Executive Performance under Direct and Hierarchical Accountability Structures: Theory and Evidence*

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Abstract

This paper studies comparatively how the type of accountability structure of a governing body’s executive branch shapes its responsiveness to voter preferences. The analysis focuses on two institutions for holding the executive accountable: popular election and appointment by a popularly elected body. We develop a political agency environment with uncertainty about the effects of policy alternatives, in which homogenous voters control the government in the face of adverse selection and moral hazard problems. When voters cannot easily identify optimal policies hierarchical delegation provides better incentives for executives to act in the public interest by insulating them from public opinion while retaining the disciplining effect of elections. We also find that hierarchical delegation can economize on voter information when legislators have strong reputational concerns. These benefits are more likely to be achieved when the legislative is independent of the executive. We present panel data evidence from US municipal elections that supports the theoretical prediction that elected city executives are more responsive to elections than executives appointed by the city council.

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1 Introduction

A practical solution to the challenge of reaching complex collective decisions in large groups is to delegate authority over matters affecting the group to specialized representatives. In the act of delegation members of the group, the principals, submit to decisions made in their name and place by their representatives, the agents. At the same time principals retain rights of control over agents by putting in place various mechanisms of accountability. The role of these mechanisms is to prevent representatives to act in a manner that is not faithful to the group’s interest, in short to contain agency loss. Typical components of accountability mechanisms are institutions such as competitive elections, term limits, no confidence and impeachment procedures, dissolution powers, recall initiatives, veto rights, party membership and judicial review.1 Yet historically there have been numerous ways to organize these basic institutions and the merits and demerits of various models of representative democracy have been the subject of political and academic debate. A fundamental question is how the type of accountability structure of governing bodies affects the representation of principals’ preferences in political acts and outcomes.

The institutional structure of modern democratic policymaking bodies is distinguished by the division of decisional authority between an executive and a legislative branch.2 Formally, as stipulated in legal documents such as constitutions, charters and statutes, the legislative branch has the power to make policies whereas the executive branch to implement and execute those policies. In actual practice, however, the roles that the two branches play cannot be so easily separated from one another. In particular, the executive branch is very often involved in policy initiation and formulation even though officially this function is assigned to the legislative branch. To a large extent this is a natural consequence of the informational advantage that the executive comes to possess by virtue of its day to day involvement in policy execution and implementation.

There are two empirically important accountability structures designed to ensure that the executive’s policy expertise is used in the best interests of the principals. The first emphasizes electoral institutions as mechanisms of control: the principals reserve the right to vote the executive as well as members of the legislature into and out of office in periodic competitive elections. We refer to this first structure as direct control. Direct election of the executive is a defining institution of presidential democracy and it is also common at the levels of regional or local politics, where

1In her modern classic on political representation, Pitkin (1967) claims that two fundamental institutions are required for achieving citizen representation in government: competitive elections and representative assemblies. She writes: "... our basic prerequisites seem very few. We would be reluctant to consider any system a representative government unless it held regular elections, which were "genuine" or "free". We would be reluctant, further, to consider a government representative unless it included some sort of collegiate representative body in more than an advisory capacity." (page 235).

2Theoretical arguments for the separation of government powers can be traced back to the work of political philosophers John Locke and Baron de Montesquieu. They argued that separation of powers was necessary to prevent the inequities that might result from an unchecked executive or legislature. James Madison and Alexander Hamilton further developed this theory in The Federalist Papers which provided a forum for discussion of the institutional arrangements that would be proposed by the US Constitutional Convention of 1787.
executives carry the title of governor or mayor. In the second arrangement principals delegate control of the executive to the legislative branch: principals directly elect the legislative branch which in turn has sole authority to appoint and remove the executive. We refer to this second accountability structure as hierarchical control. It is used, for instance, in parliamentary systems of government where the chief executive is appointed by, and has to maintain the confidence of, a majority in the national assembly, in a large number of municipal governments in countries such as the US, United Kingdom, the Netherlands and Germany, and in the management structures of publicly held companies.\textsuperscript{3}

In this paper we analyze the two basic accountability structures in terms of their performance in inducing executive behavior in accord with principals’ preferences. Our theory emphasizes the centrality of informational asymmetries in each delegation relationship.\textsuperscript{4} We start from the premise that the executive has policy expertise while the assembly and voters have only incomplete information about its actions and motivations. From this perspective, an accountability mechanism must achieve two objectives. First, it should discourage opportunistic behavior by incumbent executives in spite of the fact that principals cannot always determine with certainty their actions; this is a moral hazard correcting function. Second, the accountability mechanism must facilitate the selection of agents whose preferences are most aligned with those of the principals even if these preferences are not observable; this is an adverse selection correcting function. There generally is, however, a tradeoff between the two goals. More discipline necessarily hinders selection because principals are less likely to be able to distinguish noncongruent agents and divest them of authority. The effectiveness of an accountability mechanism in fostering representation then crucially depends on the particular manner in which this tradeoff is resolved.

To capture how the interaction between executive incentives and private information is played out in the prevailing accountability structure we build a two period model with a dual government - the executive and the assembly are distinct players - and a homogenous electorate. In each period the executive alone knows the consequences of policy alternatives and makes a policy proposal that the assembly can approve or reject. After period one the government stands reelection. Under direct delegation both the executive and the assembly may be removed by voters and replaced with challengers. Under hierarchical delegation voters can replace only the assembly while the executive remains in office as long as it maintains the confidence of the incumbent assembly, the timing of no confidence votes depending on the realization of policy effects. Assembly and executive preferences

\textsuperscript{3}The following statistics are suggestive of the prevalence of the two structures. At the level of national governments the parliamentary system is present in countries comprising about a third of the world population, a larger proportion than for any other system of government. At the level of municipalities, in the US, the first country to introduce the hierarchical structure at this level of government, about 60 percent of cities with populations above 25,000 residents are governed according to this system.

\textsuperscript{4}In a delegation relationship with a collective principal the problem of asymmetric information is particularly acute because any individual principal has the incentive to free ride on the groups’ monitoring efforts and thus remain rationally ignorant (Downs 1957).
are private information and can be either aligned with the those of the electorate or opposite to them.\footnote{The model thus incorporates two salient features of political delegation: conflicting preferences between principals and agents and asymmetric information.} In addition to policy motivations each branch of government values reelection for its own sake. The consequences of first period policy decisions are realized by the time the second period’s government assumes office and with some probability they may be learnt by voters before elections. Parametrizing the probability of policy feedback in this way allows us to study how the electoral horizon affects policymaking.

The analysis of the model yields several theoretical predictions. We find that direct accountability can lead a reelection-seeking executive to pander too often to public opinion when voters feel strongly about policy issues i.e. the executive pursues policies that voters expect to be optimal but which may turn out to be suboptimal. This occurs because voters do not always know at elections time whether the executive promoted an optimal policy choice; they can only form expectations about which policy might be optimal - we call these policies popular. However they rationally believe that popular policies are more likely to come from well-meaning politicians and consequently reelect only executives that advance these policies. The electoral incentives induced by this reelection strategy, while creating some responsiveness on the part of noncongruent executives, distort the behavior of congruent executives and can result in suboptimal outcomes. Under hierarchical delegation the incentive to pander is absent when the executive and the assembly have independent motivations. In this environment voters hold the assembly accountable exclusively for its own voting behavior. The assembly further has the flexibility to make its reappointment decision at times when it learns the true value of past policy decisions. In this way the direct dependence of executive survival on responding to public opinion is severed.

A potential failure of accountability arises under direct delegation when voters are poorly informed about the merits of policy alternatives. In this situation the executive can pursue its own preferences without suffering any electoral consequences.\footnote{This scenario confirms the more pessimistic views of the effects of political delegation. Received theories of the democratic process in political science abound with concerns that political delegation is always in danger of turning into "abdication." Riker (1982), for instance, expresses his skepticism at the disciplining role of elections, claiming that the outcome of the political process cannot be appraised as a fair result of voter preferences: "... the kind of democracy that survives is not, however, popular rule, but rather an intermittent, sometimes random, even perverse popular veto." (page 244).} Voters reelect the executive regardless of its actions because the incumbent executive’s first term actions have revealed useful information regarding its motivations to the assembly. The assembly can thus more effectively use its veto power to check executive policymaking in the second term, yielding better expected outcomes than the election of a new executive. The possibility that executives can follow their preferences without being held responsible highlights an obstacle to achieving executive selection in this system. Although after elections both the assembly and voters will have learnt the incumbent’s motivations, neither of them can remove it because the executive has gained the legal right to a fixed term.
Under hierarchical control the continuous dependence of executive survival on assembly confidence precludes this type of selection problem.

A robust prediction of the model is that the benefits of political accountability are most likely to be realized when voters are informed at the time of elections. This is consistent with the more optimistic assessments of representative democracy which claim that, despite the problems inherent in political delegation, democratic governments can deliver desirable outcomes when citizens are actively engaged in monitoring the political process (Manin et al. 1999). Our results suggest, furthermore, that a hierarchical structure of delegation can produce comparable accountability outcomes under a less demanding requirement for voter involvement. This presupposes that legislators have strong career concerns. Under this condition the mere possibility that voters will know by elections time whether the assembly’s appointment decision was in the public interest can be a powerful enough threat to induce the assembly to adopt executive appointment rules that voters themselves would have chosen under complete information. From this perspective hierarchical delegation may perform an information economizing role.

The paper also considers the possibility that executive appointment under hierarchical delegation may take place in an environment where there is partisanship between executive and assembly. We argue that in general partisanship has the effect of reducing the quality of government choices. The reason for this is that when voters expect that the two branches have similar policy objectives they hold them accountable together for policy outcomes i.e. their vote on the assembly is based in part on executive behavior. This is a natural consequence of the fact that voters learn from executive behavior something about the assembly. The implication from this type of electoral behavior, however, is that the direct link between voters and the executive is reestablished. To a larger extent executive incentives will be shaped by public opinion.

The precise effects on executive discipline depend on the strength of the assembly’s reelection concerns relative to their policy motivations. If the assembly emphasizes reelection then it will demand from its appointee policies in accord with public opinion and we should observe the government pander in much of the same manner as under direct control. If instead the assembly emphasizes policy it will punish the executive for pliant behavior unless popular policies happen to serve their own interests. In this case congruent governments behave optimally despite the risk of electoral defeat but selection suffers because voters penalize governments for unpopular policies in the belief that they indicate noncongruence.

The theoretical relationships between accountability structure, executive responsiveness and the electoral horizon yield a clear empirical prediction. We have established that direct delegation induces in the executive branch political incentives to promote popular policies. Moreover, this effect is stronger just before an election because then it is least likely that voters will learn the true value of policy choices. Consequently we should observe more evident electoral cycles in salient policy measures when governments are organized according to the direct structure relative to those
organized on a hierarchical structure. We test this hypothesis on panel data from municipal elections in large US cities during the period 1970-1997 and find considerable support for our theoretical argument. After controlling for economic, fiscal and demographic determinants, as well as city and time fixed effects, we find evidence for the presence of a relatively large and statistically significant electoral cycle in police officer hiring in mayor-council cities; this cycle is absent in council-manager cities.\(^7\) The difference in responsiveness is estimated in two ways: from combined cross section and time series variation in institutions and from time series variation alone, i.e. from cities that switched from one form of government to another.

The primary contribution of this paper to the political agency literature is the explicit modeling of the institutional structure of government in an environment with moral hazard and adverse selection. Our analysis of accountability under alternative methods of delegation extends the scope of this literature which has focused almost exclusively on the properties of the electoral mechanism. The first formal studies of political agency have emphasized the positive role of elections as instruments for disciplining politicians. In Barro (1973) voters know that all politicians pursue rents but at the same time desire reelection. Thus, although indifferent between the incumbent and a challenger, voters can induce good behavior by conditioning incumbent reelection on delivery of social welfare above a certain threshold. The extent of voter control then depends on how high this threshold can be raised so as to keep the incumbent interested in reelection. The main implication of this approach is that strong reelection concerns are a force for good thereby providing an efficiency wage type argument for increasing the value attached to political office.\(^8\)

More recent studies have recognized that politicians differ in their competence or motivations and consequently an important function of the electoral mechanism is to select better types of politicians.\(^9\) Banks and Sundaram (1993) propose an infinitely repeated electoral game in which voters and politicians share the same preferences but an agency problem arises because voters observe neither candidates’ competence nor the level of effort they expend in voters’ interests. Voters value the output of politician efforts but effort is costly for politicians. The paper establishes the existence of an equilibrium in which voters use a "grim trigger" retrospective voting rule. In this equilibrium the voting rule performs selection of competent types and, at the same time,

\(^7\)In mayor-council cities the chief executive is the mayor and he is directly elected by city residents at fixed intervals, typically four years. In council-manager cities the chief executive is a city manager appointed by the city council. The council can remove the city manager at any time by a simple majority vote. Section six provides further background on the institutional structure of US city governments.

\(^8\)Subsequent models of retrospective electoral control have extended Barro’s (1973) framework in several directions. Ferejohn (1986) introduces unobservable politician actions (moral hazard) and an infinite horizon and argues that competition among voters for particularistic benefits can lead to a complete failure of representation. Austen-Smith and Banks (1989) show how electoral accountability can make politicians abide by their campaign promises. Voters in their model behave retrospectively by punishing an incumbent if policy outcomes deviate too much from his electoral platform.

\(^9\)Fearon (1999) discusses at length this particular function of elections and argues that voters’ intentions in casting a ballot are to select more virtuous politicians rather than to punish incumbents for their past behavior in office.
discourages incumbents from shirking.\textsuperscript{10}

The agency problem in our model differs from this paper’s standard principal-agent framework in two important respects. First, our politicians may have motivations that are at variance with voters’ interests. Second, in our setup voters do not necessarily know the true impact of policy alternatives on their own welfare, however the executive does know which policies are optimal for voters. Under this information structure reelection concerns can work against voters’ interests because they lead even politicians who share voters’ preferences to pander to public opinion.\textsuperscript{11}

The risk that the electoral process may distort the incentives of well-meaning politicians calls into question the desirability of making public officials directly accountable to the electorate and points to the relevance of alternative accountability structures.\textsuperscript{12}

Addressing this issue, Maskin and Tirole (2004) find that when reputational concerns drive the behavior of elected politicians representative democracy is dominated in terms of voter welfare by other institutions such as direct democracy, if voters are moderately ignorant, or appointed courts, if votes are very ignorant. Smart and Sturm (2004) demonstrate that a solution for mitigating the negative effects of direct electoral accountability is to limit politicians’ tenure in office. This measure would reduce politicians’ reputational concerns by reducing the value of holding office. The resulting effect is more truthful incumbent behavior and thus better selection. They show that a two-term limit can better solve the tradeoff between discipline and selection than if no restrictions on tenure were imposed. Our results are similar because they imply that among the institutions of representative democracy a hierarchical structure of delegation in government can reduce the distortionary effects of direct elections without eliminating their disciplinary effects.

In its emphasis on institutional structure as a determinant of accountability outcomes our paper is related to the small formal literature on constitutional rules. For instance, Persson, Roland and Tabellini (1997) builds institutional structure into the moral hazard model of Ferejohn (1986) to study how different allocations of the power to decide the size and composition of public finances determine the rent seeking opportunities of executives and legislatures. They argue that separation of powers can improve accountability when two conditions are fulfilled. First, there must be a conflict of interest between executive and legislature over the division of rents from the public budget, and second, every public decision requires the agreement of both branches. In their model the executive can choose the level of taxation and the legislature decides the distribution of budget

\textsuperscript{10}In a follow-up paper Banks and Sundaram (1998) enrich this setup by introducing two-period term limits and allowing for more general voting strategies.

\textsuperscript{11}Canes-Wrone et al. (2001) characterize another type of electoral distortion created by this informational asymmetry namely a reelection-seeking executive enacts a policy that is both unpopular and expected to be contrary to voters’ interests but whose effects are very likely to be known before elections; they call this distortion fake leadership. Rogoff (1990) applies the logic of electoral incentives to a public finance setting and finds that budget cycles can be the result of competence signalling by politicians who have a comparative advantage in the production of public goods.

\textsuperscript{12}Many systems of government do not allow for the direct election of judges or regulators in part to prevent this type of incentive problem.
resources between socially beneficial spending and rents for itself and the executive. At each stage the decision can be vetoed by the other branch. Voters hold the two branches accountable together for economic outcomes by setting a utility threshold below which they replace the entire government. Voters gain in this two stage budgeting procedure because the executive, having no bargaining power at the allocation stage, has no incentive to propose a large budget and this reduces the legislature’s ability to appropriate rents.

Our analysis can be regarded as complementing the insights from this paper. We leave aside the important issue of different bargaining procedures between executive and legislative by starting from the premise that the executive has agenda setting power and policy expertise, and concentrating on its incentives. In this respect our theory has a narrower focus. However, it allows us to isolate the effect of the institutional structure on executive behavior. Moreover, we build a richer information structure that can generate relevant political phenomena, such as pandering and selection, that are not possible in their setup. In fact it is precisely the differential resolution of informational problems that creates the gap in executive performance between our institutional configurations.

Several empirical studies have found evidence that elected public officials, such as judges and regulators, behave differently than their appointed counterparts. Both our theoretical and empirical results on chief executives are consistent with these findings. For instance, Hanssen (1999) studies the effects of judicial institutions on the frequency of litigation in US states and finds that litigation rates are higher in states that appoint judges compared to states where judges are elected. This supports the view that appointed judges are more independent than elected judges if one is willing to assume that when disputants are uncertain about how the judge will decide - a measure of the judge’s independence - they are more willing to bear the costs of litigation. In a similar vein, Besley and Payne (2003) bring evidence from employment discrimination cases which shows that in US states where judges are elected discrimination charges are filed at a higher rate. They attribute this finding to a stronger incentive of elected judges to decide in the complainant’s favor. Moreover, they find that among states that appoint their judges fewer discrimination charges are filed in those states where judges serve life terms. In the area of regulation, Besley and Coate (2003) present evidence that in US states where regulators are elected by citizens electricity prices paid by retail consumers are significantly lower.

The rest of the paper is organized as follows. The next section presents the theoretical framework within which we model the two mechanisms of delegation under adverse selection and moral hazard. We start with the case of independent assembly and executive types. In section three we analyze the model under the assumption that at elections time the electorate and the assembly are uncertain about the optimality of past executive actions. In section four we allow for the possibility that the assembly becomes informed before elections and study how the likelihood that voters also receive feedback affects the incentives of the executive. Section five explores the effects of partisanship on executive accountability in a hierarchical system of delegation. Section six discusses the data as
well as the empirical specification and estimation technique and reports the estimation results. The last section concludes with a discussion of possible extensions.

2 The Theoretical Framework

We develop a two-period political agency environment in which voters exercise electoral control over the government on the backdrop of uncertainty about the effects of current policies and about the motivations of their representatives. Within this environment we model two institutions for monitoring the executive branch of government - popular election and appointment through a representative body - and study the performance of the government under these alternative institutional arrangements. For convenience the following terminology shall be adopted and employed throughout the paper. The term government collectively designates the two branches of government, the executive branch, or executive for short, and the legislative branch, or the assembly. The institutional arrangement in which the executive is held accountable through popular election is also termed direct control; appointment of the executive by a representative body is often referred to as hierarchical control.

In each period \( t = 1, 2 \) there are two policy alternatives to the status quo \( Q \), which we denote by \( A \) and \( B \). The government, through its two branches, the executive and the assembly, determines the policy outcome of each period \( t \), denoted by \( \hat{z}_t \), via a political process in which the executive acts as the agenda setter. Let \( z_t \) stand for the policy proposal made by the incumbent executive in period \( t \), where \( z_t \in \{A, B\} \), and \( v_t \) the decision of the legislative body of whether to approve (\( Y \)) or block (\( N \)) the executive’s proposal, \( v_t \in \{Y, N\} \). Then the mapping that we assume to exist between policy proposals and votes, on the one hand, and policy outcomes, on the other, is simply:

\[
\hat{z}_t = \begin{cases} 
  z_t & \text{if } v_t = Y \\
  Q & \text{if } v_t = N 
\end{cases} \quad \text{for } t = 1, 2
\]  

(1)

namely at time \( t \) a proposal, or bill, becomes law, or policy outcome \( \hat{z}_t \), if and only if the assembly approves it, otherwise the status quo is preserved.

In any given period the two policy alternatives may be either optimal or suboptimal. The period optimality of a policy alternative depends on the state of the world prevailing in that period; this state is denoted \( S_t \), with \( S_t \in \{A, B\} \). If in period \( t \) the policy alternative, or the policy outcome, is identical to the state we say that the policy, or outcome, is optimal; otherwise it is suboptimal.

The electorate has preferences over policy outcomes.\(^{13}\) In each period they receive a payoff of zero if the status quo obtains in that period, a payoff of one if the optimal policy is implemented

\(^{13}\)The assumption of a homogenous electorate implies that we are restricting attention to valence issues i.e. there is wide agreement among voters about the desired course of action. Conflicting preferences within the electorate raise additional considerations that are beyond the scope of this paper.
and a payoff of negative one if instead the suboptimal policy is adopted. Formally, voters’ period payoff depends on the policy outcome \( \hat{z}_t \) and the state \( S_t \) and is constant across periods:

\[
u_v(\hat{z}_t, S_t) = \left[ I \{ \hat{z}_t = S_t \} - I \{ \hat{z}_t \neq S_t \} \right] I \{ \hat{z}_t \neq Q \} \quad \text{for } t = 1, 2
\]  

(2)

where \( I \) is an indicator function, i.e. a function that takes the value one if its argument is true and zero otherwise.

Note that conditional on the state voters have a well defined ranking over policy outcomes. However, before the state is known voters can only have beliefs about their true ranking of these outcomes. Specifically we assume that the state is drawn at random and independently each period from a binary distribution that places probability \( p \) on state \( A \), where \( \frac{1}{2} < p < 1 \). Thus, in the terminology of Maskin and Tirole (2004), we may say that \( A \) is the popular policy outcome in the sense that, absent information about the state of the world, voters prefer in expectation that outcome \( A \) occurs.

The electorate delegates policy making to the executive and legislative branches of government. The legislative branch may be of one of two types \( a \); congruent (when \( a = 1 \)) and noncongruent (when \( a = -1 \)); the prior probability that the assembly is congruent is \( \pi \) with \( \frac{1}{2} < \pi < 1 \). While both types equally value reelection to a new term, which provides them with a positive ego rent \( R_a \), they also care about policy issues. We assume that the two types are different in so far as congruent assemblies rank policy outcomes in the same order as voters do, whereas noncongruent types rank them in reverse order. Formally, the lifetime utility of an incumbent assembly of type \( a \) can be written as a function of policy outcomes and states of the world realized in the two periods:

\[
U_a(\hat{z}, S \mid \theta_a) = u_v(\hat{z}_1, S_1)\theta_a + \delta\rho_a [R_a + u_v(\hat{z}_2, S_2)\theta_a]
\]  

(3)

where \( \delta \) is a time discount factor, with \( 0 < \delta \leq 1 \), and \( \rho_a \) is the probability that the incumbent assembly is reelected for a new term.\(^{15}\) The preferences of an incoming assembly of type \( a \) are represented by the utility function:

\[
u_v(\hat{z}_2, S_2)\theta_a.
\]  

(4)

We also assume that the reelection concern dominates policy motivations for both types of assembly. Formally the assumption is that:

\[
\delta R_a > 1
\]  

\(^{14}\)The probability of congruence can be interpreted in two ways. First, it is a summary measure of the quality, or reputation, of the political class. Second, it captures the degree to which voters are able to distinguish congruent from noncongruent assemblies. For an approach to endogenizing the quality of politicians see Caselli and Morelli (2004).

\(^{15}\)The assumption that policy outcomes matter to politicians only when in office is commonplace in the political agency literature. It may be interpreted as a legacy motivation: the politician cares that he will be remembered for outcomes that he himself had a role in bringing about. Besley (2005) offers a review of typical preferences and information structures underlying political agency models.
in words, the discounted value of reelection is larger than the payoff from having the ideal policy outcome today.\footnote{The primacy of the reelection concern in the behavior of legislators has been exploited elsewhere in the political science literature. Mayhew (1974), for instance, makes a compelling case in favor of this basic motivation. A closely related, but technically more involved, assumption on assembly motivations can be that the relative intensity of preferences between reelection and policy goals is issue-dependent and therefore unknown to the assembly itself before a new period begins. Then assembly behavior will alternate between being ideological and reelection-focused depending on the realization of this intensity variable at the beginning of a period. Assuming these preferences does not however affect the qualitative predictions on executive behavior, which is our main concern in this paper.}

The executive branch of government similarly can be of one of the same two generic assembly types, congruent and noncongruent.\footnote{We choose to model each branch of government as a single player in order to abstract from problems of preference aggregation, collective action and coordination that any collective agent potentially faces.} We denote the executive’s type by the random variable $\theta_e$ and assume it has the same (marginal) distribution as the assembly type $\theta_a$. With respect to the joint distribution of the two type variables we consider two polar cases. First, we assume that types are independent and second, that they are perfectly correlated. The second case captures a political environment with collusion between branches.

Because in the sequence of play to be laid out shortly the executive acts as the agenda setter it is natural to endow him with preferences over his own proposals. We wish to think about each type of executive as serving nonvoting constituencies with divergent interests by influencing the agenda of the government in their desired direction. Specifically in each period in which he is in office the executive receives a random benefit, or rent, $X_t > 0$ for introducing his constituency’s preferred policy and a payoff of zero otherwise. The payoff $X_t$ is drawn each period independently from the same probability distribution with cumulative distribution function $G : (0, x_M) \rightarrow [0, 1]$ and mean $\mathbb{E}(X) = \bar{x}$. We also make the assumption that the distribution of executive private benefits has full support and that the upper bound of this support is large enough - larger than the discounted expected payoff from being in office in period two: $x_M > \delta (R_e + \bar{x})$; this insures that with positive probability the executive follows its own preferences thus making the agency problem sufficiently severe.

We can then write the lifetime utility function of an executive of type $\theta_e$ in compact form as follows.

$$U_e(z, S, X | \theta_e) = X_1 [\mathbb{I} \{ z_1 = S_1 \} (1 + \theta_e) + \mathbb{I} \{ z_1 \neq S_1 \} (1 - \theta_e)] +$$

$$+ \delta \rho_e \{ 2R_e + X_2 [\mathbb{I} \{ z_2 = S_2 \} (1 + \theta_e) + \mathbb{I} \{ z_2 \neq S_2 \} (1 - \theta_e)] \}$$

where $\delta$ is the time discount factor and $\rho_e$ is the probability that the executive is reelected, or reappointed, to a new term.\footnote{Since the executive, through its control of the agenda, can prevent certain policy outcomes from being realized its preferences represented in equation (6) may also be regarded as ranking policy outcomes as well as policy proposals. For instance, if the executive is congruent he receives a payoff $X_t$ if in period $t$ the policy outcome is not the suboptimal policy and a payoff of zero otherwise. Thus he is indifferent between the optimal policy and the status quo and both are ranked above the suboptimal policy.} The preferences of a challenger executive of type $\theta_e$ are represented...
by the utility function:

\[ X_2 \left[ I \{ z_2 = S_2 \} (1 + \theta_e) + I \{ z_2 \neq S_2 \} (1 - \theta_e) \right]. \tag{7} \]

We model the two institutional arrangements introduced above as distinct signaling games with a common information structure. Under direct control the executive and the assembly are both popularly elected and cannot remove each other.\textsuperscript{19} These features suggest the following sequence of play and information structure. At the beginning of period one the incumbent executive and assembly separately learn their own types; the executive also learns the state of the world \( S_1 \) and his benefit draw \( X_1 \). In the first policy stage the executive introduces one of two bills \( A \) or \( B \); without observing the state or the executive’s benefit the assembly can then approve or block the executive’s bill. After the policy stage but before elections the assembly and the electorate may or may not learn the state \( S_1 \);\textsuperscript{20} this ends period one. Voters observe the decisions taken by the government in the first period, however they observe neither types nor the executive’s private benefit. In general elections for assembly and executive voters decide whether, and which of the two bodies, to reelect for a new term. At the beginning of period two the past period’s state is common knowledge. If newly elected, the executive and assembly privately learn their types and the previous period’s policy decisions. The current executive observes the state \( S_2 \) and benefit \( X_2 \) and makes a proposal \( A \) or \( B \). The assembly does not observe the state or the executive’s benefit and votes whether to approve or block the executive’s bill. This ends the second policy stage and the game.

Under hierarchical control voters can directly elect the legislative branch which in turn has sole authority to appoint and dismiss the executive. The above extensive form changes to reflect this important distinction. At the beginning of period one the incumbent executive and assembly privately learn their own types; the executive moreover observes the state of the world \( S_1 \) and his benefit \( X_1 \). In the first policy stage the executive introduces a proposal \( A \) or \( B \); the assembly observes neither the state nor the executive’s private benefit and votes Yes or No on the proposal. After policy stage one and before elections the assembly may or may not learn the state \( S_1 \);\textsuperscript{21} if it does then the assembly votes on a no confidence motion i.e. the assembly decides whether to retain the incumbent or else to appoint his challenger. Voters observe the executive’s proposal and the vote (or votes, if there has been a confidence vote after the policy stage) of the assembly but they do not learn types or the executive’s benefit \( X_1 \). They may or may not learn the past period’s state; if they do, the assembly must also have learnt it. Voters decide whether to give the assembly a new term. At the beginning of period two the past period’s state is common knowledge. If newly

\textsuperscript{19} In the terminology of Shugart and Carey (1992) the two branches are characterized by separate origin (separate popular elections) and independent survival (fixed terms of office for both executive and assembly).

\textsuperscript{20} In section three we assume neither the assembly nor voters can learn the state. In section four the assembly learns the state with probability one and voters with probability \( \varphi \), where \( 0 \leq \varphi \leq 1 \).

\textsuperscript{21} See previous footnote.
elected, the challenger assembly observes its own type and all first period actions. The assembly, incumbent or challenger, subjects the executive to a vote of confidence. If appointed, the challenger executive learns his type. The current executive observes the period state $S_2$ and his benefit $X_2$ and makes a proposal $A$ or $B$. The assembly, without observing the state or the executive’s type and payoff may approve or reject the executive’s proposal.\footnote{The essential component of our model of hierarchical delegation is executive accountability to the assembly. At the national level there is a lot of diversity in the institutional rules and norms of parliamentary and presidential democracies and various authors have proposed different criteria for classifying constitutions (see, for instance, Bingham Powell 1982, Shugart and Carey 1992, Lijphart 1999). Other studies have advanced a minimal definition based on the accountability criterion. According to Riggs (1988), for example, the crucial difference between parliamentary and presidential constitutions lies in "whether or not the head of government can be replaced by an assembly vote." Müller et al. (2003) similarly define parliamentary government simply as an "institutional arrangement by which the executive is accountable, through a confidence relationship, to any parliamentary majority."}

Finally, we specify strategies and beliefs using a unified notation across the two baseline games. The incumbent executive’s first period proposal strategy is a function of his information and type, denoted $\zeta_1 (x, s, \theta_e)$. It will often be convenient to summarize the executive’s behavior using the probability that he introduces the popular policy $A$ defined as

$$\alpha (s, \theta_e) = \mathbb{P} \{ \zeta_1 (X, s, \theta_e) = A \}. \quad (8)$$

We let $\eta (z, \theta_a)$ denote the mixed strategy for voting on policy of an assembly of type $\theta_a$. In order to simplify the exposition we do not introduce additional notation for second period proposal and voting strategies and thus omit the time subscripts on the functions $\alpha$ and $\eta$. Voters’ reelection strategies are symbolized by $\rho_a (z, v_p, v_c | s)$ for the assembly, and $\rho_e (z, v_p, v_c | s)$ for the executive, where $v_p$ and $v_c$ are the votes cast by the assembly at the policy stage and confidence stage, respectively. In the game of hierarchical control we let $\gamma_t (z, \theta_a | s)$ stand for the probability that in period $t$ the incumbent executive is reappointed by the assembly. Without risking confusion we abuse notation and employ the same symbols for these strategies even when they are based on fewer observed actions. For instance, the function $\rho_a (z, v_p)$ denotes the probability that the assembly is reelected by voters based only on the observed proposal and vote at the first policy stage. The meaning of each function will be apparent from the context.

We denote posterior beliefs about the state of period one by $\tilde{p} (z, v_p, v_c)$. We also let

$$\tilde{\pi}_i (z, v_p, v_c | s) \quad \text{for } i = e, a \quad (9)$$

stand for the incumbent executive’s, respectively assembly’s, posterior reputation after a history $(z, v_p, v_c, s)$. As the game progresses the assembly may be in a position in which it has more information about the executive for instance because they may learn period one’s state $S_1$ before voters do. However, when types are independent and when assemblies and voters have received the same information at the same time they share the same posterior beliefs about the executive and
If the executive introduces the optimal policy in both states we say that the executive behaves optimally. When this behavior comes from a congruent executive it reflects representation of voter preferences since the preferences of the two players are aligned. When this is instead the behavior of a noncongruent politician we can say it reflects responsiveness to voter preferences because the executive follows voters’ preferences instead of its own. If the executive introduces the popular policy in both states we say that it panders to public opinion because this behavior follows voters’ ex ante preferences which may diverge from their true preferences. Finally, if the executive introduces the suboptimal policy in both states we say that it behaved suboptimally. When this behavior comes from a noncongruent executive it reflects corruption because it follows the executive’s private interest at the expense of the public interest.\footnote{The notion of corruption employed here is perhaps broader than the common understanding of this term. It includes actions that are not verifiable and thus cannot trigger legal sanctions.}

The equilibrium concept chosen for our analysis is Perfect Bayesian Equilibrium (henceforth, PBE, or simply, the equilibrium). We require that strategies be optimal given beliefs and that beliefs be consistent, in the sense of satisfying Bayes’s Rule, with equilibrium strategies at all information sets that are reached with positive probability via equilibrium actions.

As is common in retrospective voting games in which voters move after policies have been chosen our models feature multiple equilibria. In each case we characterize equilibria that maximize executive performance, defined as the expected value to voters of executive proposals in the two periods:

\[ \Theta = \mathbb{E} \left[ \sum_t u_v(\zeta_t, S_t) \right] \]

where \( \zeta_t \) is the executive’s equilibrium proposal strategy in period \( t \) and \( S_t \) is period \( t \)'s state. The period components of executive performance \( \Theta_1 = \mathbb{E}[u_v(\zeta_1, S_1)] \) and \( \Theta_2 = \mathbb{E}[u_v(\zeta_2, S_2)] \) are measures of executive discipline and executive selection, respectively. We select equilibria that maximize executive performance in order to capture the extent to which each institution facilitates accountability. Moreover this allows us to perform meaningful comparative statics on form of government.

In order to compare the equilibrium outcomes of the two games we establish the following relation of dominance. Fix the vector of parameter values at \((q, G)\). We say that game \( \Gamma'(q, G) \) is weakly superior to game \( \Gamma''(q, G) \) in terms of criterion \( \omega \) at parameter vector \((q, G)\) if the equilibrium outcome of game \( \Gamma'(q, G) \) yields at least as high a value of the criterion as the equilibrium outcome of game \( \Gamma''(q, G) \). If the comparison value is strictly larger we say that game \( \Gamma'(q, G) \) is strictly superior to game \( \Gamma''(q, G) \) in terms of criterion \( \omega \). Further, we say that game \( \Gamma'(q) \) dominates game \( \Gamma''(q) \) in terms of criterion \( \omega \) at parameter vector \( q \) if game \( \Gamma'(q, G) \) is weakly superior to game \( \Gamma''(q, G) \) at all distributions \( G \) and game \( \Gamma'(q, G) \) is strictly superior to game
\( \Gamma''(q, G) \) for at least one distribution \( G \). In words, an institutional arrangement dominates another in terms of a given criterion if it does at least as well by this criterion no matter what beliefs voters might hold about the rent opportunities of politicians and does strictly better for at least one set of beliefs. In what follows our comparison criteria will be executive discipline, executive selection and executive overall performance.

3 Late-Term Accountability

In this section we characterize and compare equilibrium behavior under direct and hierarchical control for the case in which the executive is certain that feedback on the optimality of its first period proposal to the assembly arrives only after elections. The strategic situation implicit in this information structure is suggestive of decisions that a government seeking reelection has to make towards the end of an electoral term. For these late-term decisions the informational asymmetry between the executive, on the one hand, and the assembly and voters, on the other, is at its peak.

The results of this section are significant in two ways. First, they provide a parsimonious formalization of the idea that systems with direct delegation are characterized by temporal rigidity (Linz 1994). The executive is elected for a fixed term and cannot be removed until the next elections even though its past behavior and recent information have revealed its incompetence or dissonance with the public interest.\(^2^4\) This institutional feature lends direct control poor selection properties.

Second, our results suggest that making the executive responsible to an uninformed electorate can aggravate agency losses. This may occur through two channels. If voters are ex ante close to indifferent between policy alternatives - these issues are described below as technical - it may be rational for them to return the incumbent executive to office regardless of its position on the issue, thus implicitly delegating control of the executive to the assembly; however, since the assembly cannot dismiss the executive, but can at most act to block its proposals, this type of electoral behavior leaves the executive unconstrained in its choice of policies and consequently leads to high levels of corruption. If voters are more confident that their own assessment of policy alternatives is correct - described below as value issues - they demand that their ex ante preferred alternative be adopted; this electoral constraint, however, induces a strong bias in the preferences of both congruent and noncongruent executives in favor of the popular policy and results in opportunistic behavior and inefficient outcomes.\(^2^5\) By contrast, in a system of hierarchical delegation the incentive

\(^{24}\)In presidential systems of government, for instance, the president cannot be removed from office between elections except through a formal procedure of impeachment initiated by congress. This procedure, however, can be invoked only in exceptional circumstances when there is clear evidence that the president has committed a criminal offense. In this paper we assume that the actions available to the executive are legal.

\(^{25}\)This pattern of executive behavior in the proximity of elections is consistent with studies which find that politicians seeking reelection become more representative of public opinion - though not necessarily of public interest - as the end of their term approaches. See, for instance, Rogoff and Siebert (1988) on political business cycles, Shi and Svensson (2003) on political budget cycles and Gaubatz (1991) on the existence of an electoral cycle of war.
to pander to public opinion is muted to the extent that confidence votes can be timed to take place after the effects of policies have been realized.

We now describe equilibrium behavior in the game of direct control with no feedback before elections. There are two possible types of executive behavior the occurrence of each depending on two parameters, voters’ prior beliefs about the optimal alternative \( p \), and politicians’ initial reputation \( \pi \). If \( p \) is below a threshold \( p^* (\pi) \), that is increasing in \( \pi \), both executive types follow their preferences with probability one and voters reelect the executive with probability one no matter which policy alternative was introduced. We designate issues for which this type of equilibrium occurs as technical issues, because voters’ behavior suggests that they do not know enough about the relative merits of policy alternatives in order for them to be able to send a clear message to the executive. The second type of equilibrium occurs when \( p \) is above the threshold \( p^* (\pi) \). At these parameter values both congruent and noncongruent executives introduce the popular policy \( A \) if they have strong reelection concerns and follow their preferences otherwise. This happens because voters’ reelection strategies require that the popular policy be proposed and approved. Issues for which this second type of equilibrium occurs may be thought of as value issues because voters are sufficiently confident that their assessment of policy alternatives is correct to condition the survival of the executive on promoting their ex ante preferred policy. We state these results formally in the next proposition, the proof of which is in the appendix. All results are understood to refer to behavior along the equilibrium path.

**Proposition 1** Depending on the values of the parameters, two types of executive behavior can occur under direct control with no feedback. For technical issues congruent executives behave optimally, noncongruent executives behave corruptly and voters reelect the executive with probability one regardless of the policy introduced. For value issues both congruent and noncongruent executives pander to the electorate if their private benefit is below \( \delta (R_e + \bar{x}) \) and follow their preferences otherwise; voters reelect the executive if and only if the popular policy \( A \) was introduced in period one.

To understand the logic behind this equilibrium it is useful to start with the incentives of the assembly. Assemblies care first and foremost about reelection. Voters thus can induce assemblies to vote on the proposal submitted by the executive as they themselves would have voted, by reelecting with a high probability those assemblies that follow voters’ preferences.\(^{26}\) Both assembly types then vote in the required manner with equal probability. This pliant behavior is beneficial for voters in terms of obtaining the desired outcome, either the proposal or the status quo, but precludes a better selection of assembly types into the second period. The best that voters can do therefore

\(^{26}\)In the appendix we show that independence of types implies that voters’ reelection rule for the assembly depends only on the assembly vote on the current proposal. This is not in general the case if types are correlated.
is to employ a reelection strategy that guarantees their preferred outcome and this is possible by conditioning reelection of the assembly solely on the assembly vote.

Just as with their vote on the assembly, in their decision whether to reelect the incumbent executive voters act prospectively since at elections time they can no longer affect the past period’s outcome. Their objective in casting their second vote is to prevent a low quality executive from continuing in office for another term. If the executive introduced the popular policy in period one voters’ beliefs that the executive is congruent are reinforced because, on the one hand, they believe it is more likely that they are in state $A$ and, on the other hand, it is congruent types that are most willing to propose $A$ when this policy is optimal. Thus voters reelect the incumbent with probability one when the popular policy is introduced.

If the unpopular policy $B$ is introduced, however, voters do not necessarily vote the executive out despite the fact that his reputation has weakened below that of his challenger:

$$\pi_e(B) = \frac{\pi (1 - p)}{\pi (1 - p) + (1 - \pi) p} \quad (< \pi).$$

Whether or not the executive is given a new term in this case depends on how valuable the information revealed through the executive’s proposal is for second period voter welfare. To see this suppose the executive’s period one proposal of $B$ will completely reveal its type at the beginning of the second period when the state becomes known.\footnote{This happens whenever one type proposes $A$ with probability one in state $B$.} If this is the case then voters may find that on average they can expect a better second period outcome if they reelect since the assembly’s knowledge of the executive’s type improves its control of executive proposal power. The condition for this to happen defines the cutoff level $p^*(\pi)$ that separates technical from value issues and is given by:

$$\pi \tilde{\pi}_e(B) - (1 - \pi) [1 - \tilde{\pi}_e(B)] \geq \pi (2\pi - 1)$$

where $\tilde{\pi}_e(B)$ is defined in equation (11).\footnote{Note that a necessary condition for this inequality to hold is $\tilde{\pi}_e(B) \geq \frac{1}{2}$, or equivalently $\tilde{p}(B) \leq \frac{1}{2}$. In words, seeing an executive introduce the unpopular policy leads voters to believe that $B$ is more likely the optimal policy.} The left-hand side of the inequality in (12) is voters’ expected payoff from reelecting an incumbent that proposed $B$ and the right-hand side is their expected payoff from electing the challenger.\footnote{If the incumbent executive continues in office voters expect either the optimal policy, if the two branches are congruent, or the suboptimal policy, if both are noncongruent. If instead a new executive assumes office, voters expect a change in status quo only if the assembly is congruent, because a noncongruent assembly blocks all initiatives of a new executive.}

As long as condition (12) holds voters reelect the incumbent executive regardless of its behavior in office in period one. This reelection rule, although generating complete separation of executive types within states - both types follow their preferences - does not achieve any screening of executives and thus results in an inferior equilibrium outcome in which there is neither correction of noncongruent executives’ behavior in the first period, nor selection of congruent types in the second
period.

When the condition does not hold voters’ reelection rule takes a retrospective form: voters reelect the incumbent if and only if it introduces the popular policy \( A \) in period one. This rule creates the electoral incentive for both executive types to propose the popular policy regardless of the state; they do so whenever private benefits are smaller than their reservation value:

\[
X < \delta (R_e + \bar{x})
\]

and follow their preferences otherwise. Compared to executive behavior in the first type of equilibrium, in this equilibrium noncongruent types behave better - since they choose the optimal policy with positive probability in state \( A \) - but this comes at the cost of distorting the incentives of congruent types.

We now ask how the executive’s incentives change at the end of the term when its survival depends on maintaining the continuous confidence of an elected assembly. The next proposition establishes that under a system in which the executive is appointed the end of the term produces no distortion in the behavior of congruent executive types. Moreover, it induces noncongruent types with strong reelection concerns to behave optimally as well.

**Proposition 2** Under hierarchical control with no feedback congruent executives represent voter preferences. Noncongruent executives are responsive when the private benefit from following their preferences is smaller than \( \delta \pi (R_e + \bar{x}) \) and behave corruptly otherwise. At the confidence vote stage congruent assemblies reappoint the executive if and only if its proposal at the first policy stage was optimal; noncongruent assemblies reappoint the incumbent executive regardless of its behavior in period one.

The key to understanding this equilibrium outcome is to observe that at the confidence vote stage in period two the assembly, whether continuing from period one or newly elected, knows whether the incumbent executive’s first period behavior was optimal. Moreover, at that stage it is also known that congruent executives are more likely to behave optimally than noncongruent types. Assembly posterior beliefs about the incumbent’s type therefore satisfy:

\[
\bar{\pi}_e (z \mid s) > \pi \iff z = s
\]

which implies that congruent assemblies will reappoint the executive if and only if its behavior was optimal whereas noncongruent assemblies strictly prefer to reappoint an executive whose behavior was suboptimal but are indifferent between reappointing and dismissing an executive that behaved optimally. There are thus multiple equilibria depending on the choice of noncongruent assemblies at the confidence vote stage. The equilibrium that maximizes executive performance is the one in which noncongruent assemblies do reappoint an executive that behaved optimally. This does not
affect second period outcomes, since the noncongruent assembly will block second period executive proposals anyway, but it does affect first period payoffs by giving noncongruent executives a stronger incentive to behave optimally.30

At elections time voters act prospectively. Their goal is to improve the likelihood that the assembly of the second period is congruent. Since assembly and executive types are independent voters’ only source of information about the incumbent assembly’s type is assembly voting behavior at the policy stage. Thus they condition reelection of the assembly exclusively on its first period vote. The assembly behavior that produces the best expected outcome for voters is then similar to that under direct control: assemblies approve with probability one the policy that voters favor and are reelected for doing so.

The equilibria discussed above reveal significant differences in executive behavior under the two systems of delegation. With direct control the executive acts unconstrained if issues are technical and has a strong incentive to pander to public opinion for issues that voters feel strongly about. By contrast, under hierarchical control we see that strong reelection concerns, \( X < \delta \pi (R_e + \bar{x}) \), induce optimal executive behavior; however, if reelection is relatively unimportant noncongruent executives will act corruptly. The threshold that determines noncongruent executives’ decision to pursue reelection is below their reservation value because they can get away with nonoptimal behavior if the assembly is itself noncongruent.

First period executive behavior highlights the moral hazard correcting properties of each accountability mechanism. There is, however, a second dimension of voter control that is of equal importance, namely the extent to which each system prevents adverse selection. There generally is, however, an inherent tradeoff between the two goals. More discipline necessarily hinders selection because voters are less likely to be able to distinguish between types (Besley 2005). The effectiveness of an accountability mechanism thus crucially depends on the particular manner in which this tradeoff is resolved.

The next proposition establishes that when there is no policy feedback a hierarchical accountability mechanism cannot be dominated in terms of overall executive performance.

**Proposition 3** For technical issues hierarchical control dominates direct control both in terms of executive discipline and in terms of executive selection. For value issues hierarchical control dominates direct control both in terms of executive discipline and in terms of executive selection if and only if \( p \leq \pi \). When \( p > \pi \) neither institution is dominant by both criteria; furthermore in this case hierarchical control can, if \( p \) remains sufficiently small, and direct control cannot, be dominant

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30If a noncongruent assembly reappoints with probability \( \gamma \) an executive whose first period behavior is optimal then congruent executives will still follow their preferences while noncongruent executives are responsive whenever

\[
X < \delta \left[ \pi - (1 - \gamma) (1 - \pi) \right] (R_e + \bar{x})
\]  

which is increasing in \( \gamma \).
in terms of overall executive performance.

If issues are technical the executive acts unconstrained under direct control and is reelected with probability one. Executive discipline and selection are then equal to the expected quality of a new executive:

\[ \Theta_1^D = \Theta_2^D = 2\pi - 1. \] (16)

Under hierarchical control there is pooling on optimal behavior if \( 0 < X < \delta \pi (R_e + \bar{x}) \) and complete separation otherwise. Discipline and selection are, respectively:

\[ \Theta_1^H = G[\delta \pi (R_e + \bar{x})] + (2\pi - 1) \{ 1 - G[\delta \pi (R_e + \bar{x})] \} \] (17)

and

\[ \Theta_2^H = (2\pi - 1) G[\delta \pi (R_e + \bar{x})] + \{ \pi + (1 - \pi) [\pi (2\pi - 1) - (1 - \pi)] \} \{ 1 - G[\delta \pi (R_e + \bar{x})] \} \] (18)

both strictly larger than the corresponding expressions under direct control.

It is worth noting at this point that even when reelection concerns are weak, and consequently complete separation of types occurs under hierarchical control, selection is superior under this mechanism:

\[ \Theta_2^H \mid_{\delta \pi (R_e + \bar{x}) < X < x_M} - \Theta_2^D = 2\pi^2 (1 - \pi). \] (19)

This failure of selection under direct control stems from the very institutional structure of direct delegation since it does not allow for the removal of the agent after elections even if his type has been completely revealed. The only check on executive power remains the willingness of the assembly to maintain the status quo.\(^{32,33}\)

For value issues executive discipline and selection under direct control are, respectively:

\[ \Theta_1^D = (2\pi - 1) G[\delta (R_e + \bar{x})] + (2\pi - 1) \{ 1 - G[\delta (R_e + \bar{x})] \} \] (20)

---

\(^{31}\)The common value in equation (16) can also be interpreted as voters’ expected utility when the technical decision is made by an unaccountable official.

\(^{32}\)In an influential paper that sparked the contemporary debate on the relative merits of presidentialism and parliamentarism, Linz (1994) goes so far as to argue that the constitutional design of presidentialism undermines democratic stability. This is because an unsatisfied electorate or congress have to wait until the chief executive’s term expires. The "temporal rigidity" of the presidential constitution thus makes it prone to divided government, deadlock and crises of governability.

\(^{33}\)In the United States there have historically been attempts to correct this problem, the most recent in the 1987 proposal of the Committee on the Constitutional System. The solution advanced was to introduce a rule of mutual dismissal: "If it were possible for a President to call new elections, or for Congress to do so, we would have a mechanism for resolving deadlocks over fundamental policy issues" (page 16). A similar provision was present in the Israeli Constitution after the introduction of a directly elected prime minister in 1996.
and

\[ \Theta_2^D = (2\pi - 1) G [\delta (R_e + \bar{x})] + \\
+ \{(1 - p - \pi) + [\pi (1 - p) + (1 - \pi) p] (2\pi - 1)\} \{1 - G [\delta (R_e + \bar{x})]\} . \]

Then \( \Theta_1^H > \Theta_1^D \) for all \( G \) if and only if \( p \leq \pi \). Furthermore, when this condition holds it is also true that \( \Theta_2^H > \Theta_2^D \) for all \( G \). When \( p > \pi \) neither institution is dominant on both counts because if executive benefits are low, \( 0 < X < \delta \pi (R_e + \bar{x}) \), hierarchical control is superior in terms of discipline while if they are larger, \( \delta \pi (R_e + \bar{x}) < X < \delta (R_e + \bar{x}) \), direct control is superior in terms of discipline. Intuitively if \( p \) is larger than \( \pi \) it is better in expectation to have the politicians pander (resulting in an expected payoff of \( 2p - 1 \)) than to let politicians decide according to their preferences (which yields a payoff \( 2\pi - 1 \)). For these parameter values pandering can be thought of as an intermediate form of responsiveness.\(^{34}\)

If \( p > \pi \) direct control cannot be dominant in terms of overall executive performance because if private benefits are below \( \delta \pi (R_e + \bar{x}) \) hierarchical control does strictly better by this criterion. However, hierarchical control can remain dominant in terms of overall executive performance if \( p \) is not too large because even if voters believe that reelection concerns are weak hierarchical control can do at least as well as direct control due to its superior selection properties.

4 Accountability with Policy Feedback

In this section we compare executive incentives in the two systems of delegation when policy issues arise earlier in the electoral term or more generally when the agenda of the government contains policy alternatives whose effects are expected to be realized in a short period of time since their adoption. To capture this strategic situation we modify the information structure of the preceding section by assuming that in period one, after the policy stage but before elections, the assembly learns the state with probability one and voters receive the same information with some fixed probability \( \varphi' \); where \( 0 \leq \varphi' \leq 1 \).

Allowing for the possibility that both principals are informed at elections time leads to several important new results. First, under direct control the incentive to pander to public opinion starts to lose its force because with positive probability voters will condition executive reelection on promoting the optimal, rather than the popular, policy alternative. However, opportunistic behavior vanishes completely only when voters are known to be perfectly informed, \( \varphi = 1 \). Second, the superior information held by principals leads in each system of delegation to an improvement both in discipline and in the selection of executives. We find that this improvement occurs faster

\[^{34}\] The distinction between pandering and responsiveness is often blurred in the political agency literature. For instance Jacobs and Shapiro (2000) define pandering as following centrist voters’ preferences. We use the terminology of Canes-Wrone et al. (2001) and Maskin and Tirole (2004) as is apparent from the definitions given in section two.
under hierarchical control: if it is sufficiently likely that voters will be informed at elections time
the game of hierarchical control yields the performance-maximizing equilibrium outcome that can
be achieved under the informational constraints of the model; under direct control this outcome
occurs only with a perfectly informed electorate. This result suggests that the hierarchical structure
makes possible more control with less of a requirement for voters to become informed. Third, the
normative comparative results from the no feedback case continue to hold and are even strength-
ened: if $\phi$ is sufficiently large hierarchical control dominates direct control for both technical and
value issues.

We start with the case of direct control. Under this system executive behavior when issues are
technical - defined by the condition $p \leq p^* (\pi, \phi)$ - becomes more responsive than in the case of no
feedback (cf. Proposition 1). Congruent executives still follow their preferences however noncon-
gruent executives now also behave optimally with positive probability; the probability of optimal
behavior is increasing in the quality of the government’s performance measurement, captured by
the parameter $\phi$. Moreover, now there is also some screening of noncongruent executives that im-
proves the average quality of the executive serving in the second period. With value issues the
improvement in executive discipline takes the form of a decrease in the likelihood of opportunistic
behavior by both types whose place is taken by optimal behavior. Pandering is no longer an elec-
torally profitable strategy for a congruent executive if $\phi$ exceeds a half, however the incentive to
pander is still present, though weaker as $\phi$ becomes closer to one, for noncongruent types. Formally
we have the following result.

**Proposition 4** Consider the game of direct control with the possibility of an informed electorate.
For technical issues congruent executives behave optimally; noncongruent executives behave opti-
mally if private benefits are below $\delta \phi (R_e + \bar{x})$ and act corruptly otherwise. When voters do not
have feedback they reelect the executive regardless of the alternative introduced; if they are informed
they reelect conditional on optimal behavior. For value issues there are two cases. If feedback is
slow, $0 \leq \phi < \frac{1}{2}$, congruent executives pander when

$$ X < \delta [(1 - \phi)(1 - p) - \phi] (R_e + \bar{x}) \quad (22) $$

and behave optimally otherwise; noncongruent executives pander if

$$ X < \delta [(1 - \phi)(1 - p) + \phi] (R_e + \bar{x}) \quad (23) $$

and behave corruptly otherwise. If feedback is faster, $\frac{1}{2} \leq \phi \leq 1$, congruent executives behave
optimally with probability one; noncongruent executives are responsive if

$$ X < \delta [\phi - (1 - \phi)(1 - p)] (R_e + \bar{x}) \quad (24) $$
pander if

$$\delta [\varphi - (1 - \varphi)(1 - \rho)] (R_e + \bar{x}) < X < \delta [\varphi + (1 - \varphi)(1 - \rho)] (R_e + \bar{x})$$  \hspace{1cm} (25)$$

and are corrupt otherwise. Voters without feedback reelect the incumbent executive with probability one if the popular policy is introduced and with probability $\rho$ ($<1$) if $B$ is introduced; informed voters reelect the executive conditional on optimal behavior.

When voters have received feedback their unique best response is to reelect only those executives that behaved optimally in period one. To see this, consider the executive’s payoff change caused by a deviation from proposing the suboptimal to proposing the optimal policy. For instance, in state $A$ for an executive of type $\theta_e$ it is (for state $B$ the argument is completely symmetric):

$$\Delta (A, \theta_e) = X \theta_e + \delta \{ \varphi [\hat{\rho}_e (A | A) - \hat{\rho}_e (B | A)] + (1 - \varphi) [\hat{\rho}_e (A) - \hat{\rho}_e (B)] \} (R_e + \bar{x})$$  \hspace{1cm} (26)$$

where $\hat{\rho}_e (z | s)$ is the ex ante expected likelihood of reelection for an executive that makes proposal $z$ in state $s$.\textsuperscript{35} Note that the congruent type gains more by choosing $A$, since $\Delta (A, 1) - \Delta (A, -1) > 0$, which implies, by the assumption of full support of the distribution of $X$, that the congruent type is strictly more willing to introduce the optimal policy, in this particular case $A$, than a noncongruent executive would be.\textsuperscript{36} This implies that $\hat{\pi}_e (A | A) > \pi > \hat{\pi}_e (B | A)$, namely the executive’s reputation improves whenever the optimal proposal is observed. Thus, independent of assembly actions, it is a unique best response for voters to reelect the executive conditional on the optimal policy being introduced.

If voters have not received feedback by the time of elections their behavior mirrors the case of no feedback. When the popular policy is proposed in period one voters’ beliefs that the state is $A$ and that the executive is congruent are reinforced and they reelect the incumbent executive with probability one. If a $B$ proposal has been made, however, voters’ decision depends on the strength of their prior beliefs that they are in state $A$, or equivalently on the type of issue on the government agenda. If the issue is technical they return the executive to office with probability one; if they strongly believe that policy $A$ is optimal then they are either indifferent or against giving the executive another term.

It is also worth pointing out an informational property of the direct delegation structure. Even though the assembly possesses superior information ahead of elections - it has learnt the state -

\textsuperscript{35}Formally the expected probability of executive reelection in state $s$ is given by:

$$\hat{\rho}_e (z | s) = \pi \{ \rho_e (z, Y \mid s) \eta (z, 1) + \rho_e (z, N \mid s) [1 - \eta (z, 1)] \} + (1 - \pi) \{ \rho_e (z, Y \mid s) \eta (z, -1) + \rho_e (z, N \mid s) [1 - \eta (z, -1)] \}$$.

Note that it depends on voters’ as well as assemblies’ strategies.

\textsuperscript{36}If in state $A$ a congruent executive proposes the popular policy $A$ with a probability that is positive but smaller than one then a noncongruent type will propose $B$ with probability one and, conversely, if a noncongruent type proposes $A$ it must be doing so with a probability smaller than one, since $P \{X > \delta (R_e + \bar{x})\} > 0$, and consequently a congruent type proposes $A$ with probability one.

23
this does not affect the equilibrium outcome, i.e. the equilibrium outcome would be identical even if the assembly did not have this information. The reason why this occurs in our model is simply that the assembly does not have the opportunity to act in any way on this information. In some sense this information is lost and from this perspective the equilibrium outcome is inefficient. We should observe, however, that even if the assembly had the option to make a public announcement regarding the state the equilibrium outcome would still remain unaffected unless there was a way to make the announcement credibly.

We turn now to the game of hierarchical control. The arrival of information about the state triggers a confidence vote before elections. According to the type of assembly behavior at the confidence vote stage there are three types of perfect Bayesian equilibria of this game. In a pooling equilibrium both assembly types make the same decision and this decision is the same across states. In a crosspooling equilibrium both assembly types pool on the same decision but the decision differs across states: one crosspooling equilibrium is responsive, in the sense that the assembly votes as voters would vote if they had the information and authority namely it reappoints if and only if the executive behaved optimally; the other is divergent from voters’ interests, since reappointment is conditional on suboptimal behavior. Finally, there are two types of semiseparating equilibria in which congruent assemblies adopt voters’ preferred decision while noncongruent assemblies mix between reappointment and dismissal in one of the states: if feedback is slow noncongruent assemblies mix in one state and vote according to their preferences in the other state; if feedback is faster noncongruent assemblies mix in one state and vote according to voter preferences in the other state. Of the three types only pooling equilibria exist for all parameter values. A sufficient condition for the responsive crosspooling equilibrium to exist is \( \varphi \geq \frac{1}{n_a + 1} \).

**Proposition 5** In the game of hierarchical control with the possibility of an informed electorate the equilibrium can take two forms. If the responsive crosspooling equilibrium does not exist the equilibrium is pooling. Congruent executives’ behavior is optimal with probability one; noncongruent executives behave optimally if private benefits are below \( \delta \pi (R_e + \bar{x}) \) and are corrupt otherwise. At the first confidence vote the incumbent executive is reappointed with probability one in both states. If the responsive crosspooling equilibrium exists congruent executives behave optimally; noncongruent executives are responsive if their private benefits are below \( \delta \pi (R_e + \bar{x}) \) and are corrupt otherwise. At the first confidence vote the assembly reappoints the executive if and only if its behavior was optimal at the policy stage.

At the confidence vote stage of period one the two assembly types have opposite interests. If the executive behaved optimally a congruent assembly strictly prefers to reappoint, while a noncongruent type strictly prefers to dismiss the incumbent executive. However, separation cannot occur in equilibrium because it would imply that a noncongruent assembly cannot gain reelection.
and so it would deviate with positive probability to mimic a congruent type.\textsuperscript{37} Thus, in equilibrium there must be a certain degree of pooling, some of these pooling strategies more conducive to voter satisfaction than others. The proposition says that if politicians think it sufficiently likely that voters are informed at elections time \( \left( \varphi \geq \frac{1}{R_a + 1} \right) \) assemblies can be induced to play an equilibrium that replicates voters’ preferred executive reappointment rule if they were perfectly informed about the state and had the authority to remove the executive.

Voters can induce assembly preferences that result in this responsive behavior by employing the following assembly reelection strategy: if not informed, reelect the assembly if and only if it votes on the executive’s proposal as voters would vote themselves (and therefore regardless of the decision made at the confidence stage); if informed, reelect the assembly if and only if it voted at the policy stage \textit{and} at the confidence stage as voters would vote themselves had they had the authority. This reelection rule allows congruent assemblies to express their preferences without fear of electoral consequences and at the same time constrains noncongruent assemblies to use their dismissal power optimally.

To see this suppose that a noncongruent assembly is in office in period one and, on the basis of the information received about the state, has established that the executive is also noncongruent: \( \pi_e(z \mid s) = 0 \). The assembly then has the option to reappoint the executive, which results in a loss of office if voters become informed, however if voters do not receive feedback the assembly stays in power and also sees its preferred policy implemented in period two. If it chooses to dismiss the executive then it will be reelected for doing what voters want but will have to content itself with the status quo under the new executive in period two. This tension is resolved in the interest of voters whenever:

\[
(1 - \varphi) (R_a + 1) \leq R_a
\]

which is precisely the sufficient condition for the existence of a responsive crosspooling equilibrium that achieves voters’ preferred executive survival rule.\textsuperscript{38}

In a responsive crosspooling equilibrium the assembly does not have an incentive to revise the outcome of the first confidence vote after elections passed. In a pooling equilibrium this is not the case. The executive is reappointed before elections but this decision is reversed by a congruent assembly in period two if the executive did in fact behave suboptimally in period one.

We now compare the normative properties of the equilibria discussed in this section. The results

\textsuperscript{37}Assembly behavior at the confidence vote cannot change the first period policy outcome and is thus driven solely by the prospect of reelection and possibly expectations of future policy outcomes.

\textsuperscript{38}The necessary conditions for the existence of this equilibrium are \( \varphi \geq \frac{1}{2(R_a + 1)} \) and

\[
\delta \left\{ \bar{p}(z) \left( \frac{R_a}{R_a + 1} + \varphi \right) + \left[ 1 - \bar{p}(z) \right] \right\} R_a \geq \max \left\{ 2\bar{p}(z) - 1, 1 - 2\bar{p}(z) \right\}
\]

for \( z = A, B \). The second condition says that at the policy stage a noncongruent assembly must weakly prefer to pursue reelection over obtaining their preferred policy outcome in period one.
are summarized in the following proposition.

**Proposition 6** Suppose $\varphi < 1$. If the responsive crosspooling equilibrium does not exist under hierarchical control then for technical issues hierarchical control dominates direct control in terms of executive discipline and executive overall performance; for value issues hierarchical control can dominate direct control, if $p$ remains small or $p$ remains large, however direct control cannot dominate hierarchical control. If the responsive crosspooling equilibrium does exist under hierarchical control then for both technical and value issues hierarchical control dominates direct control in terms of executive discipline and executive overall performance. When $\varphi = 1$ the two institutions produce the same equilibrium outcome and thus neither is dominant.

The superiority of hierarchical control for all issues when feedback is sufficiently fast should not be surprising. The responsive crosspooling equilibrium attains the upper bound on executive discipline that can be enforced by a principal under the informational constraints of the model: the executive behaves optimally for benefits below its reservation value $\delta (R_e + \bar{x})$ and follows its preferences otherwise. Under direct control this bound is reached if and only if feedback is certain, $\varphi = 1$. We refer the reader to the appendix for a verification of this claim and here we briefly discuss the case of slow feedback when the responsive crosspooling equilibrium does not exist.

Under direct control executive performance with technical issues is increasing in the speed of feedback $\varphi$ and is given by:

$$\Theta^D = 2\pi G [\delta \varphi (R_e + \bar{x})] + 2 [\pi - (1 - \pi) (1 - \varphi \pi)] \{1 - G [\delta \varphi (R_e + \bar{x})]\}.$$  

The corresponding expression under hierarchical control is:

$$\Theta^H = 2\pi G [\delta \pi (R_e + \bar{x})] + 2 [\pi - (1 - \pi) (1 - \varphi^2)] \{1 - G [\delta \pi (R_e + \bar{x})]\}.$$  

The first term in each equation measures executive performance when executives pool on the optimal policy while the second term captures performance when there is separation by preferred policies. We observe that separation occurs earlier under direct control since

$$\varphi < \frac{1}{R_a + 1} < \frac{1}{2} < \pi$$

implying that $\Theta^H > \Theta^D$ for all voter beliefs $G$ and so hierarchical control dominates due to superior executive discipline in period one.

With regard to value issues, direct control cannot be dominant because if voters believe that the executive’s private benefits cannot exceed $\delta \pi (R_e + \bar{x})$ then hierarchical control is strictly superior. To see this note that for executive benefits below this value discipline is at its highest under this system, $\Theta^H_1 = 1$, while under direct control either the noncongruent type panders or both types
pander, resulting in a loss of discipline that cannot be compensated by a possibly superior selection of types into the second period.

5  Hierarchical Delegation with Partisanship

Some polities whose government is based on a hierarchical structure of delegation can see various degrees of collusion develop between the direct and the indirect agent, for instance between the legislative majority and the executive branch. Collusion may be sustained through several mechanisms. At the level of national politics the most common form of collusion is political partisanship. Leaders of political parties competing for executive power have access to instruments that can be used to secure the support of party members who win legislative seats, such as control over the funding of political campaigns or the right to selection and deselection of candidates for parliamentary elections (Strøm 2003). Collusion can also arise as a consequence of executive procedural prerogatives, such as the confidence vote procedure (Diermeier and Feddersen 1998) or the right to dissolve parliament and call for new elections.\(^{39}\) Partisanship is empirically more prevalent under plurality rule, single member district, electoral systems which lead to the formation of a few competitive parties. The parliamentary scene in then one in which the chief executive and his or her cabinet are often backed by a disciplined parliamentary majority of their own party. The prime example of this political environment is United Kingdom’s majoritarian parliamentary system, also known as the Westminster model (Lijphart 1999).

The fusion of executive and legislative powers was decried very early on in the modern history of democratic government by political activists and political scientists alike. In the United States the urban reform movement of the end of the nineteenth century proposed a model of city government with nonpartisan ballots, a hierarchical structure of delegation (from voters to city council to city manager), and at-large elections that were to be held separately from state and national elections. The leading premise of the reformers was that the root cause of corruption and machine politics in city halls across the country was partisan politics. In Europe at the beginning of the twentieth century Ostrogorski (1902) argued that the growing importance of parties as political actors undermined political accountability. He maintained that under a cohesive, party-based, parliamentary government the control of the executive is almost nonexistent since the responsibility of the members of parliament "disappears in that of the party" (page 714). In the language of our theoretical framework these views essentially claim that collusion between the branches of government fosters moral hazard.\(^{40}\)

\(^{39}\)The confidence vote procedure should not be confused with the other institution that features prominently in this paper, namely the vote of no confidence or censure. The former is the prerogative of the chief executive to link the survival of the government to the approval by parliament of a particularly consequential policy measure. The latter is a constitutional prerogative of parliament to dismiss the executive "at virtually any time and for whatever reason they deem sufficient" (Strøm 2003).

\(^{40}\)A more recent example of public suspicion of the effects of collusion between branches is this excerpt from the
In this section we use the model developed so far to explore the consequences of partisanship on executive accountability in a hierarchical system of delegation. We adopt a simple, reduced-form, approach to modeling partisanship between executive and assembly. We assume that at the beginning of period one the assembly's and the executive's types are perfectly correlated and the assembly can, at a confidence vote stage, dismiss the executive and replace it with an executive of its own type. We do not presume that a strict correlation of underlying preferences must exist between the two branches but rather that an (unmodeled) mechanism is in place that can induce one of the branches to act as if it had the exact policy preferences of the other.

The presence of partisanship along the chain of delegation does affect the equilibrium of this game and the qualitative change largely confirms the views presented above. We find that partisanship decreases the level of discipline that can be enforced on noncongruent executive types by increasing the incidence of either pandering or corruption. Furthermore, this effect is stronger the less likely voters are to become informed prior to elections. We also find that noncongruent executives' incentives may lead them to pander to public opinion. In the case of no feedback this is the only form in which they respond to voter preferences. When the normative properties of the new equilibria are contrasted with those of the game of direct control, however, we still cannot reject the conclusion that direct control cannot dominate hierarchical control, although the instances in which hierarchical control unequivocally dominates direct control are now more limited.

We start with the case of no feedback before elections. The following proposition is the counterpart of Proposition 3 when there is partisanship in the political environment.

**Proposition 7** For technical issues hierarchical control dominates direct control in terms of executive discipline and overall executive performance. For value issues hierarchical control dominates direct control in terms of executive discipline and executive overall performance if and only if $p \leq \pi$. When $p > \pi$ hierarchical control can, if $p$ remains small, and direct control cannot, be dominant in terms of overall executive performance.

Consider the following equilibrium under hierarchical control with partisanship. Congruent executives behave optimally with probability one; noncongruent executives pander when private benefits are below $\delta \psi(G)(R_e + \bar{x})$, where:

$$\psi(G) = \sup_{[0,1]} \left\{ \psi \mid \frac{\pi p}{\pi p + G[\delta \psi(R_e + \bar{x})]} (1 - \pi) p + (1 - \pi) (1 - p) \geq \pi \right\}$$

and act corruptly otherwise. The assembly approves all executive proposals. Voters reelect the

August 2005 ruling of Judge William Chandler, State of Delaware’s Chancellor, in the case brought by Walt Disney Company’s shareholders against the company’s CEO Michael Eisner over a hiring decision. "... Eisner to a large extent is responsible for the failings in process that infected and handicapped the board’s decision-making abilities. Eisner stacked his (and I intentionally write “his” as opposed to “the company’s”) board of directors with friends and other acquaintances who, though not necessarily beholden to him in a legal sense, were certainly more willing to accede to his wishes and support him unconditionally than truly independent directors."

28
assembly if and only if the executive proposed the popular policy $A$ and the assembly approved it. At the confidence vote stage in period two congruent assemblies, if reelected, reappoint the executive if and only if it behaved optimally in period one; noncongruent assemblies reappoint with probability $\psi(G)$ in state $A$ and dismiss in state $B$ if the executive behaved optimally, and in both states it reappoints with probability one if the executive did not behave optimally in period one. Newly elected assemblies do not reappoint the executive in either state. At the second policy stage the executive proposes its preferred policy and the assembly approves it.

Unlike in the case of independent types here voters condition reelection of the government at least partly on executive actions because these reveal information about the executive and, due to the correlation of types, about voters’ direct agent, the assembly. Any incumbent assembly, if reelected, is indifferent between reappointing the incumbent executive and dismissing it since the replacement can be chosen to be of the assembly’s type.

However, the assembly’s reappointment strategy does affect its overall welfare in the game because it influences executive first period behavior and thus assembly first period payoffs. An assembly faces the following tradeoff. If it reappoints the executive with a high probability for responding to voters’ preferences the executive will have a strong incentive to pander to voters thereby increasing the assembly’s own chances of reelection; at the same time this strategy decreases the likelihood that the assembly’s preferred policy is adopted in period one. If the assembly reappoints the executive with a low probability for being responsive to voters’ preferences the executive’s incentive to pander is reduced; the assembly obtains its preferred policy more frequently but its chances of staying in power are reduced. Several reappointment strategies, in which a congruent assembly punishes the executive for introducing $A$ in state $B$ and a noncongruent assembly punishes the executive for introducing $A$ in state $A$, thus seem reasonable.\(^\text{41}\) In the equilibrium above both types of assembly punish to some extent the executive for behaving in a manner that affects assembly policy payoffs.

A newly elected assembly can always expect its preferred policy outcome in period two by appointing an executive of its own type. For this reason a newly elected assembly can reappoint the incumbent executive in an equilibrium only if the incumbent’ type was revealed within that state and is identical to that of the incoming assembly. This requires that at least one executive type chooses one policy with probability one in that state.

It is useful to compare this result with Proposition 3. There hierarchical control with independent types dominates both in terms of discipline and selection. In an environment with partisanship the comparative advantage of hierarchical control remains discipline because congruent executives are allowed to follow their preferences; however selection deteriorates because it is driven by an

\(^{41}\)It is not reasonable to expect that a congruent assembly penalizes the executive for introducing $A$ in state $A$ because this choice benefits the assembly both in terms of policy and in terms of reelection. Analogously a noncongruent assembly should not be expected to punish the executive for introducing $A$ in state $B$.\)
assembly reelection rule that requires that the popular policy be adopted. This reelection rule leads to the replacement of a congruent government in state $B$. Without partisanship this event cannot take place because in that environment voters condition reelection of the assembly exclusively on its voting behavior, which is responsive with probability one, and further the assembly conditions reappointment of the executive on optimal behavior. Thus the probability of a Type I error when types are independent is zero.

We now turn to the case of feedback in period one.

**Proposition 8** Suppose $\varphi < 1$. Then direct control cannot dominate hierarchical control. If $\frac{1}{\delta (R_a + 1)} \leq \varphi < 1$ then for technical issues hierarchical control dominates direct control in terms of executive discipline and executive overall performance. For value issues hierarchical control can dominate direct control if $p$ remains small or $\rho$ remains large. When $\varphi = 1$ the two institutions produce the same equilibrium outcome and thus neither is dominant.

Consider the following equilibrium under hierarchical control with partisanship and the possibility of an informed electorate. Congruent executives behave optimally with probability one; noncongruent executives behave optimally if $X < \delta \varphi (R_e + \bar{x})$, pander if $\delta \varphi (R_e + \bar{x}) < X < \delta \psi (G) (R_e + \bar{x})$, where:

$$\psi (G) = \sup_{[0,1]} \left\{ \psi \mid \frac{\pi p}{\pi p + G [\delta \psi (R_e + \bar{x})] (1 - \pi) p + \{1 - G [\delta \varphi (R_e + \bar{x})]\} (1 - \pi) (1 - p) \geq \pi \right\}$$

(34)

and are corrupt otherwise. The assembly approves all executive proposals. After learning the state the assembly reappoints the executive if and only if it introduced the optimal alternative. If voters have not received feedback they reelect the assembly if and only if the executive introduced the popular policy $A$ and the assembly approved it. If voters are informed about the state they reelect the assembly if and only if the executive introduced the optimal policy and the assembly approved it. In period two a reelected congruent assembly reappoints the executive if and only if it introduced the optimal policy in period one; a reelected noncongruent assembly reappoints the executive with probability $\psi (G)$ in state $A$ after proposal $A$ and with probability one otherwise. A newly elected assembly does not reappoint the incumbent executive. At the second policy stage the executive proposes its preferred policy and the assembly approves it.

This equilibrium exists for all distributions $G$ if and only if $\varphi \geq \frac{1}{\delta (R_a + 1)}$. The reason for this restriction is that if state $B$ is very likely a noncongruent assembly may not find it in its interest to approve an executive proposal of $B$, thereby undoing the pooling that takes place at the voting stage in period one. Suppose the assembly knows the state is $B$. If $B$ is proposed in period one the assembly is not going to be reelected for approving it unless this policy is optimal and voters have received feedback indicating so. However, if the assembly blocks $B$ it will lose power for certain but is content with the status quo. The assembly then approves $B$ when it knew the state were $B$
if and only if $\varphi [-1 + \delta (R_a + 1)] + (1 - \varphi) (-1) \geq 0$ thus mimicking the behavior of the congruent type.

6 Empirical Evidence

A central prediction of our model is that executive performance under direct control may be impaired by an incentive to bias public policy in a direction favored by public perceptions of what is optimal. Moreover, we found that the incentive to pander to public opinion is stronger the less likely voters are to be informed at elections time. Irrespective of the welfare consequences of this type of executive behavior, however, the theoretical argument implies that in systems with a directly elected executive we should observe clearer attempts at promoting popular measures close to elections when compared to systems where the executive is answerable to an independent representative body. In this section we test this hypothesis using panel data from a sample of 119 large US cities over the period 1970-1997. Our empirical strategy is to test for the presence of electoral cycles conditional on the accountability structure of local government.

6.1 Background

There are two major forms of municipal government in large US cities, mayor-council and council-manager, each of which fits one of the two delegation mechanisms analyzed in this paper.\(^{42}\) In mayor-council government both the mayor and councilmembers are directly elected by residents. The mayor is the city’s chief executive and usually serves a renewable term of up to four years. His administrative authority is complete and includes managing the budget, appointing and removing department heads and directing the organization of agency functions. At the same time the mayor heads the political and policymaking agenda and prepares the budget for council approval. The mayor is typically not a member of the council, however he may have the power to veto legislation produced by the council. The city council’s primary role is to debate, amend and vote on the mayor’s proposals.\(^{43}\)

In council-manager cities the council is directly elected and appoints a city manager who assumes executive responsibility for city administration. The manager can be replaced by the council at any time by a simple majority vote. Apart from his administrative duties the manager has a central

\(^{42}\)Large cities are generally considered those having populations of over 100,000 residents. A third form of municipal government that can be found in large cities is the commission form. This form has been historically rare for cities in this category and has become even less common in recent years. In our sample only eight cities have been at some point during the period governed under this form.

\(^{43}\)This form of government was inspired by the model of US state governments, which feature a strong executive office, and is also referred to as the strong mayor form of government. Smaller cities with directly elected mayors tend to divide power more evenly among department heads, the council and the mayor. The commission form mentioned above is characterized by a similar fragmentation of power in that directly elected commissioners are each responsible for policymaking in and administration of a particular area of municipal activity. For a comprehensive discussion of forms of municipal government in the US see Renner and DeSantis (1998).
role in the development of policy alternatives and is the main source of information on policy issues for the council. His policymaking powers include the preparation of the municipal budget and the appointment and removal of department heads. The city council is often elected at large on a nonpartisan ballot and members serve up to four year terms. Shorter terms of office are concurrent while longer terms are often staggered. Its main functions are amending and voting on legislation and monitoring the city manager’s office. Some council-manager cities also have a directly elected mayor who is not however involved in city administration, rather he fulfills strictly ceremonial duties.44

Since the early 1960s a major political issue in large US cities has been the increasing level of the crime rate. This fact is evidenced by national opinion polls that have consistently ranked crime among the top concerns of US citizens. Management of this issue is largely seen by the public as the responsibility of local authorities. Police departments in American cities are organized at the local level with spending on police protection taking a substantial share of the local budget. In mayor-council cities the mayor has the authority to devise a police personnel strategy as well as to appoint and remove the police chief. In cities with the council-manager system these powers belong to the city manager.

If the city’s chief executive is held responsible for police performance in reducing crime, incumbents will have an incentive to maintain a large, and perhaps costly, police force either to prevent criminal incidents during their term or to project a clear anti-crime stance. In light of our model the incentive to increase police personnel is stronger in advance of elections since it may take time for citizens and the council to ascertain whether the hiring of extra police staff was warranted. Levitt (1997) is the first study to document the existence of electoral cycles in police officer hiring in his analysis of a panel of 59 large US cities over the period 1969-1992. Levitt’s goal was to exploit the variation in police staffing induced by elections to identify the causal effect of police on crime.

Although restricting his sample to cities where "the mayor is directly elected" (page 272), only 36 of the selected cities were organized according to the mayor-council system at some point during the sample period. Of the remaining ones 21 were council-manager cities whose mayors, while directly elected, had no authority over the management of police personnel, and two cities have had a commission form of government. We build on Levitt’s analysis by respecifying the empirical model to account for differences in local political institutions and constructing a new enlarged panel of cities. Our goal is to test the hypothesis that electoral cycles in police staffing are larger in cities organized according to the mayor-council system.

44The council-manager system is the creation of the American urban reform movement of the end of the nineteenth century. Since its first application in Stanton, Virginia in 1908, it has become a popular form of government in medium and large US cities. In 2000, 63 percent of US cities with populations of 25,000 or more have incorporated it in their charters. Several US counties have also adopted this form of government as have municipalities in countries such as Canada, United Kingdom, Australia, New Zealand, the Netherlands and Germany.
Table 1 - Summary Statistics, Entire Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Across cities</td>
<td>Within cities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>3,168</td>
<td>480,557</td>
<td>820,816</td>
<td>71,831</td>
<td>7,895,563</td>
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<tr>
<td>Officers per 100,000 residents</td>
<td>3,168</td>
<td>227.4</td>
<td>93.15</td>
<td>26.06</td>
<td>766.9</td>
</tr>
<tr>
<td>(Officers per 100,000 residents)</td>
<td>3,049</td>
<td>1.8183</td>
<td>17.49</td>
<td>17.35</td>
<td>291.65</td>
</tr>
<tr>
<td>Form of government</td>
<td>3,168</td>
<td>0.5205</td>
<td>0.4997</td>
<td>0.0842</td>
<td>1</td>
</tr>
<tr>
<td>Local election year</td>
<td>3,168</td>
<td>0.375</td>
<td>0.4842</td>
<td>0.4694</td>
<td>1</td>
</tr>
<tr>
<td>Total revenues per capita</td>
<td>3,168</td>
<td>1,111.6</td>
<td>715.7</td>
<td>272.8</td>
<td>6,678.6</td>
</tr>
<tr>
<td>Total taxes per capita</td>
<td>3,168</td>
<td>360.8</td>
<td>283.1</td>
<td>94.88</td>
<td>3411.93</td>
</tr>
<tr>
<td>Personal income per capita, MSA</td>
<td>3,168</td>
<td>14,102.2</td>
<td>2,766.2</td>
<td>1,811.2</td>
<td>32,485</td>
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<td>Percent population black</td>
<td>3,168</td>
<td>21.70</td>
<td>17.19</td>
<td>2.77</td>
<td>81.01</td>
</tr>
</tbody>
</table>

Notes: The unit of observation is a city-year. The sample is a panel of 119 historically large US cities over the period 1970-1999. The number of annual observations per city varies between 7 and 30, with an average across cities of 26.62 years, except for the variable officer hiring per 100,000 residents for which it is 25.62. Form of government equals one for mayor-council government, zero otherwise. Total revenues per capita, total taxes per capita and personal income per capita expressed in 1982-84 dollars. MSA (metropolitan statistical area) is as defined by the US Department of Commerce. Percent population black interpolated from the four decennial censuses that span our sample period.

6.2 Data Description

We collected annual data on a panel of 119 historically large US cities between 1970 and 1999. An appendix section provides detailed references to our data sources. Summary statistics for all variables used in the empirical specifications are presented in Table 1. Slightly over a half of all observations are cities with a council-manager form of government. Only a few cities have changed their form of government during the sample period, a feature of the data captured by the small within standard deviation of 0.084. There are on average approximately 227 sworn police officers for every 100,000 residents and they account for about 80 percent of total police employees. The average rate of growth in officer hiring was around 0.8 percent a year.

During the sample period the average frequency of local elections was approximately one every 2.7 years. The indicator variable for a local election takes the value one in a year with mayoral elections in mayor-council cities and a year with council elections in council-manager cities, and zero otherwise. If the election takes place in the first half of the year, January through June, the previous year is coded as an election year, otherwise the current year is indicated. This choice is justified by the fact that the size of the police force is recorded as of October 31 of each year.

45The criterion for inclusion in the panel was the average population rank over the period of 33 years (1970-2002) for which the US Bureau of Census constructed its Historical Database on Individual Government Finances, among cities that were included in all annual surveys.

46The large majority of elections with partisan ballots are organized in November. If a runoff is necessary it typically occurs within a period of a month after the primaries.

47Data on the timing of city council elections in council-manager cities is not available in any systematic form and was inferred from mayoral election dates (which coincide with all or only a part of council elections) and survey data on the city’s form of government collected every five years by the International City/County Management Association (ICMA). The surveys list the term lengths of council members and whether terms are staggered or concurrent.
Thus we expect that any attempts by the executive to hire more officers would be made during a period of several months preceding the election and consequently will be reflected in the police count taking place closest to the month of the election.\textsuperscript{48}

In addition to data on governmental form, elections and police personnel, we employ a number of demographic, fiscal and economic control variables. City-level data on population and percent population black is collected every ten years by the US Bureau of Census. Population numbers are then estimated for intercensal years using demographic formulas. We use the annual population series available in the Historical Database on Local Government Finances which unfortunately are not always yearly i.e. in some years the population estimate of the previous year is reported. The percent of city population that is black is only available for census years and we use a linear interpolation for the remaining years.\textsuperscript{49} We do not expect that these approximations will affect the estimation results since demographic variables even in the US have tended to evolve slowly.

Real personal income is measured in 1982-84 dollars using the consumer price index for all urban consumers and corresponds to the metropolitan statistical area (MSA) to which the city belongs. For cities that are not included in any of the MSAs defined by the US Department of Commerce we use the income per capita series for the state’s nonmetropolitan statistical area. Fiscal data is available annually at the city level. We use two variables to control for fluctuations in a city’s fiscal strength.\textsuperscript{50} Total taxes consist of revenues to the local budget generated through local taxation of residents and business. Total revenues is income collected from own sources and received as intergovernmental (state and federal) grants.

6.3 Empirical Specification and Estimation Results

Table 2 presents mean values, standard deviations and p-values for tests of the null hypothesis that the means of the variables in the leftmost column are equal in the two groups of observations identified by form of government. We find several patterns. First, mayor-council cities in our sample have significantly larger mean populations than council-manager cities as well as larger proportions of black residents. Second, mayor-council cities belong to metropolitan areas with on average 4.5 percent larger average incomes per capita. Another significant difference is the seemingly better ability of mayor-council cities to raise taxes, with 418.98 real dollars per capita

\textsuperscript{48}In adopting this convention we largely follow McCrary (2002) who proposed a recoding of Levitt’s (1997) mayoral elections data.

\textsuperscript{49}To obtain the interpolated series we include the 2000 census data together with the other three censuses that were conducted during the sample period: 1970, 1980, 1990.

\textsuperscript{50}There is a large literature on political budget cycles that finds evidence suggesting that governments use fiscal policy for electoral purposes. At the city level, Veronese (2003) finds that in Italian cities run by mayors tax cuts are disproportionately concentrated in the year preceding the election. In cross-country data Persson and Tabellini (2003) and Brender and Drazen (2004) find evidence of fiscal cycles whose magnitudes do not, however, depend on the form of government. To the extent that such broad fiscal cycles are present and that a city’s fiscal strength is correlated with its ability to hire more police staff it is important to control for this effect. However, we did not find any evidence for the presence of fiscal cycles in aggregate budget items in our data.
Table 2 - Means Comparison t-Tests, by Form of Government

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mayor-council</th>
<th>Council-manager</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs. Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>1,593</td>
<td>1,456</td>
<td>300.441</td>
</tr>
<tr>
<td></td>
<td>(27,322)</td>
<td>(27,322)</td>
<td>(5.654)</td>
</tr>
<tr>
<td>Officers per 100,000 residents</td>
<td>1,593</td>
<td>1,456</td>
<td>191.53</td>
</tr>
<tr>
<td></td>
<td>(2.516)</td>
<td>(1.785)</td>
<td></td>
</tr>
<tr>
<td>Δ(Officers per 100,000 residents)</td>
<td>1,593</td>
<td>1,456</td>
<td>1.318</td>
</tr>
<tr>
<td></td>
<td>(0.4713)</td>
<td>(0.4170)</td>
<td></td>
</tr>
<tr>
<td>Δ(Officers per 100,000 residents), no election</td>
<td>1,143</td>
<td>770</td>
<td>2.023</td>
</tr>
<tr>
<td></td>
<td>(0.5721)</td>
<td>(0.6033)</td>
<td></td>
</tr>
<tr>
<td>Δ(Officers per 100,000 residents), election</td>
<td>450</td>
<td>686</td>
<td>0.5266</td>
</tr>
<tr>
<td></td>
<td>(0.8116)</td>
<td>(0.5687)</td>
<td></td>
</tr>
<tr>
<td>Local election year</td>
<td>1,593</td>
<td>1,456</td>
<td>0.4711</td>
</tr>
<tr>
<td></td>
<td>(0.0113)</td>
<td>(0.0131)</td>
<td></td>
</tr>
<tr>
<td>Total revenues per capita</td>
<td>1,593</td>
<td>1,456</td>
<td>925</td>
</tr>
<tr>
<td></td>
<td>(21.58)</td>
<td>(11.77)</td>
<td></td>
</tr>
<tr>
<td>Total taxes per capita</td>
<td>1,593</td>
<td>1,456</td>
<td>301.37</td>
</tr>
<tr>
<td></td>
<td>(8.817)</td>
<td>(4.371)</td>
<td></td>
</tr>
<tr>
<td>Personal income per capita, MSA</td>
<td>1,593</td>
<td>1,456</td>
<td>13.883</td>
</tr>
<tr>
<td></td>
<td>(73.93)</td>
<td>(64.36)</td>
<td></td>
</tr>
<tr>
<td>Percent population black</td>
<td>1,593</td>
<td>1,456</td>
<td>16.06</td>
</tr>
<tr>
<td></td>
<td>(0.4646)</td>
<td>(0.3566)</td>
<td></td>
</tr>
</tbody>
</table>

Notes: The table presents mean values and standard deviations (in parentheses) of all variables on the left hand side by form of government. The last column lists p-values corresponding to t-tests with unequal variances of the null hypothesis that the mean values across forms of government are equal. Variable definitions are in subsection 6.2. The sample is the same as in Table 1 and is described in subsection 6.2.

compared to only 301.38 real dollars per capita in council-manager cities. The same comparison holds for the aggregate pool or revenues. Third, more than half of mayoral elections in mayor-council cities take place at intervals of four years, whereas less than half of council elections in council-manager cities are organized every four years. The typical electoral institution in the latter type of cities is four-year staggered terms for every councilmember, with half of the council being up for reelection every two years.

We also find significant differences across government forms when we look at measures of police employment. Mayor-council cities have larger average numbers of police officers per capita than council-manager cities. However, in terms of growth rates, the means are statistically indistinguishable. Both types of cities increased their sworn police personnel at an average rate of about 0.7 percent each year during the sample period.\textsuperscript{51} When we further compare means conditional on the presence of a local election we discover the pattern of differential pre-electoral behavior that our model predicts. In an electoral year mayor-council cities see a larger increase in the number of off-

\textsuperscript{51} It is perhaps interesting to note that this rate of increase has not kept pace with the trend in crime rates. Violent crime, the fastest growing type of crime, has more than doubled between 1970 and 1997.
icers per capita compared to a nonelectoral year. Moreover, the average hiring rate is significantly larger than the one recorded in council-manager cities.

We now investigate the robustness of this pattern by accounting for factors that might be correlated both with the timing of elections and with the hiring decisions of local governments, such as the fiscal strength of city government or the state of the local economy. Formally, we estimate the following linear regression model:

\[ Y_{it} = \Psi_1 M_{it} E_{it} + \Psi_2 M_{it} + \Psi_3 E_{it} + \phi \cdot w_{it} + \nu_t + \lambda_i + \varepsilon_{it} \]  

(35)

where \( i \) is a city index, \( t \) is a time index, \( Y_{it} \) is the number of police officers per 100,000 city residents, \( M_{it} \) is an indicator variable equal to one if city \( i \) had a mayor-council form of government in year \( t \), and zero otherwise, \( E_{it} \) is an election year indicator, \( w_{it} \) is a vector of demographic, economic and fiscal controls as well as city size indicators, \( \nu_t \) is a time fixed effect, \( \lambda_i \) is a city fixed effect and \( \varepsilon_{it} \) is an error term. We assume that the error terms are independent across cities but not necessarily within cities. Note that \( \Psi_1 \) measures the average difference in responsiveness to elections between a mayor-council city and a council-manager city. The testable hypothesis is that \( \Psi_1 \) is positive.

Table 3 presents regression estimates of several specifications of equation (35). Below each estimate we report White/Huber/sandwich standard errors clustered by cities, which are robust to autocorrelation within cities. The first column is the most parsimonious specification including only year indicators as covariates. The estimated difference in responsiveness to elections is positive and significant at the one percent level (the p-value is 0.001); the point estimates predict that mayoral election years are associated with an average of 3.14 extra police officers per hundred thousand residents compared to nonelectoral years. On the other hand, council-manager cities seem to have hired less officers in electoral years compared to nonelectoral years, although this difference is substantively small, around 0.7 percent a year. The model in column two introduces the fiscal, economic and demographic controls described in the previous subsection; the effect on the estimated electoral effects is negligible.

The model in column three controls for time-invariant sources of heterogeneity across cities by adding city fixed effects to the specification in column two. This modification has very little impact on the estimated values of the coefficients of interest. The estimated difference in responsiveness increases marginally in value and maintains its strong significance. The coefficient on the mayor variable increases in absolute magnitude suggesting that mayors have hired less police per capita on average in nonelectoral years when compared to managers.

Column four presents fixed effects estimation results that allow the electoral effects to be city-specific. This implies that the difference in responsiveness to elections is identified exclusively from cities that switched from one form of government to the other.\(^{52}\) The estimated difference

\(^{52}\)There are eight cities that changed their form of government close to the middle of the sample period. Two
Table 3 - Electoral Cycles in Officer Hiring, by Form of Government

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor × Election</td>
<td>4.7737***</td>
<td>5.0037***</td>
<td>5.0954***</td>
<td>16.8108***</td>
<td>17.4651***</td>
<td>19.6604***</td>
<td>18.2129***</td>
</tr>
<tr>
<td></td>
<td>(1.4457)</td>
<td>(1.4587)</td>
<td>(1.4884)</td>
<td>(6.2217)</td>
<td>(6.7237)</td>
<td>(7.0606)</td>
<td>(6.4816)</td>
</tr>
<tr>
<td>Mayor</td>
<td>-0.9285</td>
<td>-1.5117**</td>
<td>-4.2907**</td>
<td>-7.6182**</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>(0.6321)</td>
<td>(0.6720)</td>
<td>(2.0144)</td>
<td>(2.9981)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Election</td>
<td>-1.6377**</td>
<td>-1.6090**</td>
<td>-1.6613**</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>(0.7958)</td>
<td>(0.7938)</td>
<td>(0.8013)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Revenues per capita</td>
<td>—</td>
<td>0.0000</td>
<td>0.0014</td>
<td>0.0014</td>
<td>0.0014</td>
<td>0.0015</td>
<td>0.0025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0004)</td>
<td>(0.0018)</td>
<td>(0.0019)</td>
<td>(0.0020)</td>
<td>(0.0020)</td>
<td>(0.0033)</td>
</tr>
<tr>
<td>Δ(Personal income per capita, MSA)</td>
<td>—</td>
<td>0.0010</td>
<td>0.0008</td>
<td>0.0007</td>
<td>0.0007</td>
<td>0.0009</td>
<td>-0.0006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0012)</td>
<td>(0.0015)</td>
<td>(0.0014)</td>
<td>(0.0015)</td>
<td>(0.0014)</td>
<td>(0.0017)</td>
</tr>
<tr>
<td>Population</td>
<td>—</td>
<td>-0.0000</td>
<td>-0.0000*</td>
<td>-0.0000*</td>
<td>-0.0000*</td>
<td>-0.0000*</td>
<td>-0.0002**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0001)</td>
</tr>
<tr>
<td>Population squared</td>
<td>—</td>
<td>0.0000*</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Percent black</td>
<td>—</td>
<td>0.0407**</td>
<td>-0.3904</td>
<td>-0.3977</td>
<td>-0.3815</td>
<td>-0.3826</td>
<td>-0.0064</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0161)</td>
<td>(0.2806)</td>
<td>(0.2898)</td>
<td>(0.2970)</td>
<td>(0.2842)</td>
<td>(0.0041)</td>
</tr>
<tr>
<td>City fixed effects</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year indicators</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>City-specific trends</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>City indicator × Mayor interactions</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>City indicator × Election interactions</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year indicator × Election interactions</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R²</td>
<td>0.0396</td>
<td>0.0474</td>
<td>0.0561</td>
<td>0.1022</td>
<td>0.1027</td>
<td>0.1131</td>
<td>0.1740</td>
</tr>
<tr>
<td>Observations</td>
<td>3,049</td>
<td>3,045</td>
<td>3,045</td>
<td>3,045</td>
<td>3,045</td>
<td>3,045</td>
<td>3,045</td>
</tr>
</tbody>
</table>

Notes: White/Huber/sandwich standard errors clustered by cities in parentheses. The dependent variable is Δ(Officers per 100,000 residents). The independent variables are listed in the leftmost column. The sample is a panel of 119 US cities, 1970-1999. City fixed effects, year indicators and city-specific trends included in estimation as indicated. Every specification includes a constant, not reported.
in responsiveness is up to 16.81 officers per hundred thousand residents, which is equivalent to an average 6.9 percent annual increase. This difference is significant at the one percent level (the p-value is 0.008). The model in column five allows for a more general specification in which the intercept of the partial electoral effects are also city-specific. There is a slight increase in the estimate of $\Psi_1$ and a small increase in its standard error, leaving the estimate significant at the five percent level (the p-value is 0.011).

In column six we build on the specification in column five by controlling for an overall trend in responsiveness to elections that might have affected all cities. Since all cities that switched form of government did so from a council-manager to a mayor-council form, one might be concerned that the positive estimate for $\Psi_1$ in the previous two models captures an increase in responsiveness in all cities in the latter part of the sample period. The estimation results suggest that this is not the case; the gap between responsiveness to elections in the two types of cities goes up to 19.66 officers per hundred thousand residents. In fact, we expect that responsiveness must have gone down in the more recent years due to the relative decrease in the rate of crime. The larger estimate from this model is consistent with this expectation. Finally, in the last column we augment the model in column six with city-specific trends in police hiring. The results of interest are not affected by this modification, although the fit of the model is substantially improved.\footnote{We should also observe that the variation in officer hiring induced by elections, or the other controls, is small. This is perhaps not surprising since the decisions to hire are most probably driven by the incidence of crime.}

We conclude that the estimation results support our model’s prediction that direct accountability of the city’s chief executive creates the incentive to pander to the electorate ahead of elections, an effect that should be muted or absent when the executive is responsible to the city council.

7 Conclusion

The relative merits of alternative institutional arrangements in disciplining and selecting public officials is an important yet little studied issue in political economy. This paper has made a step towards understanding how two salient accountability structures work to reduce the agency loss inherent in any delegation relationship in which the motives and actions of the representatives cannot be completely known by the principals. At first sight, a hierarchical structure of delegation seems to only take us further away from the ideal "government by the people" conception of democracy, as it reduces voters’ ability to hold the executive accountable for its policy choices. We have developed a political agency model to show that this particular institutional configuration can in fact achieve superior accountability despite the additional agency problem that arises between the executive and the assembly.

The mechanism that drives this result rests on the observation that when the two branches of government have independent motivations voters hold them responsible separately for their other cities changed their charters at the end of the period.
decisions. Under these circumstances making the executive accountable to the assembly protects its incentives from the perverse effects of the electoral need to respond to public opinion. At the same time executive discipline is maintained through the confidence requirement. The combination of these two effects can unambiguously improve executive performance. The testable prediction of this model is that directly elected executives pander more often to public opinion especially when elections loom. We find strong support for this hypothesis in data from municipal elections in the US.

Our paper emphasizes an important feature of political delegation namely the asymmetry of information between principals and their agents. When the executive has policy expertise and voters have few opportunities or incentives to acquire information the electoral mechanism can work against voters’ interests by distorting the incentives of congruent politicians. This points to the need for institutions whose performance relies less on voter involvement. From this perspective political systems where voters delegate control of the executive to a representative body with superior information can be at an advantage if the representative body maintains its independence from the executive. We demonstrated how hierarchical control can produce equilibrium outcomes that are not possible under direct control unless the electorate is perfectly informed.

Political agency problems are only partially resolved through the mechanism of competitive elections. This paper contributes to the formal literature on electoral control under incomplete information by explicitly incorporating a basic institutional feature of representative governments, the separation of executive and legislative power. As we have seen part of the logic from electoral models with a single politician and a single voter extends to our framework and part of it does not. This alone suggests that a more comprehensive understanding of the relationship between principals and their representatives could be gained by augmenting the standard principal-agent framework with the finer institutional details of this relationship. Then we can address more rigorously the question of how different constitutional rules shape public choices.

To make further progress in this direction one could extend our model along several dimensions. First, removing the restriction to two periods would allow an analysis of the effects of term limits on the behavior of each branch of government. At the level of national politics, although there is great variation in the restrictions placed on politicians’ term lengths, a common arrangement is to limit chief executives to two terms and impose no limits on the term lengths of legislators. It would be feasible to adapt our framework in order to understand the desirability of such restrictions on tenure. Second, enriching the policy space would permit an analysis of issues that were ignored in this paper. How do voters behave when they care about several aspects of public policy? Are they able to disentangle responsibility for each issue that affects their welfare? How should decision powers be allocated among branches in order to maximize accountability for outcomes? A larger policy space would also allow the application of the model to specific public policy decisions such as fiscal policy and foreign policy.
A third extension would be to relax the assumption of an exogenous pool of candidates. The process of candidate selection is not random but is in large part itself determined by the institutional structure of government. Political parties may also play an important role in selecting candidates for high office and in holding them accountable thereafter. Finally, possibly the most challenging direction for future research is a closer scrutiny of executive-legislative institutions and their interaction. From this point of view our model is highly stylized. Political systems exhibit great diversity in rules for government formation and in allocations of agenda setting powers, dissolution powers and veto rights, all with potentially important consequences for government accountability. Future theory and evidence on the effects of accountability structures must be more comprehensive by studying different combinations of electoral and constitutional rules.
Appendix

Proof of Proposition 1

At the second policy stage the executive proposes his preferred policy, for which he receives a payoff $X_2 > 0$, whereas introducing the alternative policy yields no return. Congruent assemblies will approve the executive’s proposal if and only if his reputation $\tilde{\pi}_e(z|s)$ is above a half, receiving a payoff $2\tilde{\pi}_e(z|s) - 1$; a noncongruent assembly will adopt the opposite strategy.

Now consider the first period. In any equilibrium it must be that both assembly types approve the executive’s proposal with equal probability. To see this consider the subgame starting after a proposal $A$. Suppose the congruent type were to approve $A$ more often than the noncongruent type. Then, because $\tilde{\pi}_e(A) > \pi > \tilde{\pi}_e(B)$ voters would reelect if and only if $A$ were approved. Then a noncongruent assembly will choose to approve $A$ because it yields for him

$$1 - 2\hat{\rho}(A) + \delta \{ R_a + \hat{\rho}(A) \max \{ 1 - 2\tilde{\pi}_e(A|A), 0 \} + [1 - \hat{\rho}(A)] \max \{ 1 - 2\tilde{\pi}_e(A|B), 0 \} \}$$

which is positive, even if he thinks $A$ is the optimal policy, by assumption (5). This however is in contradiction to the supposition that the congruent type approves $A$ more often. Similarly, if the congruent type were to approve $A$ less often than a noncongruent type, then voters would reelect if and only if $A$ were blocked which will prompt a noncongruent type to block $A$ with probability one, a contradiction. We conclude that in any equilibrium $\tilde{\pi}_a(z,v) = \pi$ for all $z,v$ and voters are indifferent between reelecting the assembly or not.

At the beginning of period one the incumbent executive’s proposal strategy depends on his expectations of serving a second term in office. Let $\bar{\rho}_e(z|s)$ denote the ex ante equilibrium probability that the executive is reelected if he proposes policy $z$. This expected likelihood of reelection is a function of voters’ reelection strategies as well as of assemblies’ equilibrium voting strategies:

$$\bar{\rho}_e(z|s) = \pi \{ \rho_e(z,Y|s) \eta(z,1) + \rho_e(z,N|s) [1 - \eta(z,1)] \} + (1 - \pi) \{ \rho_e(z,Y|s) \eta(z,-1) + \rho_e(z,N|s) [1 - \eta(z,-1)] \}.$$  

However, since voters do not know the state at election time, the best they can do is to condition their voting strategies on the observed policy decisions $(z,v)$. Therefore:

$$\bar{\rho}_e(z|A) = \bar{\rho}_e(z|B) \quad \text{for } z = A, B.$$  

Let $\Delta(s, \theta_e)$ denote the change in expected payoff for an executive of type $\theta_e$ in state $s$ that

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54 The argument for the subgame starting after a proposal $B$ is completely symmetric.
occurs by a deviation from proposing alternative $B$ to proposing alternative $A$:

$$\Delta (s, \theta_e) = \bar{U}_e (A, s, X | \theta_e) - \bar{U}_e (B, s, X | \theta_e)$$

(39)

where

$$\bar{U}_e (z, s, x | \theta_e) = x \{z = s\} (1 + \theta_e) + \{z \neq s\} (1 - \theta_e) + \delta \bar{p}_e (z | s) \{z = S_2\} (1 + \theta_e) + \{z_2 \neq S_2\} (1 - \theta_e)$$

(40)

is the executive's lifetime expected utility at the beginning of period one after a benefit draw $X_1 = x$. For executive state-types $(A, \theta_e)$ and $(B, \theta_e)$ these changes in expected payoffs are written as:

$$\Delta (A, \theta_e) = X \theta_e + \delta [\bar{p}_e (A | A) - \bar{p}_e (B | A)] (R_e + \bar{x})$$

(41)

$$\Delta (B, \theta_e) = -X \theta_e + \delta [\bar{p}_e (A | B) - \bar{p}_e (B | B)] (R_e + \bar{x})$$

(42)

However, using equation (38) we can see that $\Delta (A, 1) = \Delta (B, -1)$ and so we can conclude that state-types $(A, 1)$ and $(B, -1)$ have equally strong incentives to propose $A$. In terms of their strategies this observation can be expressed as:

$$\alpha (A, 1) = \mathbb{P} \{\Delta (A, 1) > 0\} = \mathbb{P} \{\Delta (B, -1) > 0\} = \alpha (B, -1).$$

(43)

Analogously, executive state-types $(B, 1)$ and $(A, -1)$ have the same incentives to introduce bill $A$. Furthermore, their incentives are weaker than those of state-types $(A, 1)$ and $(B, -1)$ because

$$\Delta (A, 1) = X + \delta [\bar{p}_e (A | A) - \bar{p}_e (B | A)] (R_e + \bar{x}) >$$

$$> -X + \delta [\bar{p}_e (A | B) - \bar{p}_e (B | B)] (R_e + \bar{x}) = \Delta (B, 1).$$

(44)

We conclude that

$$\alpha (A, 1) = \alpha (B, -1) > \alpha (B, 1) = \alpha (A, -1).$$

(45)

We next claim that if the executive’s prior reputation $\pi$ is maintained or improves, the best response of voters is to reelect the executive regardless of the actions taken by the assembly. By contrast, if the executive’s prior reputation deteriorates, i.e. falls below $\pi$, voters may or may not reelect him depending on their beliefs about the assembly’s type.

First, we show that an executive’s reputation strengthens if the popular policy $A$ is proposed and weakens otherwise. The equilibrium beliefs that the executive is congruent given that a proposal
\[ \tilde{\pi}_e(A) = \frac{\alpha(A, 1) \pi p + \alpha(B, 1) \pi (1 - p)}{\alpha(A, 1) [\pi p + (1 - \pi) (1 - p)] + \alpha(B, 1) [\pi (1 - p) + (1 - \pi) p]} \] (46)

and

\[ \tilde{\pi}_e(B) = \frac{[1 - \alpha(A, 1)] \pi p + [1 - \alpha(B, 1)] \pi (1 - p)}{[1 - \alpha(A, 1)] [\pi p + (1 - \pi) (1 - p)] + [1 - \alpha(B, 1)] [\pi (1 - p) + (1 - \pi) p]} \] (47)

Observe that

\[ \tilde{\pi}_e(A) > \pi \text{ iff } \tilde{\pi}_e(B) < \pi \text{ iff } [\alpha(A, 1) - \alpha(B, 1)] p > [\alpha(A, 1) - \alpha(B, 1)] (1 - p) \] (48)

the last inequality of which, by equation (45) and \( p > \frac{1}{2} \), can be seen to be true.

Second, upon learning the state at the beginning of period two, assemblies’ beliefs about the executive’s type are further updated as follows:

\[ \tilde{\pi}_e(A \mid A) = \frac{\alpha(A, 1) \pi}{\alpha(A, 1) \pi + \alpha(B, 1) (1 - \pi)} \quad (> \pi \text{ because } \alpha(A, 1) > \alpha(B, 1)) \] (49)

\[ \tilde{\pi}_e(A \mid B) = \frac{\alpha(B, 1) \pi}{\alpha(B, 1) \pi + \alpha(A, 1) (1 - \pi)} \quad (< \pi \text{ because } \alpha(A, 1) > \alpha(B, 1)) . \] (50)

It is useful to record at this point a result that will be important later, namely that, by equation (49) and \( \pi > \frac{1}{2} \), in the second period congruent assemblies will approve, and noncongruent assemblies will block, the submitted proposal if it was learnt that in period one the executive behaved optimally.

Finally we observe that as long as the assembly’s reputation remains above average, it is optimal for voters to reelect an executive that introduced the popular policy \( A \). Voters’ expected payoff from reelecting both the executive and the assembly is larger than the expected payoff from reelecting only the assembly:

\[ \tilde{\pi}_a \{ \tilde{p}(A) [2 \tilde{\pi}_e(A \mid A) - 1] + [1 - \tilde{p}(A)] \max \{ 2 \tilde{\pi}_e(A \mid B) - 1, 0 \} \} + \\
\quad + (1 - \tilde{\pi}_a) [1 - \tilde{p}(A)] \min \{ 2 \tilde{\pi}_e(A \mid B) - 1, 0 \} \\
> \tilde{\pi}_a \{ \tilde{p}(A) [2 \tilde{\pi}_e(A \mid A) - 1] + [1 - \tilde{p}(A)] [2 \tilde{\pi}_e(A \mid B) - 1] \} \quad (51) \\
= \tilde{\pi}_a [2 \tilde{\pi}_e(A) - 1] \quad (52) \\
> \tilde{\pi}_a (2 \pi - 1) \quad \text{for all } \pi > \frac{1}{2} .
\]

The first inequality is immediate if we observe that the term \( \min \{ 2 \tilde{\pi}_e(A \mid B) - 1, 0 \} \) receives weight \( (1 - \tilde{\pi}_a) [1 - \tilde{p}(A)] \) on the left hand side and larger weight \( \tilde{\pi}_a [1 - \tilde{p}(A)] \) on the right hand side, with the other terms keeping the same weights. The equality follows from the definitions of \( \tilde{p}(A) \) and \( \tilde{\pi}_e(A \mid A) \). The last inequality follows directly from equation (48).
We can then conclude that if \( \tilde{\pi}_a (A, v) \geq \pi \) then reelecting both or only the executive are optimal responses for voters, whereas if \( \tilde{\pi}_a (A, v) < \pi \) voters reelect the executive only. We have thus shown that in any equilibrium voters necessarily reelect the executive for introducing the popular policy \( A \) regardless of the assembly’s vote on this bill:

\[
\rho_e (A, Y) = \rho_e (A, N) = 1. \tag{53}
\]

By equations (38), (41) and (42) it then follows that executive state-types \((A, 1)\) and \((B, -1)\) will always propose the popular policy:

\[
\alpha (A, 1) = \alpha (B, -1) = 1. \tag{54}
\]

The executive’s posterior reputation after proposing the unpopular policy becomes, by equation (47):

\[
\tilde{\pi}_e (B) = \frac{\pi (1 - p)}{\pi (1 - p) + (1 - \pi) p}. \tag{55}
\]

Proposal strategies of executive state-types \((B, 1)\) and \((A, -1)\) depend on voters’ reelection rule after seeing an unpopular policy proposed. If

\[
\pi \tilde{\pi}_e (B) - (1 - \pi) [1 - \tilde{\pi}_e (B)] \geq \pi (2\pi - 1)
\]

the executive is reelected regardless of his proposal thus \( \alpha (B, 1) = 0 \); if (56) does not hold he is not reelected for proposing \( B \) and then \( \alpha (B, 1) = G [\delta (R_e + \bar{x})] \).

Finally we characterize behavior at the policy stage in period two. Since \( \tilde{\pi}_e (A \mid A) > \pi \) and \( \tilde{\pi}_e (B \mid B) = 1 \) congruent assemblies approve, and noncongruent assemblies block, the executive’s proposal if it behaved optimally in period one. Since \( \tilde{\pi}_e (B \mid A) = 0 \) congruent assemblies block, and noncongruent assemblies approve, the incumbent’s second period proposal if the state was revealed to have been \( A \) after a first period proposal \( B \). In equilibria with no distortion of congruent types’ behavior we have \( \tilde{\pi}_e (A \mid B) = 0 \) and the second period strategy for voting on policy is as before. If congruent types pander with positive probability then \( \tilde{\pi}_e (A \mid B) = \frac{\alpha (B, 1) \pi}{\alpha (B, 1) \pi + (1 - \pi)} \) and the previous assembly strategies obtain if and only if \( \alpha (B, 1) \geq \frac{1 - \pi}{\pi} \).

**Proof of Proposition 2**

At the second policy stage the executive faces no electoral constraint and will propose his preferred policy regardless of the state. The assemblies’ responses thus only depend on their beliefs about the executive’s type: if the incumbent has won all previous confidence votes his proposal is approved by a congruent assembly, and blocked by a noncongruent assembly, if and only if his reputation is above a half; if a new executive has been appointed at the beginning of period two his bill will
be approved by a congruent assembly but blocked by a noncongruent assembly. Assembly voting behavior at the first policy stage is similar to that under direct control: both assembly types approve the proposal with equal probability and voters are indifferent between reelecting the assembly and not reelecting. See the proof of Proposition 1.

We next show that the reputation of an executive who proposed the optimal policy in period one necessarily strengthens. First, note that a congruent executive is more likely than a noncongruent type to propose the optimal policy in either state. If as before \( \Delta (s, \theta_e) \) denotes the change in the executive’s expected payoff generated by a deviation from proposing \( B \) to proposing \( A \), we have:

\[
\Delta (A, \theta_e) = X\theta_e + \delta [\bar{\rho}_e (A | A) - \bar{\rho}_e (B | A)] (R_e + \bar{x})
\]

(57)

where

\[
\bar{\rho}_e (z | s) = \pi \gamma_2 (z, 1 | s) + (1 - \pi) \gamma_2 (z, -1 | s)
\]

(58)
is the ex ante probability that the executive is reappointed for proposing policy \( z \) in state \( s \). From equation (57) \( \Delta (A, 1) > \Delta (A, -1) \) implying that the probability that a congruent type proposes \( A \) in state \( A \) is larger than the corresponding probability for a noncongruent type \( \alpha (A, 1) > \alpha (A, -1) \). Analogously, observing that \( \Delta (B, 1) < \Delta (B, -1) \) leads to the conclusion that \( \alpha (B, 1) > \alpha (B, -1) \).

Given these incentives, assemblies equilibrium beliefs about the executive’s type will be revised to reflect the greater propensity of congruent executives to introduce optimal policies. Upon their learning the state at the beginning of period two assemblies update their beliefs in the direction of more confidence that the executive is of the congruent type if it was learnt that the first bill was optimal and less confidence otherwise:

\[
\bar{\pi}_e (A | A) = \frac{\alpha (A, 1) \pi}{\alpha (A, 1) \pi + \alpha (A, -1) (1 - \pi)} > \pi
\]

(59)

\[
\bar{\pi}_e (B | A) = \frac{[1 - \alpha (A, 1)] \pi}{[1 - \alpha (A, 1)] \pi + [1 - \alpha (A, -1)] (1 - \pi)} < \pi
\]

(60)

and

\[
\bar{\pi}_e (A | B) = \frac{\alpha (B, 1) \pi}{\alpha (B, 1) \pi + \alpha (B, -1) (1 - \pi)} < \pi
\]

(61)

\[
\bar{\pi}_e (B | B) = \frac{[1 - \alpha (B, 1)] \pi}{[1 - \alpha (B, 1)] \pi + [1 - \alpha (B, -1)] (1 - \pi)} > \pi.
\]

(62)

At the confidence vote stage of period two congruent assemblies will then reappoint the executive if and only if its behavior was optimal whereas noncongruent assemblies strictly prefer to reappoint an executive whose behavior was suboptimal but are indifferent between reappointing and dismissing an executive that behaved optimally. There are thus multiple equilibria depending
on the choice of noncongruent assemblies at the confidence vote stage. The equilibrium that maximizes executive performance is the one in which noncongruent assemblies reappoint an executive that behaved optimally.

We can now solve for executive equilibrium behavior at the beginning of period one. The equilibrium probabilities that the executive proposes policy $A$ by executive state-type are:

$$\alpha (A, 1) = 1$$  \hspace{1cm} (63)

$$\alpha (B, 1) = 0$$  \hspace{1cm} (64)

$$\alpha (A, -1) = \mathbb{P} \{ X < \delta \pi (R_e + \bar{x}) \} > 0$$  \hspace{1cm} (65)

$$\alpha (B, -1) = 1 - \alpha (A, -1).$$  \hspace{1cm} (66)

Note that congruent executives’ behavior suffers no distortion whereas noncongruent types are responsive to the electorate’s preferences with positive probability $\alpha (A, -1)$ and act corruptly if current benefits are large.

The beliefs that are consistent with these equilibrium executive proposal strategies are then found by making the necessary substitutions in equations (59) - (62). We infer that at the first policy stage the executive’s posterior reputation improves if the popular policy is introduced and weakens otherwise:

$$\tilde{\pi}_e (A) = \frac{\pi p}{\alpha (A, -1) p + [1 - \alpha (A, -1)] [\pi p + (1 - \pi)(1 - p)]} > \pi$$  \hspace{1cm} (67)

$$\tilde{\pi}_e (B) = \frac{\pi (1 - p)}{\alpha (A, -1)(1 - p) + [1 - \alpha (A, -1)][(1 - \pi) p + \pi (1 - p)]} < \pi.$$  \hspace{1cm} (68)

At the beginning of the second period, upon learning the state, assemblies’ beliefs are given by:

$$\tilde{\pi}_e (A \mid A) = \tilde{\pi}_e (B \mid B) = \frac{\pi}{\pi + \alpha (A, -1)(1 - \pi)}$$  \hspace{1cm} (69)

$$\tilde{\pi}_e (A \mid B) = \tilde{\pi}_e (B \mid A) = 0.$$  \hspace{1cm} (70)

Note that the executive’s type is completely revealed following a suboptimal proposal. The implication for second period assembly behavior at the policy stage is that if the incumbent executive survived the no confidence vote a congruent assembly blocks, and a noncongruent assembly approves, with probability one the second period bill if the first period bill was learnt to have been suboptimal.

**Proof of Proposition 3**

See section three.
Proof of Proposition 4

At the second policy stage executives propose their preferred policies. If the incumbent was not reelected, congruent assemblies approve, and noncongruent assemblies block, the proposal of the newly elected executive. If the incumbent was reelected congruent assemblies approve, and noncongruent assemblies block, his second period proposal if and only if
\[ \sim e(z_1 \mid s_1) \geq \frac{1}{2}. \]

Now consider the first period. In any equilibrium it must be that both assembly types approve the executive’s proposal with equal probability. To see this consider the subgame starting after a proposal $A$.\(^{55}\) Suppose the congruent type were to approve $A$ more often than the noncongruent type. Then, because $\sim e(A) > \pi > \sim e(B)$ voters would reelect if and only if $A$ were approved. Then a noncongruent assembly will choose to approve $A$ because it yields for him
\[
1 - 2\bar{p}(A) + \delta \{ R_a + \bar{p}(A) \max \{ 1 - 2\tilde{\pi}_e(A \mid A), 0 \} + [1 - \bar{p}(A)] \max \{ 1 - 2\tilde{\pi}_e(A \mid B), 0 \} \} \quad (71)
\]
which is positive, even if he thinks $A$ is the optimal policy, by assumption (5). This however is in contradiction to the supposition that the congruent type approves $A$ more often. Similarly, if the congruent type were to approve $A$ less often than a noncongruent type, then voters would reelect if and only if $A$ were blocked which will prompt a noncongruent type to block $A$ with probability one, a contradiction. We conclude that in any equilibrium $\tilde{\pi}_a(z, v \mid s) = \tilde{\pi}_a(z, v) = \pi$ for all $z, v, s$ and voters are indifferent between reelecting the assembly or not.\(^{56}\)

We next argue that when voters have feedback they reelect the executive if and only if it introduced the optimal policy in period one. Consider executives in state $A$. They propose $A$ if $\Delta(A, \theta_e) > 0$ where:
\[
\Delta(A, \theta_e) = X\theta_e + \delta \{ \varphi [\tilde{\rho}_e(A \mid A) - \tilde{\rho}_e(B \mid A)] + (1 - \varphi) [\tilde{\rho}_e(A) - \tilde{\rho}_e(B)] \} (R_e + \bar{x}). \quad (72)
\]
Note, however, that $\Delta(A, 1) - \Delta(A, -1) = 2X > 0$ which implies, by full support of the distribution of $X$, that in state $A$ the congruent type proposes $A$ more often than the noncongruent type: $\alpha(A, 1) > \alpha(A, -1)$ and voters will consequently respond by reelecting the executive if and only if $A$, the optimal policy, was proposed. Similarly
\[
\Delta(B, \theta_e) = -X\theta_e + \delta \{ \varphi [\tilde{\rho}_e(A \mid B) - \tilde{\rho}_e(B \mid B)] + (1 - \varphi) [\tilde{\rho}_e(A) - \tilde{\rho}_e(B)] \} (R_e + \bar{x}). \quad (73)
\]
implies $\Delta(B, 1) - \Delta(B, -1) = -2X < 0$ and therefore $\alpha(B, 1) < \alpha(B, -1)$ and voters reelect if and only if $B$, the optimal policy, was proposed in state $B$. Assembly posterior beliefs about the

\(^{55}\) The argument for the subgame starting after a proposal $B$ is completely symmetric.

\(^{56}\) The equilibrium that voters prefer is the one in which both assemblies pool on the strategy: approve $A$ if and only if $\bar{p}(A) \geq \frac{1}{2}$. 

47
incumbent's type then satisfy:
\[ \hat{\pi}_e(z \mid s) > \pi \quad \text{iff} \quad z = s. \] (74)

Two immediate implications of this voting behavior are \( \alpha(A, 1) \geq \alpha(B, -1) \) (with equality iff \( \varphi = 0 \)) and \( \alpha(B, 1) \leq \alpha(A, -1) \) (with equality iff \( \varphi = 0 \)) which are sufficient to conclude that in any equilibrium proposing the popular policy results in posterior beliefs that place larger probability on state \( A \):
\[ \tilde{\rho}(A) = \frac{\alpha(A, 1) \pi p + \alpha(B, 1) (1 - \pi) p}{\alpha(A, 1) \pi p + \alpha(B, 1) \pi (1 - p) + \alpha(A, -1) (1 - \pi) p + \alpha(B, -1) (1 - \pi) (1 - p)} > p. \] (75)

It remains to determine voters' reelection rules when they do not have feedback and executives' proposal strategies in period one. For this we need to make a simple but important observation. Suppose that after a first period proposal \( z \) the executive's reputation did not weaken \( \hat{\pi}_e(z) \geq \pi \). Then we claim that the executive must in equilibrium be reelected with probability one regardless of the assembly's vote. This follows because:
\[
\begin{align*}
\pi \{ \tilde{\rho}(z) \max \{ 2\hat{\pi}_e(z \mid A) - 1, 0 \} & + [1 - \tilde{\rho}(z)] \max \{ 2\hat{\pi}_e(z \mid B) - 1, 0 \} \} + \\
& + (1 - \pi) \{ \tilde{\rho}(z) \max \{ 1 - 2\hat{\pi}_e(z \mid A), 0 \} + [1 - \tilde{\rho}(z)] \max \{ 1 - 2\hat{\pi}_e(z \mid B), 0 \} \} \\
& > \pi \{ \tilde{\rho}(z) [2\hat{\pi}_e(z \mid A) - 1] + [1 - \tilde{\rho}(z)] [2\hat{\pi}_e(z \mid B) - 1] \} \\
& = \pi [2\hat{\pi}_e(z) - 1] \\
& \geq \hat{\pi}_a [2\pi - 1].
\end{align*}
\] (76)

Intuitively, the first inequality simply says that, as long as the assembly is more likely to be congruent than noncongruent, having an informed assembly with veto power over the executive's decisions leads to greater voter welfare than if the assembly were not informed. Note also that even if \( \hat{\pi}_e(z) = \pi \) voters strictly prefer to reelect the executive, despite the fact that they may have to replace the assembly. This is because the information generated by the executive's first period proposal is valuable by making it easier for congruent assemblies to check executive proposal power in the second period.

We now show that \( \hat{\pi}_e(A) > \pi > \hat{\pi}_e(B) \) in all equilibria. Suppose this were not true. Then \( \hat{\pi}_e(B) \geq \pi \) and, by the previous argument, the executive is reelected with probability one for introducing policy \( B \) regardless of the assembly vote on it. Since \( \tilde{\rho}_e(B) = 1 \), the following are the
equilibrium proposal strategies of each executive state-type:

\[
\begin{align*}
\alpha (A, 1) &= 1 - G \{ \delta \{ -\varphi + (1 - \varphi) [1 - \tilde{\rho}_e (A)] \} (R_e + \bar{x}) \} \\
\alpha (B, 1) &= G \{ \delta \{ -\varphi - (1 - \varphi) [1 - \tilde{\rho}_e (A)] \} (R_e + \bar{x}) \} \\
\alpha (A, -1) &= G \{ \delta \{ \varphi - (1 - \varphi) [1 - \tilde{\rho}_e (A)] \} (R_e + \bar{x}) \} \\
\alpha (B, -1) &= 1 - G \{ \delta \{ \varphi + (1 - \varphi) [1 - \tilde{\rho}_e (A)] \} (R_e + \bar{x}) \}
\end{align*}
\]

Note that \( \alpha (A, -1) + \alpha (B, -1) \leq 1 \) and either \( 0 \leq \alpha (A, -1) < \alpha (A, 1) = 1 \) or \( 0 = \alpha (A, -1) < \alpha (B, -1) < \alpha (A, 1) \leq 1 \). In both cases we have

\[
\alpha (A, 1) p + \alpha (B, 1) (1 - p) > \alpha (A, -1) p + \alpha (B, -1) (1 - p)
\]

which implies \( \pi_e (B) < \pi \), a contradiction to our supposition. We conclude that in all equilibria \( \pi_e (A) > \pi > \pi_e (B) \) and when voters do not have feedback they reelect the executive with probability one for introducing the popular policy. As in Proposition 1 this reelection rule creates strong incentives to pander if the probability of feedback is low enough. From equation (72) it follows immediately that \( \alpha (A, 1) = 1 \) and so \( \pi_e (B \mid A) = 0 \).

Voters’ strategy for reelecting an executive that proposed \( B \) when they do not have feedback can take several forms depending on the parameters of the model. If feedback is slow, \( 0 \leq \varphi < \frac{1}{2} \), then there are two types of equilibria. First, voters reelect the executive with probability \( \tilde{\rho}_e (B) \), where \( \frac{1 - 2\varphi}{1 - \varphi} \leq \tilde{\rho}_e (B) \leq 1 \), and executives’ proposal strategies are:

\[
\begin{align*}
\alpha (A, 1) &= 1 \\
\alpha (B, 1) &= 0 \\
\alpha (A, -1) &= G \{ \delta \{ \varphi + (1 - \varphi) [1 - \tilde{\rho}_e (B)] \} (R_e + \bar{x}) \} \\
\alpha (B, -1) &= 1 - G \{ \delta \{ \varphi - (1 - \varphi) [1 - \tilde{\rho}_e (B)] \} (R_e + \bar{x}) \}
\end{align*}
\]

These equilibria require that

\[
\pi [1 - \tilde{\rho} (B)] [2\tilde{\pi}_e (B \mid B) - 1] - (1 - \pi) \tilde{\rho} (B) \geq \pi (2\pi - 1)
\]

where

\[
\begin{align*}
\tilde{\rho} (B) &= \frac{[1 - \alpha (A, -1)] (1 - \pi) p}{\pi (1 - p) + [1 - \alpha (A, -1)] (1 - \pi) p} \\
\tilde{\pi}_e (B \mid B) &= \frac{\pi (1 - p)}{\pi (1 - p) + [1 - \alpha (B, -1)] (1 - \pi) (1 - p)}.
\end{align*}
\]

Second, voters reelect the executive with probability \( \tilde{\rho}_e (B) \), where \( 0 \leq \tilde{\rho}_e (B) < \frac{1 - 2\varphi}{1 - \varphi} \), and execu-
tives’ proposal strategies are:

\begin{align*}
\alpha (A, 1) &= 1 \\
\alpha (B, 1) &= G \{ \delta \{ -\varphi + (1 - \varphi) [1 - \tilde{p}_e (B)] \} (R_e + \bar{x}) \} \\
\alpha (A, -1) &= G \{ \delta \{ \varphi + (1 - \varphi) [1 - \tilde{p}_e (B)] \} (R_e + \bar{x}) \} \\
\alpha (B, -1) &= 1
\end{align*}

These equilibria require that

\[ \pi - \tilde{p} (B) \leq \pi (2\pi - 1) \]  

where

\[ \tilde{p} (B) = \frac{[1 - \alpha (A, -1)] (1 - \pi) p}{[1 - \alpha (B, 1)] \pi (1 - p) + [1 - \alpha (A, -1)] (1 - \pi) p} \]  

Note that while in the first kind of equilibrium the behavior of congruent executives is not distorted, in the second kind of equilibrium both executive types pander with positive probability.

Finally if \( \frac{1}{2} \leq \varphi \leq 1 \), voters without feedback reelect an executive that proposed the unpopular policy with probability \( \tilde{p}_e (B) \) (in the case \( \varphi = 1 \) this strategy is not needed) and executives proposal strategies are the same as in equations (84)-(87). The equilibria in which \( \tilde{p}_e (B) = 1 \) are interesting because the executive is reelected with probability one despite the fact that its reputation is weaker that that of its challenger. This is rational because voters’ payoff for the next period is not solely dependent of the executive’s expected quality but also on the assembly’s information about the executive’s type.

In the second period the vote on a reelected executive’s proposal is determined by the assemblies’ posterior beliefs about the executive’s type. Since \( \tilde{\pi}_e (A \mid A), \tilde{\pi}_e (B \mid B) > \pi \) congruent assemblies approve, and noncongruent assemblies block, the executive’s proposal if it behaved optimally in period one. Since \( \tilde{\pi}_e (B \mid A) = 0 \) congruent assemblies block, and noncongruent assemblies approve, the incumbent’s second period proposal if the state was revealed to have been \( A \) after a first period proposal \( B \). In equilibria with no distortion of congruent types’ behavior we have \( \tilde{\pi}_e (A \mid B) = 0 \) and the second period strategy for voting on policy is as before. If congruent types pander with positive probability then \( \tilde{\pi}_e (A \mid B) = \frac{\alpha (B, 1) \pi}{\alpha (B, 1) \pi + (1 - \pi)} \) and the previous assembly strategies obtain if and only if \( \alpha (B, 1) \geq \frac{1 - \pi}{\pi} \).

**Proof of Proposition 5**

Behavior in the second period is identical to the case of an uninformed assembly. Upon learning the state congruent assemblies reappoint the executive if and only if its first period bill proved optimal. Noncongruent assemblies reappoint the executive regardless of its behavior. The executive then proposes his preferred policy. This proposal is approved by a congruent assembly and blocked by a
noncongruent assembly if and only if \( \hat{\pi}_e(z_1 | s_1) \geq \frac{1}{2} \). Since voters cannot elect the executive branch their only concern at election time is with the type of assembly that will control the executive in the second period. We first solve the subgame starting after a proposal has been made by the executive in period one. The equilibria of these two subgames together with the results of the second confidence vote determine the reappointment rule that the executive faces in equilibrium.

Suppose policy \( z \) was proposed in the first period and that in equilibrium congruent assemblies approve \( z \) more often than noncongruent types. Then, for all values of the probability of feedback \( \varphi \), and regardless of the results of the subsequent confidence vote, voters replace the assembly for blocking \( z : \rho_a(z, N, c) = \rho_a(z, N, c | s) = 0 \) for \( c = Y, N \) and \( s = A, B \). To establish this claim we show that neither \( \rho_a(z, N, c | s) > 0 \) nor \( \rho_a(z, N, c) > 0 \) can be equilibrium strategies. Without loss of generality consider the case \( c = Y \).

Suppose \( \rho_a(z, N, Y | s) > 0 \). Then it must be that \( \hat{\pi}_a(z, N, Y | s) \geq \pi \) and the executive must be replaced with positive probability in state \( s \) after \( z \) is blocked. This implies \( \hat{\pi}_a(z, N, N | s) < \pi \) and therefore \( \rho_a(z, N, N | s) = 0 \). Now if in equilibrium \( \rho_a(z, N, N) = 0 \) then we reach a contradiction because \( z, N, N \) cannot be chosen with positive probability in state \( s \). Thus for an equilibrium it must be that \( \rho_a(z, N, N) > 0 \). But this implies that \( \hat{\pi}_a(z, N, N) \geq \pi \) and that the executive must be reappointed with positive probability in at least one state after \( z \) is blocked. This further requires that \( \hat{\pi}_a(z, N, Y) < \pi \) and therefore \( \rho_a(z, N, Y) = 0 \) and since \( \hat{\pi}_a(z, N, Y | s) \geq \pi \) it must also be that \( \hat{\pi}_a(z, N, Y | s') < \pi \) and \( \rho_a(z, N, Y | s) = 0 \), where \( s' \neq s \). These two, however imply that \( z, N, Y \) cannot be chosen in state \( s' \), or equivalently that \( \pi \leq \hat{\pi}_a(z, N, Y | s) = \hat{\pi}_a(z, N, Y) < \pi \), a contradiction.

Suppose \( \rho_a(z, N, Y) > 0 \). This implies \( \hat{\pi}_a(z, N, Y) \geq \pi \) and the executive must be replaced with positive probability after \( z \) is blocked in either state \( A \) or in state \( B \). Thus, since \( \hat{\pi}_a(z, N, N) < \pi \), it must be that \( \rho_a(z, N, N) = 0 \). Now if in equilibrium \( \rho_a(z, N, N | A) = \rho_a(z, N, N | B) = 0 \) then \( z, N, N \) cannot be chosen with positive probability in equilibrium. At least one of the state dependent reelection probabilities has to be positive. Suppose, without loss of generality that \( \rho_a(z, N, N | A) > 0 \). Then \( \hat{\pi}_a(z, N, N | A) \geq \pi \), but since \( \hat{\pi}_a(z, N, N) < \pi \) it must be that \( \hat{\pi}_a(z, N, N | B) < \pi \) and so \( \rho_a(z, N, N | B) = 0 \). But this means that \( z, N, N \) cannot be chosen in state \( B \). Therefore \( \pi \leq \hat{\pi}_a(z, N, N | A) = \hat{\pi}_a(z, N, N) < \pi \), a contradiction. This establishes the claim.

Based on this observation we can now infer that if \( A \) was proposed in period one and state \( A \) is believed to be more likely than state \( B \) there are no equilibria where a congruent assembly blocks \( A \) more often than the noncongruent assembly. This follows since, by the previous claim, reelection is not possible for approving \( A \). However, this means that a noncongruent assembly will block \( A \) with probability one, in other words at least as often as the congruent assembly. Symmetrically, if \( A \) was proposed and state \( B \) is believed to be more likely than state \( A \) there do not exist equilibria where the congruent assembly approves \( A \) more often than the noncongruent assembly.
Consider, without loss of generality, the subgame that begins after a proposal $A$ and suppose $\hat{p}(A) > \frac{1}{2}$. There are three types of equilibria: pooling, crosspooling and semiseparating. There are two pooling equilibria: first, both assembly types approve $A$ and then reappoint the executive regardless of the state; second, both assembly types approve $A$ and then replace the executive regardless of the state. Similarly there are two crosspooling equilibria: first, both assembly types approve $A$ and then reappoint the executive in state $A$ and replace it in state $B$; second, both assembly types approve $A$ and then replace the executive in state $A$ and reappoint it in state $B$. Pooling equilibria exist for all parameter values. A sufficient condition for the first crosspooling equilibrium to exist is $\frac{1}{R_a + 1} \leq \varphi \leq 1$.

Semiseparating equilibria can be of two forms. If the probability of feedback is low, $0 \leq \varphi < \frac{1}{2(R_a + 1)}$, then congruent assemblies approve $A$ with probability one and reappoint with probability one if and only if the proposal matches the state; noncongruent assemblies approve $A$ with positive probability and at the confidence vote mix in state $A$ and reappoint in state $B$. If voters have feedback they reelect the assembly if and only if it approved $A$ and reappointed only when the proposal matched the state. If voters do not have feedback they reelect with probability one if the executive is replaced and with probability $\frac{1-2\varphi}{1-\varphi}$ if the executive is reappointed. For higher probabilities of feedback, $\frac{1}{2(R_a + 1)} \leq \varphi \leq \frac{1}{R_a + 1}$, congruent assemblies approve $A$ with probability one and reappoint with probability one if and only if the proposal matches the state; noncongruent assemblies approve $A$ with positive probability and at the confidence vote reappoint in state $A$ and mix in state $B$. If voters have feedback they reelect the assembly if and only if it approved $A$ and reappointed only when the proposal matched the state. If voters do not have feedback they reelect with probability one if the executive is replaced and with probability $\frac{R_a}{(1-\varphi)(R_a + 1)}$ if the executive is reappointed.

The executives' proposal strategies that correspond to the first pooling equilibrium are:

$$\alpha (A, 1) = 1$$  \hspace{1cm} (97)  
$$\alpha (B, 1) = 0$$  \hspace{1cm} (98)  
$$\alpha (A, -1) = G [\delta \pi (R_e + \bar{x})]$$  \hspace{1cm} (99)  
$$\alpha (B, -1) = 1 - G [\delta \pi (R_e + \bar{x})].$$  \hspace{1cm} (100)

The executives’ proposal strategies that correspond to the first crosspooling equilibrium are:

$$\alpha (A, 1) = 1$$  \hspace{1cm} (101)  
$$\alpha (B, 1) = 0$$  \hspace{1cm} (102)  
$$\alpha (A, -1) = G [\delta (R_e + \bar{x})]$$  \hspace{1cm} (103)  
$$\alpha (B, -1) = 1 - G [\delta (R_e + \bar{x})].$$  \hspace{1cm} (104)
Note that in either case neither executive type behaves opportunistically: congruent types behave optimally while noncongruent types behave either optimally or corruptly.

**Proof of Proposition 6**

Suppose $\varphi < 1$ and the responsive crosspooling equilibrium exists under hierarchical control. When $X < \delta (R_e + \bar{x})$ both executive types behave optimally under hierarchical control. Discipline is then maximal: $\Theta_{1}^H = 1$. Under direct control the executive behaves nonoptimally with positive probability, either by pandering or by being corrupt, and therefore $\Theta_{1}^D < 1$. When $X > \delta (R_e + \bar{x})$ both executive types follow their preferences in each system and discipline is $\Theta_{1}^D = \Theta_{1}^H = 2\pi - 1$. We conclude that hierarchical control is superior for all full support distributions $G$, since $G [\delta (R_e + \bar{x})] > 0$.

We now compare the systems in terms of overall executive performance. Consider first the case $X < \delta (R_e + \bar{x})$. Under hierarchical control the executive behaves optimally and performance is $\Theta^H = 2\pi$. Under direct control there are four types of behavior, at least two occurring with positive probability. First, both executive types behave optimally and so $\Theta^D = 2\pi$. Second, a congruent type behaves optimally and a noncongruent type panders; in this case performance is:

$$\Theta^D = 2\pi \left\{ p + (1-p) \{ \varphi + (1-\varphi) [\rho + \pi (1-\rho)] \} \right\} - 2 (1-\pi) (1-p) (1-\varphi \pi) \quad (105)$$

which is strictly less than $2\pi$. Third, a congruent type behaves optimally and a noncongruent type corruptly; performance is:

$$\Theta^D = 2\pi - 2 (1-\pi) \{ \pi (1-p) (1-\varphi) (1-\rho) + \rho \{ \varphi (1-\pi) + (1-\varphi) \rho + (1-\varphi) (1-\rho) (1-\pi) \} \} \quad (106)$$

which is also strictly smaller than $2\pi$. Fourth, both executive types pander. Performance is then given by:

$$\Theta^D = 2\pi \{ p + (1-p) [1-\varphi (1-\pi)] \} - 2 (1-\pi) [p + (1-p) \varphi (1-\pi)] \quad (107)$$

and is strictly smaller than $2\pi$.

Finally, suppose that $X > \delta (R_e + \bar{x})$. Under both systems the executive follows its preferences. Relative performance then turns on how well each system achieves selection.

$$\Theta_{2}^D = \pi \{ p + (1-p) [\varphi + (1-\varphi) [\rho + (2\pi - 1)(1-\rho)] \} + (1-\pi) \{ p \varphi (2\pi - 1) - (1-\varphi) \rho + (1-\varphi) (1-\rho) (2\pi - 1) \} \} \quad (108)$$

$$\Theta_{2}^H = \pi + (1-\pi) (2\pi - 1). \quad (109)$$

It can be easily verified that $\Theta_{2}^D < \Theta_{2}^H$ for all parameter values.
If \( \varphi = 1 \) the two systems yield the same equilibrium outcome. Furthermore, the implicit executive survival rule is identical. It follows that no system is dominant in this case.

**Proof of Proposition 7**

For technical issues discipline is higher under hierarchical control if \( X < \delta \psi (G) (R_e + \bar{x}) \) because the noncongruent executive panders instead of following its preferences:

\[
\Theta_1^D = 2\pi - 1 < \pi + (1 - \pi) (2\pi - 1) = \Theta_1^H.
\]

(110)

When \( X > \delta \psi (G) (R_e + \bar{x}) \) the executive follows its preferences in each system and discipline is consequently the same. It thus follows that \( \Theta_1^D < \Theta_1^H \) for all full support distributions \( G \).

Overall executive performance for technical issues is given, respectively, by:

\[
\Theta^D = 2 (2\pi - 1)
\]

and

\[
\Theta^H = \{2 (2\pi - 1) + 2 (1 - \pi) \left[ \pi (2\pi - 1) + (1 - \pi) p \right] \} G \left[ \delta \psi (G) (R_e + \bar{x}) \right] + \]

\[
\{2 (2\pi - 1) + 2\pi (1 - \pi) \} \{1 - G \left[ \delta \psi (G) (R_e + \bar{x}) \right] \}
\]

(112)

and so \( \Theta^D < \Theta^H \) for all distributions \( G \).

For value issues discipline under direct control is:

\[
\Theta_1^D = (2p - 1) \left[ \delta (R_e + \bar{x}) \right] + (2\pi - 1) \{1 - G \left[ \delta (R_e + \bar{x}) \right] \}
\]

(113)

and under hierarchical control it is:

\[
\Theta_1^H = [\pi + (1 - \pi) (2p - 1)] \left[ \delta \psi (G) (R_e + \bar{x}) \right] + (2\pi - 1) \{1 - G \left[ \delta \psi (G) (R_e + \bar{x}) \right] \}
\]

(114)

where \( \psi (G) \) is defined in equation (33). Since \( \psi (G) > 0 \) we have that \( \Theta_1^D < \Theta_1^H \) for all \( G \) if and only if \( p \leq \pi \).

In terms of executive performance with value issues direct control yields:

\[
\Theta^D = 2 [\pi p - (1 - \pi) (1 - p)] \left[ \delta (R_e + \bar{x}) \right] + 2 \left[ (2\pi - 1) + \pi (1 - \pi) \right] \{1 - G \left[ \delta (R_e + \bar{x}) \right] \}
\]

(115)

while hierarchical control has:

\[
\Theta^H = 2 \{\pi [p + \pi (1 - p)] - (1 - \pi) (1 - p) \} \left[ \delta \psi (G) (R_e + \bar{x}) \right] + 2 \left[ (2\pi - 1) + \pi (1 - \pi) \right] \{1 - G \left[ \delta \psi (G) (R_e + \bar{x}) \right] \}
\]

(116)

54
It can be verified that \( p \leq \pi \) is a sufficient condition in order to have \( \Theta^D < \Theta^H \) for all \( G \). The dominance of hierarchical control according to this criterion remains true if \( p > \pi \) but \( p \) remains sufficiently small. Otherwise, neither institution is dominant because if \( X < \delta \psi (G) (R_e + \bar{x}) \) hierarchical control is superior due to the better discipline (instead of pandering a congruent executive can behave optimally without electoral consequences) and if \( \delta \psi (G) (R_e + \bar{x}) < X < \delta (R_e + \bar{x}) \) direct control is superior also due to higher discipline.

**Proof of Proposition 8**

We first show that \( \psi (G) > \varphi \). To see this note that

\[
\tilde{\pi}_e (A) = \frac{\pi p}{\pi p + G [\delta \psi (R_e + \bar{x})] (1 - \pi) p + \{1 - G [\delta \varphi (R_e + \bar{x})]\} (1 - \pi) (1 - p)}
\]

is increasing in \( \psi \) and \( \tilde{\pi}_e (A) \big|_{\psi = \varphi} > \pi \). By full support of \( G \) there exists a \( \hat{\psi} > \varphi \) such that \( \tilde{\pi}_e (A) \big|_{\psi = \hat{\psi}} > \pi \). Then \( \psi (G) \), defined to be the largest such \( \psi \), must itself be larger than \( \varphi \).

Suppose \( \varphi < 1 \). Direct control cannot dominate hierarchical control in terms of overall executive performance because if voters believe that executive private benefits are below \( \delta \psi (G) (R_e + \bar{x}) \) and for these beliefs the equilibrium outlined in section five exists, then hierarchical control is superior by inducing the executive to behave optimally and yields performance \( \Theta^H = 2 \pi \). Under direct control at least one type panders with positive probability. If only the noncongruent type panders then:

\[
\Theta^D = 2 \pi \left\{ p + (1 - p) [\varphi + (1 - \varphi) [\rho + \pi (1 - \rho)]] \right\} - 2 (1 - \pi) (1 - p) (1 - \varphi \pi).
\]

If both the congruent and the noncongruent types pander then

\[
\Theta^D = 2 \pi \left\{ p + (1 - p) [1 - \varphi (1 - \pi)] \right\} - 2 (1 - \pi) [p + (1 - p) \varphi (1 - \pi)].
\]

In both cases we have \( \Theta^D < 2 \pi \) and therefore hierarchical control is strictly superior at these beliefs.

Now suppose that the equilibrium of section five exists for all distributions \( G \). A necessary and sufficient condition for this to happen is that \( \varphi \geq \frac{1}{\delta (R_a + 1)} \). For value issues discipline under each system is respectively:

\[
\Theta^D_1 = G [\delta \varphi (R_e + \bar{x})] + (2 \pi - 1) \{1 - G [\delta \varphi (R_e + \bar{x})]\}
\]

\[
\Theta^H_1 = G [\delta \psi (G) (R_e + \bar{x})] + (2 \pi - 1) \{1 - G [\delta \psi (G) (R_e + \bar{x})]\}.
\]

We see that \( \Theta^D_1 < \Theta^H_1 \) for all \( G \) because \( \psi (G) > \varphi \). Finally, overall executive performance is given
\[
\theta^D = 2\pi G [\delta \varphi (R_e + \bar{x})] + \\
+ \{2\pi - 2 (1 - \pi) [p + (1 - \pi) (1 - p)] [\varphi (1 - \pi) + (1 - \varphi)]\} \{1 - G [\delta \varphi (R_e + \bar{x})]\}
\]

\[
\theta^H = 2\pi G [\delta \psi (G) (R_e + \bar{x})] + \\
+ \{2\pi + (1 - p) \{(2\pi - 1) (1 + \varphi - \pi) \\
- [\varphi + (1 - \varphi) (1 - \pi)]\} \{G [\delta \psi (G) (R_e + \bar{x})] - G [\delta \varphi (R_e + \bar{x})]\}\} + \\
+ \{2\pi - 2 (1 - \pi) [p + (1 - \pi) (1 - p)] [\varphi + (1 - \varphi)]\} \{1 - G [\delta \psi (G) (R_e + \bar{x})]\}\}
\]

under each system respectively. Hierarchical control dominates because in the middle interval it is superior due to higher discipline: the noncongruent type panders whereas under direct control it acts corruptly.

**Data Sources**

Our data come from several sources. City-level population series are from the Historical Database on Individual Government Finances (IndFin) constructed by the US Bureau of Census. The number of sworn police officers is computed on the basis of variables available in the Crime Reports CD, Release 1.0, published by Geolytics, Inc. This source contains data for the period 1975-1997, with the exception of years 1976 and 1984. Data for the remaining years is from the *Uniform Crime Reports*, an annual publication of the Federal Bureau of Investigation (FBI). Information on city form of government was obtained from the *Municipal Year Book*, editions 1968-1998, published by the International City/County Management Association (ICMA). The sources for mayoral elections dates were the *Municipal Year Books* 1968-1983 and the *World Almanac and Book of Facts*, editions 1968-1998, as well as city websites. Local council election dates were determined on the basis of information available in the *Municipal Year Books* 1968, 1982 and 1987, ICMA’s 1996 Form of Government Survey data file and city websites. Annual city-level data on total taxes and total debt outstanding were taken from the US Bureau of Census’s Historical Database on Individual Government Finances. The annual series of personal income per capita by metropolitan statistical area and state nonmetropolitan statistical area are from the online tables of the Bureau of Economic Analysis at the US Department of Commerce. Fiscal and economic variables were deflated using the Consumer Price Index for all urban consumers (CPI-U) with the base period 1982-84, published by the Bureau of Labor Statistics and made available online. The decennial census figures for percent population black were taken from the 1977, 1988, 1994 and 2000 editions of the *County and City Data Book* published by the US Bureau of Census.
References


