

Bureaucracy

There can be no doubt, that if power is granted to a body of men, called representatives, they, like any other men, will use their power, not for the advantage of the community, but for their own advantage, if they can.

James Mill

Each official is evidently more active within the body to which he belongs than each citizen within that to which he belongs. The government's actions are accordingly influenced by the private wills *of its members* much more than the sovereign's [citizenry's] by those of its members – if only because the official is almost always individually responsible for any specific function of sovereignty. (Italics in original)

Jean-Jacques Rousseau

The preceding chapters have focused upon the demand side of public choice. The citizen voter's preferences determine outcomes in the public sector. Government, like the market in a pure exchange economy, is viewed simply as an institution for aggregating or balancing individual demands for public policies. Those in government, the candidates and representatives, have been depicted as single-mindedly seeking to be elected. To do so they must please voters, so that those in government are merely pawns of those outside in a competitive political system. Only in the rent-seeking literature just reviewed does one begin to obtain a glimpse of another side of government. Politicians may not live by votes alone. They, too, may seek wealth and leisure. Their preferences may impinge on the outcomes of the public sector.

In this chapter and the next we examine several models that give those in government a role in determining policies beyond that of simply carrying out the revealed demands of the citizens. These may be viewed as models of the supply of government policies.

In many cases government outputs are supplied by government controlled or regulated *bureaucracies*. The term “bureaucracy” was introduced by the French philosopher, Vincent de Gourmay, in 1765, and has had since its introduction a negative connotation (van Creveld, 1999, p. 137). While the term *laissez faire*, also introduced by de Gourmay, conjures up images of freedom of action and efficiency – at least to an economist – the term *bureaucracy* suggests routinized and constrained behavior, and inefficiency. The antithesis of the iconoclastic entrepreneur operating in free markets is the conformist bureaucrat seated behind his desk.

The bureaucrat, like everyone else, can be assumed to be a selfish utility maximizer. But what is it that he maximizes? Weber (1947) assumed that the bureaucrat's natural objective was *power*. "Power" is a concept frequently employed by political scientists and sociologists, and totally ignored by economists¹ and practitioners of public choice. Given Weber's stature as a social scientist, it seems prudent to pay some heed to his thinking on this matter. As we shall see in the following section, there is an interpretation of political power that not only is prominent in the political science and sociology literature, but also fits in well with the analysis of government and bureaucracy in public choice. We begin by developing this concept, and then turn to models that grant the government a degree of power over the citizens.

16.1 **Uncertainty, information, and power**

At the most intuitive level, the word "power" connotes the ability or capacity to do something (Wagner, 1969, pp. 3–4).² But "something" can stand for a variety of objects, each of which leads to a different kind of power. Physical power is the ability to apply force. Economic power is the capacity to purchase goods, and so on. Political power must be defined as the ability to achieve certain ends through a political process. To observe the exercise of political power, some actors must have conflicting goals. If all members of a committee, including *A*, favor *x* over *y* and *x* is chosen, we cannot say that *A* has exercised power. If only *A* favors *x* and *x* is chosen, *A* has political power.

Russell (1938) defined three ways in which an individual can exert influence in a political context: (1) by exercising direct physical power, for example, by imprisonment or death; (2) by offering rewards and punishments; and (3) by exerting influence on opinion through the use of education and propaganda. The first two are closely related to a more general type of political power, which we might call procedural power. *A* might achieve his choice of *x* because the rules of the committee make him dictator, or grant him the right to set an agenda by which the committee is led to choose *x*. The procedural power granted the agenda setter figures prominently in one of the models examined below. But it is the third source of influence Russell listed that is most closely related to a more general notion of political power. Education, propaganda, and persuasion are all forms of information. Information has value, or grants power, only in the presence of uncertainty. Uncertainty creates the potential to exercise power; information provides the capacity to do so.

Political power means inducing someone to do something that he did not want to do, as when *A* gets a committee to choose *x* when all but *A* favor feasible alternative *y* (Simon, 1953; Dahl, 1957, p. 80). In the agenda-setter example discussed in Chapter 5, it was not simply the authority *A* has to set the agenda that brought about this outcome. It was the *knowledge* *A* had of every other committee member's preferences, coupled with their *ignorance* of the sequence of votes that would be

¹ Market power, the ability to raise price, is a limited use of the term by economists.

² This section borrows heavily from Mueller (1980).

taken. Given this uncertainty on the part of all committee members save A , A could induce the committee to choose z over y , z' over z , and so on until x was reached. But if all committee members save A favor y over x , they could impose y by not voting for z against y . Their lack of information compared to A gave A the power to use his position as agenda setter to bring about x 's victory.

Returning to Russell's list of sources of power, we can see that it is the uncertainty that surrounds a dictator's use of physical power or a supervisor's issuance of rewards and punishments that allows these people to control their subordinates. If B knows with certainty that A will give him a reward if B does X , as the rules require it, then B in carrying out X exercises as much power over A as A does over B . In a bureaucracy in which no uncertainty existed, lines of authority might exist, but no real power would accompany authority. All employees would know all of the possible events that might occur and all could predict the eventual outcomes or decisions that would follow each. Employee grievance procedures would be completely codified and both the supervisor's and the employee's reaction to any situation would be perfectly predictable. In a world of complete certainty, all individuals are essentially acting out a part, "going by the rules," and those at the top of the bureaucracies are as devoid of discretionary power as those at the bottom. All power is purely procedural (see Simon, 1953, p. 72).

This type of situation comes close to the conditions existing in the French monopoly that Crozier (1964) described in *The Bureaucratic Phenomenon*. As Crozier depicts it, the monopoly does operate in a world of certainty, with one exception: the machines sometimes break down. This places the women operating the machines completely under the power of the mechanics responsible for repairing them, since the women have a quota of output for each day and must work harder to make up for any downtime. More interesting, the supervisors who nominally have more authority also have less power than the mechanics. Since the mechanics know how to repair the machines, and the supervisors do not, the supervisors are unable to exert any real control over the mechanics (Crozier, 1964, pp. 98–111).

It is instructive to note the tactics used by the mechanics to preserve their power. The operators were severely scolded for "tinkering" with their machines in an effort to keep them going or to repair them. Only the mechanics knew how to repair the machines; each machine was different, and just how it needed to be fixed was known only to the mechanics. Repairing them was an art, not a science. When clashes arose between the mechanics and the supervisors, it was over whether the latter could, on occasion, work at repairing the machines. The supervisors were further hampered in this endeavor by the continual "mysterious" disappearance of machine blueprints from the factory. The mechanics always worked without the aid of blueprints.

One sees in the power exerted by the mechanics in Crozier's case study a modest form of the power of experts in a bureaucracy. Max Weber emphasized the power of expertise, and it will appear again in the models discussed next. More generally, we shall see that all incorporate assumptions in various ways regarding the power stemming from asymmetric possession of information in a world of uncertainty.

16.2 **The budget-maximizing bureaucrat**

Bureaucratic man pursues power. Economic man pursues profit. In Knight's (1921) theory of profit, profit exists because of uncertainty and is earned by those who possess the daring and *information* to allow them to make correct decisions under uncertainty. Thus, there is a close link between the economic theory of profit and the political theory of power. Both profit and power exist owing to uncertainty; both accrue to the possessors of information.

In the modern corporation, the information gatherers and processors of information are the managers. They are the possessors of power. A major difference between the business corporation and the public bureau is that the power of managers can be monetarized. The business of corporations is making profits, and managers as information gatherers are its main recipients.

Legally, however, corporations belong to the stockholders, and the custom persists that they are the rightful recipients of corporate profits. Thus, managers are unable to pay themselves all the profits they create. They are forced to claim corporate profits in less conspicuous ways than simply salaries and cash bonuses. Numerous substitute goals have been put forward: on-the-job consumption, excess staff and emoluments (Williamson, 1964), security (Fisher and Hall, 1969; Amihud and Lev, 1981), and a host of nonpecuniary goals that one can lump together under the heading of X-inefficiency (Leibenstein, 1966; Comanor and Leibenstein, 1969).

Many of the nonpecuniary goals of managers are likely to be correlated with the size or growth in size of the corporation (Baumol, 1959; Marris, 1964, ch. 2). Large size can also be used as a justification for higher compensation packages, and thus can allow managers to justify greater direct cash payments to themselves. The bigger and more complex the firm is, the more difficult it is for stockholders to monitor the activities of managers, and the more power managers have. Thus, size and growth in size are plausible goals, along with profits, of corporate managers.

The pursuit of profits is not the perceived legitimate goal of public bureaus, and thus it is even more difficult for public bureaucrats to convert the power they have into income. The nonpecuniary goals of management become the logical objectives of the public bureaucrat. Among these, size and risk aversion have received the most attention. The first systematic effort to study bureaucracies within a public choice framework was made by William Niskanen, and we turn now to his model of bureaucracy.³

16.2.1 *Environment and incentives*

One of the key characteristics of a government bureau is the nonmarket nature of its output (Downs, 1967, pp. 24–5). Indeed, a bureau does not typically supply a number of units of output as such, but levels of *activities* from which output levels

³ Niskanen's book (1971) was preceded by two insightful looks at bureaucracy by Tullock (1965) and Downs (1967). Although written by two of the founding fathers of the public choice field, these earlier works do not attempt to develop a theory or model of bureaucracy from a public choice perspective. Instead, they use the economics methodology to examine various facets of bureaucratic organizations.

must be inferred (Niskanen, 1971, pp. 24–6). Thus, the Department of Defense maintains numbers of combat personnel and weapon systems, although it supplies various degrees (units) of defensive and offensive capabilities. Its budget is defined over the activities it maintains, even though the purchasers – the taxpayers and their representatives – are ultimately interested only in the “final outputs” of combat capabilities that these activities produce. The reason for this is obvious: it is easier to count soldiers and airplanes than it is units of protection. This “measurement problem,” inherent in so many of the goods and services that public bureaus provide, creates a monitoring problem for the funding agency. Given the unmeasurable nature of a bureau’s outputs, how can the purchaser monitor the efficiency of its production?

The monitoring problem is intensified by the bilateral monopoly nature of the bureau–sponsor relationship (Niskanen, 1971, p. 24). That the buyer of a bureau’s output would be a monopsonist follows almost from the nature of the good sold. A public good is by definition consumed by all the people, and the agent of all the people is a monopsonist buyer on their behalf. Of course, we have seen that the government may not engage in the supply of only pure public goods, but, nevertheless, it remains the sole agent of whatever interest group it represents in dealing with public bureaucracies. Even if the government acts as the sole agent for the population, or an interest group, it does not necessarily have to buy from a single source, even though it often does. The usual reason for granting a bureau a monopoly on the provision of a given service is to avoid wasteful duplication. Although there is certainly some validity in this justification, the monopoly nature of most bureaus also frees them from competitive pressure to be efficient and denies the funding agency an alternative source of information by which to gauge the efficiency of the monopolist bureaus, thus compounding the monitoring problem inherent in the nature of the bureau’s output.

Inefficient production of a bureau’s services is further induced by the scheme of compensation of bureaucrats. While managers in a private corporation can usually claim a share of the savings (profits) generated by an increase in efficiency, public bureaucrats’ salaries are either unrelated or indirectly, and perhaps inversely (Warren, 1975), related to improved efficiency. Thus, the public bureau is characterized by weak external control on efficiency and weak internal incentives.

If the bureaucrat has no financial incentive to pursue greater efficiency, what are his goals, and how are they related to efficiency? Niskanen (1971, p. 38) lists the following possible goals of a bureaucrat: “salary, perquisites of the office, public reputation, power, patronage, output of the bureau, ease of making changes, and ease in managing the bureau.”⁴ He then asserts that all but the last two are positively and monotonically related to the size of the budget.

16.2.2 The model

The bureau receives a budget from its funding agency (say, congress or the parliament), which is a function of the *perceived* output of the bureau’s service:

$$B = B(Q), \quad B' > 0, \quad B'' < 0. \quad (16.1)$$

⁴ Downs also devotes a good deal of space to the goals of bureaucrats (1967, pp. 81–111).

This function may be thought of as a public benefit or utility function. Public benefits are assumed to increase, but at a diminishing rate, with increasing output.

The bureau has a cost function for producing its output that, over the relevant range at least, increases at an increasing rate like a competitive firm's cost schedule:

$$C = C(Q), \quad C' > 0, \quad C'' > 0. \quad (16.2)$$

This cost schedule is known only to the bureau's members (or a subset thereof). This is how the monitoring problem arises. The funder knows its total benefit schedule (16.1), but sees only an activity budget from the bureau. Therefore it cannot determine whether this output is being supplied Pareto efficiently, that is, if, at the margin, public benefits equal public costs. The funder sees only the total output of the bureau and its total budget. This frees the bureau to maximize its budget subject to the constraint that its budget cover the costs of production. If we assume that the bureau does not turn money back to the funder, this constraint is satisfied as an equality and the bureau's objective function is

$$O_B = B(Q) + \lambda(B(Q) - C(Q)), \quad (16.3)$$

whose first-order condition yields

$$B'(Q) = \frac{\lambda}{1 + \lambda} C'(Q) \quad (16.4)$$

$$B(Q) = C(Q). \quad (16.5)$$

Optimality from the point of view of the funder requires that the marginal benefit of an extra unit of output to the funder equal its marginal cost to the bureau:

$$B'(Q) = C'(Q). \quad (16.6)$$

The Lagrangian multiplier represents the marginal utility of an expansion of the budget constraint to the bureau and is positive. Thus, (16.4) implies that $B' < C'$. The budget is expanded beyond the point where marginal public benefits equal marginal costs. If B and C are quadratic, B' and C' become straight lines and we have the situation depicted in Figure 16.1, taken from Niskanen (1971, p. 47). Instead of requesting a budget that would result in the output Q_0 , and thereby maximize the net benefits of the funder, the bureau requests the larger budget consistent with the output Q^* . At Q^* triangle E equals triangle F . All of the consumer surplus gains from the production of the infra marginal units of output up to Q_0 are balanced out against the excess of marginal costs over marginal benefits on the units between Q_0 and Q^* .

Niskanen also discusses the possibility that the funder's demand schedule would be so far to the right, or inelastic, that the marginal benefit of Q to the funder would fall to zero before F grew as large as E . The constraint that total budget equals total cost would not be operative then, and the bureau would simply request the output level at which the funder is satiated. This situation is represented by the B'_S schedule and Q_S quantity in Figure 16.1.

The possibility that a funder might become satiated from a given public good before a bureau had exhausted all of the consumers' surplus it is capable of exploiting could lead a budget-maximizing bureaucrat to propose other outputs besides the one

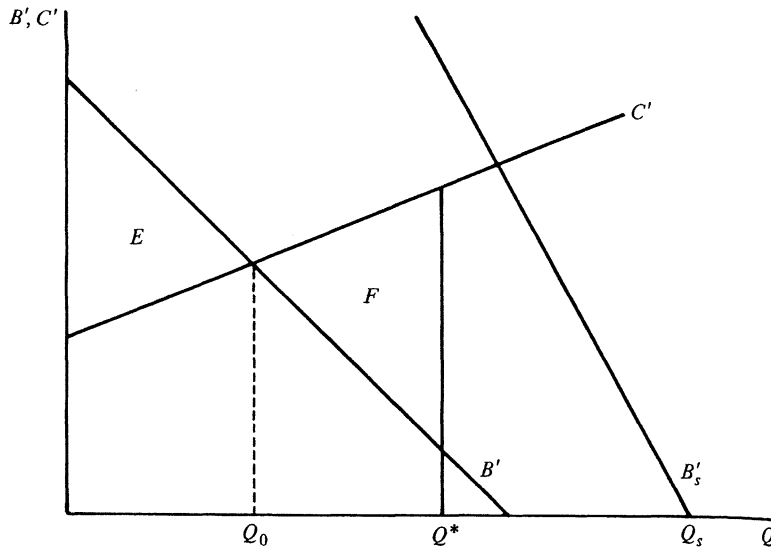


Figure 16.1. The oversupply of a bureau's output.

for which it is solely responsible. This could take the form of radical innovations, or more plausibly, infringements of one bureau onto another bureau's domain, or onto the domain of the private market.

16.3 Extensions of the model

The power of the bureaucracy to obtain budgets greater than those desired by the sponsor stems from three important characteristics of the bargaining situation assumed by Niskanen: (1) the bureau is a monopolist supplier, (2) it alone knows its true cost schedule, and (3) it is institutionally allowed to make take-it-or-leave-it budget proposals. Relaxing any of these assumptions weakens the bureau's position vis-à-vis the sponsoring agency.

16.3.1 Alternative institutional assumptions

The ability to make only take-it-or-leave-it budget proposals gives the bureau an extremely strong agenda-setting role, a fact that presumably occurs to the sponsor. The sponsor might reasonably request that the bureau state the costs of a range of outputs from which the sponsor then chooses. If the sponsor is still ignorant of the bureau's true costs and the bureau knows the sponsor's true demand, this new arrangement can leave the bureau in the same position as before, but it can alternatively force the bureau to announce its true marginal cost schedule.

Suppose that the bureau must announce a unit price P at which it will supply output Q , with the sponsor free to choose Q . The budget of the bureau is now

$$B = PQ, \quad (16.7)$$

with $Q = f(P)$ being the sponsor's demand schedule, which is known to the bureau. The bureau then chooses a P to maximize (16.7) subject to the constraint $B \geq C(Q)$.

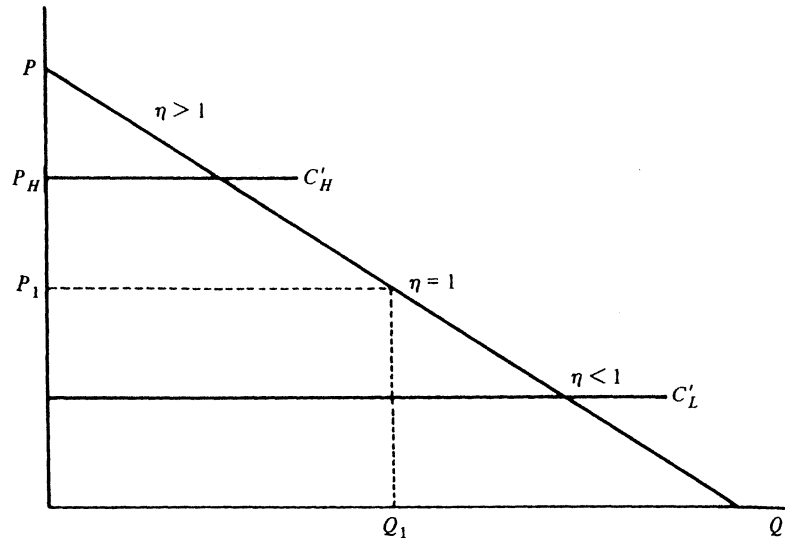


Figure 16.2. Options for a price-setting bureau.

The first-order condition for this problem is simply

$$\frac{dB}{dP} = Q + P \frac{dQ}{dP} = 0, \quad (16.8)$$

from which one obtains

$$\eta = \frac{P}{Q} \frac{dQ}{dP} = 1. \quad (16.9)$$

If the constraint $B \geq C(Q)$ is not binding, the bureau chooses the unit price at the point on the bureau's demand schedule where its demand elasticity, η , equals unity. If the constraint is binding, the bureau selects the *lowest* price for which the budget covers its total costs. The possibilities, assuming a straight-line demand schedule and constant marginal costs, are depicted in Figure 16.2. With the low marginal cost schedule C'_L , the bureau can announce the price P_1 at which revenue under the demand schedule is maximized. When marginal costs exceed P_1 , however, the bureau is forced to reveal its true marginal costs to obtain the maximum budget possible, for example, $P_H = C'_H$. Thus, when the bureau must declare a unit price or price schedule, instead of a take-it-or-leave-it proposal, its ability to force a higher-than-optimal budget on the sponsor depends on the elasticity of the sponsor's demand. If marginal costs intersect demand in the elastic portion of the demand schedule, the bureau honestly declares true costs. Only when the demand for its services is inelastic can the bureau expand its budget beyond the sponsor's preferred level by announcing a higher price for its output than its true costs (Breton and Wintrobe, 1975; Bendor, Taylor, and van Gaalen, 1985).⁵

⁵ Clarr (1998) gives the sponsor the authority to regulate both the price and output of the bureau, and derives second-best policies for the sponsor. In general, it still cannot obtain the first-best outcome because it lacks knowledge of the bureau's costs.

Considerable power resides with the bureau owing to its ability to conceal its costs. In practice, this too is limited. Monitoring agencies, like the U.S. General Accounting Office, may detect budget excesses and report them to the sponsor. Whistle-blowers within the bureau inform sponsors from time to time of budget excesses. Thus, in declaring a $P > C'(Q)$, the bureau runs the risk of incurring a penalty in the form of a future reduction in budget, or direct sanctions on personnel (curtailed discretionary budget items, lost promotions, dismissal).

Let the expected penalty from announcing a $P > C'$ be $\pi(P)$, $\pi' > 0$. If π is defined in units comparable to B , then the bureau's objective can be written as the maximization of

$$O = B - \pi(P), \quad (16.10)$$

from which the condition

$$\eta = \frac{P}{Q} \frac{dQ}{dP} = 1 - \pi' \quad (16.11)$$

is obtained. If the constraint $B \geq C(Q)$ is not binding, the bureau announces a price lower than P_1 , that is, a price in the inelastic portion of its demand schedule, to reduce the probability of incurring the penalty (Bendor, Taylor, and van Gaalen, 1985). Wherever the sponsor can partially monitor and penalize the bureau, the bureau is forced to declare a price closer to its true marginal costs.

This conclusion is strengthened if we assume, as is often done, that bureaucrats are risk-averse. If bureaucrats are risk-averse, each additional dollar of budget provides lower marginal utility while each additional increase in price raises the expected penalty from being caught, causing increasing marginal disutility. The risk-averse bureaucrat will thus declare a still lower price than the risk-neutral bureaucrat (Bendor, Taylor, and van Gaalen, 1985).

Allowing the sponsor to monitor the bureau and gather information shifts power from the bureau to the sponsor compared with the original situation in which the bureau knows the sponsor's demand but the sponsor is ignorant of the bureau's cost. The sponsor's position can be further strengthened if one assumes that the sponsor can conceal its demand from the bureau. Miller and Moe (1983) show how this assumption can also force the bureau to reveal its true costs.

Finally, the bureau's hand is weakened if it must compete for budget funding with other bureaus. If each bureau must announce prices at which it will supply output, then the sponsor can use the bids of other bureaus as information to gauge a bureau's true costs. In effect, the competing bureaus serve as monitors of a bureau's activity, forcing it to declare lower prices.⁶

⁶ McGuire, Coiner, and Spancake (1979); Bendor, Taylor, and van Gaalen (1985). Niskanen (1971, chs. 18–20) emphasizes the potential for competition between bureaus as well as between bureaus and the private sector as a restraining force on a bureau's discretionary power.

Eighteen of the 38 Herfindahl indexes for government-provided goods and services that Carroll (1989) estimated for 1985 were less than 0.5, implying that in these cases the market structure was equivalent to no worse than a duopoly. She goes on in a subsequent paper to argue, however, that the competitive environments that bureaus find themselves in may actually lead to *larger* budgets and greater inefficiency, because public bureaucracies tend to favor nonprice over price competition (Carroll, 1990).

Thus, relaxing any of the assumptions of the original budget-maximizing-bureau model shifts the outcome away from the excessive budget result, and in several cases yields the optimally sized budget.

16.3.2 *Bargaining between sponsor and bureau*

Sponsors compete for votes on the basis of how well government programs have served the interests of voters. Bureaucrats compete for promotions, and bureaus compete for funds on the basis of how well they are judged to have supplied the outputs sponsors desire. The interests of the two main actors conflict, and the most general way to view the sponsor–bureau conflict over the size of the bureau’s budget and other characteristics of its output mix is as a bargaining game between sponsor–demander and bureau–supplier (Breton and Wintrobe, 1975, 1982; Miller, 1977; Eavey and Miller, 1984). The bureau has monopoly power to some degree and information (expertise) on its side. But the sponsor controls the purse strings. It can offer rewards and punishments, gather information to an extent, and conceal its own hand. The most plausible outcome, as in most bargaining models, is a compromise. The bureau’s budget falls short of the bureaucrat’s target, but is greater than the sponsor would want.

16.4 **Alternative behavioral assumptions**

Migué and Bélanger (1974) pointed out that the relentless use of budget funds to expand the bureau’s output would conflict with one of the presumed objectives for having larger bureau budgets – to pursue other goals. Weatherby (1971) suggested, à la Williamson (1964), that the expansion of personnel would be one of the additional goals pursued by bureaucrats. The pursuit of this goal would result in higher costs per unit of output, and might be regarded as a particular form of the more general goal of maximizing X-inefficiency or organizational slack.

Chant and Acheson have developed and tested a model of central bank behavior in which the central bankers pursue prestige and risk avoidance.⁷ Consistent with our preceding discussion of power, central bankers in the Chant/Acheson model are very secretive. Chant and Acheson develop and test their model with respect to the behavior of the Bank of Canada, but emphasis placed on secrecy would fit many other bureaucracies and central banks – most notably the new European Central Bank.

Although prestige is unlikely to be an important bureaucratic goal in many agencies (for example, sanitation and transportation departments), avoiding risks seems likely to characterize the behavior of many bureaucrats. We shall take a bit closer look, therefore, at the slack-maximizing and risk-avoiding models of bureaucratic behavior.

16.4.1 *The slack-maximizing bureaucrat*

In Figure 16.3, Q represents the output of a bureau and Y represents all of the other items in the sponsor’s budget.⁸ The sponsor has a total budget of B that it can divide

⁷ See Chant and Acheson (1972, 1973) and Acheson and Chant (1973).

⁸ The exposition here follows Wyckoff (1990).

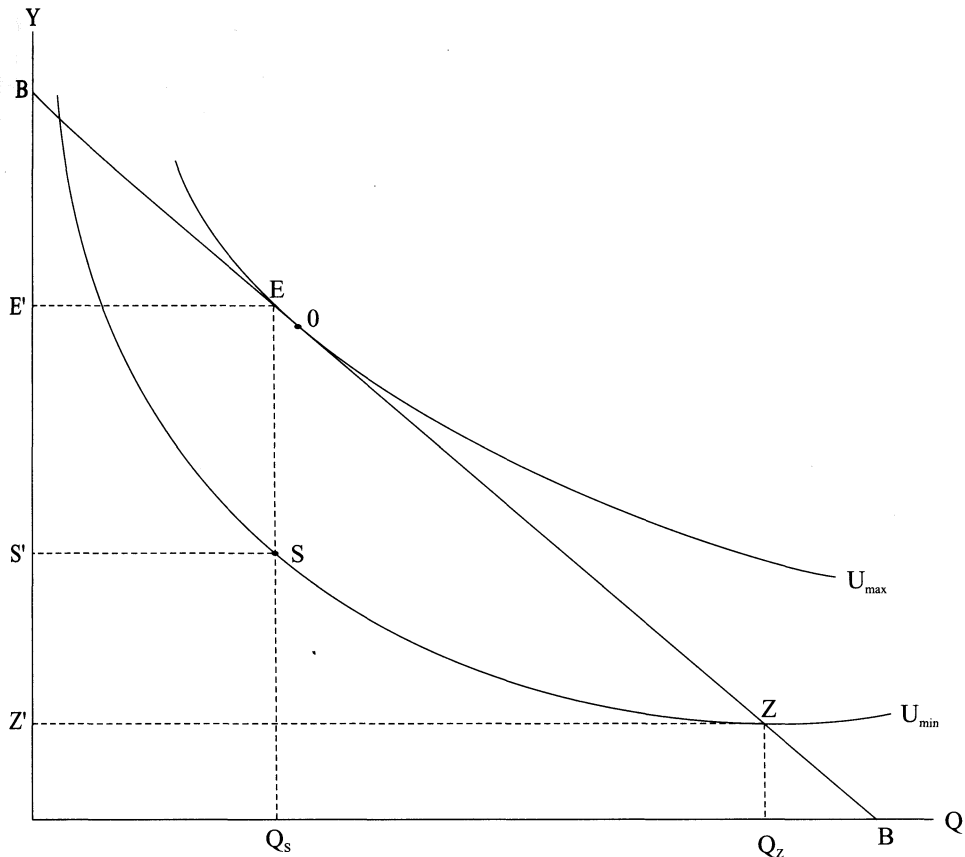


Figure 16.3. The output choice of a slack-maximizing bureau.

between the output of the bureau and the other items in its budget. BB is thus the budget constraint line of the sponsor.

U_{max} and U_{min} are two indifference curves of the sponsor, or if we think of the sponsor as an elected assembly that faithfully follows the wishes of the median voter, indifference curves for this voter. Given its budget constraint line, the optimal combination of Y and Q for the sponsor is at point O .

U_{min} is the minimum level of utility that the sponsor will tolerate before shifting to another source of supply and closing the bureau down. The only combinations of Q and budget that the bureau can possibly attain, therefore, lie on or above U_{min} and on or below BB .

A budget-maximizing bureau chooses to supply the output Q_z , which yields its maximum possible budget, BZ' . Any points along U_{min} to the left of Z involve smaller total budgets, but include *slack*. Slack is measured by the distance between a point on U_{min} and a point directly above it on the BB -line. A slack-maximizing bureau would choose the point along U_{min} at which the vertical distance to the BB -line is maximized, that is, the slope of U_{min} and BB are the same. This occurs at point S in Figure 16.3.

The slack-maximizing bureau produces output Q_s . With zero slack, this output could be supplied to the sponsor at a total cost of BE' to the sponsor. The bureau

supplies it, however, at the cost of BS' . The higher costs may come about because members of the bureau do not work as hard as they could have, or produce Q with a suboptimal combination of inputs – too much staff and emoluments, for example.

It should also be noted that if Q were a normal good for the sponsor, S would lie to the left of O , and the existence of X-inefficiency in the bureau actually would result in *too little* output being supplied relative to what the sponsor would find optimal.⁹

Several studies have used data envelopment analysis or similar econometric techniques to estimate the relative efficiency of state and private suppliers of various goods.¹⁰ These procedures use data on the outputs and costs of different firms to estimate some sort of *efficiency frontier*, and then measure the relative efficiency of a firm by its distance to this frontier. Such a measure in terms of Figure 16.3 would be BE'/BS' , that is, the ratio of the lowest possible cost of producing the output Q_S to the actual cost of producing it. Most of these studies find that state suppliers are *less efficient* than private suppliers. Figure 16.3 illustrates that these studies actually *understate* the social losses due to X-inefficiency in the public provision of goods, since they only take into account the higher costs associated with production of a given output, and not the additional social loss that comes about because the community is not consuming the optimal quantity of the publicly supplied good.

16.4.2 The risk-avoiding bureaucrat

The effects of risk aversion on a bureau's performance are more difficult to predict and measure. In Section 16.3.1, we noted that risk aversion may move a budget-maximizing bureau back toward the efficient bureau size. But risk aversion can induce bureaus to avoid projects that their sponsors would want them to undertake, if the sponsors could without cost monitor all bureau activities. Peltzman (1973) estimated that the Federal Drug Administration costs the United States more lives than it saves by excessively delaying the certification of new drugs. This behavior is attributed to the much greater risks the drug administrators perceive that they face if they approve a drug that turns out to be unsafe, than they face from delays in approval. Gist and Hill (1981) reported that officials of the Department of Housing and Urban Development allocated funds to cities with less risky investment projects to avoid the criticism that the projects were not successful, even though the purported goal of the program was to help "distressed" cities, that is, cities for which the risks in housing programs were high.

Lindsay (1976) gathered data indicating that risk-averse Veterans Administration hospital officials concentrate on providing outputs that are easily measured (hospital beds, patient days) at the cost of quality of service, an unmeasurable dimension of

⁹ Since the slope of U_{\min} at S is the same as that of BB , we could shift BB leftward until it becomes tangent to U_{\min} at S . S would thus constitute the optimal combination of Y and Q for the sponsor at the lower budget implied by this displaced BB -line. If Q were a normal good for the sponsor, less of it would be bought when the sponsor's income declines.

¹⁰ For recent examples see Hayes and Wood (1995); Duncombe, Miner, and Ruggiero (1997); Hayes, Razzolini, and Ross (1998); and Majumdar (1998).

output. Dávila, Pagán, and Grau (1999) make a similar argument with respect to the Immigration and Naturalization Service (INS). Because it is easier to measure the number of people caught illegally *entering* the country than it is to measure the number of illegal immigrants *in* the country, the INS devotes too much resources to preventing the entry of illegal immigrants, and not enough to capturing those already in the country. These examples further illustrate the importance of information in controlling a bureaucracy. The sponsor is not without some power to control the bureaucracy, since some dimensions of bureau performance can be measured. But if all dimensions cannot be monitored, then some power rests with those in the bureau who can use it to create slack and/or to secure their positions.

16.5 Empirical tests

All the models of bureaucracy reviewed so far suggest that bureau budgets will be too big in some sense because bureaucrats have the discretion to pursue their own goals at the sponsor's (citizen's) expense. Breton and Wintrobe (1982, pp. 96–7) have argued, on the other hand, that bureaucrats, like corporate managers, are not totally free to pursue their own goals; indeed, they may have less discretionary power than their private sector counterparts, because they operate in an environment in which considerable competition for promotions exists. If anything, public bureaucrats are more mobile than corporate managers; this suggests that the market for public bureaucrats is more competitive than the market for company managers. Bureau sponsors, the elected representatives of parliament, and the executive also function in a competitive environment. They must stand for periodic reelection. Thus, they are under continuous pressure to control bureaucratic excesses to the best of their ability.¹¹

Thus, as so often is the case, whether and to what degree government bureaucracies oversupply goods or are inefficient remain empirical questions. In this section, we examine some of the evidence that has been accumulated on this issue.

16.5.1 *Power of the agenda setter*

The hypothesis that bureau budgets exceed the optimum levels of their parliamentary review committees is often difficult to test directly, since output is hard to measure and the optimum levels for the review committee cannot be established. In Oregon, however, school budgets are determined by a process that allows one to observe the budget-maximizing bureaucrat in action. Each school district has a budget maximum determined by law. School boards can increase the budget size, however, by proposing larger budgets at an annual referendum. If the newly proposed budget gets more than 50 percent of the votes cast, it replaces the legally set limit. If the school board's budget fails, the budget reverts back to the level set by the law.

This situation allows one to test hypotheses regarding school board officials' motivation, if one assumes that the optimum level of expenditures would be that

¹¹ For two vigorous defenses of governmental efficiency that emphasize the competitiveness of democratic institutions, see Wittman (1995) and Breton (1996).

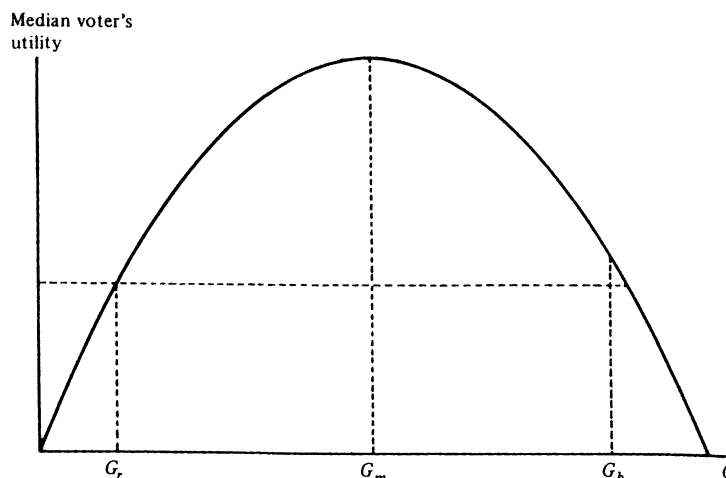


Figure 16.4. Options for the budget-maximizing agenda setter.

most preferred by the median voter, if voting were on all possible expenditure levels. Figure 16.4 depicts the utility function of the median voter defined over school expenditures G . Let G_r be the level of expenditures to which the school budget reverts if the referendum fails. While the median voter's most preferred expenditure is G_m , she would be willing to vote for G_b rather than see the budget revert to G_r . Thus, when the reversion level for the school budget is below the most favored budget of the median voter, the school board can force the median voter to vote for a larger budget than the one she prefers by forcing her to choose between this higher budget and the reversion level.

Romer and Rosenthal (1978, 1979b, 1982) have analyzed and tested a model of the Oregon school budget referenda process. They predict the budget expenditures that the median voter would demand using a standard median voter model and find that, where the reversion levels are below the levels necessary to keep the school system viable, referenda pass leading to school budgets anywhere from 16.5 to 43.6 percent higher than those most preferred by the median voter. Further corroboration for the budget-maximizing school bureau hypothesis is contained in the data for the 64 districts that either failed to hold a referendum or failed to pass one. When the reversion budget exceeds the level favored by the median voter, one expects that the school board does not call an election, and simply assesses the full 100 percent of its statutorily set base. The mean assessment for these 64 districts was over 99 percent of their bases.¹²

¹² See also Filimon (1982).

Additional evidence of the use of discretionary power by public officials is provided by Shapiro and Sonstelie (1982), who show that Proposition 13 in California took away discretionary funds from local officials and forced them to choose different budget expansion paths. Using data on community college budgets in California, Kress (1989) also found that Proposition 13 took away discretionary power from college bureaucrats.

Ruttan (1980) points to the agricultural research program of the U.S. Department of Agriculture (USDA) as an important counterexample to the budget-maximizing bureau story. The high rates of return on agricultural research estimated in numerous studies imply a significant underinvestment in agricultural research. This finding would be consistent with higher unit costs for the USDA if the demand for this service were highly elastic.

The Oregon school budgeting system provides school officials an unusually attractive opportunity to increase budget sizes by the power granted them to make take-it-or-leave-it referendum proposals. But, as noted earlier, most bureau budgets are the outcome of a bargaining process between the bureau and its sponsors. Using classroom experiments, Eavey and Miller (1984) have shown that merely granting the sponsor-demanders the right to confer and form coalitions increases their power vis-à-vis the agenda setter. The Eavey-Miller experiments produced outcomes falling in a bargaining range between the review committee's most preferred choice and that of the agenda setter. Fort (1988) found that for nonrepeated hospital bond issues, the outcomes did not differ from what one would expect from the median voter hypothesis.

16.5.2 *Cost differences between publicly and privately provided services*

In some cases, the nature of a bureau's services makes it difficult to expand its output beyond the level that the community demands. A school system cannot educate more children than are sent to school; the sanitation department cannot collect more garbage than the community puts out to be collected. In these situations, a bureau's members can only take advantage of the discretion that they have by introducing slack into their budget, that is, by providing the fixed output demanded by the community at a higher cost than necessary. The extra costs could reflect higher than competitive salaries, more personnel than are needed to provide the service, or general X-inefficiency. Numerous studies have compared the provision of similar services by public and private firms. Table 16.1 summarizes the findings for 71 studies. In only 5 were public firms found to be more efficient than their private counterparts. In another 10 there were no significant differences in the performances of the two types of companies, while in the remaining 56 studies state-owned companies were found to be significantly less efficient than privately owned firms supplying the same good or service. The provision of a good or service by a state bureaucracy or by a state-owned company generally leads to lower residual profits, and/or higher costs and lower productivity.¹³

In several of the studies comparing public and private provision of a good or service, the private firms are regulated to some degree. Differences between public and private company performance in these cases may be reduced or eliminated through the regulation process. For example, electricity rate regulation in the United States provides incentives for profit-maximizing suppliers to choose inefficiently large amounts of capital equipment.¹⁴ For this reason, the most revealing comparisons in Table 16.1 may be the ones at the very end of the table between privately and state-owned companies operating in nonregulated sectors like manufacturing and mining.

¹³ Vining and Boardman (1992, Table 2) present a much longer list of studies including many that are unpublished or difficult to locate. Roughly the same pattern of findings is revealed in their table.

¹⁴ See Averch and Johnson (1962). The study of the West German insurance industry by Finsinger, Hammond, and Tapp (1985) is much more an indictment of the regulatory process in Germany and the inefficiencies that it causes than an example of state companies outperforming private ones.

Table 16.1. *Cost and productivity indices: alternative organizational forms*

Activity: author	Unit/organizational form	Findings
1. Airlines		
Davies (1971, 1977, 1981)	Australia/sole private domestic vs. its lone public counterpart	Efficiency indices of private 12–100% higher
Forsyth and Hocking ^b (1980)	Australia's one private and one publicly owned airlines (1964–76)	Similar performance
2. Banks		
Davies (1981)	Australia/one public vs. one private bank	Sign and magnitude in all indices of productivity, response to risk, and profitability favor private banks
Davies and Brucato (1987)		Government-owned banks hold less risky assets and are less profitable than private banks
3. Bus and transit service		
Oelert (1976)	Municipal vs. private bus service in selected West Germany cities	Cost public bus service 160% higher per km than private equivalents
Bails (1979)	School buses in six U.S. states (1976–7)	Costs are lower in school districts which contract with private sector than for state-owned systems
McGuire and Van Cott (1984)	School buses in 275 districts in Indiana (1979–80)	Privately owned bus services have 12% lower costs than state-owned
Pashigian (1976)	Transit systems in 117 U.S. cities (1971)	Publicly owned systems have lower profit margins and revenue per vehicle
4. Cleaning services		
Bundesrechnungshof (1972)	Public production vs. private contracting out in West Germany post office	Public service 40–60% more costly
Hamburger Senat (1974), Fischer-Menshausen (1975)	Public production vs. private contracting out in West Germany public building	Public service 50% more costly than private alternative
5. Debt collection		
Bennett and Johnson (1980a)	U.S. General Accounting Office study/federal government supplied service vs. privately contract-for equivalents	Government 200% more costly per dollar of debt pursued
6. Electric utilities		
Meyer ^a (1975)	Sample of 60–90 U.S. utilities/public vs. private firms	Very weak indication of higher costs of private production

Activity: author	Unit/organizational form	Findings
Moore (1970)	Sample of U.S. utilities/27 municipal vs. 49 private firms	Overcapitalization greater in public firms; total operating costs of public production higher
Spann ^b (1977b)	Four major U.S. cities/public (San Antonio, Los Angeles) vs. private (San Diego, Dallas) firms	Private firm adjusted for scale as efficient and probably more so with respect to operating cost and investment (per 1,000 kWh)
Wallace and Junk (1970)	By region in U.S./public vs. private firms	Operating costs 40–75% higher in public mode; investment (per kWh) 40% more in public mode
Atkinson and Halvorsen ^b (1986)	U.S. electric utilities (1970)	Privately and publicly owned are equally efficient
DiLorenzo and Robinson ^b (1982)	U.S. electric utilities	Privately and publicly owned are equally efficient
Peltzman (1971)	135 U.S. electric utilities (1966)	Privately owned are more efficient
7. Fire protection		
Ahlbrandt (1973)	Scottsdale, Arizona (private contract) vs. Seattle area (municipal) fire departments	Municipal fire departments 39–88% higher cost per capita
Pescatrice and Trapani ^a (1980)	56 electric utilities in the U.S. (1965, 1970)	Publicly owned have 24–33% lower costs
8. Forestry		
Bundesregierung Deutschland (1976)	Public vs. private forest harvesting in West Germany (1965–75)	Operating revenues 45 DM per hectare higher in private forests
Pfister (1976)	Private vs. public forests in state of Baden-Württemberg	Labor input twice as high per unit of output in public compared with private firms
9. Hospitals and nursing homes		
Clarkson (1972)	Sample of U.S. hospitals/private nonprofit vs. for profit	“Red tape” more prevalent in nonprofits; greater variation in input ratios in nonprofits; both suggest higher cost of nonprofit outputs
Lindsay ^a (1976)	U.S. Veterans Administration vs. proprietary hospitals	Cost per patient day less in V.A. hospital unadjusted for type of care and quality; less “serious” cases and longer patient stays in V.A.; preference for minority group professionals compared with proprietary hospitals

(continued)

Table 16.1 (continued)

Activity: author	Unit/organizational form	Findings
Rushing (1974)	Sample of 91 short-stay hospitals in U.S. mid-South region/private nonprofits vs. for-profit	Substitution among inputs and outputs more sluggish in nonprofit hospitals
Wilson and Jadlow (1982)	1,200 U.S. hospitals producing nuclear medicine/government vs. proprietary hospitals	Deviation of proprietary hospitals from perfect efficiency index less than public hospitals
Becker and Sloan ^b (1985)	1979 data on 2,231 U.S. hospitals	Costs and profitability similar in private for profit, private nonprofit, and publicly owned hospitals
Frech (1985)	U.S. nursing homes	Private profit-seeking have 5–29% lower costs than nonprofit homes; 34–41% lower costs than state-owned homes
Tuckman and Chang ^b (1988)	Nursing homes in Tennessee	No significant cost differences between for-profit and nonprofit homes
10. Housing		
Muth (1973)	Construction costs in U.S. cities, private vs. public agencies	Public agencies 20% more costly per constant quality housing unit
Rechnungshof Rheinland-Pfalz (1972)	Public vs. private cost of supplying large public building projects in the West German state of Rheinland-Pfalz	Public agencies 20% more costly than private contracting
Schneider and Schuppener (1971)	Public vs. private firm construction costs in West Germany	Public firms significantly more expensive suppliers
11. Insurance sales and servicing		
Finsinger ^a (1981)	5 public vs. 77 private liability and life firms in West Germany	Same rate of return and no obvious cost differences between organizational forms
Kennedy and Mehr (1977)	Public car insurance in Manitoba vs. private insurance in Alberta	Quality and services of private insurances higher than those of the public one
Finsinger, Hammond, and Tapp ^a (1985)	96 German life insurance companies, 83 German automobile insurance companies (1979)	Public enterprises have lower costs than private stock companies
Frech (1976)	78 health insurance companies	Profit seeking companies have 15% lower costs than nonprofit

Activity: author	Unit/organizational form	Findings
12. Ocean tanker repair and maintenance Bennett and Johnson (1980a)	U.S. General Accounting Office/Navy vs. commercial tankers and oilers	U.S. Navy from 230 to 5,100% higher
13. Railroads Caves and Christensen ^b (1980)	Canadian National (public) vs. Canadian Pacific (private) railroads	No productivity differences recently, but CN less efficient before 1965, the highly regulated period
14. Refuse collection Collins and Downes ^b (1977)	53 cities and municipalities in the St. Louis County area, Missouri/public vs. private contracting-out modes	No significant cost differences
Columbia University Graduate School of Business Studies: Savas (1974, 1977a, 1977b, 1980), Stevens and Savas (1978)	Many sorts of U.S. cities/municipal vs. private monopoly, franchise vs. private nonfranchise firms	Public supply 40–60% more expensive than private, but monopoly franchise only 5% higher than private nonfranchised collectors
Petrovic and Jaffee (1977)	83 cities in midwestern U.S./public vs. private contracting-out modes	Cost of city collection is 15% higher than the price of private contract collectors
Hirsch ^b (1965)	24 cities and municipalities in the St. Louis city-county area, Missouri/public vs. private firms	No significant cost differences
Kemper and Quigley (1976)	101 Connecticut cities/private monopoly contract vs. private nonfranchise vs. municipal firms	Municipal collections costs 14–43% higher than contract, but private nonfranchise 25–36% higher than municipal collection
Kitchen (1976)	48 Canadian cities/municipal vs. private firms	Municipal suppliers more costly than proprietary firms
Savas ^b (1977c)	50 private vs. 30 municipal firms in Minneapolis	No significant cost differences
Pier, Vernon, and Wicks ^a (1974)	26 cities in Montana/municipal vs. private firms	Municipal suppliers more efficient
Pommerehne (1976)	102 Swiss municipalities/public vs. private firms	Public firms 15% higher unit costs
Spann (1977b)	Survey of various U.S. cities/municipal vs. private firms	Public firms 45% more costly
Bennett and Johnson (1979)	29 private firms vs. one public trash collection authority in Fairfax County, Virginia	Private firms more efficient

(continued)

Table 16.1 (*continued*)

Activity: author	Unit/organizational form	Findings
Edwards and Stevens (1978)	77 U.S. cities (1975)	Prices 41% lower when cities contract with private firms
Stevens (1978)	340 public and private U.S. collectors (1974–5)	Labor productivity lower in public monopolies than in private ones
15. Saving and loans Nicols (1967)	California Savings and Loans/ cooperative or mutuals vs. stock companies	Mutuals have 13–30% higher operating costs
16. Schools Chubb and Moe (1990)	Test scores for over 7,000 U.S. high school students (1982, 1984)	Students in private schools outperform students in public schools
17. Slaughterhouses Pausch (1976)	Private vs. public firms in 5 major West Germany cities	Public firms significantly more costly because of overcapacity and overstaffing
18. Water utilities Crain and Zardkoohi (1978)	112 U.S. firms/municipal vs. private suppliers; case study of two firms that each switched organizational form	Public firms 40% less productive with 65% higher capital-labor ratios than private equivalents; public firm that became private experienced an output per employee increase of 25%; private firm that became public experienced an output per employee decline of 40%
Mann and Mikesell (1976)	U.S. firms/municipal vs. private suppliers	Replicates Meyer's (1975) electricity model, but adjusts for input prices; found public modes more expensive by 20%
Morgan (1977)	143 firms in six U.S. states/ municipal vs. private suppliers	Costs 15% higher for public firms
Feigenbaum and Teeple ^b (1983)	57 private and 262 public water companies in U.S. (1970)	Two types of firms perform the same
19. Weather forecasting Bennett and Johnson (1980a)	U.S. General Accounting Office study/U.S. Weather Bureau vs. private contracted-for service	Government service 50% more costly

Activity: author	Unit/organizational form	Findings
20. Industrial companies in private sector		
Boardman and Vining (1989)	500 largest non-U.S. corporations in the world (1983): 419 private, 58 state-owned, 23 mixed ownership	Mixed and state-owned companies have lower profitability and productivity than private companies
Funkhouser and MacAvoy (1979)	100 Indonesian companies (1971)	Profit rates 14–15% lower for publicly owned companies; prices the same; costs higher
Majumdar (1998)	Used data envelopment analysis to measure the relative efficiency of a large sample of Indian companies (1973–89)	State-owned companies have average efficiency scores of .64–.66, where 1.0 is most efficient. Mixed ownership companies have mean scores of .91, privately owned average .975
Picot and Kaulmann (1989)	Sample of large companies drawn from 6 countries and 15 industries (1975–84)	Privately owned firms have higher profitability and productivity than state-owned companies
Gugler (1998)	94 Austrian companies (1975–94)	State-owned have lower profitability than bank-, family-, and foreign-owned companies
Vining and Boardman (1992)	370 large Canadian companies (1986)	Privately owned companies are significantly more profitable and efficient than state-owned; mixed ownership companies fall in-between

^a Public sector less costly or more efficient.

^b No significant difference in costs or efficiencies.

All studies without an ^a or ^b found the public sector firms to have higher costs or lower efficiency.

Source: Borchering, Pommerehne, and Schneider (1982, pp. 130–3) with additions.

As noted above, a large literature exists discussing the principal-agent problem in joint-stock companies and the various goals corporate managers pursue with the discretion that they have. State-owned companies have several tiers of principal-agent relationships, however. Rational ignorance leads citizens to be poor monitors of elected officials. Information asymmetries give the managers of state-owned companies considerable discretion vis-à-vis the elected members of the legislature. In situations where some state agency monitors the state-owned enterprises on behalf of the legislature, yet another principal-agent relationship is introduced with further scope for the appearance of slack and X-inefficiency. All six studies at the end of Table 16.1 found that the privately owned companies significantly outperformed the state-owned companies in the same sectors. Even partial ownership by the state substantially reduced performance. If companies that face competition can

become so inefficient, what should we expect from bureaucracies that supply hard-to-measure outputs and face little or no competition?

16.6 **The government as Leviathan**

16.6.1 *Theory*

The family of bureaucracy models initiated by Niskanen depicts a bargaining situation between a bureau and a sponsor, like the U.S. Congress. In Niskanen's original model, the bureaucracy has all of the relevant information and power; the sponsor has only the money and the power to turn down the bureau's offer. Subsequent refinements of the Niskanen model have shifted power toward the sponsor and altered the bureau's objective function. In the next chapter, we consider a group of models that are almost the polar reverse of the Niskanen model – all of the power lies with the sponsor. Before turning to these, however, we examine a model more in the spirit of that of Niskanen.

In Brennan and Buchanan's (1980) Leviathan model, the sponsor – congress or a parliament – and the bureaucracy that supplies public goods and services are fused. This monolith monopolist then exploits its power over the citizenry à la Niskanen by maximizing the size of the public sector. Political competition is an ineffective constraint on government owing to the rational ignorance of voters, the uncertainties inherent in majority rule cycling, and outright collusion among elected officials (Brennan and Buchanan, 1980, pp. 17–24).

Although political competition cannot constrain the government's desire to expand, constitutional limitations on sources of tax revenue and on debt and money creation can. Brennan and Buchanan assume that the only truly effective constraints on government in the long run are contained in constitutional rules limiting government's power to tax, issue debt, and print money.

With the government viewed as a malevolent revenue maximizer rather than a benevolent public good provider, many of the traditional propositions of the public finance tax literature are stood on their heads (Brennan and Buchanan, 1980, p. 2). Traditional analysis assumes that the purpose of government is to raise a *given amount of revenue* subject to certain efficiency and equity constraints; Brennan and Buchanan assume that citizens seek to impose constraints on the government bureaucracy limiting its revenues to a given amount. To see the difference, consider the familiar problem of how to tax income without discriminating against leisure. Let AB in Figure 16.5 represent an individual's opportunity locus in the absence of any tax. An "ideal tax" would shift the individual's opportunity locus toward the origin without distorting his choice between income and leisure, say, to CD , by taxing an individual's *capacity* to earn income and not just the income actually earned. If the taxing authority is free to raise revenue only by means of a tax on earned income, however, it must raise the equivalent amount of revenue, AC , by imposing a much higher effective tax rate on earned income, as is implicit in the opportunity line, EB . If the amount of tax revenue to be raised were a fixed amount, as the normative literature on optimal taxation assumes, the tax on the more comprehensive tax base

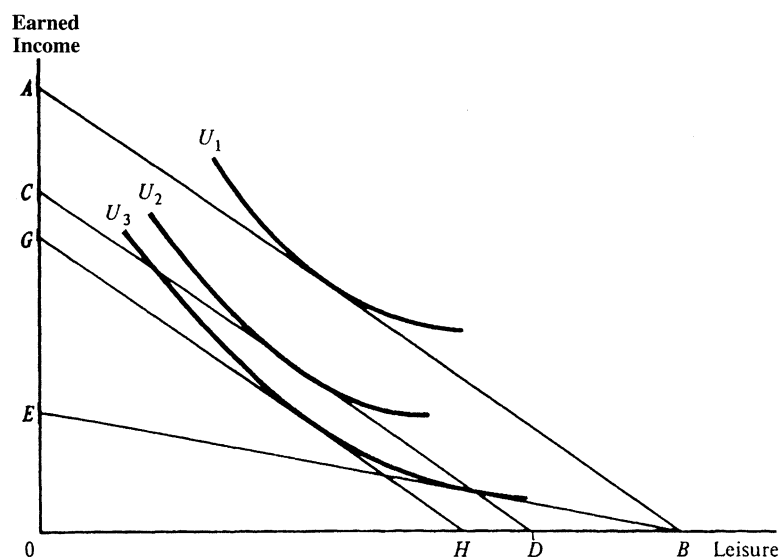


Figure 16.5. Alternative strategies for taxing income and leisure.

would be preferred, since $U_2 > U_3$. However, if the budget-maximizing bureaucrat were free to tax both earned income and leisure, there is no reason to assume he would stop with a tax revenue of AC . If the citizen would tolerate a reduction in utility by the taxing authority to U_3 , then the budget-maximizing bureaucrat would push tax rates up sufficiently to raise AG . The difference between a comprehensive definition of income and a restricted definition is not the level of utility of the voter-taxpayer for a given tax revenue, but the amount of tax revenue taken at a given utility level under the grasping Leviathan view of government.

If the voter always finished up at the same utility level whatever the definition of the tax base, he would be indifferent to the resolution of this question. Brennan and Buchanan assume, however, that there are physical and institutional limits to how high nominal tax rates on a given revenue base can be raised. Given such limits, the bureaucracy's capacity to tax the citizenry is weaker under a narrow definition of the tax base than under a broad one. A citizen who expected bureaucrats to maximize their budgets would constrain their ability to do so by constitutionally restricting the kinds of income and wealth that could be taxed.

The Brennan-Buchanan model also turns the standard analysis of excess burden in taxation on its head. With the amount of revenue to be raised by taxation fixed, the optimal tax is the one that induces the minimum amount of distortion, which falls on the most inelastic sources of revenue. With the government maximizing the amount of revenue raised, the citizen seeks to limit it to more elastic tax bases and shelter parts of his income and wealth from taxation entirely.

When Brennan and Buchanan apply their analysis to other aspects of taxation, they sometimes reach conclusions analogous to those existing in the normative tax literature, but the underlying logic is quite different. Because a vote-maximizing government has the incentive to introduce special tax concessions favoring narrowly defined interest groups, a citizen writing a tax constitution to constrain Leviathan

would require that the government impose tax schedules that are uniform across persons to limit the government's capacity to engage in tax price discrimination as a means of expanding its revenue. Thus, "horizontal equity" would be favored at the constitutional stage because it limits the government's degrees of freedom, and not for any other ethical reasons.¹⁵ Similar logic leads in general to a preference for progressive over regressive taxes: less revenue can typically be raised by tax schedules imposing high marginal rates than by schedules imposing low ones.

The Leviathan model also provides an additional justification for Wicksell's (1896) prescription that expenditure proposals be tied to the taxes that would finance them. Although to Wicksell this proposal seemed to be an obvious requirement to ensure informed choices by citizens as to benefits and costs, when governments seek to maximize revenue the proposal has the added advantage of ensuring budget balance and forcing the government to provide some public benefit to secure more revenue (Brennan and Buchanan, 1980, pp. 154–5). Bridges and roads must be built before the government can collect tolls.

Although traditional analyses of debt and money creation have assumed that government's motivation is benign, in the hands of a Leviathan seeking ever new sources of revenue, both of these policy instruments become extremely dangerous. Balanced budget constitutional amendments follow naturally, as do restrictions on the government's capacity to print money (Brennan and Buchanan, 1980, chs. 5, 6, and 10), with the ultimate restriction – "denying government the power to create money under any circumstances at all" (Brennan and Buchanan, 1980, p. 130) – being possibly the best means to control the abuse of this power.

In the Brennan-Buchanan model of the state, the citizens have lost almost all control over government. They set government on its way, when they forge the constitutional constraints on government at its inception. The government's power to pursue its own objectives is greatly aided by the "rational ignorance" of voters of their true tax bills, the full impact of debt, and money creation. The information-power nexus reappears in the Leviathan model as fiscal illusion and rational ignorance. From time to time, citizens may perceive that the government Leviathan has gone too far in pursuing its own ends and may rise from their lethargy to reforge certain bonds on government, as in the tax and debt revolts of the seventies, and the brief triumph of fiscal conservatism in the United States during the early nineties. But between these surges of citizen control the government proceeds on its revenue-maximizing course within whatever constraints the constitution effectively allows.

16.6.2 *Empirical testing – government expenditures and taxes*

The central hypothesis of the Leviathan model is that only constitutional constraints on the sources of revenue or levels of expenditure can curb the appetite for growth by those in government. A revealing illustration of the importance of such constraints has been recounted by Campbell (1994). New Hampshire's constitution requires

¹⁵ A similar line of argument, although with a more normative flavor to it, is developed by Buchanan and Congleton (1998).

that its tax rates be proportional. Its lower house also has an unusually large number of seats, and the ratio of its seats to the number of seats in the upper house is very large. Following the arguments of McCormick and Tollison (1981), these features of the New Hampshire constitution should make it difficult for interest groups to change it. The consequence is that New Hampshire has one of the narrowest tax bases of any of the 50 U.S. states – no sales taxes, and an income tax that is limited to interest and dividends. The consequence is that New Hampshire has much lower taxes and government expenditures than its neighboring states.

As evidence that New Hampshire residents approve of the outcomes from this constrained governmental sector, Campbell cites the much higher growth rates in population, which New Hampshire has experienced relative to its neighboring states. Citizens have voted for a constrained Leviathan with their feet by migrating into New Hampshire from neighboring states, and by exiting in smaller numbers.

Campbell's account of the importance of the tax base in determining government size has been supported in a broader study by Nelson (1986). He found that those states that tax personal income have significantly larger government sectors, and that the relative size of the government sector varied inversely with the number of local government units. If one assumes that having more local government units signifies a stronger federalist structure and more intensive constraints on government through intergovernmental competition, then this result also supports the Leviathan model. Campbell also noted that New Hampshire has a more decentralized governmental structure than neighboring Vermont, Maine, and Massachusetts. Further evidence for the importance of decentralization in explaining government size is provided by Deacon (1979), Mehay (1984), Mehay and Gonzales (1985), and Marlow (1988). Several cross-national studies have also found that federalist structures are inversely related to government size (Cameron, 1978; Saunders, 1986; Schneider, 1986; Mueller and Stratmann, 2002). Oates (1985), on the other hand, found no support for the Leviathan hypothesis using data on federalist constitutional structures and the degree of centralization of tax revenue. The same was observed by Nelson (1986) in his cross-sectional analysis of U.S. state data.

The beneficial effects of intergovernmental competition will not emerge, of course, if governments collude, which in the Leviathan model they have every reason to do. Intergovernmental grants are an attractive vehicle for making the side payments needed to cement collusive agreements among supposedly competing governments (Brennan and Buchanan, 1980, pp. 182–3). New Hampshire makes less use of intergovernmental grants than neighboring Vermont, Maine, and Massachusetts (Campbell, 1994, pp. 140–1). Grossman (1989a,b) and Grossman and West (1994) provide more systematic evidence for the United States and Canada.¹⁶

The ultimate constraints on Leviathan in Brennan and Buchanan's schema are provided by the constitution. The success of Proposition 13-type movements in reducing government size offers further support for their thesis (Shapiro and Sonstelie, 1982; Kress, 1989).

¹⁶ For further discussion and evidence, see Chapters 10 and 21.

16.7 Conclusions

Most of the public choice literature is in the citizen-over-the-state tradition. Just as the individual consumer is sovereign in the marketplace, ultimate authority is assumed to rest with the citizens.

But the word “sovereign” did not originate as a synonym for citizen. Historically, the word has referred to a single person ruling the people as head of a monarchy. The state was something separate from, indeed above, the people it ruled. Citizens are expected to serve the state; the state is not servant to the people.

This second view of the state appears most vividly in Brennan and Buchanan’s Leviathan model, but elements of this view are also present in the bureaucracy models. Which model best explains the outcomes of the polity probably depends both on the outcomes that one wishes to explain and on the polity. The citizen-over-the-state model is probably more appropriate for describing the public policies of the Swiss canton of Appenzell; the Leviathan model is perhaps more appropriate for countries like France and Germany.

Both Brennan and Buchanan’s Leviathan model and Niskanen’s bureaucracy model assume that the actor’s main goal is to maximize budget size. The sovereign and the bureaucrat are both empire builders of sorts. In the private sector such empire-building behavior is quite consistent with maximizing wealth, as managerial salaries tend to be highly correlated with company size. Civil service rules in most countries, however, do not link bureaucrats’ salaries closely to the size of their bureaus (Johnson and Libecap, 1989). In the public sector, the bureaucrat typically exercises his discretion by creating and taking advantage of organizational slack. The public school system in America fails its citizens not by educating too many students, but by educating them poorly – poorly in comparison to students educated in more efficiently organized private schools (Chubb and Moe, 1990).

Although there is considerable evidence that public slack and inefficiency exist, there is also evidence that citizens are able to exercise some control over Leviathan. Hayes and Wood (1995), for example, found less evidence of bureaucratic slack in the provision of police service in those Illinois municipalities where citizens had stronger incentives to be informed. The average efficiency score of a municipal police department was 0.96 on a scale of 0 to 1.0. Hayes, Razzolini, and Ross (1998) came up with a similar finding for other government services supplied by Illinois municipalities. Duncombe, Miner, and Ruggiero (1997) found that public schools in New York State were closer to the efficiency frontier in school districts in which citizens had greater incentives to become informed. The Proposition 13 movement provides yet another example of citizens taking action to (re)take control over government.

Some scholars like Brennan, Buchanan, Niskanen, and Usher (1992) look at the state and see a grasping beast set upon exploiting its power over citizens to the maximum degree. Others, like Breton (1996) and Wittman (1995), when they gaze upon the state see an institutional equivalent to the market in which democratic competition produces efficiency levels comparable to those achieved by market competition. Which view is closer to reality? This is obviously an empirical question.

We have presented some of the relevant evidence in this chapter. We consider more later, particularly in Chapters 20, 21, and 22.

Bibliographical notes

Surveys of the bureaucracy literature include Orzechowski (1977), Moe (1997), and Wintrobe (1997).

The agenda control model of bureaucracy has been extended to more than one government activity by Mackay and Weaver (1981).

In Breton's (1974) theory of representative democracy, the government is modeled as a monopoly supplier of certain highly desired public goods like defense, police and fire protection, and highways. Auster and Silver (1979) also describe the history of the state as if it were a monopolist.