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BUREAUCRATIC BEHAVIOR IN DEMOCRACY

A CASE STUDY

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ABSTRACT

This paper analyzes bureaucracy within the context of the politico-economic framework using the rational choice approach. Bureaucracy interacts with various groups of decision-makers, and its influence depends on institutional differences, in particular representative democracy with or without referendum. Theoretical and empirical analysis for Swiss cities suggests that (1) there is little evidence for any significant influence on policy outcome by bureaucrats qua voters; (2) there is evidence that bureaucracy has a direct influence on the supply side; (3) it is not useful to view bureaucracy to be in an isolated position of a monopolist.

BUREAUCRATIC BEHAVIOR IN DEMOCRACY:

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I. TWO APPROACHES TO BUREAUCRACY

The rational choice theories of public bureaucracy¹ are composed of two distinct strands of thought: One body of theory looks at bureaucracy as a supplier of goods and services with a monopoly position; the other concentrates exclusively on the demand for public goods and services expressed by individual bureaucrats in their capacity as consumer/voters.

1. Monopoly of Bureaucracy: The Supply Approach

This strand of Public Choice theory takes its origin from the neoclassical theory of the private firm in its sophisticated version. A firm is not simply assumed to maximize profits but the managers are taken to maximize their own utility. The owners of the firm are unable to fully control managers, i.e., they have to leave them a large range of discretion. The individual owners are badly informed and have little incentive to interfere with management due to the free rider effect². Williamson³ suggests that managers

gain utility by having a larger staff than in a profit maximizing firm.

Niskanen⁴ applied the model of the firm to public bureaucracy assuming that bureaucrats reap utility from large a budget, because it is intimately connected with such things as salary, perquisites of the office, prestige etc. Public bureaucracy has a monopoly power vis à vis parliament (representing the voters) because it offers its total output as a package in exchange for the budget (and not in individual units of output at a price, as firms on a market). Public bureaus extract a large part of consumer surplus created by its services, and therefore its budget will be too high.

It is reasonable to assume that Williamson's suggestion that bureaucrats have a preference for large staff also applies to the public area. It can be combined with Niskanen's view of public bureaucracy as a perfectly discriminating monopolist⁵.

The supply oriented theory of bureaucracy yields testable propositions⁶. Public bureaucracies have a larger output and produce at higher cost than competitive firms in the market. The higher cost are reflected by an oversized staff⁷.

2. The Voting Power of Bureaucrats: The Demand Approach

The second approach looks at individual bureaucrats in their voting capacity⁸. Unlike the other voters, public officials do not only benefit from the public supply of goods and services but also from its production in the form of prestige, salary increases and (possibly) a quiet life. They therefore reveal a preference for high public expenditure in their voting decision. It should be noted that bureaucrats are here considered to act as individuals, they do not form a pressure group of their own.

Public bureaucrats have a voting power far exceeding their number. They participate much more in all types of political activities, above all in voting, because they have low costs of information and political participation, and at the same time a high productivity for political activity⁹. Due to superior voting power, public bureaucrats have a major influence on the demand side of the political process.

3. Evaluation

The approaches discussed point to important aspects of public bureaucrat's behavior, but both are unsatisfactory because it is considered too isolated. The total politico-economic framework surrounding bureaucracy is not suffi-

ciently considered. In particular, the interrelationship with government is not sufficiently accounted for.

The monopoly power approach is developed quite independent of government's actions and reactions. Clearly, government fulfills bureaucracy's direct demands in different degrees, according to how its reelection chances and its own utility are affected. The voting power approach disregards government behavior completely, assuming in the tradition of the median voter models¹⁰ that the voters completely determine public output, government adjusting in a completely passive way.

4. Contribution of this Paper

This paper analyzes bureaucracy within the context of the politico-economic framework. Two main aspects are considered:

- (a) Bureaucracy is taken to interact with various groups of decision-makers, in particular with voters and government. It is not simply assumed that bureaucracy is a monopolist, but the process of interaction with other political decision-makers is studied.
- (b) The various degrees of control of collective decisions by the voters is accounted for by explicitly considering institutional differences, in particular representative democracy with or without referendum.

The following general hypotheses are proposed:

1. In representative democracies in which voters do not have continuous control over the executive - i.e., where no referendum exists - bureaucratic direct influence on political outcomes is strong;
2. In representative democracies with continuous control by the voters, bureaucrats have the possibility to influence the outcome as voters. Due to the institution of obligatory or optional referendum this influence is considerably weaker than in the first case.

These hypotheses are developed in part II of the paper. Part III presents empirical tests of the above hypotheses with data for Swiss cities. The results suggest that

- there is little evidence for any significant influence on policy outcome by bureaucrats qua voters;
- there is some evidence that bureaucracy has a direct influence on policy outcome on the supply side;
- it is not useful to view bureaucracy to be in an isolated position of a monopolist.

II. BUREAUCRACY IN REPRESENTATIVE DEMOCRACIES

Besides bureaucracy, two political decision-makers are explicitly considered.

The voters are assumed to maximize their utility from the consumption of privately and publicly supplied goods and services in their capacity as consumers and taxpayers. In cities with the institution of referendum they are able to express their preferences by voting according to their individual optimum. With simple majority voting, the median is the equilibrium outcome¹¹. In cities in which no referendum exists, voters may reveal their preferences only at general elections occurring in discontinuous time intervals. They then vote for that party who proposes a program nearest to their wishes.

Government is assumed to maximize its own utility by pursuing its ideological goals, subject to a reelection¹² and referendum constraint. In political institution with no referendum, government politicians can more easily pursue policies according to its ideological predilections, and may more easily yield to pressure from log-rolling interest groups resulting in an increase of overall public expenditures¹³. As voters tend to forget (discount) past events,

government may undertake policies deviating from median voter preferences at the beginning of an election term, if it only adjusts to voters' preferences towards the end of the election term in order to secure its reelection. In institutions with referendum, voters may continually influence government policy, i.e., have greater possibilities to make their wishes known. Accordingly, parliamentary elections are of less importance than if direct political participation in the form of referenda did not exist.

Bureaucrats make an effort to make their wishes become true in both types of institutions. If a referendum exists, bureaucracy has a weak direct (supply side) influence, because voters continually have the chance of controlling policy, and government is forced to resist bureaucracy's monopolistic tendencies. Bureaucrats must therefore rely mainly on their role as voters (demand side influence) in order to affect policy outcome.

When the institution of a referendum does not exist, bureaucracy has a stronger direct influence on the supply side: Voters are unable to control government (except at election time), thus that government is open to bureaucracy's monopolistic pressure on the supply side. It is now possible to state the hypotheses to be empirically tested:

Hypothesis A:

Bureaucrat's indirect influence through their voting power is strong in representative democracies with the institution of referendum. Direct bureaucratic influence (through the supply side) is accordingly weak.

Hypothesis B:

In representative democracies with referendum voters' influence is strong and accordingly government's discretionary influence is weak and is not affected by the point of time within the election period.

Hypothesis C:

In representative democracies without referendum there is an adjustment of government policy to voters' preferences towards the end of the election period.

III. EMPIRICAL TEST OF THE PROPOSITIONS

In order to test the hypotheses established, the following estimation equation will be used:

$$\ln E_j = \text{const.} + \alpha \ln \hat{Y}_j + \beta \ln \hat{\tau}_j + \gamma \ln n_j + \eta \text{TBE}_j^{-1} + \varphi \text{VPB}_j + \varepsilon_j . \quad (1)$$

The symbols have the following meaning:

E_j = aggregate public expenditures in city j ($j=1, \dots, m$) per inhabitant¹⁴;

\hat{Y}_j = median income in j (after deduction of federal and state taxes);

$\hat{\tau}_j$ = median tax share in j (local taxes, only);

n_j = residential population in j ;

TBE_j = "time before election" which a government of municipality j , acting at the beginning of the period considered (here January 1, 1970) has available before the next election;

VPB_j = voting power of bureaucrats (to be defined below);

ε_j = error term with zero mean and constant finite variance.

The data cover to the 62 largest Swiss cities with representative democracy in which there was an obligatory or optional referendum (35 municipalities) or no referendum (27 municipalities) and they refer to the year 1970¹⁵.—

The first three variables \hat{Y}_j , $\hat{\tau}_j$, n_j on the right hand side of eq.(1) capture the demand components as used in the traditional median voters models. They are in logarithmic form such that the respective parameters α , β , γ

showing the influence on the log of expenditures may be interpreted as demand elasticities relative to income, price and the number of users of the publicly supplied goods and services, respectively. The expected parameter signs are $\alpha > 0$, $\beta < 0$, $\gamma < 0$ ¹⁶.

The two following variables, TBE_j^{-1} , VPB_j , capture the influences on the supply side of the political process. The inverse of TBE is used in order to indicate that the government is forced to adjust to voters' preferences the more strongly, the nearer the elections are (i.e. the smaller TBE). η is expected to be negative because the government is forced to reduce expenditures (compared to the trend) which before were expanded too far due to the pressure of bureaucrats and log-rolling of interest groups.

The voting power index of bureaucrat's is defined as¹⁷

$$VPB_j = \frac{1}{1 + \frac{VPR_{NB_j}}{VPR_{B_j}} \left(\frac{1}{g_j} - 1 \right)} \quad (2)$$

where

VPR_{NB} = voting participation rate of non-bureaucrats;

VPR_B = voting participation rate of bureaucrats,

both at local referenda;

g_j = percent of bureaucrats in the labor force in city j.

The voting participation rate of non-bureaucrats is (due to a lack of data) residually determined from the overall participation rate in the various cities j and by assuming that bureaucrats participate in all cities at the same rate (calculated to be uniformly 80%)¹⁸. The lower the non-bureaucrat's participation (VPR_{NB}) and the higher the share of bureaucrat's in the labor force (g), the higher the bureaucrat's voting power VPB .

The estimation results for each of the two institutional types of representative democracy are shown in table 1.

Table 1

Equations (3a) and (4a) give the estimates of the "pure" median voter model solely concerned with the demand side. The t -values of the parameters α and β are much higher (and about equal for γ), the (corrected) \bar{R}^2 is more than twice as high (37% vs. 15%), in equation (3a) compared to (4a). According to the F -test applied to residual variances, equation (3a) performs significantly better than (4a) at a level of security of 95%. The parameters in both equations have the expected sign ($\hat{\alpha} > 0$; $\hat{\beta}, \hat{\gamma} < 0$), but median income does not have a statistically significant

Table 1: Influence of bureaucracy in representative democracy with and without referenda: aggregate per capita expenditure (Swiss cities, 1970)^a

institutional character- istics	const.	demand elasticities with respect to			inverse of time to election (η)	voting power of bureau- crats (φ)	test statistics		
		median income (α)	median tax share (β)	residential population (γ)			\bar{R}^2	residual variances	
3a	democracies with referenda	-9.03	0.88 (1.64)	-0.47** (-3.72)	-0.37* (-2.26)	---	---	0.37	0.08
3b		-8.84	0.86 (1.58)	-0.48** (-3.49)	-0.32* (-2.15)	-0.18 (-0.31)	---	0.35	0.08
3c		-9.26	0.90 (1.65)	-0.47** (-3.63)	-0.33* (-2.24)	---	0.26 (0.39)	0.35	0.08
4a	democracies without referenda	-4.12	0.44 (0.97)	-0.43* (-2.78)	-0.51* (-2.34)	---	---	0.15	0.16
4b		-4.59	0.47 (1.14)	-0.31* (-2.03)	-0.27 (-1.19)	-3.00* (-2.37)	---	0.29	0.13

^a Figures in parantheses below the parameter estimates indicate the t-values. An asterisk indicates statistical significance at the 95% level, two asterisks at the 99% level of security.

influence. As a whole, the median voter model equation (3a) yields clearly superior results suggesting that voters' influence is stronger in democracies with the institution of referendum. This finding supports hypothesis B.

Equations (3b) and (4b) add the influence of time before election to the median voter model. In cities with referendum, TBE turns out to be of little importance: The t-value of the γ -coefficient is -0.31, only. This suggests that voters control government permanently. In cities without referendum, government has to adjust its expenditure policy to voters' preferences towards the end of the election period, the respective γ -coefficient (eq. 4b) is highly significant. While the inclusion of TBE adds nothing to the overall performance of the equation in democracies with referendum, the \bar{R}^2 is almost doubled (from 15% to 29%) in democracies without referendum, thus pointing to the importance of TBE in the latter equation. These findings support hypothesis C.

Equation (3c) tests whether the voting power of the bureaucrats employed by the cities (including public enterprises) has any special effect going beyond the influence of the median voter in municipalities with referenda (when there is no referendum, the bureaucrats have, of course, no possibility to exert their influence via the demand side,

except at elections¹⁹. The sign of the γ -coefficient is correct (+0.26), but not significantly different from zero ($t=0.39$). This suggests that bureaucrats as voters do not have any special influence on aggregate public expenditures in Swiss cities. This contradicts hypothesis A established above.

Table 2 and 3 present the corresponding estimates for public expenditure disaggregated into outlays on salaries and outlays on goods and services (current and capital, including interest payments)²⁰. This disaggregation may be of interest because it may (following hypothesis A) be expected that the bureaucrats' voting power would with most emphasis be used to increase salaries.

A comparison of equations (5a) and (6a) in Table 2 shows

Table 2

that the pure median voter model performs much better in the case of cities with than without referenda: The t-values of the income and tax price elasticities are higher (and about equal for γ), the \bar{R}^2 is almost three times as high, and the F-test applied on the residual variance indicates

Table 2: Influence of bureaucracy in representative democracy with and without referenda: per capita expenditure on salaries (Swiss cities, 1970)^a

institutional character- istics	const.	demand elasticities with respect to			inverse of time to election (η)	voting power of bureau- crats (φ)	test statistics		
		median income (α)	median tax share (β)	residential population (χ)			\bar{R}^2	residual variances	
5a	democracies with referenda	-8.80	0.72 (1.14)	-0.55** (-3.68)	-0.35 (-2.01)	---	---	0.42	0.11
5b		-9.18	0.75 (1.17)	-0.57** (-3.65)	-0.36* (-2.04)	-0.35 (-0.50)	---	0.40	0.11
5c		-9.51	0.79 (1.24)	-0.54** (-3.60)	-0.35* (-2.05)	---	0.82 (1.07)	0.42	0.11
6a	democracies without referenda	-4.43	0.36 (0.56)	-0.61* (-2.75)	-0.72* (-2.32)	---	---	0.17	0.32
6b		-5.47	0.43 (0.91)	-0.33 (-1.92)	-0.49 (-0.72)	-6.62** (-4.59)	---	0.55	0.17

^a For notes see Table 1.

with a degree of confidence of 99% that eq.(5a) performs better than eq.(6a). Hypothesis B is again supported by the evidence.

As for aggregate expenditure, the variable 'time before election' is not significant at all in democracies with referenda, but highly significant (the t-value is -5.41) in democracies in which the voters have no continuous control over government through referenda. The inclusion of TBE rather lowers the \bar{R}^2 in the first case, but raises it dramatically from 17% to 55% in democracies without referendum. (Compare eq.(5b) with (5a); and (6b) with (6a). This suggests that governments not constrained by referenda deviate quite strongly from voters wishes during the election term, but make a very strong effort to adjust to it when the elections come nearer. Salaries are increased strongly (compared to the trend) in-between elections as a reaction to bureaucracy's monopolistic influence on the supply side, but before elections this trend is reversed. Hypothesis C is supported by the evidence.

Equation (5c) explicitly tests the voting power influence of bureaucrats. It is again found that the effect is positive ($\gamma=0.82$), but that it is not statistically significant from zero ($t=1.1$). Hypothesis A is again rejected.

Table 3 presents the estimates for the subcategory of expenditure on goods and services.

Table 3

In general, the results are similar to those shown in the previous tables. The only major difference is that the inclusion of the 'time before election' variable does not improve the median voter estimate for both types of democracies. Government unconstrained by referenda thus does not seem to follow direct bureaucratic pressure in between elections in the case of expenditures for goods and services - or bureaucracy is little interested in the expansion of goods and services (but very much so in the increase in employment and/or salaries). Hypothesis C is not confirmed by the evidence and should be restricted to expenditure on salaries.

Table 3: Influence of bureaucracy in representative democracy with and without referenda: per capita expenditure on goods and services (current and capital, including interest payments; Swiss cities, 1970)^a

institutional characteristics	const.	demand elasticities with respect to			inverse of time to election	voting power of bureaucrats	test statistics	
		median income	median tax share	residential population			\bar{R}^2	residual variances
7a	democracies with referenda	-10.58	1.00 (1.62)	-0.44** (-3.02)	-0.33 (-1.93)	---	---	0.24 0.10
7b		-10.21	0.97 (1.54)	-0.43** (-2.77)	-0.31 (-1.79)	-0.35 (-0.51)	---	0.22 0.10
7c		-10.58	1.00 (1.58)	-0.44** (-2.96)	-0.33 (-1.89)	---	-0.005 (-0.01)	0.21 0.11
8a	democracies without referenda	-5.63	0.57 (1.07)	-0.40** (-2.89)	-0.53* (-2.43)	---	---	0.16 0.15
8b		-6.74	0.67 (1.29)	-0.36* (-2.65)	-0.44 (-1.98)	-1.85 (-1.50)	---	0.21 0.14

^a For notes see Table 1.

IV. CONCLUDING REMARKS

The empirical evidence on the three hypotheses proposed is mixed:

- (a) There does not seem to be any special influence of individual bureaucrats as voters, i.e., on the demand side of the political process.
- (b) Voters do have a continuous and strong influence on policy outcome in democracies with the referendum institution; government's discretionary range is accordingly small.
- (c) In democracies without referendum, in-between elections government tends to yield to the monopolistic pressure of bureaucracy by increasing expenditure on salary. Government has to reverse this policy before elections in order to increase its chances of winning. This sequence does not apply to expenditure on goods and services.

The analysis undertaken is incomplete, in particular, the direct monopolistic influence of bureaucracy on public expenditure has been tested only indirectly²¹. Other types of models are needed which explicitly model bureaucracy's

interaction with government, parliament and voters, and possibly private interest groups.

It is needless to stress that the results obtained only apply to Swiss cities in the period considered. The results may not simply be generalized. It may well be that similar tests for other levels (state, federal) and other countries yield quite different conclusions.

FOOTNOTES

¹ There are sociological and political science approaches [for a survey of these contributions see Richard Bendix, "Bureaucracy," in International Encyclopedia of the Social Sciences, ed. David Sills (New York: Macmillan, 1968)] making important contributions by stressing different aspects.

² See for example R. Joseph Monsen and Anthony Downs, "A Theory of Large Managerial Firms," Journal of Political Economy, 73 (June 1965), 221-236.

³ Oliver Williamson, The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm (Englewood Cliffs: Prentice-Hall, 1964), espec. 34 et seqq. . The same hypothesis was elaborated by Armen A. Alchian and Reuben Kessel, "Competition, Monopoly and the Pursuit of Money," in Aspects of Labor Economics (Princeton: Princeton University Press, 1962).

⁴ William A. Niskanen, "The Peculiar Economics of Bureaucracy," American Economic Review, Papers and Proceedings, 58 (May 1968), 293-305; William A. Niskanen, Bureaucracy and Representative Government (Chicago: Aldine, Atherton, 1971), espec. ch. 4.

⁵ See Jean L. Migué and Gérard Bélanger, "Toward a General Theory of Managerial Discretion," Public Choice, 17 (Spring 1974), 27-43.

⁶ For a survey of the results of empirical studies see William Orzechowski, "Economic Models of Bureaucracy: Survey, Extensions, and Evidence," in Budgets and Bureaucrats: The Sources of Government Growth, ed. Thomas E. Borcherding (Durham: Duke University Press, 1977).

⁷ Besides the contributions mentioned by William Orzechowski, see James L. Weatherby, "A Note on Administrative Behavior and Public Policy," Public Choice, 11 (Fall 1971), 107-110, and Charles B. Blankart, "Zur oekonomischen Theorie der Buerokratie," Public Finance, 30 (No. 2, 1975), 166-185.

⁸ This aspect has been pointed out by Gordon Tullock [Public Choice, 12 (Spring 1972), 119-124] in his review of Niskanen's book. The approach has been further expanded by Winston C. Bush and Arthur T. Denzau, "The Voting Behavior of Bureaucrats and Public Sector Growth," and, Thomas E. Borcherding, Winston C. Bush, and Robert M. Spann, "The Effects on Public Spending of the Divisibility of Public Outputs in Consumption, Bureaucratic Power, and the Size of the Tax-Sharing Group," both in Budgets and Bureaucrats: The Sources of Government Growth (Durham: Duke University Press, 1977).

⁹ For these arguments see Bruno S. Frey, "Why Do High Income People Participate More in Politics," Public Choice, 11 (Fall 1971), 101-105.

¹⁰ See Duncan Black, The Theory of Committees and Elections (Cambridge, Mass.: Cambridge University Press, 1958), espec. ch. 5.

¹¹ This proposition is formally proved in Duncan Rae and Michael Taylor, "Decision rules and policy outcomes," British Journal of Political Science, 1 (January 1971), 71-90, and has been used in a number of empirical voting studies such as Theodore C. Bergstrom and Robert P. Goodman, "Private Demands for Public Goods," American Economic Review, 63 (June 1973); Thomas E. Borchering and Robert Deacon, "The Demand for the Services of Non-Federal Governments," American Economic Review, 62 (December 1972), 891-901.

¹² For a more complete development of this behavioral hypothesis see Larry J. Lau and Bruno S. Frey, "Ideology, public approval and government behavior," Public Choice, 10 (Spring 1971), 21-40.

¹³ The tendency of log-rolling to lead to too high expenditures is cogently argued in James M. Buchanan and Gordon Tullock, The Calculus of Consent (Ann Arbor: University of Michigan Press, 1962), ch. 11.

¹⁴ Per capita expenditures are used in order to avoid problems of heteroscedacity.

¹⁵ Most data had to be collected by a survey as they did not exist in published form. Details may be obtained from the authors.

¹⁶ See, e.g., Theodore C. Bergstrom and Robert P. Goodman, op.cit., and Werner W. Pommerehne, "Institutional Approaches to Public Expenditure: Empirical Evidence from Swiss Municipalities," Journal of Public Economics, forthcoming.

¹⁷ This index is discussed in Thomas E. Borcharding, Winston C. Bush, and Robert M. Spann, op.cit., 217 et seqq.

¹⁸ The clue for this participation rate of local bureaucrats in Switzerland is drawn from data underlying the study of Leonhart Neidhart and Jean-Pierre Hoby, Ursachen der gegenwertigen Stimmabstinenz in der Schweiz (Berne: Eidgenoesisches Justiz- und Polizeidepartement, 1977). Empirical evidence for a similar participation rate of local bureaucrats in other countries (U.S., France, and the U.K.) can be found in various studies mentioned in Winston C. Bush, and Arthur T. Denzau, op.cit.

¹⁹ Bureaucrat's voting power is, however, relatively weak in general elections because the overall participation rate is much higher.

²⁰ More detailed disaggregation of public expenditure do not change the outcome and are therefore not reproduced here.

²¹ To our knowledge, there are so far no theoretically and statistically satisfactory empirical analyses in the respect.