



A Behavioral Model of Bureaucracy

Author(s): Kenneth Shun-Yuen Chan

Source: *Southern Economic Journal*, Vol. 45, No. 4 (Apr., 1979), pp. 1188-1194

Published by: [Southern Economic Association](#)

Stable URL: <http://www.jstor.org/stable/1056963>

Accessed: 21/08/2013 14:27

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Southern Economic Association is collaborating with JSTOR to digitize, preserve and extend access to *Southern Economic Journal*.

<http://www.jstor.org>

A Behavioral Model of Bureaucracy*

KENNETH SHUN-YUEN CHAN
Saint Mary's University

I. Introduction

From a traditional viewpoint, government growth is thought to be a response to population expansion and the increasing complexities of the economy engendered by externalities and various other market failure. In the literature, Buchanan [1] first explains the decision-making process of the government by postulating a utility function for the bureaucracy that has income level and size of bureaucracy as arguments. Thus, this form of utility function is similar to that of a profit maximizing firm. (Note that a hyperbolic utility function implies that government bureaucrats will maximize wages above the market rate times the size of output of bureau services. This is identical to profit maximization.) To achieve these goals, the government bureaus which behave as monopolies must under-produce government services. Hence at the utility maximizing output, it is impossible to have over-size bureaus.¹ To amend this, we have to assume that for the utility function of the bureaucracy, more "favor" is attached to the size of the bureaucracy than to the income of the bureaucrats. Niskanen [6] justifies the latter by assuming the sole objective of government bureaucrats is to maximize the "budget allocation". He then demonstrates that this assumption would result in an over-expansion of bureaucracy.

Tullock [7; 8] has noted that the above analysis has an obvious drawback in that voters participation is omitted. The introduction of voters in our analysis also introduces competition into the public sector. Downs [3] argues that the sole objective in the decision-making process of government bureaucrats is to maximize political support; that is, ensure re-election. Hence, when government bureaucrats are faced with a group of conscientious voters,

*I am indebted to Gordon Tullock, Nancy Ripley and Sandra Dow for helpful discussions and comments. I alone bear any responsibility for errors.

1. Even when perfect "political" competition among bureaucrats is introduced, the bureau will produce at $P = MC$; we can never get over-size bureaus!

defined to be those who support only efficient government, competition for re-elections will force government bureaus to maintain optimal size. Consequently, over-size bureaus can only occur with a group of unconcerned and dependent voters,² defined as voters that prefer more government service rather than efficient government service.

To my knowledge only Tullock [8] has attempted to explain the growth of bureaucracy as the interactions between bureaucrats and voters. He argues that the votes of the bureaucrats would be partially directed towards raising their own salaries. Gradually, as the size of bureaus becomes larger, the bureaucracy members take a larger and larger share of the voting constituency; thereby further reinforcing the size of bureaucracies. And so on.

Since most governmental activities are based on some invisible form of contractual agreement (social contracts) between the government and her constituents, this paper will analyze the growth of bureaucracy from the viewpoint of behavioral interactions of voters and bureaucrats. A static framework is employed. The concept of a "social" contract curve will be introduced. A set of sufficient conditions for the growth of bureaucracy is derived in this paper which hopefully will remove some of the afore-mentioned shortcomings in the literature.

II. Analytical Framework

Let t be the amount of tax per unit of government service. Let the D - D curve in Figure 1 in the (t, Q) space be the demand curve for government service

We assume the following institutional constraints on the economy: (1) the size of bureaucracy provides additional utility for bureaucrats.³ (2) the money

2. We can get a group of unconcerned and dependent voters in two ways. (1) When all the public services are indivisible, voters can become unconcerned. Since public services cannot be priced directly to the recipients, payment for public services is often divorced from the receipt of such services. Consequently, there is a tendency for voters to prefer more government services [2, 61]. And (2) A continuous dose of government services can create in the public an "overdependence" on the government to solve their problems. Thus, a welfare state may generate a society of dependent individuals. Trudeau, the Prime Minister of Canada, reminds his constituents that they cannot expect as a right, a free lunch. This is essentially the same as the "moral hazard" problem. In the literature, Mundell [5] argues that government services can destroy the moral fibre in the society such as private incentive and personal responsibility etc. He illustrates this by the example of relief payments: "It is widely believed that public provision for the needy has reduced private charity (or at least changed its goals), but more important, it has altered the character of the recipients of it. It is one thing for society to arrange to help out the crippled, . . . and the deprived. . . . It is another thing to create in healthy individuals the expectation that the government has the responsibility to compensate them for personal actions that have turned out badly. . . . Just as a mother who is tempted to remind her child every time he is in the act of forgetting eventually learns that a continually reminded child can become a forgetful one" [5, 185].

3. Since bureaucrats are forbidden to pursue for profit, bureaucrats have to look for other means (e.g. to increase the size of bureaus) to maximize their utility. In the literature, the explanation for that is as follows: (1) suppose the allowable budget varies with the size of the bureau, then bureaucrats must prefer a large bureau so that they can have a large "expense

wage of bureaucrats is institutionally restricted not to go below the market wage rate regardless of the size of bureaucracy.⁴ And, (3) the amount of work for each governmental position is rigidly specified independent of the wage level of the employee and/or the size of bureaucracy.⁵ Thus, the utility function of the bureaucracy consists of two components: wage rate and the size of the bureaucracy.

In Figure 1, the average cost (*AC*) and marginal cost (*MC*) curves are drawn with the assumption that the bureaucrat's salary is equal to the constant market wage rate. In Figure 1, we map the utility contour of the bureaucracy onto the (*t, Q*) space. The vertical distance above the *AC* curve must be proportional to how much the bureaucrats' money wage exceeds the market wage rate. Therefore, the utility contours must lie above the *AC* curve.

We assume there is perfect "political" competition among bureaucrats. The maximum utility level the bureaucrats can achieve would be the utility contour that is tangent to the *D-D* curve since the latter represents the amount of (*t, Q*) that voters can afford to pay.⁶

Let us next discuss the preference function of the voters for government bureaus. Voters always prefer more government service and a cheaper tax rate from government bureaus. Hence the preference contours of voters take a positive slope and are convex as shown in Figure 1.

We assume there is perfect "political" competition among voters. The maximum utility the voters can achieve is the preference contour that is tangent to the *AC* curve since the latter represents the amount of (*t, Q*) that bureaucrats are willing to work given the institutional constraints.

One would expect that in this set of voters' preference contours, government efficiency must be taken into account. Hence, for a group of conscientious voters, the slope of one preference contour must be tangent to the *AC* curve where the *MC* curve cuts the *D-D* curve.⁷ This is illustrated by point *A*

account" [6]; (2) bureaucrats may prefer a large bureau for the sake of bureaucratic "aesthetics": a devoted bureaucrat who cannot appropriate the profit he makes for the bureau, would prefer to have a "perfect" bureau rather than an "economical" bureau [4, 244]; and, (3) there are considerably more prestige and power working in a large bureau (*ibid.*).

4. Since institutions do not explicitly recognize the gain of bureaucrats from the size of bureaucracy, the official opportunity cost of hiring a government employee must be his market wage rate.

5. This is often due to the high adjustment cost involved in changing job specifications. Causal observations would support this. Each lengthy job description sheet is carefully written up. Any minor changes often involve a series of bureaucratic "red-tape."

Constraints (2) and (3) guarantee the existence of "feather-bedding" jobs in the government. Also, constraint (3) implies the amount of disutility from work is fixed. Hence, as the size of bureaucracy (level of money wage) increases holding the level of money wage (size of bureaucracy) constant, the level of utility of bureaucrats must increase. Further, it would draw a "pool" of unemployed bureaucrats from other sectors of the economy queuing for those limited positions.

6. Note that this is different from Niskanen's model which assumes the bureau has monopoly power. Consequently, the *D-D* curve is the marginal budget curve for the bureau since the bureau is able to appropriate its sponsor's consumer surplus. Our model, however, assumes perfect "political" competition among bureaucrats.

7. We can regard the preference contour of conscientious voters as combinations of (*t, Q*) that

in Figure 1. As for a group of unconcerned and dependent voters, the marginal rate of substitution must bias in favor of the size of bureaucracy. Hence, the preference contour must be tangent to the AC curve to the right of point A (e.g. point B in Figure 1).

From these two sets of contours, we can now derive a social contract curve (SCC) which is a locus of points of tangency of the two sets of contours.

As mentioned earlier, we consider most governmental activities are based on an invisible social contract between bureaucrats and voters. This, together with our assumption of perfect political competition among voters and bureaucrats, indicates that the static solutions of the model must be where the marginal rates of substitution of (t, Q) are identical for both parties. Suppose lobbying is allowed before election (i.e. recontracting); then, when the initial values of (t, Q) are off the contract curve, there exists an adjustment of (t, Q) towards the SCC which would be acceptable to both parties; hence both parties enter into contractual agreement.

Note that in our model, the initial values of (t, Q) determine where the economy would be on the SCC . Since the voters' preference contours are always positively sloped, as the economy moves from the initial point to the SCC , an increase (decrease) in government service must be accompanied by an increase (decrease) in bureaucrat's salary.

Let us next discuss some sufficient conditions for the bureaucracy to overexpand.⁸

Proposition 1

With the above institutional constraints on the economy, the possibility for the bureaucracy to overexpand exists.

The above institutional constraints imply that as the size of bureaucracy expands at the market rate, the level of utility increases. Furthermore, since the marginal rate of substitution between the size of bureaucracy and money wage are not zero, therefore, as we move along the AC curve in Figure 1, the slope of the bureaucracy's utility contour must be strictly less than the slope of the AC curve at the points of intersection.

Let us first examine the case where government bureaucracy is faced with a group of conscientious voters. Since, at A , the slope of the voters' preference contour is tangent to the AC curve, as we move to the right along the AC curve, the slope of the voters' preference contours must be strictly less than the slope of the AC curve at the points of intersections. Hence, the SCC —where the two sets of contour lines are tangent to each other—must be to the right of point A . Consequently, the possibility for the bureaucracy to

keep a constant level of consumer surplus. Obviously, the "highest" preference contour must be tangent to the AC curve where MC cuts the $D-D$ curve.

8. By over-size or over-expansion we mean the Q is to the right of point A in Figures 1 and 2.

overexpand exists. As for the case of unconcerned and dependent voters (i.e. the slope of a voters' preference contour is tangent to the AC curve at *B*), the SCC will cut the AC curve to the right of point *B*. Obviously, the possibility for overexpansion exists.

The implication of proposition 1 is: even with the presence of perfect "political" competition among voters and bureaucrats, the possibility for overexpansion of bureaucracy still exists. Since the size of bureaucracy is an argument in the bureaucracy's utility function and there are various institutional constraints, voters are ready to accept bureaus with some degree of over-size in order to make the jobs acceptable for the bureaucrats.

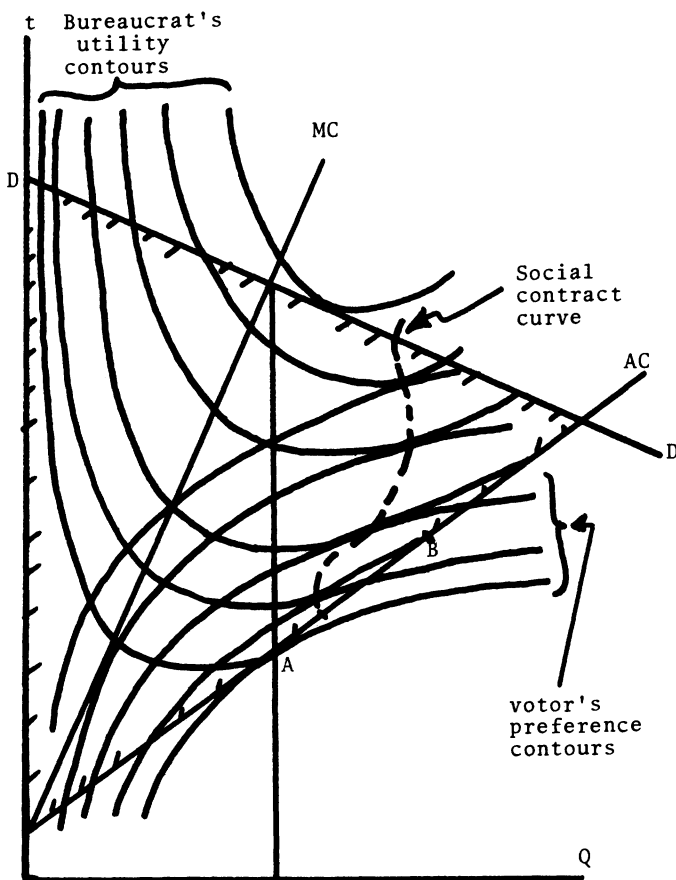


Figure 1.

Proposition 2

With a group of unconcerned and dependent voters, the possibility for the bureaucracy to overexpand exists regardless of the type of institutional constraints.

This rather obvious proposition is illustrated by Figure 2. Suppose government bureaucrats are indifferent to the size of bureaucracy; and are only interested in the level of their salaries (in other words, the marginal rate of substitution of salary increase to size of bureaucracy is zero everywhere). These bureaus are now faced with a group of conscientious voters. Under such circumstances, the SCC must pass through point A in Figure 2 and take a negative slope. Government bureaus can never become over-size! The possibility of an over-size government can only occur in this case when these bureaus face a group of unconcerned and dependent voters. The SCC then must pass through a point to the right of A (such as B in Figure 2).

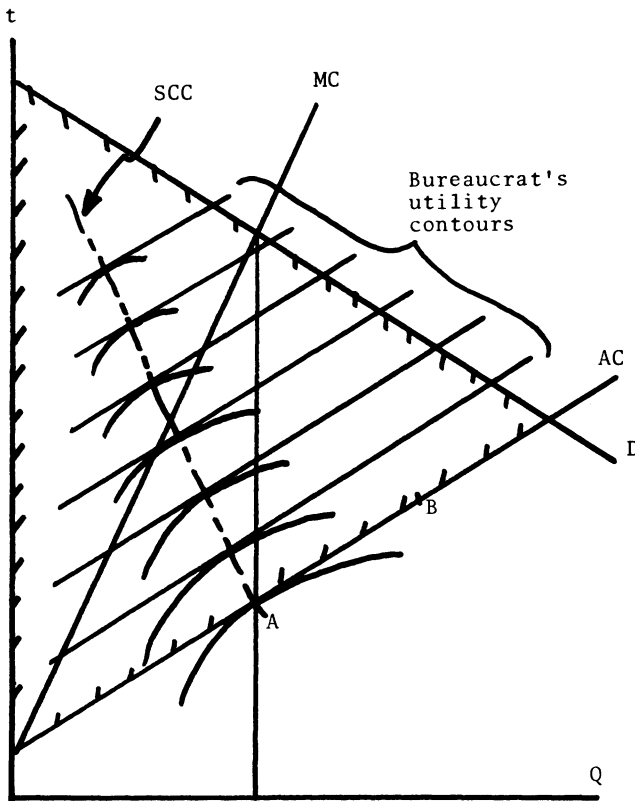


Figure 2.

III. Conclusions and Discussions

In the conventional wisdom, the lack of competition in the government sectors, together with the institutional constraints on the economy, seems to be the main cause for the growth of bureaucracy [2; 4; 6]. However, our analysis shows that when voters participation is taken into consideration, the lack of competition in the government sector is neither necessary nor sufficient for the growth of bureaucracy. It is not necessary, since our propositions 1 and 2 discuss the growth of bureaucracy under the assumption of perfect competition among voters and bureaucrats. It is not sufficient because when the bureau possesses the monopoly power, bureaucrats would maximize utility by choosing the utility contour that is tangent to the "offer curve" of the voters. The static solution which depends on the initial values of (t, Q) and the shape of the offer curve, may not necessarily be an oversize bureau.

Finally, the model can be extended to aid in explaining the deficit finance behavior of the government. Consider the situation where the marginal rates of substitution between voters and bureaucrats are not equal at a certain (t, Q) and the AC curve has effectively confined the movements of (t, Q) . In this instance, both groups are frustrated. If the short-run cost of deficit financing is small, it is possible for the government to run a transitory budget deficit and lower the AC curve so that both the voters and the bureaucrats can reach the SCC. (Note that the amount of budget deficit can be regarded as a negative fixed cost).

References

1. Buchanan, J., "The Pure Theory of Government Finance: A Suggested Approach." *Journal of Political Economy*, December 1949, 496–505.
2. ———, and M. Flowers, *The Public Finances*. Homewood: Irwin Incorporated, 1975, 54–63.
3. Downs, A., "An Economic Theory of Democracy." Harper & Row, 1957.
4. McKenzie, R. B. and G. Tullock, *The New World of Economics: Explorations into the Human Experience*. Homewood: Irwin Inc., 1978, 221–52.
5. Mundell, R. A., *Man and Economics: The Science of Choice*. McGraw-Hill, 1968.
6. Niskanen, W. A., *Bureaucracy and Representative Government*. Chicago and New York: Aldine-Atherton Incorporated, 1971.
7. Tullock, G., *The Politics of Bureaucracy*. Washington, D.C.: Public Affairs Press, 1965.
8. ———, "Dynamic Hypothesis in Bureaucracy." *Public Choice*, Fall 1974, 127–31.