing expectations of the quality of a randomly drawn opponent. A decrease in σ will decrease the marginal cost of expanding reform, which will make mimicing more attractive, as will an increase in R which makes the economic cost of firm subsidies smaller. Finally, an increase in w or \tilde{l}_{nr} will decrease the total labor demand generated by a true reformer (by making more firms choosing defensive rather than no restructuring), so it becomes less costly to mimic, and a partially pooling equilibrium once again becomes more likely.

4.4 *The composition of subsidies*

The idea that political benefits can lead politicians to choose less efficient instruments for channeling subsidies has long been a staple of public-choice approaches to redistribution. This has been formalized more recently by Coate and Morris (1995), who show that politicians may choose less efficient means of transferring resources because the reputation penalty is smaller. We let the incumbent, therefore, select both the size and instrument of firm subsidies, namely, through explicit or implicit subsidies (non-payments to the public sector). The portion of subsidies through non-payments is defined as α . Two further assumptions characterize the trade-off between efficiency and transparency. First, we assume that the marginal cost of financing the subsidies is increasing in α , i.e. $c(\alpha, R)$, and $c_\alpha(\cdot) > 0$. We further assume that $c_{\alpha\alpha}(\cdot) > 0$, and $c_{\alpha R}(\cdot) < 0$, which implies that the marginal cost of using inefficient subsidies goes down when government revenues rise, which makes intuitive sense. Second, we assume that the share of uninformed voters is increasing in α , i.e. $g(s_1, \varphi, \alpha)$ and $g_\alpha(\cdot) > 0$, $g_{\alpha\alpha}(\cdot) < 0$, $g_{s\alpha}(\cdot) > 0$, $g_{\alpha\varphi}(\cdot) > 0$. Thus the fraction of the public who do not observe the size of the subsidies is increasing as the proportion of

subsidies being non-payments is increasing, and this effect is increasing in the monitoring capacity of the voters.

The incumbents decision problem can now be represented as

$$\begin{aligned}
& \max_{s_1, r_1, \alpha} H \left(\frac{1}{2} (1 - g(s_1, \varphi, \alpha)) \mu_\tau \pi \tilde{l}_{sr} \right) \Omega - C(S_1) - \sigma r_1 \\
& \text{s.t.} \quad r_1 = 1 - \frac{s_1 \tilde{l}_{nr}}{\pi \tilde{l}_{sr}} \\
& \quad \quad C(S_1) = c(R, \alpha) \left(1 - k \tilde{l}_{nr} + s_1 \right) s_1
\end{aligned} \tag{26}$$

Substituting the constraints and solving for an interior solution for s_1 and α yields the following first order conditions

$$\begin{aligned}
& h(\cdot) \mu_\tau \pi \tilde{l}_{sr} g_s(s_1, \varphi, \alpha) \Omega - c(R, \alpha) \left(1 - k \tilde{l}_{nr} + 2s_1 \right) + \frac{\sigma \tilde{l}_{nr}}{\pi \tilde{l}_{sr}} = 0, \\
& h(\cdot) \mu_\tau \pi \tilde{l}_{sr} g_\alpha(s_1, \varphi, \alpha) \Omega - c_\alpha(R, \alpha) \left(1 - k \tilde{l}_{nr} + s_1 \right) s_1 = 0.
\end{aligned} \tag{27}$$

The trade-off between subsidies and reform effort, as given by the first first order condition, remains the same as above, so the results in Proposition 1 remain unaltered. Turning to the choice of instrument for firm subsidies, the comparative statics results are presented in the proposition below.

Proposition 2 *The proportion of non-payments increase as: i) the ego-rents of holding office (Ω) are increasing; ii) government revenues (R) are increasing; iii) the probability that the opponent is a reformer (μ_τ) increases; iv) the monitoring capacity (φ) is increasing; v) the labor unit cost (w) is increasing; vi) the employment level in a non-restructured firm increases relative to that of a defensively restructured firm (\tilde{l}_{nr}); and vii) the employment level in a strategically restructured firm increases relative to that of a defensively restructured firm (\tilde{l}_{sr}).*

Whenever political power becomes more desirable (when Ω rises) the share of non-payments in total subsidies will increase. If \tilde{l}_{sr} or μ_τ increases, an uninformed voter's expected labor demand will increase with the incumbent remaining in office, whereas the reverse is true for the informed voters. It thus becomes more important to use implicit subsidies to generate votes among the

uninformed. If monitoring capacity, φ , is increasing, then it also becomes more important to use less transparent subsidies to prevent job destruction. When total subsidies fall because w or l_{nr} are increasing (indicating that fewer firms will choose not to restructure for a given level of per-firm subsidies), a marginal increase in the share of non-payments in total subsidies will be less costly (since the cost of non-payments is the increase in the opportunity cost of financing the subsidies). Hence, an increase in w or l_{nr} can lead to an increase in the share of non-payments. Finally, if the marginal opportunity cost of shifting to non-payments is decreasing in government revenues (R), then greater revenues are expected to prompt an increase in the share of non-payments.

5 Implications and conclusion

In this paper, we develop a model in which a combination of private information and imperfect signals prompts opportunistic politicians to use soft budget constraints to avoid job destruction. We characterize the equilibrium size of subsidies as well as its composition in terms of explicit and implicit subsidies. Here we highlight four results.

First, the model suggests, not surprisingly, that opportunistic politicians are more likely to enforce budget constraints for firms if their personal cost of doing so is lower. That cost is likely to be a function of their competence as well as of extant political constraints. In countries where competence among political leaders is low—in countries that lack the specialist knowledge or administrative capacity to identify and implement appropriate reforms—the accountability mechanism of elections has a smaller effect, as poorly-performing incumbents are less likely to be ousted if voters anticipate that the alternatives will be no better. It follows that we should expect less reform and softer budget constraints in countries where voters expect less of their politicians (when μ_τ is low). This result suggests something of a vicious circle, with badly performing politicians prompting lower voter expectations, in turn lowering incentives for politicians to perform well. In countries with greater expectations of the politicians (when

μ_τ is high), however, opportunistic politicians are more likely to choose implicit transfers in order to shield their true performance from voters. Hence, we may observe a hardening, overall, of budget constraints in countries with more competent and honest politicians, but we may also observe more opaque forms of existing subsidies.

Second, we also demonstrate how prospective job creation and destruction can motivate politicians to subsidize firms in different ways. An increase in the wage bill from excessive employment (an increase in w or \tilde{l}_{nr}) can motivate more firms to restructure, and as a consequence, produce greater job destruction. In avoiding the political cost of unemployment, incumbents may respond by increasing the size of subsidies offered to firms. On the other hand, an increase in the labor demand for a firm that chooses strategic restructuring relative to one choosing defensive restructuring can expand incentives to exert reform effort and decrease firm subsidies. What determines the potential for job creation is by no means obvious, but it is likely to depend on factors such as the skill level of the labor force, physical proximity to large trading partners, and the quality of regulatory and governmental institutions. One outcome is that governments may choose lower firm subsidies, leading to higher rates of both job destruction (initially) and job creation, in countries with these favorable conditions. Unemployment rates, for example, soared in the more advanced reformers in Central and Eastern Europe until job creation picked up, while less employment turnover was the norm in the slower reformers in the region. In Russia, moreover, regions with higher initial distortions generally saw less change in the portion of the workforce employed in the manufacturing and trade sectors (Ickes and Ofer, 2003).

Third, democratization may lower the level of aggregate subsidies if it enhances the ability of the electorate to monitor the actions of the politicians. But democratic transitions can also expand the proportion of implicit subsidies in the total. Our findings thus somewhat qualify the findings in recent work (e.g. Strömberg, 2004a, 2004b; Besley and Burgess, 2002; Besley, Burgess, and Prat, 2002; Besley and Prat, 2001) that increased ability of voters to hold politicians

accountable will improve policies. In our case, increased monitoring capacity leads to more reform and less subsidies, and therefore more restructuring, but it may also push the incumbent towards the more costly implicit instrument to avoid job destruction and thus be one of the factors responsible for the "virtual" economy. Considering the possibility of different policy instruments, with different economic and political implications, may thus lead to a more gloomy prediction of the impact of increased transparency. However, it must be emphasized that this is likely to be a short-run effect. In the long run, increased transparency is likely to limit the ability to use any instrument without being observed causing massmedia attention. The important implication is thus that political liberalization in all its aspects must go far enough to be able to hold politicians accountable for all their actions, not only the ones most readily observable.

Finally, an increase in government rents from sources such as natural resource exports, foreign aid, or worker remittances may increase the level of subsidies as well as the share of implicit subsidies, by making it less costly for politicians to avoid job destruction through subsidies to troubled firms. Thus, the potential revenue benefit of a resource boom may soften the budget constraint, create stalemates in restructuring in the rest of the economy, and encourage a more detrimental choice of policy instruments. This finding is consistent with a recent literature stressing the pivotal role of political institutions in explaining the potential effects of natural resource dependence (see Acemoglu, Johnson and Robinson, 2001; Auty, 2001a, 2001b). It is also consistent with regional analyses of the Russian Federation which find that there has been less economic recovery in the regions with the greatest natural resource endowments (Ickes and Ofer, 2003; Desai, Freinkman, and Goldberg, 2003). An increase in government revenues may be the consequence of successful restructuring (producing greater profits, higher wages, and larger tax payments) or it may be a result of income from external sources; our model suggests that checks and balances that limit the discretionary use of revenues may be particularly important when these revenues are derived in the form of rents.

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