PAPERWORK AND BUREAUCRACY

JAMES T. BENNETT and MANUEL H. JOHNSON*

This study explores paperwork as an inherent characteristic of bureaucratic behavior. The magnitude and scope of the federal government paperwork burden on the private sector is given particular emphasis. A theoretical model of bureaucratic behavior is developed which shows that bureaucrats employ paperwork to shift the cost of agency functions to the private sector in order to increase their perquisites of office. The model indicates that, if the private sector were compensated for the federal paperwork burden, agency employment would be smaller, as would agency output and the volume of private-sector labor expended in preparing federal forms.

Pejorative connotations aside, the characterization of bureaucrats, in general, and federal government employees, in particular, as "paper shufflers" is more accurate than apocryphal.[1] The federal government is awash in paperwork; the burden and cost of paperwork is not only enormous, but also rapidly growing. In 1972, the federal bureaucracy generated more than two billion pieces of paper and filled over 4.5 million cubic feet of file space each year.[2] The National Archives and Records Service estimated costs of major paperwork elements in the federal government for fiscal years 1955, 1966, and 1973, as shown in Table 1.

Total paperwork costs more than doubled in the eleven-year interval between 1955 and 1966; moreover, an additional 86 percent increase occurred in the seven years between 1966 and 1973. The $15 billion spent on paperwork in 1973 was 6 percent of all federal expenditures in that year.

This study explores paperwork as an inherent characteristic of bureaucracies and bureaucratic behavior. While the theoretical discussion is applicable to any bureaucratic organization, the overview and the empirical data focus on paperwork in the federal government. Particular

*The authors are, respectively, Professor of Economics and Assistant Professor of Economics, George Mason University. The authors gratefully acknowledge the helpful suggestions of William Snavely, Eddie Mayberry, and an anonymous referee. This research was supported by the Contemporary Economics and Business Association at George Mason University. The usual caveats apply.

1. Ludwig von Mises (1944, p. 1) in *Bureaucracy*, contended that "The terms *bureaucrat*, *bureaucratic*, and *bureaucracy* are clearly invectives . . . These words are always applied with an approbrious connotation. They always imply a disparaging criticism of persons, institutions, or procedures. Nobody doubts that bureaucracy is thoroughly bad and that it should not exist in a perfect world." Von Mises' views notwithstanding, the term "bureaucrat" is not used in a derogatory sense herein.

2. See U.S. Congress (1972, Part I, p. 469). The volume of the Washington Monument is approximately one million cubic feet.

TABLE 1

Cost Estimates of Federal Government Paperwork
by Type of Paperwork, FY 1955, 1966 and 1973
(millions of dollars)

Type of Paperwork	1955	1966	1973
Correspondence	$1,000	$1,500	$2,790
Reports	700	1,000	1,860
Forms	867	1,000	1,860
Directives	100	1,000	1,860
Files	650	1,500	2,790
ADP Paperwork	—	1,100	2,040
Other[a]	683	960	1,800
Total	$4,000	$8,060	$15,000

Source: U.S. Government Accounting Office (1973, p.6). [a]Includes office copying, microfilming, records disposition, vital records, and paperwork automation.

attention is given to federal government forms required of the private sector because data are relatively abundant and because government forms impose external costs on society which, as will be seen, are not negligible. Section I contains an overview of the magnitude and scope of the federal paperwork problem. In Section II, it is shown that bureaucratic behavior toward paperwork is consistent with models of bureaucracy developed by Tullock (1965), Downs (1967), and Niskanen (1971, 1975). The last section contains the summary and conclusions as well as some suggestions for future empirical work.

I. BUREAUCRATIC PAPERWORK: AN OVERVIEW

Since the late 1880's, a host of agencies, boards, bureaus, committees, commissions, departments and task forces have undertaken appraisals, analyses, hearings, investigations, and studies that have resulted in directives, executive orders, legislation, reports, and recommendations to control federal paperwork. All to no avail. Table 2 contains a sample of these efforts.

Every president since Theodore Roosevelt has taken a stand against excessive paperwork in the federal bureaucracy.[3] Generally, efforts to reduce the burden of paperwork on the private sector are initiated in

3. In his seventh annual message to Congress in 1907, Theodore Roosevelt, apparently in a fit of over-exuberance, stated that "Antiquated practices and bureaucratic ways have been abolished, and a general renovation of departmental methods has been inaugurated" (U.S. Commission on Federal Paperwork, 1977d, p. 3-1).

TABLE 2

Federal Government Attempts to Control Paperwork, 1887-1975

Year	Effort	Concern
1887	Cockrell Committee	High Cost of Copying, Paperwork
1893	Dockerz — Cockrell Commission	Carbon Paper/Letterpresses
1905	Keep Committee	Filing; Establish National Archives
1913	Taft Commission	Records Depositories, Filing
1942	Federal Reports Act	Forms Control and Clearance
1949	Hoover Commission I	Better Organization for Record Management
1950	Federal Records Act	Promote Records Management
1955	Hoover Commission II	Reduce Paperwork and Cost
1965	Paperwork Jungle Hearings	Reduce Paperwork Burden and Red-Tape
1973	Paperwork Burden Hearings	Reduce Paperwork Burden and Red-Tape
1975	Commission on Federal Paperwork	Reduce Paperwork Burden and Red-Tape

Source: U.S. Commission on Federal Paperwork (1977c, p.9).

response to complaints, particularly from small businessmen who tend to be inundated by demands for information which large firms handle more easily. The first legislation to reduce the federal paperwork burden by controlling government forms was the Federal Reports Act of 1942,[4] which declares it

> . . . the policy of the Congress that information which may be needed by the various Federal agencies should be obtained with a minimum burden upon business enterprises (especially small business enterprises) and other persons required to furnish such information and at a minimum cost to the Government; that all unnecessary duplication of efforts in obtaining such information through the use of reports, questionnaires, and other such methods should be eliminated as rapidly as practicable; and that information collected and tabulated by any Federal agency should insofar as is expedient be tabulated in a manner to maximize the usefulness of the information to other Federal agencies and the public.

Specifically exempted from the provisions of the Act are the General Accounting Office, federal bank supervisory agencies, and agencies within the Treasury Department including the Internal Revenue Service, the Bureau of Public Debt, the Division of Foreign Funds Control, the Bureau of Accounts and the Comptroller of the Treasury. The "teeth" of the Federal Reports Act are found in Section 5, *viz.*,

4. Public Law 831, 44 United States Code 3501-3511.

TABLE 3

Repetitive Public-Use Reports Approved for Use by OMB, December, 1966-June, 1973
Number of Forms and Man-Hours Required to Complete, by Type of Form
(Man-Hours are in millions.)

As of Date	Applications		Administrative Reports		Statistical Reports		Regulation Reports		Total	
	Number	Man-Hours	Number	Man-Hours	Number	Man-Hours	Number	Man-Hours	Number	Man-Hours
December, 1966	1,065	38.3	2,213	49.9	1,243	11.8	259	3.3	4,780	103.3
June, 1967	1,091	37.4	2,320	49.6	1,278	12.2	245	3.1	4,934	102.4
December, 1967	1,110	43.8	2,369	51.1	1.273	12.3	239	3.0	4,991	110.3
June, 1968	1,107	45.6	2,448	51.7	1,278	12.2	247	3.1	5.080	112.6
December, 1968	1,123	41.3	2,480	52.0	1,267	14.0	249	2.8	5,119	110.1
June, 1969	1,145	41.5	2,520	52.5	1,265	14.2	246	3.2	5,176	111.4
December, 1969	1,138	41.0	2,544	52.1	1,268	14.2	252	3.3	5,202	110.6
June, 1971	1,187	44.6	2,705	57.1	1,339	14.7	268	6.0	5,499	122.5
December, 1971	1,152	46.8	2,570	57.5	1,318	11.4	258	14.8	5.298	130.5
June, 1972	1,207	41.6	2,613	66.0	1,314	13.3	271	15.1	5,405	136.0
December, 1972	1,258	41.0	2,623	75.4	1,332	16.1	328	8.0	5,541	140.4
June, 1973	1,308	48.4	2,616	72.0	1,306	16.1	337	8.7	5,567	145.3
% Change	22.8%	26.4%	18.2%	44.3%	5.1%	36.4%	30.1%	63.6%	16.5%	40.7%

Source: U.S. Congress (1973, pp. 96-99).

> Sec. 5. No Federal agency shall conduct or sponsor the collection of information, upon identical items, from ten or more persons (other than Federal employees considered as such) unless, in advance of adoption or revision of any plans or forms to be used in such collection,
> (a) The agency shall have submitted to the Director such plans or forms, together with copies of such pertinent regulations and other related materials as the Director shall specify; and
> (b) The Director shall have stated that he does not disapprove the proposed collection of information.

Basically, any government agency that wishes to collect data from 10 or more persons ("persons" is loosely defined to include individuals, corporations, associations, and the like) on either a repetitive or a one-time basis must obtain approval from the Statistical Policy Division of the Office of Management and Budget (OMB) by filing Standard Form No. 83, "Clearance Request and Notification of Action," in triplicate. This form, *inter alia*, specifies the nature of the data to be collected and the estimated respondent burden which consists of the number of responses and the total number of man-hours required to complete the form each year.[5] OMB reviews the request and, if the form is approved, an approval expiration date is specified. A form may not be used if OMB does not consent or if the approval has expired. Thus, the OMB review process, in theory, controls federal forms.

Table 3 contains information on the number of active, repetitive-use forms approved by OMB during the period December, 1966, to June, 1973; the total man-hours required to complete the forms are also shown. Over the seven and one-half year period, the total number of repetitive forms increased by 787 — 16.5 percent — and the total respondent man-hours increased by 42.0 million or 40.7 percent. The number of forms increased in each of the four categories. The greatest percentage change occurred in the regulation reports category where the number of regulation reports increased by 30.1 percent and respondent man-hours increased by 63.6 percent. Much of this increase can be attributed to the wage and price controls instituted in August, 1971. The number of statistical reports increased by only 5.1 percent, but the associated man-hours rose by 36.4 percent. In general, the reporting burden, as measured by the number of respondent man-hours, grew more rapidly than the number of forms.

According to OMB, the increased respondent burden was largely due to new programs instituted by the Congress that required additional

5. Standard Form 83A, "Instructions for Requesting OMB Approval Under the Federal Reports Act," contains a detailed review of the contents of Standard Form 83. For Interagency Reports, Standard Form 360 must be filed with the National Archives Records Service, which also receives Standard Form 152 if the form is a Standard or Option Form in public use that requires OMB approval. Elaboration of these matters is beyond the scope of this paper.

TABLE 4

Major Increases in Reporting Burden from New Programs Begun Between December, 1966 and June, 1973

Program	Agency/Department	Man-Hours
Food Stamps	Agriculture	1,976,000
Student Loans	Health, Education & Welfare	1,214,000
Basic Educational Opportunity Grant	Health, Education & Welfare	8,600,000
Medicare — Medicaid	Social Security Administration	1,539,000
Black-Lung Benefits	Social Security Administration	200,000
Supplemental Security Income	Social Security Administration	7,500,000
Equal Employment Opportunity	OEO[a] and Labor	1,928,000
Environmental Protection	EPA and AEC[b]	2,056,000
Occupational Health & Safety	Interior, Labor, AEC[b]	3,790,000
Price Controls	Wage-Price Council	5,600,000
Airway & Airport Development	FAA/Transportation	788,000
Highway Safety	National Highway Safety Admin.	182,000
Revenue Sharing	Treasury	228,000
Meat, Poultry & Egg Inspection	Agriculture	144,000
Freight Loss & Damage Claim Report	CAB/ICC	876,000
Total		36,621,000

Source: U.S. Congress (1973, p. 67).
[a]Now referred to as ACTION.
[b]Now referred to as the Nuclear Regulatory Commission (NRC).

information, as reported in Table 4. Table 4 indicates that new programs enacted by Congress or amendments to existing legislation raised the reporting burden by approximately 36.6 million man-hours over the period, which accounts for 87 percent of the total increase of 42 million man-hours. In any event, the reporting burden is most likely grossly understated by the agencies requesting forms clearance to minimize the possibility of disapproval by OMB. There is no evidence, however, to suggest that OMB is necessarily concerned about the reporting burden in the forms review process; very few forms do not receive OMB's blessing. During the fiscal year 1972, for example, a total of 2,193 repetitive-use forms were submitted to OMB for review; 733 of these forms were new whereas the remaining 1,438 were revisions to or extensions of existing reports. Only 22 repetitive use forms were disapproved — 1 percent of the total. The same year, 724 single-use forms were submitted for review and all but 30 (1.8 percent) were given OMB approval (U.S. Congress, 1973, p. 69).

In Table 5, the distribution of forms among various bureaus is reported as of June 30, 1973, data are given on the number of forms, the number of responses, and the estimated man-hours required for all forms and for those forms which require more than 100,000 man-hours from

TABLE 5

Number of Forms, Estimated Number of Responses and Man-Hours for Repetitive Public Use Reports Requiring More Than 100,000 Man-Hours and All Forms — By Federal Agency as of June 30, 1973

	Requiring More Than 100,000 Man-Hours			All Forms		
Department or Agency	No. of Forms	Number of Responses	Required Man-Hours	No. of Forms	Number of Responses	Required Man-Hours
Agriculture	19	21,969,354	5,962,302	831	35,670,047	9,227,958
Commerce	8	18,463,490	2,757,213	554	25,560,587	4,711,308
Defense	15	6,331,178	3,810,260	247	15,331,660	6,010,567
HEW	52	128,297,700	38,453,998	983	157,310,878	45,633,808
HUD	14	3,708,400	3,147,883	302	7,204,978	5,693,600
Interior	2	2,235,600	1,890,700	339	4,842,480	2,946,277
Justice	7	9,042,282	1,200,615	142	13,111,851	2,322,304
Labor	27	39,191,929	17,230,325	266	43,647,103	18,857,593
State	4	3,550,000	1,137,500	37	4,741,090	1,410,428
Transportation	14	9,859,300	2,877,000	286	16,409,584	4,815,182
Treasury	10	12,599,591	1,907,771	135	25,275,988	3,413,529
AEC [ERDA/NRC]	2	63	1,400,000	63	274,830	1,472,528
EPA	3	129,111	648,440	67	636,600	1,156,368
EEOC	2	213,680	1,289,440	7	268,180	1,357,840
Exec. Office: President	2	480,000	293,000	52	856,451	728,959
Farm Credit Admin.	1	50,000	200,000	12	61,267	230,744
FCC	5	324,500	1,137,500	109	1,308,651	1,733,245
Maritime Admin.	1	24,000	600,000	13	51,340	631,253
FPC	2	620	246,490	41	92,683	758,404
GSA	2	834,900	523,500	47	1,331,071	914,119
ICC	8	511,627	1,678,863	97	998,889	2,771,365
NASA	1	26,400	211,200	21	179,010	233,879
NSF	2	510,000	302,000	59	666,181	446,091
ACTION	1	240,000	240,000	29	487,075	225,236
RRB	1	1,300,000	216,666	123	3,824,828	498,207
Selective Service	5	7,400,000	2,400,000	42	9,383,152	2,899,100
Civil Service	9	15,157,954	7,781,395	83	18,219,409	8,671,166
Veterans' Admin.	25	15,667,500	5,280,166	282	24,671,163	7,729,974
Other Agencies	4	118,750	5,642,800	38	289,890	5,757,490
Total: U.S. Government	248	298,237,929	110,467,027	5,567	418,129,405	145,311,790

Source: U.S. Congress (1973, pp. 82-88).

all respondents. There is much diversity among the "paper-propensities" of the various bureaus. The Department of Health, Education and Welfare (HEW), has nearly a thousand repetitive-use forms, which produce more than 157.3 million responses requiring more than 45.6 million respondent man-hours. At the other end of the spectrum, the Equal Employment Opportunity Commission has only seven forms that produce slightly more than a quarter-million responses. Considering all 5,567 repetitive-use forms, the average form produces about 75 thousand responses and requires 21 minutes to complete. The Railroad Retirement Board's (RRB) forms require, on the average, only 7.8 minutes to complete, whereas the average form of "other agencies" requires 20 hours.

The vast majority of the responses are generated by a very small number of forms. Only 248 forms — 4.5 percent of the total — generate almost 300 million responses (71 percent of the total) and account for 76 percent of the total man-hours. For the forms requiring more than 100,000 man-hours each year to complete, the average response requires about 22 minutes — almost the same time as for all federal forms. The average form which requires more than 100,000 man-hours of response burden produces in excess of 1.2 million responses — 16 times the average number of responses per form when all forms are considered. Note that the Atomic Energy Commission anticipated only 63 responses to two forms, but these responses would require 1,400,000 man-hours of effort, or 22,220 man-hours per response. These forms are associated with the licensing of nuclear power plants. According to the Commission on Federal Paperwork (1977a, p. 61),

> The paperwork in licensing a single nuclear power plant frequently exceeds 15,000 pages and may cost $15 million to the utility applying for the license. This paperwork takes the form of reports, questions and answers pertaining to these reports, and transcript of public hearings. Most of the applicant-prepared material is printed in batches of 300-500 copies for distribution to the Nuclear Regulatory Commission, other Federal agencies, State agencies, and interested members of the public.

The data in Tables 3, 4, and 5 provide only a partial view of forms employed by the federal bureaucracy primarily because of agency exemptions from the Federal Reports Act. As might be anticipated, the Internal Revenue Service is the major omission, for the paperwork produced by IRS is astounding. About 35 percent of all federal forms involving the general public are generated by this one agency (U.S. Congress, 1972, p. 34). In testimony before the Senate Committee on Government Operations, IRS stated that it used 13,200 forms, including form letters which are given form numbers (U.S. Congress, 1973, p. 59). However, as any experienced taxpayer is aware, a single "form" may have many separate "schedules" attached to it which are not assigned

separate numbers. The best-known example is the Individual Income Tax Form 1040 that has 11 schedules attached: Schedules A, B, C, D, E, F, G, R, RP, SE and TC. *Your Federal Income Tax Return*, 1978 edition, lists no less than 41 forms "commonly used" in tax preparation.

The reporting burden imposed by the IRS forms is enormous in terms of the number of responses and the number of man-hours required. Because IRS is exempt form OMB review, estimates of the private burden of federal forms are grossly incomplete.

> Form 1040, the Individual Income Tax Return, is the most familiar to the general public. It accounts for over 73 million returns annually. The U.S. Information Return for dividends and interest, Form 1099, contributes more than 100 million additional responses each year. These figures, however, are dwarfed by the number of responses which are required by the various forms used exclusively by businesses.
>
> The millions upon millions of man-hours required to fill out all of these forms represent an enormous burden to businesses and to the general public. An accurate assessment of the total cost involved cannot be made. Estimates, however, run into the billions of dollars. Compliance with Form 941 alone is estimated to cost small business over $235 million per year. (U.S. Congress, 1972, pp. 34-35).

In addition to underestimation of the man-hours required to complete forms and to the omission of the burden caused by forms used by agencies not subject to the Federal Reports Act, three other factors also cause the forms burden to be understated. First, OMB assumes that agencies do not use forms past the OMB-assigned expiration date, but this is not the case. In one instance, the Health Services and Mental Health Administration at HEW was found using 14 forms past their expiration date. OMB does little to control the use of expired forms. Second, many forms are used without clearance, even though clearance is required by law. Contractors who collect data for federal agencies may employ surveys without clearing the forms. Further, some federal regulatory agencies (particularly the FTC) contend that OMB forms clearance interferred with their legislatively-mandated functions and refused to submit forms for review. The Congress added a series of floor amendments to the Alaska Pipeline Authorization Act of 1973 which exempted 13 independent regulatory agencies from the form clearance function of OMB and gave the Comptroller General the authority to review the information requests of these agencies and to advise them within 45 days whether the information sought by the agency was available elsewhere in the government. Each regulatory agency then makes its own decisions about the use of forms.

The third factor contributing to the downward bias in the estimated burden of federal government forms is that single-time forms have not

TABLE 6

Single-Use Forms in the GAO and OMB Inventory-
Statistical Report Forms Category as of June 30, 1976

Agency	Number of Forms	Estimated Responses	Estimated Man-Hours
GAO	11	21,006	396,730
OMB	240	2,223,000	1,699,000
Total	251	2,244,006	2,095,730

Source: U.S. Commission on Federal Paperwork (1966b, *passim.*).

been considered. Thus far, attention has focused solely on repetitive forms. Data on single-time forms in the OMB and GAO inventory as of June 30, 1976, are given above for the statistical report forms category.

The number of single-use forms in the statistical reports category (where most single-use forms are likely to appear) on file with GAO and OMB is small in relation to the number of repetitive-use forms. The single-use forms are designed for special purposes and represent only a small fraction of the federal paperwork reporting burden. The burden, however, can fall disproportionately on one group or industry. For example, 7 of the 11 single-use forms on file with GAO were written by FEA and, most likely, were sent primarily to firms in the petroleum industry.

More recent data are not available in sufficient detail to provide comparisons with earlier data. The Commission on Federal Paperwork reported that as of June 30, 1977, a total of 5,473 repetitive-use forms had been filed with GAO and OMB; these forms generate about 427 million responses annually which required 210 million man-hours (U.S. Commission on Federal Paperwork, 1977b, p. 2). Although the number of forms was about 1.7 percent lower at the end of June, 1977 compared to the end of June, 1973, the number of responses increased by 2.2 percent while — in only 4 years — the reporting burden in man-hours increased by 44.5 percent. On March 1, 1976, the President ordered the number of forms in use reduced by 10 percent as compared to the number of forms in use on October 31, 1975.[6] The federal bureaucracy achieved this reduction, but increased the man-hours required to complete the forms in the process.

6. President Ford's letter is reported in *Weekly Compilation of Presidential Documents*, Vol. 12, No. 10, March 8, 1976, pp. 324-325.

II. PAPERWORK IN AN ECONOMIC THEORY OF BUREAUCRACY

In order to incorporate paperwork into an economic theory of bureaucratic behavior it is essential that the analysis account for two distinct phases of decision making which occur sequentially in time. The first phase is the budgetary process in which the budgetary authority, i.e., Congress, decides the appropriate level of agency funding for the coming year. In the second phase, the bureaucrat takes this authorized budget as a given and optimizes subject to this funding constraint. Bureaucratic behavior plays a central role in both phase I and phase II.

Generally, economic models of bureaucratic behavior are based upon theories of utility maximization by managers of the neoclassical firm.[7] Studies by Tullock (1965), Downs (1967), and Von Mises (1944) preceded the first explicit utility maximization model of bureaucracy by Niskanen (1971) which assumed that bureaucrats maximize agency size. A critique by Migue and Belanger (1974) resulted in Niskanen's revised model (1975) in which the bureaucrat attempts to maximize his own utility by maximizing the perquisites of office. When paperwork is considered in an economic theory of bureaucracy, part of the bureaucrat's maximization process occurs in phase I and part in phase II, each of which is considered in turn.

Phase I: The Budgetary Process. Each year, it is assumed that the bureau must justify to the legislative sponsor a budget or funding limit to produce bureau output in the coming year. Following Miller (1977), we assume that the bureau actively negotiates with the sponsor regarding the size of the appropriate budget.[8] In this budget process, the objective of the sponsor is to maximize net benefits, that is, the difference between the sponsor's total benefit function (the area under the sponsor's demand curve for his perception of the agency's output in the coming year) and the sponsor's perceived cost of producing each level of agency output in the coming year. In Figure 1, the sponsor's benefit curve is designated *BEN* and the sponsor's perceived cost of agency output, the appropriate budget for each level is *B*.[9] The sponsor authorizes budget B^* which is expected to yield agency output Q^* and total benefits BEN^* over the course of the budget period. The true cost of production, ceteris paribus, is TC^*.

7. Williamson (1964) made managerial objectives a part of the analysis of the firm and developed a number of models explaining discretionary behavior.

8. Niskanen (1975) assumes, because of the high cost of information, that the legislative sponsor is passive in the budgetary process and accepts the budget proposal offered by the bureau as long as it does not exceed total sponsor benefits, i.e., the area under the sponsor's demand curve for the agency's output.

9. The negotiation between the bureau and the sponsor may not be successful for the sponsor if the bureau anticipates the intent of the sponsor to cut the budget request and purposefully inflates the bureau's proposed budget to offset this action. In this case, the budget line includes the budget cuts achievable by the sponsor.

FIGURE 1

The Budget Phase

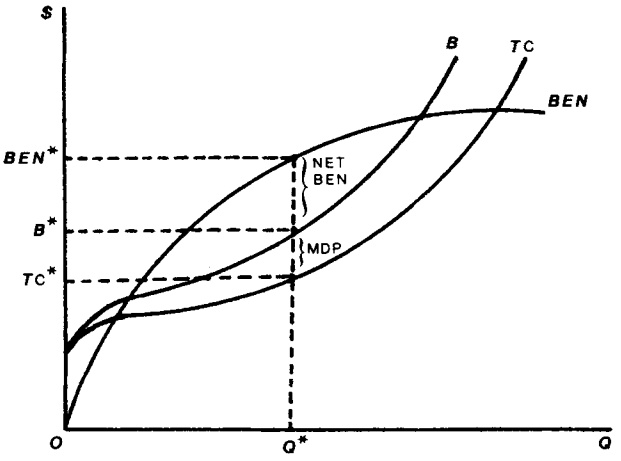
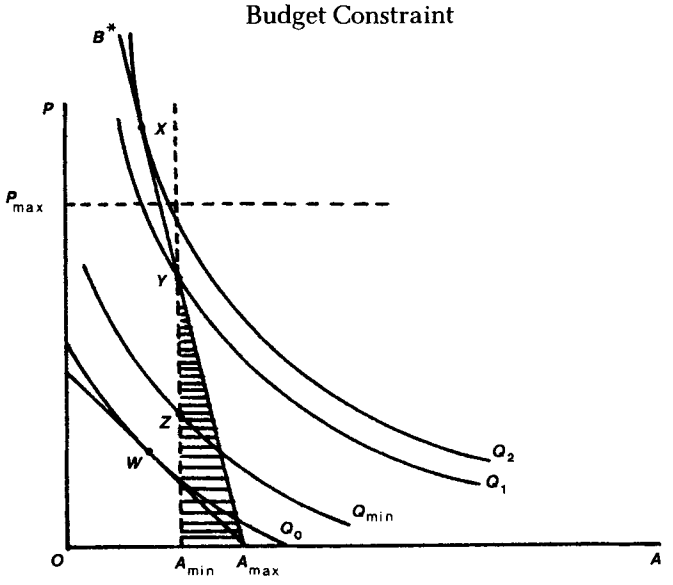


FIGURE 2

MDP Maximizing Behavior Under
Budget Constraint



The bureaucrat's "managerial discretionary profit" (*MDP*) is the difference between the cost of production as perceived by the sponsor (B^*) and the true cost of production (TC^*). The budget function perceived by the sponsor has the same general shape as the true total cost

function but lies above *TC* because the cost to the sponsor of obtaining complete information is prohibitive (and increases with agency size) and because the bureaucrat concentrates inputs on those activities which the sponsor is known to monitor. The bureau chief increases *MDP* in the budget phase by inflating the cost of production as perceived by the sponsor through shifting *B* upward relative to *TC*.

Paperwork is an ideal instrument for increasing the difference between *B* and *TC*, the *MDP*. Thus far, it has been implicitly assumed that the agency output is quantifiable. In fact, a *sine qua non* of bureaucracies is that ". . . they have no direct way of evaluating their outputs in relation to the costs of the inputs used to make them" (Downs, 1967, p. 30). The necessity for some measure of output in order to provide the sponsor with some indicant of the level of agency activity leads to the selection of surrogates. As is typically the case, when output measures do not exist, inputs are employed as surrogates for output because factor inputs are the only measurable components of the agency. For example, the output of the defense establishment is often discussed in terms of the number of personnel, the number of ships, the number of aircraft, etc. Because the bureaucrat, in this budget phase, wishes to inflate the sponsor's perception of agency costs, inputs that do not have well defined costs will be used. Paperwork is an ideal input because its value is undefined, in contrast to labor, capital and raw materials used by the bureau which have precise market values that are easily obtained by the bureau sponsor.

The bureaucrat has a strong incentive to use and have the sponsor adopt paperwork as a surrogate for output in order to magnify the perceived cost of expected agency output in the budget phase and thereby increase *MDP* by reducing net benefits to the sponsor.[10]

Phase II: MDP Maximization Subject to a Budget Constraint. In the second phase the bureaucrat accepts the budget, B^*, authorized by the sponsor as a constraint and seeks to increase further the managerial discretionary profit by reducing the cost of production in some manner. In Figure 1, this can be accomplished by shifting TC^* downward relative to B^*, which is fixed after the budgetary process. A second incentive for the bureaucrat to employ paperwork is that in addition to its indeterminant value, some of the cost of processing paperwork can be shifted

10. It might seem counterintuitive for the sponsor to view paperwork as output and, simultaneously, to attempt to reduce the paperwork burden because this implies that the sponsor is attempting to reduce output. Recall, however, that the Federal Reports Act of 1942 specifically exempts internal paperwork and, Congress' "bark" is far worse than its "bite" in these matters as history has shown. More than likely, much of the Congressional concern about paperwork is more apparent than real.

outside the agency so that the burden of completing forms is borne by the private sector and state and local governments.[11] As indicated in Section I, agencies of the federal government impose enormous costs on the private sector through the requirement that thousands of forms be filled out. Thus, a significant portion of the labor used to prepare paperwork and reports is provided by the private sector rather than by the agency itself. The private-sector labor commandeered for this purpose is not compensated for its effort — the federal bureaucrat views the private sector as a common property and virtually costless resource. To the extent that the bureaucrat can convince the sponsor in phase I of the need for a budget appropriation to cover the cost of paperwork and then, in phase II, shift at least part of this cost to the private sector, *MDP* will be increased because, other things equal, TC^* will move downward relative to B^*.

The bureaucratic decision process in phase II is shown in Figure 2 where, for ease of exposition, it is assumed that private-sector labor, P, and agency labor, A, are the only variables in the bureau production function. Figure 2 depicts various levels of bureau output resulting from different levels of the two types of labor input. The budget line, B^*, is steeply sloped which indicates that private-sector labor is very cheap relative to agency labor. Given the appropriated budget B^*, the tangency at point X indicates that the optimal level of output is Q_2 if the private-sector can be fully exploited.

Output Q_2 however, will not be produced for three reasons. First, the budget is exhausted by private and agency labor and, therefore, the bureaucrat is unable to increase the *MDP* beyond that obtained in phase I. Second, there is some upper limit (P_{max}) to the amount of private-sector labor that the bureaucrat can exploit. This limit occurs because, for example, a grossly overburdened private sector may "revolt" (the Proposition 13 effect with regard to paperwork rather than taxes) and demand relief from the sponsor or OMB might refuse to approve additional forms. The repeated attempts of the Congress to control paperwork documented in Table 2 and the perennial hearings on the subject attest to both the Congressional concern and the bureaucratic persistence regarding paperwork.[12] Third, in addition to the constraint on the amount of private-sector labor employed by the bureau, some minimum amount

11. The ability to exploit the private sector in order to lower the bureau's production costs produces an externality. According to Mishan (1965, p. 6), "external effects may be said to arise when relevant effects [e.g, inputs] on production or welfare go wholly or partially unpriced." Mishan includes in his definition of external effects all cases in which an organization pays any factor of production less than its social value in alternative uses. See also Buchanan and Stubblebine (1962) and Furubotn and Pejovich (1972) for more detailed discussions.

12. In addition to small businessmen, there have always been many complaints from individuals about the burden of government paperwork, e.g., see U.S. Congress (1973, pp. 108-147). Individuals, however, are disorganized and, without an effective lobby, are generally ignored.

of agency labor (A_{min}) must be employed to produce bureau output. To be viable as a bureau, every agency must have at least some employees who work at least some of the time. The two constraints on labor inputs imply that the maximum output achievable is Q_1 which is produced at point Y with A_{min} units of agency labor and Y units of private-sector labor. At point Y, however, the bureaucrat still realizes no managerial discretionary profit because point Y lies on the budget constraint and the cost of private-sector and agency labor exhausts the budget, B^*.

In order to increase *MDP*, the bureaucrat must decrease agency output below Q_1, for if the constraints on private-sector and agency labor are incorporated into the Budget and Total Cost functions of Figure 1, output level Q_1 in Figure 2 corresponds to Q^*. The permissible combinations of private-sector and agency labor are found in the shaded triangle (A_{min}, Y, A_{max}). The horizontal distance between the budget line B^* and the vertical limit, A_{min}, is *MDP*. Although *MDP* is at a maximum when *P* is zero, the bureaucrat will not operate at this point because some minimum level of output, Q_{min}, must be produced to avoid reprisals from the sponsor. For output Q_{min}, the bureaucrat maximizes *MDP* by employing Z units of private-sector labor and A_{min} units of agency labor. Q_{min} is always less than Q^* because the bureaucrat expropriates some of the budget for his own purposes. If the output of the agency is easy to measure, it will be difficult for the bureaucrat to deceive the sponsor, Q_{min} will be approximately equal to Q^*, and *MDP* will be relatively small. The more difficult it is to measure bureau output, the greater the discrepancy between Q^* and Q_{min} that will be tolerated by the sponsor, and the greater *MDP*.

From Figure 2, it might appear that, in an effort to increase *MDP*, the bureaucrat benefits the private sector by reducing the amount of private-sector labor exploited by the agency from Y to Z. However, if the private sector were compensated with a wage equal to the opportunity cost of time, the budget constraint becomes much less steep. As shown in Figure 2, the new budget constraint, WA_{max}, reflects the greatly increased unit cost of private-sector labor to the bureau. From the perspective of the general public, the efficient level of output, Q_o, lies below Q_{min}, which indicates that the exploitation of the private sector results in excessive bureaucratic output produced by an excessive amount of agency labor. When the bureaucrat confiscates private-sector labor for his own purposes, a transfer of property rights from the private sector to the state occurs. A discussion of the implications of this phenomenon is beyond the scope of the analysis herein; however, some attention has been given to such matters by F. A. Hayek (1944).

III. SUMMARY AND CONCLUSIONS

Although it is widely recognized that bureaucracies exhibit a penchant for paperwork, little, if any, attention has been given to paperwork as a manifestation of bureaucratic behavior in the literature. This paper has surveyed the magnitude and scope of the problem in the federal bureaucracy and has incorporated paperwork into an economic theory of bureaucratic behavior in which bureaucrats are assumed to maximize their self-interest by maximizing the perquisites of office obtained from managerial discretionary profits. *MDP* is first increased when paperwork is employed to inflate the sponsor's perception of bureau costs during the budgetary appropriations process. Given a budget constraint, the bureaucrat can then increase *MDP* further by shifting at least part of the cost of the paperwork to the private sector. The theoretical model indicates that, if the private sector were compensated for the federal paperwork burden, agency employment would be smaller, as would agency output and the volume of private-sector labor expended in preparing federal forms.

The empirical testing of this model will, at best, be difficult for several reasons. For example, as discussed in Section I, the estimates of private sector burden in terms of the number of forms, responses, and man-hours are likely biased downward and there is no information available on whether this bias varies systematically from agency to agency. A simultaneity problem may exist because paperwork can be viewed as an output or an input to the agency production process. It is essential that a bureau production function be estimated, but, for all intents and purposes, measures of bureau outputs and inputs generally do not exist on an agency-by-agency basis.

Although the analysis in this study should be regarded as preliminary, it is obvious that paperwork is an important facet of bureaucratic behavior which any comprehensive theory of bureaucracy must incorporate.

REFERENCES

Buchanan, James M. and Stubblebine, W.C., "Externality," *Economica*, November 1962, 29, 371-384.

Downs, Anthony, *Inside Bureaucracy*, Boston: Little, Brown and Company, 1967.

Furubotn, Eirik and Pejovich, Svetozar, "Property Rights and Economic Theory: A Survey of Recent Literature," *Journal of Economic Literature*, December 1972, 10, 1137-1162.

Hayek, F.A., *The Road to Serfdom*, Chicago: University of Chicago Press, 1944.

Migue, J.L. and Belanger, G., "Toward a General Theory of Managerial Discretion," *Public Choice*, Spring 1974, 17, 27-43.

Miller, Gary J., "Bureaucratic Compliance as a Game on the Unit Square," *Public Choice*, Spring 1977, 29, 37-51.

Mishan, E.J., "Reflections on Recent Developments in the Concept of External Effects," *Canadian Journal of Economics and Political Science*, February 1965, 31, 1-34.

Niskanen, William A., *Bureaucracy and Representative Government*, Chicago: Aldine-Atherton, 1971.

_____, "Bureaucrats and Politicians," *The Journal of Law and Economics*, December 1975, 18, 617-643.

Tullock, Gordon, *The Politics of Bureaucracy*, Washington, D.C.: Public Affairs Press, 1965.

U.S. Commission on Federal Paperwork, *A Report of the Commission on Federal Paperwork: Energy*, Washington, D.C.: U.S. Government Printing Office, 1977a.

_____, *A Summary of the Federal Paperwork Burden as of June 30, 1976: Special Summary Prepared for the Committee on National Statistics*, Washington, D.C., 1977b (Mimeographed.).

_____, *Study of Federal Paperwork Impact on Small and Large Business*, Washington, D.C.: U.S. Government Printing Office, 1977c.

_____, *What the Federal Government Has Tried To Do About Paperwork: A Technical Report of the Commission on Federal Paperwork*, Washington, D.C.: U.S. Government Printing Office, 1977d.

U.S. Congress. Senate. Committee on Government Operations, *Improving the Coordination of Federal Reporting Services. Hearings* before the Committee on Government Operations S. 200 and S. 1812, 93rd Cong., 1st sess., Washington, D.C.: U.S. Government Printing Office, 1973.

_____, Select Committee on Small Business. Subcommittee on Government Regulation, *The Federal Paperwork Burden. Hearings*. Parts I and II. Washington, D.C.: U.S. Government Printing Office, 1972.

U.S. General Accounting Office, National Archives and Records Service. *Ways to Improve Records Management Practices in the Federal Government: Report to the Comptroller General of the United States*. Report No. B-146743, Washington, D.C.: U.S. Government Printing Office, 1973.

von Mises, Ludwig, *Bureaucracy*, New Haven: Yale University Press, 1944.

Williamson, O., *The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm*, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964.