Bureaucrats, Legislators, and the Size of Government

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Some recent theories have blamed the growth of government on budget-maximizing bureaucrats who are assumedly capable of imposing their most preferred budget-output combination on legislatures, subject to cost and demand constraints. However, theoretical examination of the range of bargaining outcomes that might occur between bureau and legislature shows that budget-maximizing behavior does not necessarily lead to super-optimal levels of production, nor do the suggested reforms of competition and privatization necessarily improve the situation. In this bargaining model, the central determinants of governmental growth are not budget-maximizing bureaucrats, but the legislature's decisions regarding mode of oversight and form of internal organization.

Public bureaucracy has never been especially popular, but in recent years its image has gone from bad to worse. Citizens frustrated by big government and excessive taxation have focused much of the blame on the entrenchment and inefficiency of administrative institutions. Elected politicians—responsible for creating, funding, and overseeing these institutions all along—have reaped political gains by echoing (and sometimes leading) such popular sentiments. And the media have contributed regular exposes on bureaucratic behavior, with emphasis on mindless inefficiency, unresponsiveness, and unchecked growth.

Within the social sciences, all of this has been paralleled by enhanced interest in the study of bureaucracy, and by a growing conviction among scholars that bureaucracy is indeed a root cause of overextended government. The most influential work in support of this position is Niskanen's *Bureaucracy and Representative Government* (1971). In a pioneering departure from traditional, essentially sociological approaches to administration, Niskanen offers an economic theory in explaining the link between public bureaucracy and governmental growth.

Niskanen's view is that bureaus can be modelled in much the same way that economists model business firms, but with a few differences, such as: bureaucrats seek to maximize budgets rather than profits; their resources typically derive from lump-sum legislative appropriations rather than from selling goods in the marketplace; and, in dealing with the legislature, they have an effective monopoly over information about the true costs of supply. Incorporating these properties into a model of bureaucratic behavior, he demonstrates that budget-maximizing bureaucrats will put their monopoly powers to use in securing budget and output levels that are higher than socially optimal.

During the last decade, Niskanen's novel perspective has shaped scholarly thinking about bureaucracy.[1] Above all, it has provided theoretical justification for the view that bureaucracy is a basic cause of excessive governmental growth, and it has riveted attention on the expansionary incentives and monopoly advantages of public bureaucrats. In the process it has become the cornerstone of a scientific movement of sorts, led by the public choice school of economists and political scientists, against the bureaucratic supply of public services and in favor of two fundamental dimensions of reform: privatization and competition. Privatization involves the provision of public services through contracting arrangements with private firms. Competition, whether among bureaus or firms, involves provision via multiple sources of supply. Both proposals, usually offered in combination, are natural extensions of conventional economic principles to the problem of governmental organization.[2]

Criticism of Niskanen's model has centered most often around the assumption of budget-

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[1] Its influence has been bolstered by empirical research demonstrating the relative inefficiency of bureaucratic supply. See, for instance, Ahlbrandt (1973), Davies (1971), DeAllesi (1974), Savas (1976).

[2] See for example, Borcherding (1977), Savas (1977), Savas (1982), Ostrom and Ostrom (1971), Tullock (1965), and Mackay and Weaver (1978).

maximization, with the suggestion that bureaucrats may in fact pursue other goals—e.g., slack resources—in addition to or instead of large budgets.[3] These sorts of motivational issues are clearly important, since different assumptions can give rise to quite different conclusions about the behavior of bureaucrats, and, in a later article, Niskanen (1975) has recognized as much by incorporating a more complex bureaucratic value structure into a revised model.

The most instructive and far-reaching criticism of Niskanen's work, however, is that it fails to integrate the legislature into its formal framework. Budgets and service levels, after all, are not really bureaucratic decisions—they are *joint* decisional outcomes that arise from bureau-legislature interaction, and they should be modelled as such. Niskanen has implicitly recognized this all along, yet, at least in part to minimize the analytical complexities that interaction often entails, his model of bureaucratic behavior essentially focuses on the bureau alone. In his book, the legislature is introduced in a less formal, less systematic way late in the analysis, and, in his subsequent article, he carries out a more sustained and formal analysis of legislative decision making without developing an overarching model in which legislative and bureaucratic decision making are truly interdependent. This general approach, however much it helps to simplify his analysis, cannot produce a coherent perspective on bureau-legislature interaction and, as a result, threatens to generate inappropriate conclusions about the nature and determinants of decisional outcomes.

In this article we move toward a broader perspective on bureaucracy which recognizes the integral role of the legislature.[4] To enhance comparability and highlight the implications of bureau-legislature interaction, we retain the basic components of Niskanen's original budget-maximization model.[5] With this as a foundation, we go on to incorporate the legislature and allow for important aspects of legislative organization: its modes of oversight, the representativeness of its committees, and its decisional rules of thumb. When these legislative considerations are integrated into the analysis, bureaucratic behavior is placed in larger, more meaningful context. Viewed from this standpoint, the dimensions of the "bureaucracy problem" begin to look very different from those stressed by Niskanen and other critics. In particular, the model implies that their negative assessments of bureaucracy are overdrawn, that their proposals for privatization and competition are often ill-advised, and that the legislature, not the bureaucracy, is primarily to blame for problems of big government.

Needless to say, we offer this model in the spirit of cumulative science and not as the final word. The point we wish to emphasize at this stage is simply that the familiar economic logic Niskanen and others have relied upon in justifying their anti-bureaucratic position does not necessarily lead in this direction at all. A more comprehensive —and, we think, more reasonable—version of their own model, guided by the same line of economic reasoning, leads in fact to far more positive views of public bureaucracy. At the least, this should raise some doubts about a perspective that is fast becoming conventional wisdom.

The Niskanen Model

The strength of Niskanen's model derives from its simplicity. Like other economic models of producer behavior, it is built around the notions of supply and demand. The demand for a bureau's services is assumed to come from the legislature, which places a value upon levels of output, Q, and offers a schedule of budgets, B, equal to this total evaluation. Specifically, the legislature's budget-total evaluation curve is assumed to be $B = aQ - bQ^2$ ($a, b > 0$). On the supply side, output is produced by a monopolistic bureau headed by a budget-maximizing bureaucrat. The cost of producing each level of output, $C = cQ + dQ^2$ ($c, d > 0$), is known only by the bureaucrat, not by the legislature. His task is to secure the largest budget he can for his bureau, subject to the constraint that he must be able to deliver the level of Q he promises—that his budget must cover his costs.

How do legislatures and bureaucrats interact to arrive at a decision? Niskanen recognizes that the bureau is typically a monopoly supplier of Q and the legislature a monopoly buyer (a monopsonist), and thus that their relationship constitutes a bilateral monopoly. But he does not incorporate this feature into his model. He assumes instead a rather peculiar process of decision making: the legislature reveals the maximum amount it is willing to pay for each level of Q (its total evaluation

[3] See Migue and Belanger (1974), which applies the literature on "managerial discretionary profit" to Niskanen.

[4] For other efforts to model bureau-legislature interaction, but along different lines, see Miller (1977), Spencer (1980), and Breton and Wintrobe (1975). For a general equilibrium approach, see Fiorina and Noll (1978).

[5] In particular, we maintain the quadratic forms of the cost and valuation functions used by Niskanen. A generalization of this form is desirable, but we maintain the quadratic form for consistency with Niskanen and because we later show, in the section entitled "Rules of Thumb," that assumptions of linearity in marginal cost and demand functions (which are equivalent to the quadratic for valuation and total cost) may be stra-

curve), and the bureaucrat then picks any budget-output combination he likes consistent with this legislative budget function. This seems odd for two reasons. First, the legislature behaves irrationally. It does not even try to maximize its net benefits on the exchange, but instead simply turns its utility function over to the bureaucrat. Second, the final budgetary choices are made by the bureaucrat, when, in the real-world budgetary process, final choices are obviously made by the legislature.

Niskanen does not treat this model as the curiosity it is. In the latter part of this book, however, after the basic conclusions about bureaucratic supply have already been derived, he introduces what amounts to an explanation. Legislators, he notes, make decisions in committees, and decisions about particular bureaus tend to be made by committees whose demand for bureau services is much higher than that of the legislature as a whole. The high-demand committee *is* a rational decision maker that seeks to maximize its own utility in overseeing the bureau, but it is on the bureau's side in preferring high budget-output combinations. Moreover, it is in an excellent position for getting its way, because its decisional role is to present the legislature with a take-it-or-leave-it budgetary choice. The legislature does not choose a budget from a whole range of possible alternatives, but simply votes yes or no on the single alternative produced by the committee. And, although the legislature might prefer a low level of Q, the committee can force it to accept a much higher level, since the legislature will vote for any budget-output combination that it prefers even slightly to the alternative of nothing at all. Thus the committee can choose (as Niskanen's bureaucrat does) budget-output combinations infinitely close to the legislature's total evaluation curve, achieving the largest feasible outcome.[6]

Following this logic, then, Niskanen justifies his simple model as a reflection of empirical features of the budgetary process, and he suggests (but does not prove) that it leads to the same conclusions as would a more complex model explicitly incorporating these elements. He does not "really" assume that the legislature is irrational, nor that the bureaucrat makes the final budgetary decision; it only appears that way in the simplified structure of the model.

We can now turn to the conclusions entailed by the model itself, since these are the claims for which Niskanen's analysis is best known. Most fundamentally, they derive from the bureaucrat's constrained optimization problem, which is to maximize his budget (equaling the legislature's total evaluation curve), subject to the constraint that the budget must cover the costs of production:

$$\text{maximize } B = aQ - bQ^2$$
$$\text{subject to } aQ - bQ^2 \geqslant cQ + dQ^2$$

The maximum budget corresponds to $Q = a/2b$, but this output level is not always attainable. In particular, if the budget and cost curves intersect at some $Q < a/2b$, as they do for C_2 in Figure 1, then the maximum budget cannot be reached; the costs of supplying $Q = a/2b$ will outweigh the legislative budget, and the bureaucrat will be unable to follow through on any promise to provide this level of output. Under these "cost-constrained" conditions, the largest budget the bureaucrat can secure corresponds to $Q = (a-c)/(b+d)$, the level of output for which the budget is just large enough to cover costs. If, on the other hand, the budget and cost curves do not intersect at some $Q < a/2b$, as is true for C_1 in Figure 1, then the legislative budget forthcoming at $Q = a/2b$ will be at least enough to cover the costs of supply. Under these conditions (which Niskanen calls "demand-constrained"), the rational bureaucrat will simply make the unconstrained choice of $Q = a/2b$ and secure the maximum budget.

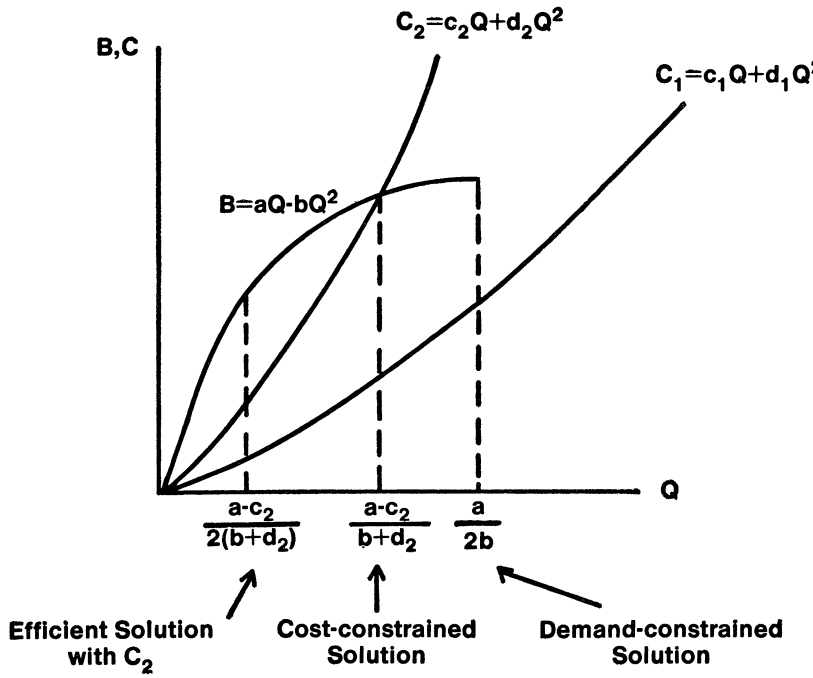
Thus, there are two solutions to the budget-output decision, depending on the prevailing supply and demand conditions. And these two solutions, it turns out, have different implications for the internal efficiency and social optimality of bureaucratic performance.[7] Consider the question

tegically useful assumptions for some of the participants in the bargaining process.

[6]Note that it is the legislative committee, not the bureau, that exercises agenda control by presenting the legislature with a take-it-or-leave-it choice. (See our discussion under "Rules of Thumb.") Perhaps the clearest case of agenda control in a take-it-or-leave-it form is that by the local school board in placing tax millage proposals before the electorate. Here the school board, as legislature, is the agenda monopolist and the population is the relatively passive "sponsor." Romer and Rosenthal (1979) develop this case in a seminal article which is probably the most realistic application of the Niskanen model because of the relative passsivity of large electorates and because of the control of the agenda by the school board.

[7]We should perhaps clarify the difference between internal efficiency and social optimality, as we use the terms here. Internal efficiency occurs when the supplier produces any possible level of Q at the least possible cost, given the current state of technology. Social optimality occurs at the particular level of output that maximizes the difference between the sponsor's evalua-

Figure 1. Sponsor's Total Evaluation Function and Alternative Total Cost Functions.



of efficiency. Under demand-constrained conditions, some portion of the legislature's appropriated budget will be wasted in the supply of Q; the budget generally exceeds the true costs of supply and, because the legislature is not privy to this information, the bureaucrat is able to use his discretion in allocating the slack resources in uneconomical ways—e.g., by hiring unnecessary staff. If budget and cost curves force the cost-constrained solution, however, the entire budget will be allocated toward the production of Q at minimum cost. In this sense, the cost-constrained bureau will operate efficiently.

The social optimality question prompts Niskanen to make two additional assumptions: that the legislature's total evaluation curve is an accurate reflection of the underlying social evaluation of Q, and that the bureau's cost curve represents the minimum social costs of supplying Q. Given these assumptions, it follows that the social optimum occurs at $Q = (a-c)/2(b+d)$, the output level that equates marginal social benefits with marginal social costs. The cost-constrained solution, although internally efficient, therefore involves larger budgets and outputs than are socially optimal. It generates no social surplus whatever, and neither the legislature nor social consumers realize any net benefit on the exchange. The demand-constrained solution involves still larger levels of budget and output. Some social surplus is generated, but the bureau captures it all and puts it to socially inefficient use. Once again, the legislature and social consumers gain nothing.

All of this provides the foundation for Niskanen's central critique of bureaucracy: when governmental services are supplied by monopolistic bureaus, both the level of services and the amount spent on them will be higher than socially optimal. Government will be too large. Outcomes are more efficient under the cost-constrained than the demand-constrained bureaucratic solution, and Niskanen encourages a search for mechanisms that would promote the former result, e.g., committee restructuring to lower committee demand. But his major emphasis is on moving away from reliance upon monopoly bureaus and toward alternative arrangements that, particularly to an economist, have a capacity for improving social efficiency: privatization and competition.

tion curve and the minimum cost function; this difference is the social surplus. Niskanen's critique of bureaucracy is primarily a social optimality critique—bureaus produce too much.

A Broader Framework for Analysis

A basic problem here is that the connection between Niskanen's simple model and his general line of reasoning is ambiguous. In the first place, it is unclear whether the actions of legislative committees do indeed allow bureaucrats to act as if they are choosing from the legislature's total evaluation curve—a crucial foundation for his conclusions. This is unclear on logical grounds, for he never demonstrates the linkage by fully incorporating committees into his model. But it is also unclear for empirical reasons, because the literature on budgeting, which highlights the frugality of appropriations committees, suggests that high-demand committees may not be the norm at all.[8] Second, it remains a question whether the culprit in this tale is really the bureaucracy. After all, it could be the legislature that deserves most of the blame, owing to the way in which it organizes itself for budgetary decision making.[9] Niskanen's model, by implicitly combining the roles of bureaus and legislative committees, confounds their effects and makes the assignment of blame virtually impossible.

In this and subsequent sections, we develop a somewhat more elaborate model that addresses these ambiguities and, in so doing, allows for a more comprehensive analysis. To facilitate comparison with Niskanen's original model, however, the basic assumptions structuring his analysis are retained. We continue to focus on the same set of actors, to adopt the same functional forms for cost and benefit curves, and to assume that the latter accurately reflect social costs and benefits.[10]

We depart from Niskanen in offering an explicit model of bureau-committee interaction. In its simplest form, this model is structured by four general assumptions:

1) The relationship between the actors is one of bilateral monopoly: the bureau is a monopoly supplier, the committee a monopoly buyer, and each tries to maximize its own utility in shaping budget-outcome decisions.

2) The relationship is hierarchic. a) Final budget-output decisions are taken by the committee, subject to approval by the full legislature. The role of the bureau is to supply cost information—not necessarily accurate—on the basis of which the committee makes its determinations. b) The sequence of steps in the decision process is implied by the committee's characteristic "mode of oversight," where the latter largely reflects the committee's (and the full legislature's) imposition of structure on budgetary interactions. This imposition may be the result of conscious choice or it may simply be the result of habit or tradition.

3) There are two polar modes of legislative oversight. a) *Demand revealing,* in which the legislature reveals a demand function for Q, then solicits cost information from the bureau, then makes its final decision. b) *Demand concealing,* in which the committee reveals nothing, requires the bureau to "go first" in transmitting a supply schedule, then makes its final decision.

4) The committee, knowing that its only information about costs comes from the bureau, does not try to arrive at a comprehensive estimate of the bureau's cost function. Instead, it adopts the simplest possible rule of thumb by announcing its intention to pay a flat amount, p, for each unit of Q. Its cost-estimation problem, then, reduces to the much easier task of settling upon a value for p.

Assumptions 1 and 2a are clearly consistent with Niskanen's general line of reasoning. Assumption 2b is added because it serves a necessary function: in order for there to be deterministic solutions in a bilateral monopoly game, some structure must be imposed on the interactions. Empirically, it is reasonable to posit that this structure is implicit in the modes of oversight employed by legislative committees. Assumption 3 is a useful way of entering the oversight factor into the analysis. As we will see, each model depicts an extreme case: in one the bureaucrat is able to extract maximum monopoly gains, and in the other the committee is able to extract maximum monopsony gains. Analysis of these polar cases, along with references to the continuum of cases in between, offers useful insights into the determinants of budget-output decisions and leads to reference solutions against which the Niskanen results can be evaluated. Assumption 4 is useful because it provides a common cost parameter, p, that structures the calculations of both participants—and because, as we will show, it makes possible an inquiry into the roles of legislative rules of thumb. But the assumption also

[8] For a discussion of the "watchdog" attitudes and central role of the appropriations committees, see Fenno (1966) and Wildavsky (1964). There is some evidence, however, that during the last decade or so, high-demand individuals have been more successful at landing the seats they want on the appropriations subcommittees. Whether this is significant for budgeting outcomes remains to be determined. For an overview of the literature, see Dodd and Schott (1979) and also Cowart (1981).

[9] The centrality of the legislature in the growth of the federal government is argued by Fiorina (1977), Hardin, Shepsle, and Weingast (1982), and Weingast (1979).

[10] Also, for simplicity and purposes of comparison, we follow Niskanen in assuming that the reversion level is zero (i.e., that the alternative to the committee's proposed budget is a budget of zero). An analysis allowing nonzero reversion levels is developed in Romer and Rosenthal (1979).

seems reasonable enough in itself. In some policy areas—defense, for instance—committees clearly do use per-unit prices as decision guides, and this practice may in fact be widespread.[11] More generally, the use of a per-unit price is consistent with an underlying legislative assumption that bureaucratic costs are linear functions of Q; since the committee cannot know whether costs are increasing or decreasing over the relevant range, and since either is feasible, it is reasonable to suggest that legislators often "muddle through" by assuming costs are approximately linear—and thus that budgetary cost can be represented as the quantity pQ.

This model does not require a high-demand committee. The relationship between the committee's demand for Q and the full legislature's demand for Q is a variable whose value remains to be filled in. We will do so by developing the analysis in two stages. In the first, we will derive a full range of conclusions based on the assumption that the committee is perfectly representative of the legislature as a whole. In the second, we will show how these conclusions change as the committee becomes increasingly unrepresentative. This two-stage treatment of committee demand, combined with attention to legislative oversight, allows us to distinguish the independent effects of these important components of legislative organization, and thus to explore the extent to which the legislature—rather than simply the budget-maximizing bureaucrat—can be responsible for problems of over-extended government.

Oversight by Representative Committee

A committee's benefit and cost functions are not the same as the legislature's. The committee receives some fraction of the total benefits deriving from Q, and it must pay some fraction of the total cost burden. When these fractions are equal, however, the committee's own cost-benefit calculations lead it to choose the same budget-output combination that the legislature itself would have chosen in seeking to maximize its net benefits. The representative committee, in other words, calculates as though it were acting on the basis of the legislature's total-benefit and total-cost curves. And when its decision is presented in take-it-or-leave-it form to the whole body, of course, approval is always forthcoming. By focusing our analysis in this section on representative committees, then, we simplify matters substantially. Niskanen's benefit curves can be employed as though they are the committee's, and the constraint of legislative approval need not be entertained, since it is unbinding.

[11]For example, in the controversy surrounding close air support, there was a fixed per-unit "price" or procurement cost for each of the potential aircraft. The per-unit cost for the Harrier was $4.6 million. There was no expectation that the Department of Defense or other bureaucratic agency had offered a take-it-or-leave-it budget; on the contrary, the committee seemed perfectly capable of ordering any number of each type of aircraft at the per-unit price given for each. See Liske and Rundquist (1974).

Bureaucratic Supply

Assume first that oversight is demand revealing. The committee is interested in maximizing its net benefits on the exchange, and thus (in effect) in maximizing $N = aQ - bQ^2 - pQ$, the difference between total benefits and budgetary costs. Treating p as a bureaucratically determined parameter, the committee maximizes with respect to Q, yielding

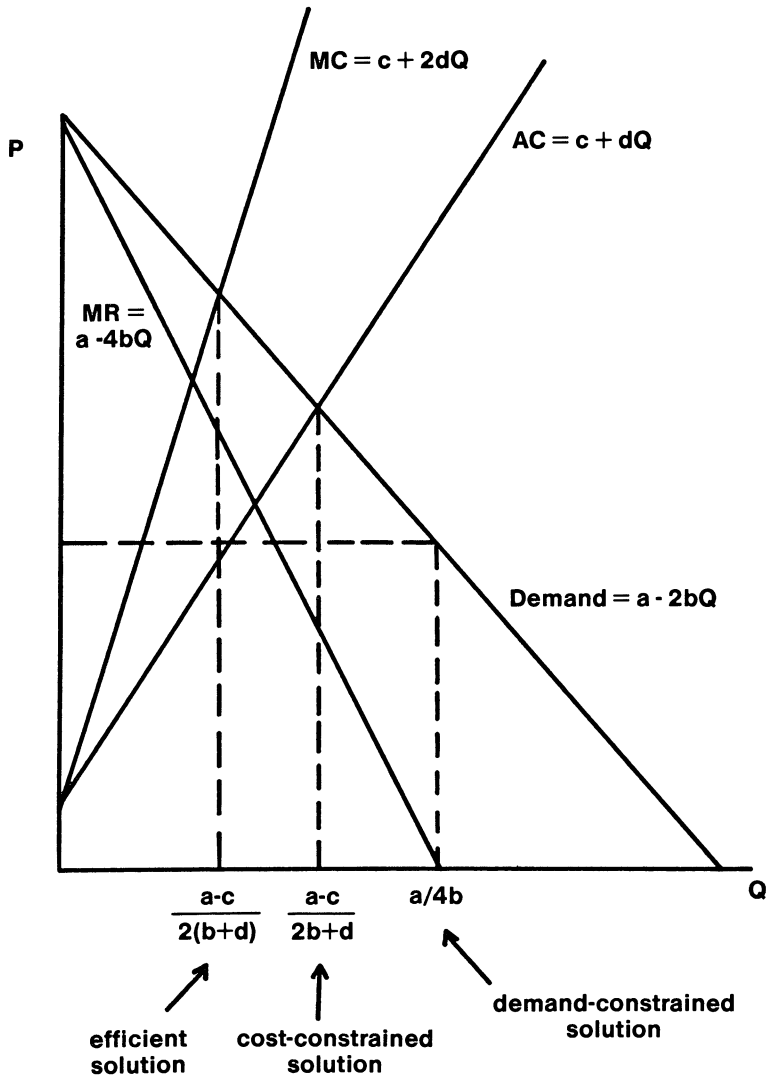
$$N' = a - 2bQ - p = 0$$
$$p = a - 2bQ$$

This is the demand curve the committee reveals to the bureaucrat, who must now respond by providing the committee with cost information. In general, he will want to supply information that maximizes his agency's budget. In making his decision, however, he can take advantage of his knowledge of legislative demand, which tells him how the committee will react to whatever choices he makes. Taking this committee reaction function into account, his constrained optimization problem becomes:

$$\text{maximize } B = pQ$$
$$\text{subject to } pQ \geqslant cQ + dQ^2$$
$$\text{and } p = a - 2bQ.$$

As in Niskanen's model, the bureaucrat is led to two solutions (Figure 2). Under demand-constrained conditions, he simply acts to maximize total revenue (the budget) by setting marginal revenue equal to zero and reading off the optimal price, $p = a/2$, from the committee demand curve. Given the committee's reaction curve, however, the bureaucrat knows full well that it will respond to $p = a/2$ by picking the companion output level he desires, $Q = a/4b$. Under cost-constrained conditions, illustrated in Figure 2, this price-output combination is unattainable because it calls for a price that does not cover the average cost of production. Here, the bureaucrat obtains his largest budget under the circumstances by setting average cost equal to

Figure 2. Demand Revealing Solutions with Budget-Maximizing Bureaucrat.



committee demand, yielding a price of $p = (2bc + ad)/(2b + d)$. This is the information the bureaucrat transmits about costs. He knows that the committee will react to this information by choosing $Q = (a-c)/(2b+d)$, his preferred output level.

The final step in the decision process is now pro forma. The committee acts to maximize its net benefits based on bureaucratically supplied cost information, and, in so doing, chooses the budget-output combination preferred by the bureaucrat. The committee makes the "final decision," but the bureaucrat's prior knowledge of its reaction function has allowed him to engineer the whole process and predetermine the results.

These results are not immediately comparable to Niskanen's, because the parameter restrictions defining the demand-constrained and cost-constrained regions are different across models. In particular, for $d < b - 2bc/a$, both models are demand-constrained; for $d > 2(b - 2bc/a)$, both models are cost-constrained; and for parameter values in between, Niskanen's model is cost-constrained, whereas ours is demand-constrained. Comparisons are properly drawn within these sets, and when this is carried out, a sometimes

messy process, the following conclusions emerge.

If we think of social welfare in terms of total social surplus, which is standard, then these levels of output generally correspond to higher levels of welfare that are closer to optimal than Niskanen's. They imply, in other words, better governmental outcomes for society. The only exception, ironically, is that demand-constrained output may be so far *below* the optimal level that Niskanen's own demand constrained result—which itself represents a government grown far too large—is actually a preferable outcome for society. The latter possibility can be illustrated with reference to Figure 2. Were the cost curves in the figure to shift downward, the socially optimal level of Q (given by the intersection of marginal costs and demand), would shift to the right, and there is clearly a whole range of cost conditions for which the optimum would be greater than $a/4b$, the demand-constrained solution. In general, the lower the true costs of production, the more likely the demand-constrained solution will obtain—and the more likely that it will actually imply a government that is too small, relative to the social optimum.

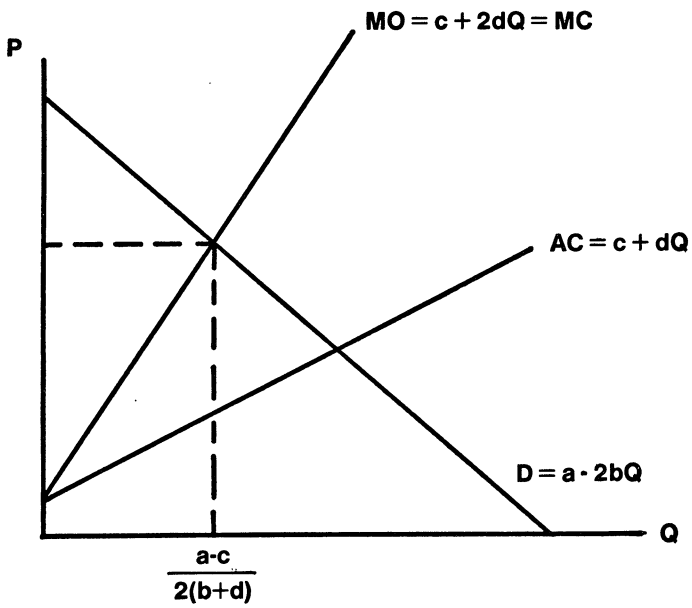
We may also want to think of social welfare in terms of legislative net benefit, for there is something rather perverse about measuring social welfare purely in terms of social surplus when all or most of it may be soaked up by the bureau. Looking at welfare in this way, comparison across models is unambiguous. Given our representative-committee model, the legislature and social consumers always realize net benefits on the budgetary exchange: under cost-constrained conditions they capture the entire surplus, whereas under demand-constrained conditions they divide the surplus with the bureau. By contrast, Niskanen's model implies that they never realize net benefits on the exchange, regardless of the underlying conditions. By this criterion, then, the representative-committee model associates uniformly higher levels of social welfare with the bureaucratic production of services than Niskanen's does.

Now assume that legislative oversight is demand concealing. Here, the decision process consists of two steps. First, the committee requires the bureaucrat to transmit a supply function indicating, for each possible price, how much Q he can promise to produce. The committee then takes this information into account in making the final budget-output decisions.

The bureaucrat must begin the process, then, by determining what supply function is best suited to the maximization of his own budget—with the committee providing him with no prior information about its demand. Treating p as a parameter, he calculates his optimal response by

$$\begin{aligned} &\text{maximizing} && B = pQ \\ &\text{subject to} && pQ \geqslant cQ + dQ^2 \end{aligned}$$

Figure 3. Demand-Concealing Oversight with Budget-Maximizing Bureaucrat.



This leads to one solution. For any fixed p, the maximum budget the bureaucrat can achieve (i.e., the highest point along the line p_iQ), given the constraint, corresponds to the output at which $pQ = cQ + dQ^2$. Thus, the optimal budget-output combinations always lie along the bureaucrat's own cost curve—which means that, for any and all levels of Q, the supply schedule he or she reports to the committee is his or her true average cost curve. This is the bureaucrat's best budget-maximizing response, even though he is free to transmit any supply information he likes.

The committee takes this information, which describes the bureaucrat's reaction curve, and puts it to use in maximizing its net benefits on the exchange. As illustrated in Figure 3, its constrained optimization problem,

$$\text{maximize } N = aQ - bQ^2 - pQ$$
$$\text{subject to } p = c + dQ,$$

then leads it to calculate just as a classic monopsonist would: namely, by choosing the price-output combination that equates its marginal evaluation with its marginal outlay. The latter, however, is identical in this case to the bureaucrat's (and society's) marginal cost. Thus, the committee, in maximizing its own net benefits, is automatically led to choose the socially optimal level of output, $Q = (a-c)/2(b+d)$, at a price just covering the average cost of bureaucratic supply. The size of government, then, is "just right" under demand-concealing oversight. Social surplus is at a maximum, the legislature and social consumers capture it all (legislative net benefit is equal to social surplus), and the bureau produces efficiently.

There is no guarantee, of course, that either of these polar modes of oversight, demand concealing or demand revealing, will obtain empirically. And it is unlikely that any given legislative committee will be perfectly representative of the legislature as a whole. As a first step, however, this simplified analysis has been useful as a means of investigating basic relationships, and several of its implications stand out as particularly important.

1) Social welfare varies directly with the mode of legislative oversight. Society is better off when the committee hides its demand and requires the bureaucrat to go first in supplying cost information. To the extent that the committee reveals its demand for services beforehand, the bureaucracy will take advantage of the situation and impose less favorable outcomes.

2) The relationship between size of government and legislative oversight is contingent. Demand-concealing oversight leads to a government of optimal size, but a shift to demand-revealing oversight produces outcomes that may be larger or smaller than this.

3) Regardless of the mode of oversight, a representative committee system always produces smaller government and (except when outputs are far below optimal) higher levels of social welfare than Niskanen's model implies. Since he implicitly assumes high-demand committees, this is a preliminary indication that, if his logic is roughly correct, a good portion of the problem of oversized government is not the result of bureaucracy, but rather of the legislative committee system.

4) There are social conditions—demand-concealing oversight, representative committee system—under which monopolistic supply by budget-maximizing bureaus is socially optimal. Although these conditions are unrealistic, they are no less realistic than those underlying standard economic models of perfect competition, and it is unclear why this model of bureaucratic supply, as an ideal model of governmental service provision, should be any less useful or attractive than perfect competition itself.

Reform: Privatization

The fact is that perfect competition and its underlying logic have had major influences on scholarly thinking about government organization. In view of all the benefits associated with competition among profit-maximizing firms and all the costs associated with monopoly, it is a short step to the conclusion that governmental supply by monopoly bureaus produces serious social inefficiencies—and another short step to the conclusion that government can reduce social inefficiency through greater reliance upon private firms and competitive supply. For years, these points went without formal demonstration, and it was simply assumed they were consistent with the tenets of economic theory. When Niskanen's "demonstration" came along, his innovative analysis was widely acclaimed, but its effect was to justify general conclusions about bureaucracy that many economists (and, increasingly, political scientists) had already embraced.

It is certainly reasonable to argue that privatization and competition each have something important to offer. Privatization substitutes a profit-maximizing firm (e.g., through contracting arrangements) for a budget-maximizing bureau. Even in the absence of competition, the firm seeks to maximize the *difference* between revenues (budgets) and costs rather than to seek the greatest possible revenue. The result should be a smaller and presumably more optimal budget-output combination for society. Similarly, competition, even if it is only among public bureaus, should also lead to greater social efficiency, for it undermines the monopoly power of suppliers and

loosens their exclusive control over cost information. Thus, granting that political realities may not allow for an ideal merging of privatization and competition, reform along either dimension would seem to promise socially beneficial results.

In this section we will evaluate the privatization argument by applying the two modes of legislative oversight to a new mode of supply: supply by a monopoly contractor. The method of analysis will be the same as before, except that the supplier now calculates with reference to a profit function, $Y = pQ - cQ - dQ^2$, rather than the bureaucrat's budget function, $B = pQ$.[12] Competition among suppliers, whether public or private, will be evaluated at a later point.

Suppose that oversight is demand revealing. Here, the committee begins the process by revealing the same demand schedule it would provide to the bureaucrat, $p = a - 2bQ$. The contractor takes advantage of this information in

$$\text{maximizing } Y = pQ - cQ - dQ^2$$
$$\text{subject to } p = a - 2bQ,$$

which leads to the standard monopolist solution: he chooses (implicitly) the output level at which marginal revenues and marginal costs are equal, and reads off the corresponding price from the revealed demand curve (Figure 4). The contractor then transmits this optimal price, $p = (ab+ad+bc)/(2b+d)$, to the committee, knowing that, given the committee's reaction curve, it will respond by picking the final output level he desires, $Q = (a-c)/(2b+d)$. As a comparison of Figures 2 and 4 illustrates, this output level is always smaller than the one yielded by bureaucratic supply under the same mode of oversight, and it is also smaller than the social optimum.

Now suppose oversight is demand concealing. The committee requires the contractor to begin the process by submitting a supply schedule that indicates how much he will produce for different levels of price. Calculating without information on committee demand, the contractor seeks to

$$\text{maximize } Y = pQ - cQ - dQ^2$$

under the assumption that p is an unknown parameter whose value is ultimately chosen by the committee. His solution is to transmit the supply curve $p = c + 2dQ$, which is in fact his true marginal cost curve. The committee then takes this supply information into account in maximizing its own net benefits. This does *not,* however, lead the committee to choose the social optimum by setting marginal costs equal to its marginal evaluation. Instead, as shown in Figure 4, the committee behaves as any monopsonist would: it sets marginal *outlay* equal to its marginal evaluation, and thus chooses a level of output smaller than the social optimum. This level is also smaller, of course, than the one supplied by the bureau under demand-concealing oversight, since bureaucratic output equals the social optimum.

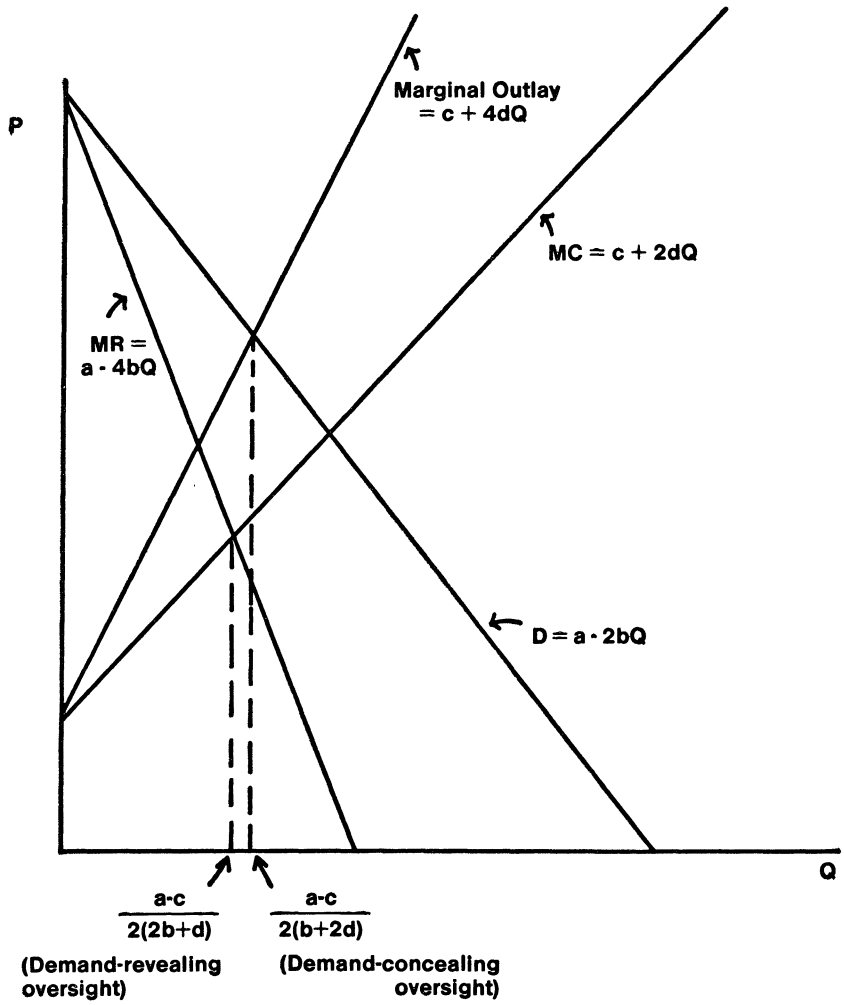
Some useful summary comparisons can now be made with the help of Tables 1, 2, and 3, which present figures on output, legislative net benefit, and social surplus, for both the bureaucratic and private modes of supply. Algebraic manipulation of these data leads to the following conclusions.

1) The relationship between legislative oversight and the level of private output is contingent. For $b > d$, demand-concealing oversight leads to larger outcomes than demand-revealing oversight, and, for $b < d$, the reverse is true.[13] This contingency reflects the actors' use of market power. When the committee acts as a monopsonist, constructing a marginal outlay curve from the supply schedule, its utility is more sensitive to the rate of increase in costs (d) than the rate of decrease in benefits (b). As Table 1 indicates, an increase in d therefore causes a greater reduction in its preferred output than does an identical change in b. Just the opposite occurs for the supplier, who, acting as a monopolist, finds that his profits are more sensitive to the rate of change in revenues (b) than the rate of change in costs (d). Because the committee and the supplier respond to the b and d terms differently, then, the demand-revealing (monopoly) solution will increase relative to the demand-concealing (monopsony) solu-

[12]Note that an analysis of "profit" (or slack or managerial discretionary profit) maximizing bureaucrats would follow precisely these lines, and that the results we obtain for the private monopolist could be employed (although we will not pursue it in this article) to investigate the implications of motivational diversity among bureaucrats. That is, the more a public bureaucrat values the *difference* between costs and budget, instead of the total budget, the more he will approximate the behavior of the profit-maximizing private entrepreneur. Conversely, private managers who maximize total sales revenue will behave exactly like public budget maximizers if they are facing the same kind of market. The only difference between private revenue maximizers and public budget maximizers is that private sales maximizers are normally thought of as facing a large number of buyers, whereas the public budget maximizer faces a monopsonistic legislature.

[13]Note that Figure 4 shows the demand-concealing solution larger than the demand-revealing solution, because of the relative steepness of the demand curves. For $b < d$, the reverse would have been true.

Figure 4. Demand-Revealing and Demand-Concealing Oversight with Profit-Maximizing Supplier.



tion to the extent that b increases relative to d, and vice-versa.

2) By the social surplus criterion of welfare, bureaucracy is usually the preferable mode of supply. Specifically, bureaucracy can always be counted upon to yield higher levels of social welfare than private supply, except when oversight is demand revealing and $b > d$.

3) Given the social surplus criterion, society is usually better off when the committee adopts demand-concealing oversight. Specifically, this mode of oversight always gives rise to higher levels of social welfare than demand-revealing oversight does, except when $b < d$ and the mode of supply is private.

4) For either mode of oversight, the committee and the legislature are uniformly better off with bureaucratic supply. If we measure social welfare in terms of legislative net benefit, the same conclusion follows for society as a whole.

5) For either mode of supply, the committee and the legislature are uniformly better off with demand-concealing oversight. If social welfare is measured by legislative net benefit, then the same conclusion follows for society as a whole.

6) Whether social welfare is measured in terms of social surplus or legislative net benefit, society's best combination of modes is always bureaucratic supply/demand-concealing oversight.

7) Generally speaking, then, the emphasis of reformers on the beneficial consequences of privatization is not justified—not, at any rate, when the legislative committee system is representative.

Table 1. Output

	Demand-concealing oversight	Demand-revealing oversight
bureau	$\frac{a-c}{2(b+d)}$ (efficient output)	$\frac{(a-c)}{2b+d}$, $d \geq 2b - \frac{4bc}{a}$ (greater than efficient) $\frac{a}{4b}$, $d < 2b - \frac{4bc}{a}$ (indeterminate)
firm	$\frac{a-c}{2(b+2d)}$ (less than efficient)	$\frac{a-c}{2(2b+d)}$ (less than efficient)

Table 2. Legislative Net Benefit

	Demand-concealing oversight	Demand-revealing oversight
bureau	$\frac{(a-c)^2}{4(b+d)}$	$\frac{b(a-c)^2}{(2b+d)^2}$, $d \geq 2b - 4bc/a$ $a^2/16b$, $d < 2b - 4bc/a$
firm	$\frac{(a-c)^2}{4(b+2d)}$	$\frac{b(a-c)^2}{4(2b+d)^2}$

Table 3. Social Surplus

	Demand-concealing oversight	Demand-revealing oversight
bureau	$\frac{(a-c)^2}{4(b+d)}$	$\frac{b(a-c)^2}{(2b+d)^2}$, $d \geq 2b - 4bc/a$ $\frac{3a^2b - 4abc - a^2d}{16b^2}$, $d < 2b - 4bc/a$
firm	$\frac{(a-c)^2(b+3d)}{4(b+2d)^2}$	$\frac{(a-c)^2(3b+d)}{4(2b+d)^2}$

Although a shift to private supply does indeed lead to smaller government, government is "too small"; and, except under special conditions, social welfare is lower than it would be under bureaucratic supply.

Strategic Interaction

In the real world of politics, sophisticated maneuvering and anticipated reactions are everyday facts of life that influence budgetary decision making. To this point, our analysis has been built around polar categories that, taken singly, do not allow for such complex interactions on the part of participants. Considered together, however, these same categories can be shown to constitute a very useful framework for thinking systematically about a full range of behavioral patterns—including not only strategic interaction between suppliers and committees, but also competition among suppliers.

A bilateral monopoly game, pitting monopolist against monopsonist, is strictly indeterminate. Depending upon their relative skills and resources, rational behavior may lead to outcomes falling anywhere between (or including) two extremes: one at which the monopolist gains maximum advantage by acting with full knowledge of the monopsonist's reaction curve, and one at which such advantages accrue only to the monop-

sonist.[14] Although these end-points are not necessarily the outcomes to be expected, they function to place important limits on the range of behavioral expectations. And when we recognize the kinds of resources and skills that tend to produce these extremes, we also gain broader insight into questions of why various interactions should lead to outcomes falling at different points in between.

In our framework, demand-revealing oversight guarantees maximum monopoly gains for the supplier, and demand-concealing oversight guarantees maximum monopsony gains for the committee. They therefore represent polar cases of the bilateral monopoly game, anchoring the ends of the continuum of possible outcomes. Note that this continuum *does not contain the Niskanen result.* Strategic interaction between bureaucrats and representative committees may lead to various levels of governmental output, but all of these are smaller than Niskanen predicts and, except under special conditions, social welfare is uniformly higher. This is true even if the committee *loses* the bargaining game entirely and passively allows the bureaucrat to exploit his monopoly position to the fullest.

Exactly where along the continuum will actual outcomes fall? This answer turns largely on each participant's success in learning the other's reaction curve. At the demand-concealing extreme, for example, the supplier is assumed to have no information about the committee's demand function; thus, he cannot strategically misrepresent his cost function with any assurance whatever that this misrepresentation will raise rather than lower his final budget or profit. On the other hand, once the supplier begins to gather clues about committee demand, he will have a foundation for misrepresenting the cost information he transmits. What holds for the supplier, however, also holds for the committee. The committee is best off if the supplier has no information about its evaluation of Q. Once it learns that the supplier is using available information to shape his cost transmissions, the committee will have an incentive to misrepresent the demand information on which the supplier bases his decisions, as well as to collect data on accurate supplier "prices."

The relative success of the players depends upon their relative resources and skills. The supplier, for instance, has a major informational advantage: he is the only one who knows the actual costs of supply, and the cost information he transmits need not reflect these actual costs in any respect. The committee, by contrast, must make the final decision, and thus, assuming that each final decision is taken to maximize its net gains, its budget-output choice ultimately demonstrates something about its true demand. Over time, therefore, the budgetary process tends to reveal more reliable information to the supplier than to the committee, other things being equal.

The supplier's informational advantage is offset, however, by several factors working in favor of the committee. First, committee demand is prone to change over time with such factors as changes in membership, constituency demands, and issue salience; to the extent that this is true, past decisions are less useful as indicators of present committee demand, and the supplier is forced to rely more heavily upon current information, which is more susceptible to manipulation by the committee. Second, although the supplier can only try to estimate the legislature's changing evaluation of Q, the supplier's own value function does not change at all and is likely to be transparent: if a bureaucrat, he is trying to maximize his budget, and, if a contractor, he is trying to maximize profit. Thus, it is much easier for the committee to know what the supplier is maximizing than for the supplier to know what the committee is maximizing, and this gives the committee a strategic advantage. Third, the committee can use its authority to impose any structure it wants on the budgetary process. Thus, it can require that the supplier go first in submitting cost information, while simply refusing to guarantee any prior information about demand. It can also specify what types of information are to be transmitted by the supplier, in what forms, and other requirements. The supplier will of course adjust to these requirements in his strategies of misrepresentation, but he cannot change the fundamental asymmetry in their relationship: he is subordinate to the committee in the hierarchy of governmental authority, and he must play the budgetary game within a structural framework set by the legislature.

In view of these considerations, there is no reason to think that the bargaining game is inherently stacked against the legislature, nor that budgetary outcomes should tend to approximate the demand-revealing end of the continuum. Legislators have important resources at their disposal, and, to the degree that they put these resources to use wisely, the budgetary process will yield smaller budget-output levels that are more nearly optimal for society as a whole. Better budgetary decisions are thus within the legislature's scope of action. Problems of seriously over-

[14] "Economists view the monopoly and monopsony solutions as the bargaining limits of the bilateral monopoly situation; the buyer can do no worse than the monopoly solution, and . . . the seller can do no worse than the monopsony solution." Henderson and Quandt (1980, p. 226).

sized government, should they occur, are not inevitable—they are indications that the legislature is not taking advantage of its resources and is consistently losing a bargaining game that it could well win.

The bargaining game may, however, tend to favor bureaucratic suppliers over private suppliers. Bureaucrats are governmental insiders and may be in a better position than contractors to gain special insight into legislative demand, to understand the politics of budgeting, and to obtain sympathetic treatment from legislators. If bureaucrats do indeed have these resource advantages, then outcomes under bureaucratic supply may tend to be closer to the demand-revealing end of the continuum than would be true under private supply, and this will tend to lower (but not eliminate) the comparative benefits we associated with bureaucratic supply in the previous section. Although this possibility is worth noting, its importance should not be exaggerated. Most private contractors are *not* really outsiders; they have incentives to seek the same kinds of information and special treatment that bureaucrats do, and their efforts along these lines often lead to established, regular roles in the political process. In many respects, they are just as much a part of politics as bureaucrats are. Thus, although it is reasonable to think that bureaucrats may have some advantages in the budgetary bargaining game, these advantages are unlikely to be very dramatic.

Reform: Competition

In conventional economic analysis, a comparison of monopoly and competition is simplified by assuming that the costs of production are the same for both. Prices and outputs are understood to differ across the two modes of supply, then, not because of their cost characteristics, but because the monopolist exercises market power that competitive suppliers cannot. The monopolist is able to pick both his optimal price and his optimal level of output, based on his knowledge of downward sloping market demand, whereas the competitive supplier must accept the going market price and is constrained to pick an output relative to that price. It is this greater degree of decisional control that allows the monopolist to produce less, receive a higher price, and make more profit than a set of competitive suppliers operating under precisely the same cost conditions.

This is the way competition and monopoly in the private sector are normally compared. Our own analytical framework, based upon polar modes of legislative oversight, easily allows an extension of this logic in comparing competition and monopoly in the provision of governmental services.[15] Demand-revealing oversight maximizes the monopoly power of the supplier, whether bureaucratic or private; the committee provides a demand schedule, and the supplier picks both his optimal price and his optimal output based on this information about demand. Demand-concealing oversight eliminates the supplier's monopoly power entirely; he transmits a supply schedule to the committee and then must accept whatever price-output decisions the latter makes. Thus, even though the prior analysis was developed in terms of a single supplier, the continuum of outcomes between the two poles in fact reflects an underlying movement from maximum to zero monopoly power—that is, from monopoly to competition. Holding cost conditions constant, then, the effect of introducing a degree of competition into the provision of governmental services is to shift social outcomes toward the demand-concealing end of the continuum. The more competitive the supply, the more closely the polar outcome will be approximated.

This does not mean that competition leads to a demand-concealing mode of oversight—just to the social outcomes associated with it. To illustrate, suppose that oversight is demand revealing, supply is initially monopolistic, and additional suppliers are then introduced. A major effect of this new competition is to bring about—e.g., through supplier bidding or other market-like mechanisms—revelations of information about the actual costs of supply, putting the committee in a better decisional position for dealing with suppliers. At the same time, suppliers are *less* able to put the committee's revealed demand schedule to profitable use, owing to the uncertainties created by their own competition and interdependence. The net effect, then, when competition is taken to its extreme, is to maximize the relative power of the committee over suppliers. Social outcomes will therefore be those associated with the demand-concealing pole of the continuum—even if, in political practice, the committee continues with a demand-revealing style of oversight.

A second point also needs to be stressed here we are only talking about competition on the sup-

[15]Niskanen's own analysis of competition among bureaus is inappropriate. He focuses on the (presumed) cost advantages associated with dividing supply among multiple suppliers, rather than holding (industry) costs constant and focusing solely on the implications of market power. Neither empirically nor theoretically is there a solid basis for concluding that small, competitive firms must supply goods at a lower cost than large, monopolistic firms. The question is a controversial one that remains unsettled.

ply side. On the demand side, there remains one buyer—the committee. Because of this, competitive supply does not produce anything like a competitive market for governmental services; it produces, rather, a one-sided competition that enhances the monopsony power of the committee. Under some conditions, however, we may observe competition on the demand side as well: for example, a large number of private buyers, plus the legislative committee, demanding services from a private monopoly supplier. In this case, competitive demand maximizes the monopoly power of the supplier vis-à-vis buyers, and shifts social outcomes toward the demand-revealing end of the continuum (whatever the prevailing mode of oversight may be). Thus, movement along the continuum can take place in either direction, depending upon how competition affects the monopoly power of sellers and the monopsony power of buyers. The market can only be "truly competitive" if both kinds of power are eliminated.

Given this background, it is now a straightforward matter to evaluate the reformist position on competitive supply. The question is: does the movement from monopoly to competition, whether among public bureaus or private firms, promise higher levels of social welfare? A comparison of polar social outcomes (presented in Tables 1, 2, and 3) leads to the following summary conclusions.

1) If governmental services are bureaucratically supplied, then the effects of competition are uniformly beneficial. The level of output moves toward (which usually means: declines toward) the social optimum, and both social surplus and legislative net benefit increase. Thus, the committee and the full legislature are better off with competition, as is society as a whole.

2) If governmental services are privately supplied, competition is *not* necessarily beneficial. When $b > d$, competition leads to higher, more nearly optimal levels of output, as well as to higher levels of social surplus and legislative net benefit. When $b < d$, on the other hand, competition leads to lower output than monopoly and to lower levels of social surplus—although legislative net benefit increases. By the usual social surplus measure of welfare, then, competition is socially beneficial when $b > d$ and socially harmful when $b < d$. From the standpoint of the committee and the full legislature, however, competition is always beneficial because it uniformly increases legislative net benefit.

There is a bit of irony in these results. Reformers' arguments on behalf of competition are invariably derived from an underlying belief in the benefits of competition among firms in the private sector. Yet, by their own measure of social welfare, competition in the supply of governmental services is only uniformly beneficial when the mode of provision is bureaucratic. When the private sector is relied upon, competition may actually be harmful. Thus, privatization and competition do not necessarily go hand-in-hand. Indeed, when these results are added to those in the preceding section, we find that the best combination for society—under a representative committee system—is bureaucratization and competition.

Oversight by High-Demand Committee

To this point, the analysis suggests that budget-maximizing bureaucracy has shouldered more than its share of the blame for problems of big government. If government is in fact too large, it appears to be because the legislature has made unwise decisions (or simply drifted into suboptimal patterns of behavior) regarding modes of oversight and service delivery. But this is only part of the story, for there is an entire dimension of legislative impact that remains to be investigated: the legislature also makes decisions about its own internal organization, decisions that determine the extent to which its committee system will be representative. To round out the analysis, we need to know what happens when the legislature undergoes an organizational shift from representative to unrepresentative committees—particularly when this leads to oversight by high-demand committees of the sort envisioned by Niskanen. What does such a change imply for the size of government and levels of social welfare?

Following Niskanen, we can assume the legislature is divided into three groups of equal size, each with its own evaluation function, V_i, and each assigned a tax share (a share of the total costs), t_i, of 1/3.

$$V_1 = a_1aQ - (b/3)Q^2$$
$$V_2 = a_2aQ - (b/3)Q^2$$
$$V_3 = a_3aQ - (b/3)Q^2$$

For simplicity, the evaluation functions are assumed to differ only as a result of the a_i, where $a_1 \geqslant a_2 \geqslant a_3$ and $a_1 + a_2 + a_3 = 1$. Thus, group 1 is the high-demand group, group 2 is the middle-demand group, and group 3 is the low-demand group. Legislative oversight responsibilities are given over to the high-demand group, which makes budget-output decisions subject to final approval by the legislature as a whole. This approval is not automatically forthcoming, however, as it was for the representative committee. The high-demand committee's final budget-outcome decisions must guarantee net benefits to (or at least not impose net costs upon) the middle-

demand group—which holds the balance of power in a majority voting scheme, and which places a lower value on Q than the committee does. The committee's task, then, is to maximize its own net benefits in dealing with the suppliers of governmental services, subject to the following constraint:

$a_2aQ - (b/3)Q^2 \geqslant t_2pQ$ or, since $t_2 = 1/3$, $p \leqslant 3a_2a - bQ$.

Two issues need to be addressed before the analysis can be carried out. First, the evaluation function of the middle-demand group is now relevant to the behavior of both the committee and suppliers, and it makes a difference who (if anyone) knows what this function is. We will assume that the committee, as part of the legislature, always has information on this dimension, whereas the supplier may or may not: under demand-revealing oversight the middle-demand constraint is revealed to the supplier, and under demand-concealing oversight, it is not. This is a reasonable assumption empirically. It also maintains the market-power implications of the polar cases, while simplifying informational complexities in a way that is analytically workable, for if the committee did not possess the requisite information, it would be unable to express a meaningful demand and thus unable to follow through on its promises. Second, since budgetary outcomes will often reflect the middle-demand constraint, an evaluation of social consequences depends upon the representativeness of this middle-demand group. Niskanen seems to assume that this group is representative of the legislature as a whole (and thus of society), which implies $a_2 = 1/3$. To enhance comparability, we will go along with this assumption initially. In subsequent analysis, however, we will allow for the possibility that the middle-demand group, too, may be unrepresentative. In conjunction with the foregoing work, then, this will yield three perspectives on budgetary outcomes: one in which the oversight committee is representative, one in which the oversight committee is not (necessarily) representative, but the middle-demand group is, and one in which neither is (necessarily) representative.

High-Demand Committee, Representative Middle-Demand Group

Suppose first that oversight is demand revealing and supply is bureaucratic. Here the committee can reveal its own demand function only when it offers p–Q combinations acceptable to the middle-demand group, and thus only when its demand function lies below the middle-group constraint, as it does for $Q > Q_x$ in Figure 5. Should its demand be too high over some range of output, as it is for $Q < Q_x$, the best the committee can do is to reveal the middle-group constraint as its own demand. The net result is committee revelation of a kinked demand curve, dd', to the bureaucrat.

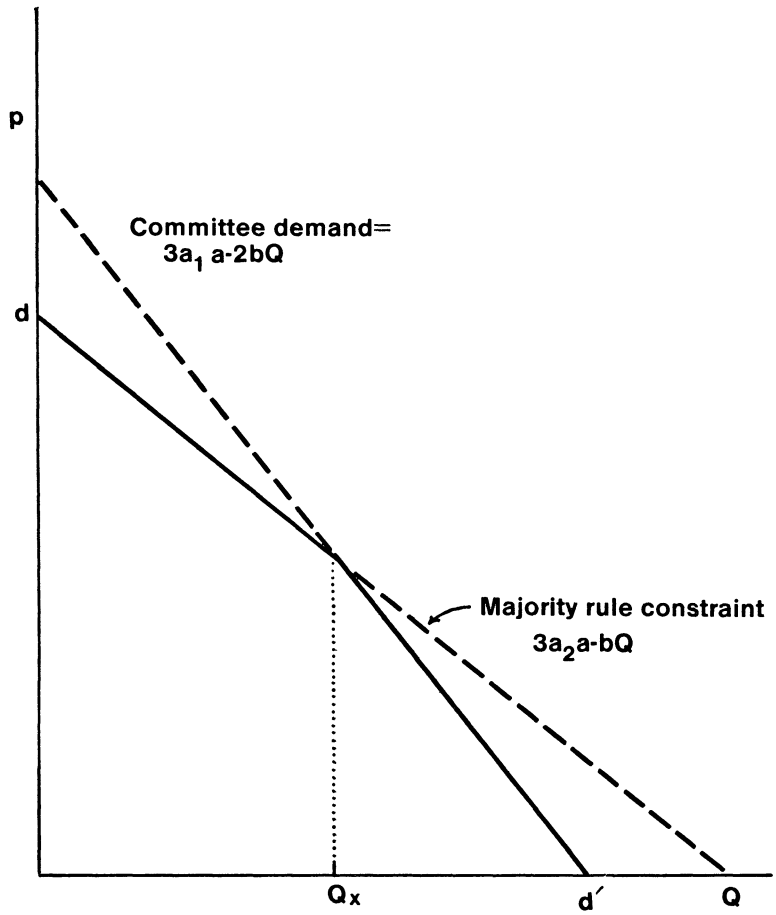
To simplify matters, we can concern ourselves with the extreme—and, given Niskanen's argument, most interesting—case in which the disproportion between the high-demand and middle-demand groups is at its greatest. This case occurs when $a_1 = 2/3$, $a_2 = 1/3$, and $a_3 = 0$. Under these conditions of maximum skewness, the committee's demand is sufficiently high that it lies above the constraint for all values of Q. The kink therefore disappears, and the committee's revealed demand is simply the middle-group constraint.

The bureaucrat calculates in the same way as in our earlier analysis, except that he now seeks to maximize his budget subject to this new revealed demand curve. His solutions, displayed in Figure 6, prove to be *identical to Niskanen's.* Under cost-constrained conditions, he chooses $Q = (a-c)/(b + d)$ and, under demand-constrained conditions, he chooses $Q = a/2b$. For the former solution, output is far too large and social surplus and legislative net benefit are both zero. For the latter, output remains too large and, although social surplus is positive, it accrues entirely to the bureaucrat, leaving the legislature with zero net benefits. Both solutions offer net benefits to the high-demand committee—which pays the same costs as the other groups, but values the provision of Q far more. Net costs are imposed on the low-demand group.

Now suppose that oversight is demand concealing. The bureaucrat, as before, begins the process by revealing a supply schedule equal to his actual average costs. The committee, acting as a monopsonist, then uses this supply information to construct a marginal outlay curve, and it solves for Q by setting marginal outlay equal to its own marginal evaluation (Figure 6). Under the high-demand conditions represented by $a_1 = 2/3$, however, the resulting price-output combination is outside the feasible region defined by the middle-demand constraint. The best it can do under the circumstances is to choose $Q = (a-c)/(b+d)$, which, again, *is the Niskanen result.*

Niskanen's model can therefore be viewed as a special case of the more general model developed here: it describes bureaucratic behavior when the disproportion between the high-demand committee and the middle-demand group is at a maximum, and it applies *regardless* of the mode of oversight. The differences between our model and Niskanen's, as outlined in earlier sections of the

Figure 5. Kinked demand curve resulting from high-demand committee subject to majority rule constraint



analysis, can thus be explained by the decisional impact of the committee system. For, when representative committees give way to very high-demand committees, the two models turn out to have identical implications for bureaucratic supply.

They are identical, however, when committee demand is very high. When the disproportion is less severe, our model continues to imply smaller levels of government and higher levels of social welfare than Niskanen's, as is illustrated in Figure 7, which outlines the relevant solutions. (For simplicity, only the cost-constrained result is presented for demand-revealing oversight.) The familiar ordering is preserved: the Niskanen output is the largest, followed by the demand-revealing output and then the demand-concealing output. A quick comparison with Figure 2, however, suggests an important difference: both the demand-revealing and the demand-concealing outputs are now larger than they were under a representative committee system. Thus, the effect of the high-demand committee is to shift the whole continuum of outcomes to the right. The higher the committee's demand, the farther to the right the continuum shifts, and the shorter the distance between the demand-revealing and demand-concealing outputs. In the limit, the continuum collapses on the extreme right point: the Niskanen result.

Now suppose the supplier is a private contractor. Under demand-revealing oversight, the very-high-demand committee reveals the middle-group constraint as its own demand. The profit-maximizing contractor then uses this information to calcullate his (her) marginal revenue, which he equates to marginal cost in arriving at an output choice, as shown in Figure 8. Because of its anchoring in the representative group's total evaluation, however, his marginal revenue is in fact identical in this case to marginal social benefit—and his decisional calculus, as a result, leads him

to choose *the social optimum.*

Under very-high-demand conditions, then, the combination of demand-revealing oversight and private supply maximizes social surplus and produces a government whose size is "just right." The benefits of social efficiency, however, are not immediately felt by the legislature or consumers, for their net benefit is zero. The only legislative group to benefit from this arrangement is the high-demand group—which shares the social surplus with the monopoly contractor. It is worth noting, moreover, that the high-demand group benefits *less* from this social optimum than it would from nonoptimal bureaucratic supply. As a comparison of Figures 6 and 8 suggests: under demand-revealing oversight, the committee is better off choosing bureaucratic over private supply because the former, in overproducing, generates greater net benefits for the committee at the same time that it generates less surplus for society as a whole. If the committee has its way, then, the social optimum is not likely to be chosen.

Now consider demand-concealing oversight. As in the earlier analysis, the private contractor begins the process by revealing a supply schedule equal to his marginal costs. The committee then responds by constructing a marginal outlay curve, which it equates to its own marginal evaluation in arriving at its desired level of output, as shown in Figure 9. When $a_1 = 2/3$, however, this output is outside the feasible region defined by the constraint. The best the committee can do is to opt for $Q = (a-c)/(b+2d)$, the boundary point at which marginal cost (supply) and the demand

Figure 6. Oversight by very high demand committee with bureaucratic supplier

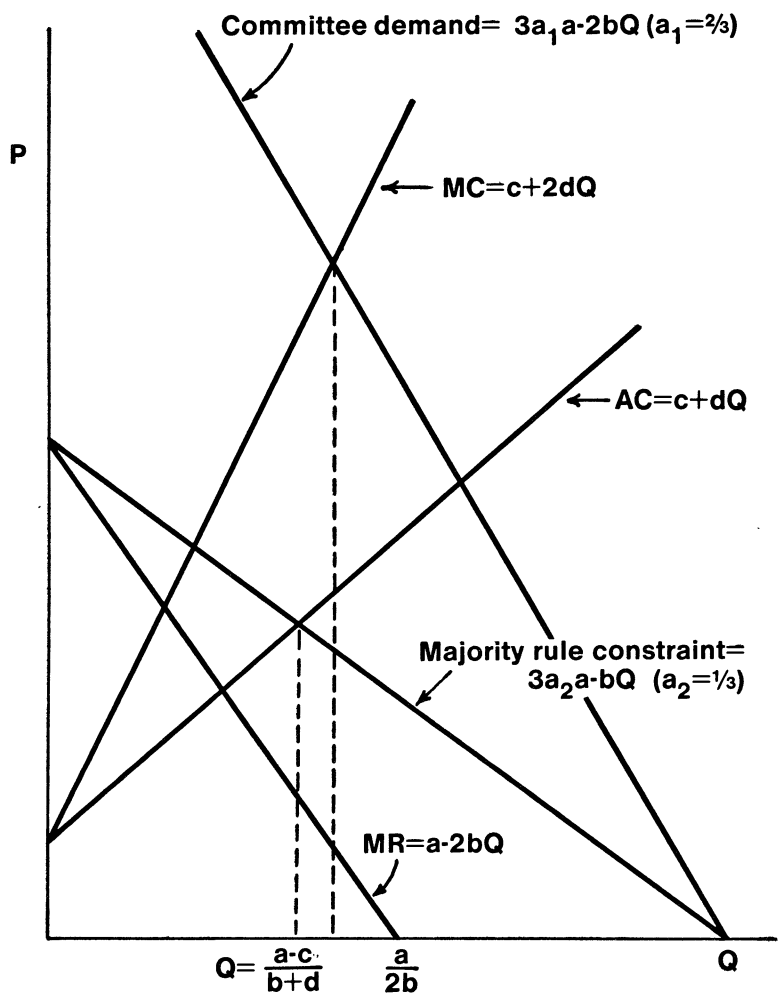
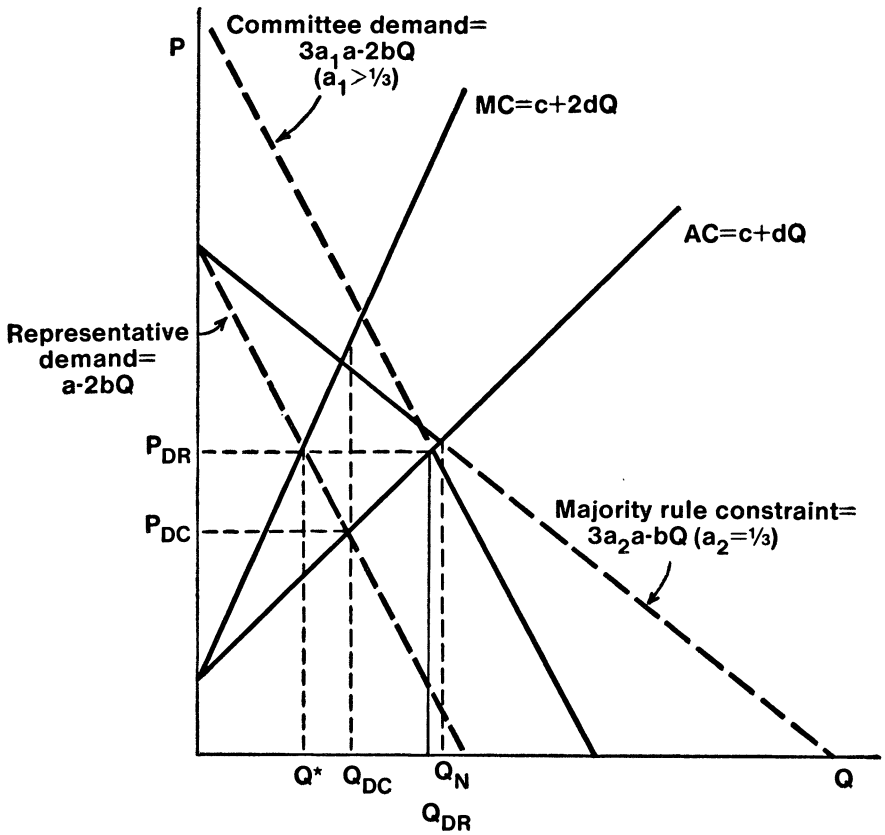


Figure 7. Demand-revealing oversight by moderately high demand committee with bureaucratic supplier



constraint are equal. This level of output is larger than the social optimum (although smaller than the Niskanen result) and yields a correspondingly lower level of social surplus. Legislative net benefit remains zero. The high-demand committee is actually better off as a result of these developments—which is not surprising, since this mode of oversight maximizes its power—but these benefits still do not make privatization an attractive mode of supply. As Figures 6 and 9 indicate, the committee continues to prefer bureaucracy. Under demand-concealing oversight as under demand-revealing oversight, bureaucratic supply guarantees greater output and greater net benefits for the committee despite its relative inefficiency for society.

Comparison of these results to those of the representative-committee model helps to suggest what happens under demand conditions that are less extreme. When the committee and the middle group have roughly equal evaluation functions, the combination of private supply and demand-revealing oversight leads to a suboptimal level of output; as the disproportionality between the two groups increases, this suboptimal solution moves toward and finally equals the social optimum, $Q = (a-c)/2(b+d)$. The combination of private supply and demand-concealing oversight also produces a suboptimal solution under conditions of roughly equal demand; but here, as the disproportionality increases, output surpasses the social optimum and reaches its superoptimal boundary value, $Q = (a-c)/(b+2d)$.

In short, as demand increases, the whole continuum of results shifts to the right—to the point where private supply is no longer associated with levels of government that are too small. Moreover, although roughly equal demand conditions lead to ambiguity about which mode of oversight implies better social outcomes, high demand leads to the dominance of the demand-revealing solution. This only makes sense, because in minimizing the relative power of the high-demand committee, the demand-revealing mode of oversight allows the contractor to choose the smaller, more nearly optimal levels of government he actually prefers.

Given the foregoing analysis, a comparison of

bureaucratic and private supply is now a straightforward matter. Under high-demand conditions, private supply yields uniformly smaller levels of output. Ranking the combinations from smallest to largest output, we have: private/demand-revealing, private/demand-concealing, bureaucratic/demand-concealing, bureaucratic/demand-revealing. (In the limit, the latter two are equal.) Similarly, private supply also yields uniformly higher levels of social surplus, with supply/oversight combinations ranked precisely as above in order of social preferability. The dominance of private supply must be qualified, however, by two factors. First, legislative and consumer net benefit are zero for *both* private and bureaucratic supply under very high demand; thus, whereas the former is "better" in generating a social surplus, the surplus is captured entirely by the contractor and the committee. Second, the committee always prefers bureaucratic to private supply, and thus, to the extent the committee is able to make legislative choices about the mode of supply, bureaucracy will be the winner despite its greater social inefficiency.

A final conclusion is that competition has different effects across these alternative modes of supply. Competition among public bureaus is beneficial under conditions of roughly equal demand, but as demand increases, the benefits from competition decline until, with a very-high-demand committee, competition makes no difference at all. Competition among private suppliers, by contrast, is actually *harmful.* Under very-high-demand conditions, the demand-revealing solution yields the social optimum at the same time that it maximizes the monopoly power of the contractor; competition operates to increase the relative power of the committee, allowing the latter to impose a larger, less optimal level of output than a monopoly contractor would choose on his own.

The general thrust of this section's analysis, then, suggests that the critics of bureaucracy are largely but not entirely correct, if we assume the

Figure 8. Demand-revealing oversight by very high demand committee with private supplier

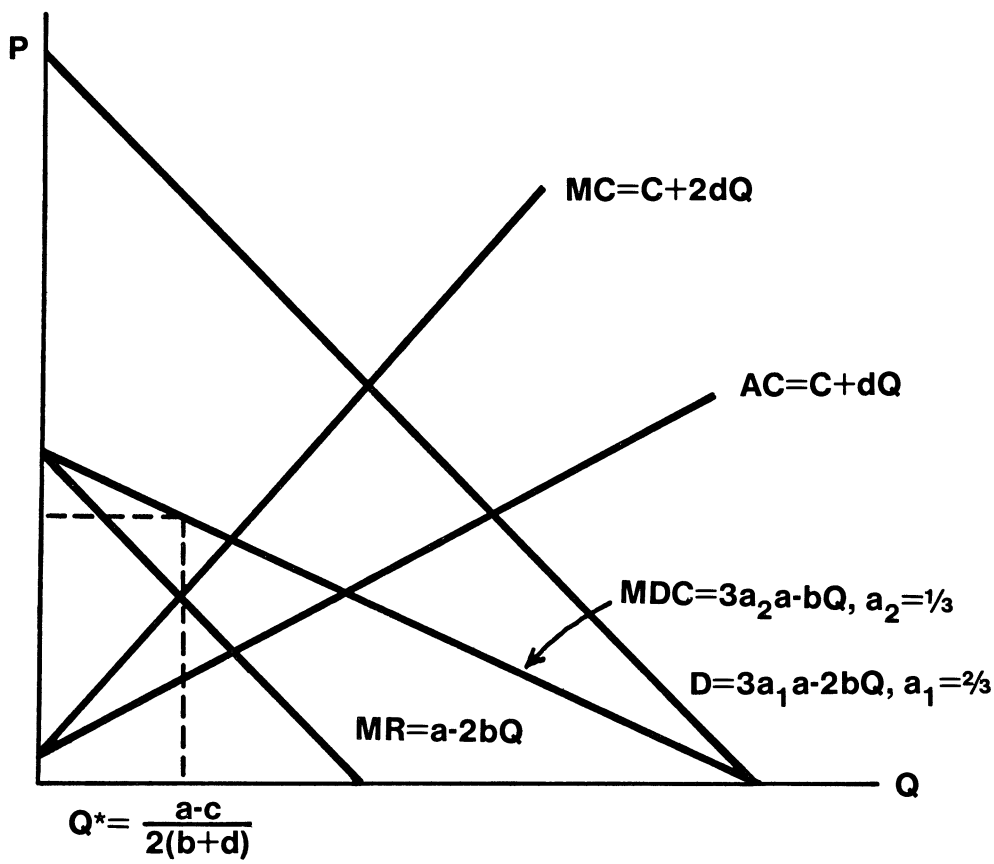
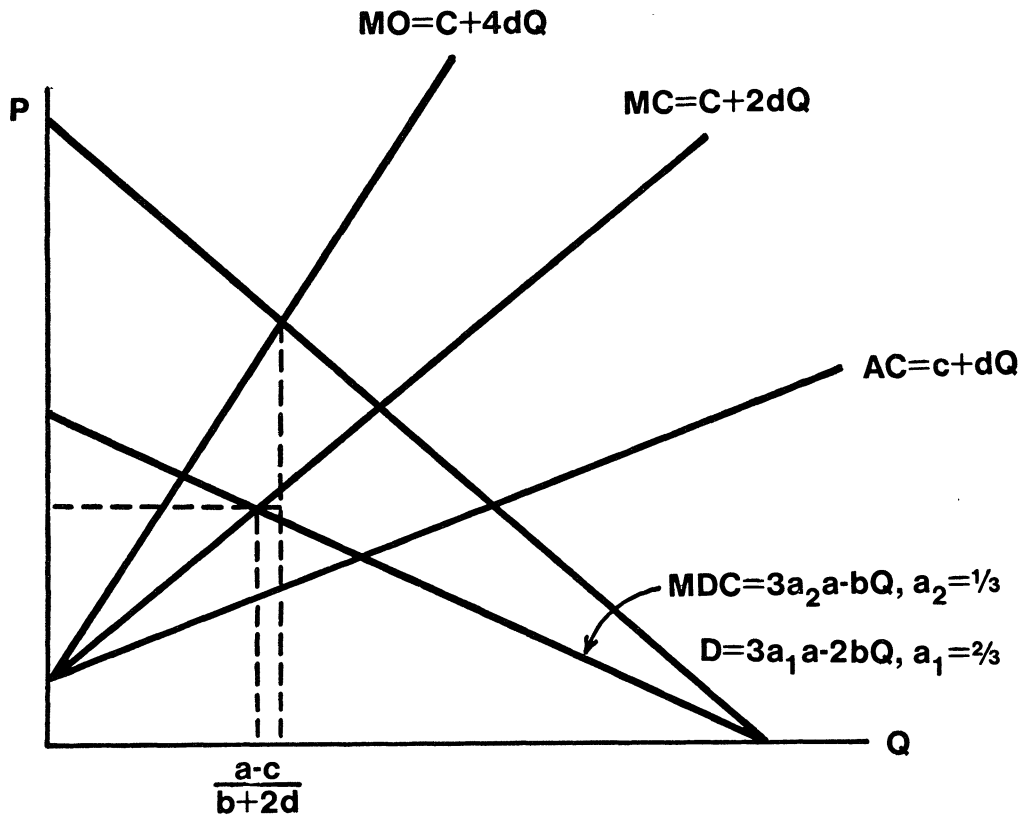


Figure 9. Demand-concealing oversight by very high demand committee with private supplier



legislature is organized into high-demand committees, and if we assume the middle-demand group is representative of the legislature as a whole. Under these conditions, bureaucracy does lead to the Niskanen results, government is far too large, and a shift to private supply does imply smaller government and higher levels of social welfare. They are wrong, however, in stressing the value of competition; under these assumed conditions, competition does not work for public bureaus, and it makes matters worse when supply is private. The best combination for society, given these conditions, is private supply, demand-revealing oversight, and no competition.

High-Demand Committee, Unrepresentative Middle Group

All of this assumes the middle-demand group is representative of the legislature as a whole. Empirically, however, there is no reason to think that this assumption is generally or even usually tenable. Most interestingly, demand for some services—agricultural subsidies, urban renewal, and others—could easily be skewed to the point that virtually all legislative demand is concentrated in one group, with the rest of the legislature fairly indifferent. If so, this high-demand group's a_1 could clearly be greater than 2/3 and perhaps close to 1. Since we must have $a_1 + a_2 + a_3 = 1$, the middle-demand group's a_2 would correspondingly be less than 1/3 and perhaps near 0. With tax shares equally allocated across groups at 1/3, it follows that the middle group is no longer representative of the legislature as a whole. In particular, its evaluation of these governmental services is now lower, possibly by a great deal, than representativeness would require.

Suppose that social demand happens to be concentrated in the group with oversight responsibilities, and that its decisions are constrained by a middle-demand group of the sort described here. What are the implications for the size of government and social welfare? The committee now demands more than before, owing to its upward shift in a_1, but its greater demand is irrelevant. The only relevant change is the downward shift in the middle-demand constraint, reflecting the

smaller value of a_2. For both modes of oversight the final output choice is $Q = (3a_2a-c)/(b+d)$, given by the intersection of average cost and the constraint. Under a representative middle-group constraint, when $a_2 = 1/3$, this is simply the Niskanen result. But as the constraint shifts downward, implying a more and more unrepresentative middle-demand group, the decline in a_2 signals a corresponding decline in final output, until a point is reached at which the middle-demand group refuses to approve *any* feasible appropriation for Q. The tendency, then, is toward *undersupply in the extreme.*

When we drop the restrictive assumption of representativeness, therefore, an increasingly high-demand committee does not imply larger government. Ironically, it implies just the opposite. The key decisional role is played not by the committee, but by the middle demand group. As the committee's demand increases as a proportion of the total legislative demand, the middle group's proportion automatically decreases and imposes a constraint more and more unrepresentative of the entire body. Under these conditions, Niskanen's emphasis is quite misplaced: bureaucracy overseen by an increasingly high-demand committee threatens society with a problem of undersupply, not oversupply, and the decision maker most responsible for the suboptimality is the middle-demand group, which refuses to approve higher output levels more beneficial for society.

A shift from bureaucratic to private supply cannot remedy the problem. Whatever the mode of oversight, a monopoly contractor will produce even less than a monopoly bureau, thus exaggerating the undersupply. Nor can competition be of much help. It has no effect on bureaucratic supply, and although it does serve to increase private supply, the output still remains lower than with a monopoly bureau. Thus, when the middle-demand constraint is severe, neither of these familiar reforms represents even a partial solution to the problem of undersupply.

This problem seems to have gone unrecognized by Niskanen and other critics of bureaucracy. But, particularly for policy areas in which benefits have a skewed distribution, there is good reason to think that it will often arise. Under such distributions, and in the absence of generalized logrolling, the vast power critics have attributed to budget-maximizing bureaus and high-demand committees simply does not exist. They may well be "in bed with each other," as Niskanen claims, owing to their common interest in securing high levels of output, but they also share a true powerlessness to do anything about the binding constraint from the legislature as a whole. Both would like a larger level of production, but neither can get it, even if it is socially preferable for them to do so.

Empirically, this may or may not prove to be a serious problem, for they may be able to get out of the bind by entering into logrolling relationships with elements of the middle-demand group. All legislators serve both as committee members and as voters on each others' proposals, so there is clearly an incentive for horsetrading in which some members of the middle-demand group agree (in effect) to loosen the constraint in return for reciprocal action when their own committee proposals come up for a vote. In practice, then, legislative politics may tend to correct somewhat for the undersupply problem, and in some cases even convert it into an oversupply.[16]

The important theoretical point, however, remains: once we get beyond the restrictive assumption of a representative middle-demand group, the "problem of bureaucracy" can cut both ways. Government may be too large, but it may also be too small. The direction of the problem (if there is one) depends on the characteristics and decisional roles of all three participants—the supplier, the oversight committee, and the middle-demand group. To focus on budget-maximizing bureaucracy and high-demand committees, as critics tend to do, overlooks a whole dimension of the budgetary decision: a dimension which, as we have seen, can generate social outcomes precisely the opposite of what the critics would have us expect.

Rules of Thumb

Throughout this analysis, we have assumed that the legislative committee does not even try to estimate the supplier's cost function, but adopts instead a simplifying rule of thumb. It proceeds as though budgetary costs rise linearly with output, and it concerns itself with deciding upon final values for both Q and the parameter of linearity (which we have called "price"). Niskanen does not allow the relevance of rules of thumb, nor does he explore the theoretical roles of the implicit, nonmarket "prices" that might be inherent in them. Instead, he stresses that there are generally no market prices for the services of bureaus and argues that this is the key to bureaucratic power. In part, his explanation turns on the monopoly control over cost information that this affords the bureaucrat. But it also turns on the strategic advantages entailed by the use of total rather than

[16]Note that the conditions obtaining in this section are essentially those of distributional politics, and that our conclusions about potential undersupply and incentives for logrolling (or universalistic norms) are consistent with recent theoretical work in the area. See Weingast (1979), Shepsle and Weingast (1981), Ferejohn (1974), and Arnold (1979).

per-unit budgetary figures. As he models it, the bureau (or private supplier, in the absence of market prices) presents a total budget level as a take-it-or-leave-it item for the legislature's decision, which allows the bureau to control the legislature's agenda and engineer the final outcome. Orzechowski (1975, p. 231) describes the model approvingly as follows:

> (Niskanen) assumes that bureaus possess a unique monopoly advantage and asserts that bureaus can exercise monopoly power to the degree of perfect price discrimination. Bureaus are able to extract almost the full amount of consumer surplus generated by government output. The highest degree of monopoly power is afforded bureaus because of the institutional features of the budgetary process. Bureaus bargain with appropriations committees on the basis of a total budget. Bargaining does not proceed on a per unit basis. The fiscal purchaser, in effect, is constrained to buy the output of a monopoly bureau in one large package. That is, he is constrained to buy at all-or-nothing prices.

Before contrasting these approaches, a basic ambiguity must be cleared away: legislatures are indeed confronted with take-it-or-leave-it choices, as Niskanen contends, but this agenda control is actually exercised by legislative committees, not by bureaus. Bureaus and committees interact in the stage before legislative ratification. At this stage, appropriations committees may well focus on total budgets, but they are hardly limited to the evaluation of just one budget level submitted by the bureau. They clearly consider a range of budgetary options in the process of arriving at a final choice to be submitted to the full body. Thus bureaus can only exercise a degree of agenda control in the larger legislative arena by working through legislative committees, and, in attempting to do so, must come to grips with the fact that legislative committees need not allow their *own* agendas to be controlled. Even if budgets are considered entirely in terms of total expenditures rather than per-unit prices, it does not follow that bureaus are able to achieve agenda control or the favorable budgetary outcomes such control entails. These results are determined by the strategic relationship between the bureau and the committee, and it is here that theoretical interest properly centers.

In the preceding sections, we analyzed this relationship by assuming the committee adopts a linearity rule of thumb. But now suppose it does not, and that instead both the committee and the bureau are free to consider or propose any functional form linking budgets to outputs. Does this removal of the rule-of-thumb constraint on budgetary interactions lead to the kinds of results Niskanen says we should expect?

The answer is mixed. Under demand-concealing oversight, behavior is the same as before; the bureaucrat, acting in complete ignorance of committee demand, continues to reveal his true costs. Under demand-revealing oversight, however, things are now quite different indeed. Whereas the bureaucrat was previously constrained to report a supply schedule that takes account of the committee's linearity assumption, he now has the flexibility to *fit* his reported supply schedule precisely to the committee's total evaluation curve—i.e., to report that the cost of supplying any Q is (virtually) identical to the maximum amount the committee would under any conditions be willing to pay. Knowledge of the committee's total evaluation curve and complete flexibility in reporting a supply schedule therefore combine to extend the bureaucrat strict control over the committee's agenda. He then uses this power to capture the committee's entire consumer surplus. This may or may not involve larger levels of Q, however, depending on the representativeness factor. As formal analysis could show, output increases to what we have called the Niskanen level when the committee is representative of the full legislature, or when the committee expresses a high demand but the middle legislative group remains representative. When the latter is unrepresentative, on the other hand, output remains the same and is likely to be severely suboptimal.

In sum, elimination of the committee's linearity rule of thumb does give the bureau real strategic advantages, and these advantages translate into budget-output combinations that, relative to those derived in the foregoing sections of this article, are more consistent with Niskanen's original conclusions, although they remain, given the mitigating effects of representativeness and modes of oversight, less pessimistic than Niskanen's about the "bureaucracy problem."

Knowing this, we can now learn a far more important lesson by turning the comparison around and asking: what can we say about the role of legislative rules of thumb? Above all, we can now see that these rules of thumb are *rational* in these kinds of budgetary games, regarding their consequences for both the committee and society as a whole. Legislative rules of thumb, whatever their precise content, *prevent* the bureaucrat from reporting a supply schedule that mirrors the committee's total evaluation. They constrain his flexibility and thus undercut a crucial prerequisite for agenda control. The result is that the bureaucrat must package his supply information within a framework imposed by the committee, and, as we saw in the case of the linearity rule of thumb, this requirement will tend to block him from achieving budgets and outputs as large as he would like. Perhaps surprisingly, then, a legislative rule of

thumb adopted entirely in ignorance and *not* designed to discover true bureaucratic costs is in fact well suited to the pursuit of legislative and social ends.

The rationality of legislative rules of thumb takes on special importance in light of three additional considerations. The first is that the adoption of rules of thumb is within the committee's power; it is a step the committee can take *on its own* to improve its strategic position. It is a tool for gaining leverage in the budgetary game, and it is even more powerful in this respect than the mode of oversight (another dimension of committee choice), because the latter can be undermined by forces beyond the committee's control. A high-demand individual on a representative committee, for example, may secretly leak information on the committee's total evaluation function, thus defeating the purpose of demand-concealing oversight, whereas a rule of thumb, once adopted, structures decisional outcomes without need of secrecy or universal cooperation.

The second point is that rules of thumb need not be consciously adopted to be effective. They may be the product of habit, tradition, or accident, or they may be uncalculated adjustments to reduce uncertainty. Whatever the explanation, once rules of thumb emerge and become ingrained as components of the process, they can structure decision making and place constraints on bureaucrats just as effectively as if they had been chosen for that purpose. The very fact that they should tend to work to the committee's advantage in practice, moreover, can only promote their continued use and deeper entrenchment. Thus, just as informational monopoly works to the bureaucrat's advantage, so rules of thumb work to the committee's advantage, but they can work unobtrusively, even if no one plans it that way.

Finally, if anything at all is clear from the empirical literature on budgeting, it is that legislative committees *do* rely upon rules of thumb as guides in decision making and that these rules *do* in fact play important roles in structuring political interactions and outcomes. For real-world budgetary contexts, therefore, it is only reasonable to suggest that bureaucrats ordinarily find their flexibility constrained by legislative rules of thumb. The extent to which these rules are strategically chosen rather than nonrationally embraced remains to be determined, but this is not, at any rate, of real consequence. The important point is that the context is in fact structured by decision rules, however implicit, and that bureaucrats indeed must operate within a decisional framework not entirely of their own making.

In short, legislative committees should, can, and in fact do adopt rules of thumb, which in turn serve to structure bureaucratic as well as committee decision making in significant ways. It seems apparent that an adequate model of bureaucratic behavior must recognize this in some fashion. As a first step, we have tried to do this by means of the linearity rule, but there are obviously various ways in which it might be approached. A model that assumes no constraints on bureaucratic strategies, as Niskanen's implicitly does, can only exaggerate the bureaucrat's ability to exercise agenda control and win large budgets and outputs.

Conclusion

By integrating bureaucratic and legislative behavior, this model places the "bureaucracy problem" in broader perspective and discourages simple evaluations and solutions. Will government be too large? Does bureaucracy inevitably overproduce? Do privatization and competition yield smaller government and higher social welfare? Given our model, the answers to these and other questions depend upon conditions reflecting the way the legislature organizes itself for decision making. In particular, through the design of its committee system, the operation of rules of thumb, and the adoption of characteristic modes of oversight, the legislature sets the parameters of governmental supply. It is this structure imposed by the legislature that most fundamentally shapes the size of government, the performance of bureaucracy, and the impact of reforms.

In effect, the critics' position on the "bureaucracy problem" assumes a specific legislative structure: oversight by very-high-demand committees, total bureaucratic flexibility in framing decisional alternatives, and final choice by a representative middle-demand group. Under these conditions, regardless of the mode of oversight, it does indeed follow that bureaucracy generates big government. But when committee demand is less extreme, bureaucrats are constrained by legislative rules of thumb, or the middle-demand group is to some degree unrepresentative, very different substantive conclusions may be entailed.

Given the linearity rule of thumb, for instance, a dramatic contrast emerges when both the committee and the middle-demand group are representative. Within this structure bureaucracy is generally superior to private supply, government is smaller than the critics expect, and, when the committee adopts a demand-concealing mode of oversight, bureaucracy actually produces at the social optimum. Another striking departure from the critics' position emerges when a high-demand committee is combined with an unrepresentative middle-demand group; under these conditions,

government tends not only to be smaller than they expect, but may be far below the social optimum, perhaps justifying fears of a "small government problem," and bureaucracy is again associated with higher levels of welfare than private supply.

In general, different legislative conditions give rise to different conclusions about bureaucracy and the size of government, and the conclusions of Niskanen and other critics, implicitly pegged to a specific set of conditions, portray the "bureaucracy problem" in its extreme, most negative form. Virtually *any* other set of conditions implies a more moderate and positive perspective, and, not surprisingly, a less enthusiastic evaluation of their proposed reforms.

A broader theory of this sort does more than simply challenge the general conclusions of bureaucracy's critics. Precisely because it does generate implications of a contingent rather than universal nature, it also underlines the need for certain kinds of empirical research. This involves, of course, the testing of hypotheses, but it also involves inquiry into what is perhaps the most fundamental question at this point: what legislative conditions do in fact prevail? We need to know, in particular, what modes of oversight legislative committees adopt, how representative these committees are, how representative the middle-demand group is, and which rules of thumb obtain. Research on Congress and other legislatures has yet to provide the kind of empirical foundation necessary for confident evaluation. It is only reasonable to suggest, however, that modes of oversight, degrees of representativeness, and (perhaps to a lesser extent) rules of thumb will vary across committees as well as with types of policies, and thus that the incidence, severity, and effective reforms of the "bureaucracy problem" will vary, too, in a corresponding way. Some parts of the government are likely to be overgrown and proper targets of structural reform, whereas others are systematically underfunded and quite undeserving of criticism. The interesting question, then, is not whether we have a "bureaucracy problem," but where and to what extent the problem surfaces. The key to an answer rests with the underlying patterns of legislative organization and with empirical research to discover what those patterns are.

The theory can also be put to prescriptive use, particularly in linking legislative reforms to bureaucratic behavior. Most important, it implies that the legislature can take positive steps to minimize the problems commonly associated with bureaucratic supply. As Hardin, Shepsle, and Weingast claim (1982, p. 22), "Bureaucracies are 'runaways,' and spending programs are 'uncontrollable,' because Congress made them that way." Specifically, by purposely moving toward representative oversight and decision structures, demand-concealing modes of oversight, and appropriate rules of thumb, legislatures may do a great deal to get runaway bureaucracies under control. This may involve, for instance, applying different criteria for assigning individuals to committees, adopting different rules governing committee jurisdiction, requiring different oversight procedures, embracing simplified decisional assumptions, or even taking some kinds of final decisions out of the hands of the full legislature.

It also implies that certain kinds of legislative reforms should *not* be adopted. As we have seen, this is often true of privatization and competition, particularly when proposed in combination, but it is also true of other popular reforms. PPBS, ZBB, and other proposals for rationalizing the budgetary process, for example, are likely to aggravate rather than relieve problems of bureaucratic supply, and they should be avoided. In requiring policymakers to articulate mechanisms and costs, they effectively impose a demand-revealing mode of oversight that encourages overproduction.[17] When supply is bureaucratic, both the legislative committee and society as a whole tend to be better off if the committee conceals its policy preferences, and in effect refuses to become part of a nonstrategic, analytical process of choice. Better programmatic information, rather than producing better decisions, simply enhances the power of the bureaucracy to extract larger budgets. Here again, "muddling through," because it does not require a clear and accurate statement of legislative consensus regarding demand, serves a strategic and useful purpose.

In sum, there is a simple theme running throughout this discussion of our model and its implications: that bureaucratic behavior must be understood in its legislative context. This theme is hardly controversial; students of public administration have been making the same point for decades, and substantive analyses of bureaucratic politics have long emphasized the importance of the legislature's role. Formal models of bureaucracy, however, have not done an adequate job of reflecting this substantive tradition. Taking the bureau as their theoretical focus, they have given undue emphasis to its independence, flexibility, and decisional control—and, in the process, either ignored or downplayed the capacity of the legislature, specifically its committees, to act just as purposely and forcefully in achieving ends which may be quite at variance with those of the bureau. In this article we offer an alternative model that integrates bureaucratic and legislative behavior

[17]See, for example, Schick (1966), Pyhrr (1973), and more generally, Hammond and Knott (1980).

within the same framework, and we argue its merits. More generally, though, we are making an argument for balance in the formal analysis of bureaucracy. The legislature must be extended a theoretical role that squares with its substantive importance, and it must be resurrected from a secondary status that hides not only important dimensions of legislative behavior, but the fundamental constraints on bureaucracy as well.

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