The Theory of Employment and Wages in Non-Profit Industry

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The common characteristic of the public and of the non-government but
not-for-profit sectors of the economy, is that the behavior of neither can be
usefully described as profit seeking. However, after a little reflection, I
have concluded that there is not much to be gained by exploiting this fact.
Instead, I shall discuss the two sectors separately. For reasons of space,
the non-public-not-for-profit is dealt with only very briefly.

Since no later point will be convenient, at the outset I should like to
contrast the quality of the recent work in the area of this conference with
the early pioneering efforts at analyzing inter-industry wage differentials
in the immediate post-World War II period. In theoretical conception,
econometric technique and wealth of data analyzed, the work to which I shall
make reference is incomparably superior to the pioneering efforts of only a
quarter century ago. But my role is not to dwell on how far we have come,
but on how far we have still to go.

I. The Public Sector

I propose to organize my discussion around the following question: why
should there be a wage differential between the public and non-public sectors
for "comparable" workers? The quick and largely correct answer is that if the
workers are truly comparable there will be no such differential. The critical
point, obviously, is what is meant by comparable.

Roughly, to be comparable workers should be alike in respect of human
capital embodied, tastes and location. Alike in respect of "human capital
embodied" means, in practice, alike in respect of age, years of (relevant) experience, years of schooling and in any natural endowments not fully reflected in the measures of the other characteristics. For workers to be alike in respect of tastes means that the equalizing (pecuniary) differential between any two jobs would be the same for any pair of workers. Location is a significant attribute of a job and equalizing differentials between otherwise identical jobs may arise simply because the jobs have different locations; locational workers will be comparable only after such differentials have been taken into account.

Thus defined, hourly wage differentials between comparable workers would seem incompatible with competitive equilibrium. Yet, such differentials may, and I suspect do, exist as between public and other types of employment. The explanation lies in the peculiar characteristics of public (government) employment, that makes jobs, seemingly similar to those in the private sector, have an appreciably different marginal product.

Let us now discuss differences in hourly wage rates among otherwise comparable workers employed in the public and in the private sectors. The discussion is divided into three conventional sections: demand, supply and "interaction."

(a) The Demand for Labor in the Public Sector.

It is tempting to regard the demand for labor of a given quality, by a public (governmental) body as simply an application of the theory of household demand for inputs. For example, this is the spirit in which Ehrenberg [1] proceeds. In effect, he treats a governmental decision making unit as a household whose resource constraint reflects a process of utility maximization in which it (or some higher body funding it) decides the fraction of the constituency's resources to be devoted to supporting the governmental
activities under discussion. The allocation of resources between the govern-
mental unit and other uses is assumed to be "strongly separable" from the
allocation of the governmental unit's resources among alternative inputs.
This permits focussing of attention entirely on the optimal mix of publicly
produced goods and services and the resulting derived demands for inputs
(labor and others). In effect, a governmental unit's derived demand for a
given kind of labor is determined by the maximization of some utility or
objective function subject to a (dollar) budget constraint with given input
prices. As Ehrenberg shows, this leads to a set of inter-related derived
demand functions for various kinds of labor formally analogous to household
demand functions for inputs.

However, this procedure precludes consideration of the political factors
that bear upon government behavior. It is the premise of this paper that
political factors normally are important in determining government wage-
employment decisions. In some cases it may be expedient to abstract from
political factors, but this should be done explicitly and only after some
investigation. In analyzing the public sector, political considerations are
never incidental.

What follows is a sketch of a model that purports to explain the
politically determined behavior of a government. Consider first its objective
or utility function, (1) that relates the utility of a government, $U$, to its
\[ U = f(V, a_1, \ldots, a_q) \]  
expected number of votes, $V$. For simplicity, abstract from lags and consider
only static relationships. It will often be useful to measure $V$ as a percent-
tage of eligible voters.) In general, $U'_V > 0$ for all $V$ though, as we shall
see, there may be discontinuities and inflexion points.

The empirical characteristics of the transformation function between
dollars ($D$) and votes ($V$) obviously is a matter of great practical interest
and is, in my judgment, eminently researchable. However, so far as I am aware, this research has not yet been done. For the present purpose, and as a first approximation, it is assumed that the government chooses an optimal mix of dollars and votes, and that government actions are selected so as to yield an optimum mix of cash and votes given the constraint of its political resource endowment. That is, we assume the government selects a course of action so as to make the marginal rate of substitution between D and V equal to the rate at which they can be exchanged for (transformed into) one another. It is sufficient for the present purpose to assume that the rate of exchange between D and V is independent of wage and employment decisions.

\[ a_1 \ldots a_q \] are "ideological parameters," determined exogenously. They reflect the fact that a government gets utility not only by adding to its votes, but also by avoiding (engaging in) certain types of actions that it considers ideologically offensive (attractive). Normally, there is some tradeoff between votes and ideological attractiveness, but this will not concern us.

Depending upon the specific characteristics of the electoral system, at various values of V, \( U_v \) may "jump" (e.g. at 50% of all votes in a winner take all, two party situation). Such jumps are sometimes reflected in great sacrifices of ideology to get a few extra votes. This is too obvious a possibility to require further discussion.

Everything said of (1) refers to a political party (out of office) as much as to a government. The only difference between parties in and out of power is that when in office unperformed promises have a lower marginal product in terms of votes. Out of office, a party can make promises and get votes on the basis of voter hopes; in office, downpayments in performance must be made or credibility is lost. Our interest is in the behavior of parties
in office; i.e. governments.

Now let us turn to the vote function, (2). We shall discuss the arguments of (2), seriatim: for simplicity, assume the government produces two goods, 1 and 2 in quantities $g_1$ and $g_2$, respectively, and sells them at prices $p_1$ and $p_2$. Assume all p's and g's are non-negative, and that the combinations, $(p_1, g_1)$ and $(p_2, g_2)$ are so selected that their values always lie on the demand curves for $g_1$ and $g_2$.

It is assumed that both $V'_{p1}$, $V'_{p2}$ are negative.

The rationale is that a voter is more favorably disposed, cet.par., toward a government that furnishes him a good at a lower than at a higher price. Hence, lowering (say) $p_1$ will tip some marginal voters toward the government.

Given the assumption that the government's policy is to stay on the demand curves for 1 and 2, and assuming that queuing is avoided, $g_1$ and $g_2$ are determined once $p_1$ and $p_2$ are set. Moreover, since the government is assumed to supply whatever quantities are demanded at the prices established, lowering $p_1$ and $p_2$ will increase the consumer's surplus of buyers thereby increasing the probability that they will vote for the government.

Given this line of reasoning, it might seem that a rational government would set prices a zero (or even charge negative prices). But this ignores taxes, $T$. The higher an individual's tax burden, cet. par., the less likely he is to vote for the government; i.e. $V'_T < 0$. For convenience, assume $T$ to be a vector of tax payments for all n taxpayers and that the tax burden of individual $i$, $T(i)$, is an unique and increasing function of the general tax level, $T$.

Assume that deficits are not permitted; i.e. all government payments must be financed by sales or taxes (including fines). (This restrictive
assumption prevents consideration of the political economy of inflation and its implications.) For the present purpose, government expenditure is assumed subject to a receipts constraint, given by (3).

\[ E = p_1E_1 + p_2E_2 + T = x_1w_1 + x_2w_2 + x_3r + S_1 \]  

(3)

In (3), government expenditures, \( E \), is identically equal to current receipts, given by the middle expression and to disbursements, given by the right hand expression. For simplicity, assume goods 1 and 2 to be unrelated in demand and (each) produced at a rate that makes marginal cost equal to price. Then, to reduce the price of good 1 (and continue to supply the quantity demanded) it would be necessary to increase outlay on factor inputs \( (x_1w_1 + x_2w_2 + x_3r) \) by more than the sale of the resulting output. Cet. par., this would necessitate an increase in \( T \). But this would also reduce \( V \). In other words (symbols), the effect of a reduction in \( p_1 \) on \( V \) is the sum of a favorable effect on voting by buyers of 1 and of an unfavorable effect on voting by taxpayers.

A rational government would lower the price of each good it sells until the marginal vote product from buyers was equal to the marginal vote cost of taxpayer votes lost. The implication of this is clear; cet. par., goods for which the vote elasticity with respect to price is judged to be relatively low will bear a greater "markup" over marginal cost than those for which the vote elasticity is judged to be greater.

The relation of government decisions on price and output to votes is both direct and indirect, via contributions of resources. Resource contributions, either in cash or services (which have a cash equivalent) are an argument of (2), \( V_C' > 0 \), and are given by (4) which is the sum of the contributions of the \( n \) individuals. The contribution of individual \( i \) is given by (4a) where \( c_iT_i, c_iP_1, c_iP_2 \) are negative and \( c_i'S_1 \) is positive. If (say) the
government's price-output behavior toward good 1 injures its buyers sufficiently,
\[ C = c_1 + \ldots + c_n \]  
\[ c_1 = c_1 (T_1, S_1, P_1, P_2) \]
they may respond by reducing their contributions or even making them negative.
The indirect effect of (say) a price change on the government's expected vote, via contributions, may be greater than the direct effect on votes; the relative size of direct and indirect effects depends on both the impact of the price change on contributions, and of the impact of contributions on votes.

(a) The Composition of the "Agenda:" The Output-Mix of the Public Sector

As in the private sector, public sector demand for labor is derived from demand for final output, relative input prices and technology. As used here, technology includes not only technical know-how but also the political feasibility of using various methods of employing and paying labor. Only to a very limited degree would knowledge of the menu of final goods and services provided by the public sector to households determine the kinds and quantities of activities performed by individuals on the public payroll. To a very important extent, the productive activities carried on in the public sector depend upon which intermediate stages of production are performed by labor on the public payroll, aided by publicly owned instruments, and which are contracted out to firms in the private sector. Thus a country in whose final output public goods bulk large, need not employ much of its resources in the public sector.

To illustrate this point consider the public good par excellence, the lighthouse. For well known reasons, it is impossible to exclude non-payers from benefitting from lighthouses; this makes it necessary for the government to pay for the inputs used in producing lighthouse service, raising the revenue by taxes, port fees or similar means. But the operation of the lighthouse could be contracted out to a profit-seeking firm on any mutually
acceptable basis of compensation.

It is not necessary to contend that all activities normally carried on within the public sector could be contracted out to private firms. But many of them can be, and the question of which activities will be retained within the public sector and which contracted out is not decided entirely by considerations of productive efficiency.

Relative efficiency does play some role in determining the relative importance of the public and private components of national output. For example, the public sector has a relative advantage when it can purchase inputs cheaper. This would seem to be the case for a small number of high level jobs. Usually these jobs are highly visible in that their holders obtain a substantial amount of news coverage or at least acquire a great deal of prominence within their own professions. This prominence usually acts as a non-pecuniary benefit of the job, enabling the public employer to obtain a given quality candidate at a lower wage than the candidate could obtain in the private sector.

If this conjecture is correct, it is necessary to ask why the public sector sets wage rates for certain of its jobs that are below what the private sector normally pays for comparable talent. In part, the explanation lies in the recognition of all concerned that certain jobs have such non-pecuniary attraction as not to require pecuniary rewards equal to what a suitable candidate could earn elsewhere. This consideration gains added weight from the fact that the most glamorous jobs tend to be "political" and therefore of short duration; accordingly, the pecuniary sacrifice, if any, also is brief.

But over and above parsimony, there is the ceiling effect of the salaries of legislators, governors, mayors, cabinet officers and the like. Understandably, these functionaries who are critically involved in wage setting, are resistant to the suggestion that their organizational inferiors
should receive as much or more than they. While exceptions are permitted, they are scrutinized unsympathetically and the larger the fraction of a given budget used to pay such salaries, the more difficult it will be to get it accepted; this creates a bias against paying such high salaries. Where such salaries are needed to attract appropriate manpower, the tendency will be to "contract out" the activity to the private sector. Cet. par., the effect will be to shift "high salary intensive" activities to the private sector.

I shall not attempt to explain why legislators and executives resist the paying of higher salaries than they themselves receive. Such resistance exists in the private sector as well as the public, and is probably rooted in feelings of envy. What is more to the point is why those with legal power (i.e. legislators and executives) to set salaries do not raise their own rather than hold down those of their organizational inferiors. I submit that the answer lies in a feared adverse political reaction—a negative effect on votes—to granting such salary increases. If this surmise is correct, then fear of an adverse voter reaction to high salaries for elected officials, combined with an (unexplained) resistance to paying appointees more than their elected appointers, leads to a bias against retaining activities requiring (very) high salaried personnel in the public sector.

Another type of situation in which the public sector has a relative advantage is where cost-price relations are such that equity capital cannot earn a rate of return equal to the competitive. In such cases, if the activity is to be conducted at all, it must be subsidized; i.e. the capital must be supplied by those willing to accept less than a competitive return. This means that the capital must come from the public or the private not-for-profit sectors. For simplicity, assume that the government finances only what the other sector will not or cannot finance in a manner satisfactory to voters (see below).
Of course, the government may finance (i.e. subsidize) an activity without engaging in it. But to do so, involves "subsidizing a private producer."

The political effect of this depends upon the cost of the subsidy and the above presumption becomes conditional upon the cost of the subsidy and the political eligibility of its recipients. Obviously, the larger the subsidy the greater the resulting vote loss. Partially offsetting the vote loss on account of higher taxes is the vote gain from recipients of the subsidy. For both realism and simplicity, assume that for arbitrarily chosen subsidies, the tax increase required to finance an extra dollar of subsidy costs more votes than the subsidy gains. Hence for a subsidy to be politically profitable, its recipients, its "cause," or both must be deemed "eligible" by the voting public.

The issues involved are illustrated by the example of public education; manifestly, schools can be run privately. However, the volume of expenditure per student that advocates of education have persuaded governments to finance entail (lifetime) costs per student well above what most parents would pay in a free market. Hence either subsidies, public instruction, or both, were required. But if subsidies--other than those from one governmental unit to another--were to be paid, who should receive them?

Subsidies to schools or students, without severe restraints on educational content, would have resulted in support for institutions with religious affiliations as well as for institutions of low educational quality and/or socially unacceptable objectives support for public instruction reflected political (not to mention Constitutional) opposition to public support for church affiliated institutions, as well as desire to impose linguistic and cultural uniformity upon a population of diverse origins. In the 19th century, the strongest potential sources of alternative educational supply were religious organization; these were politically unacceptable. Private-for-profit schools were too varied in character, and state policing machinery too rudimentary,
to hold profit seekers effectively to acceptable minimum educational standards.

Once established as the dominant mode of instruction, public schools gained the further advantage of momentum. Economies of scale, and the advantage of an established organization, made public schools seem vastly superior to actual or potential small scale private competitors. So great has been the apparent superiority of public schools that—with negligible exceptions—profit seekers have not challenged their hegemony. Apparently, actual and potential profit seeking educational entrepreneurs have considered the probability of obtaining a public subsidy so small as not to be worth the effort of a serious campaign. In short, neither profit seeking nor private non-profit schools have been considered politically eligible for a subsidy which, given the massive tax support for public schools, has made public instruction the dominant mode of pre-college education.

Occasionally, the state becomes entrepreneur of last resort when the vote cost (of the taxes) requisite to finance a subsidy sufficient to obtain supply from the private sector is greater than the vote loss consequent upon its public production. The political gain from subsidizing private producers is the votes and contributions of those subsidized. The cost arises from the envy of the unsubsidized and the higher taxes occasioned by the subsidy. The political embarrassment to the government of paying a subsidy is increased when its recipients attempt one or more of the following: to reduce relative wage rates, raise relative selling prices or worsen product quality. Such attempts are likely to coincide, as in public transportation, with a leftward shift of the demand curve that raises unit costs causing reduced profits (often losses) and prompting a demand for a subsidized loan to improve rolling stock, avert bankruptcy and the like.

The situation of private suppliers in a situation of (permanently) reduced demand is frequently one of virtual bankruptcy with market considera-
tions suggesting termination of production, but political considerations
preventing the government from permitting such an outcome. The government
attempts to induce the private supplier somehow to continue operation, with
the size of the subsidy being the bone of contention. Sometimes, no terms
acceptable both to the supplier and to the government can be found and, as
a last resort, the government takes over.

The effect of such takeovers is probably to make wage rates higher and
hours employed greater than would otherwise be the case. Vote seeking
politicians are far more responsive to the pressure of unions or of general
public opinion to treat employees of failing enterprises fairly than profit-
seeking stockholders.

The need to preserve jobs is yet another reason why the government
sometimes takes over, and keeps in operation, production processes that the
private sector would abandon. Moreover, the government will continue operation
under financially less favorable circumstances than would private producers.
Still further, political considerations will lead governments to avoid
reductions in force and/or wage reductions that profit seekers would require
as a condition of continuing operations; this tends to make losses of public
enterprises bigger than private under comparable circumstances.

Looked at in a slightly different way, what I am conjecturing is
that public bodies are less prone to destroy the specific capital of their
employees than private employers. If true, relatively smaller variances and
(probably) higher average earnings if they occur in the public rather than in
the private sector.

Yet a further situation in which the public sector has a comparative
advantage vis-a-vis profit makers is as "employer of last resort." The
relative importance of government and private non-profit organizations as job
providers (for the otherwise unemployed) has a long and checkered history,
but in recent history the government has had no real competition in this field. Hence I shall assume without argument that if there is to be an employer of last resort, it will be the government.

Suppose "employer of last resort" is taken (literally) to mean that a job on a public sector payroll at a specified wage rate and given conditions will be available to anyone upon application. Then no worker need fear being dismissed from such a job because, by definition another will be available with negligible search cost. Discipline and productivity on such jobs could not be higher than what suited the workers' convenience, since fear of dismissal would be removed.

If the wage rate on last resort jobs were set at what is paid per hour in the private sector (for the services of comparable trained workers), then the disutility and productivity of (these) private jobs would decline to the level of the public jobs; otherwise workers would shift to the public jobs in pursuit of greater net advantages of employment. This would lead to some reduction in the number of hours of work demanded privately, and to an increased rate of hourly compensation for those hours still demanded in order that the remuneration be sufficiently attractive relative to last resort employment for the private workers to fear dismissal in the event of poor performance. Varying with the response of the nominal money supply, this could lead either to (i) a general rise in all wage rates and product prices to restore initial equilibrium relationships, making the wage rate on last resort jobs too low to compensate for foregone job search time or (ii) to a compression of the hourly wage structure with a consequent reduction in supply of applicants for those types of training that would be sub-marginal at the reduced wage differentials.

But, it may be protested, an argument such as this implies an unfair interpretation of the "employer of last resort" concept. It was not intended
that jobs should be available for the asking, regardless of past or current work performance, but only that a certain number of jobs should be available on specified conditions, etc. Whether the first interpretation, or something like that suggested in the previous sentence, is more nearly correct may remain moot. But if the latter interpretation is correct, then the conditions under which last resort jobs can be obtained and held (i.e. the way in which such jobs are rationed) become critical determinants of the economic effects of any program of last resort employment. Indeed, until these conditions are specified, the meaning of "employer of last resort" is not determined.

A final remark on the implications of being employer of last resort: if access to a certain class of public sector jobs is a matter of right, then they have no sale value to the government. Therefore, if the government were to offer unlimited access to one class of jobs, political rationality would lead it to develop a superior class, conditionally available (to the same type of worker) for political support. By the same reasoning a politically rational government faced with a positive cost of taxing, must resist any unconditional guarantee of jobs as politically wasteful. Whatever it pretends, ultimately a government will want admission to the payroll restricted and priced by its functionaries.

To summarize: there is no general characteristic of output in the public sector such that one could deduce that its labor demand functions would have any properties that distinguished them from those in other parts of the economy. Instead, I have made a few rather specific suggestions that are testable but whose combined impact on a public-non-public wage differential would be hard to predict.

(b) Labor Input-Coefficients of the Public Sector

In (2), \( V \) depends on the input quantities, \( x_1, x_2 \) and \( x_3 \), and their
rates of compensation, \( w_1, w_2 \) and \( r \). Assume the partial derivative of \( V \) with respect to each of these is positive; i.e. a government adds to its expected vote both by employing more input units and by paying them more (per service unit), being restrained in using outlay on factors to buy votes by the adverse effect (on the expected vote) of the entailed tax increases.

Let \( x_1 \) and \( x_2 \) represent two types of labor, and \( x_3 \) some non-human input; let \( w_1 \) and \( w_2 \) represent the wage rates of \( x_1 \) and \( x_2 \) and \( r \) the remuneration rate of \( x_3 \). Assume that technology relates \( g_1 \) and \( g_2 \) to the inputs in accordance with (6). (6) consists of two production functions for the outputs

\[
\begin{align*}
g_1 &= s_1 (x_1, x_2, x_3) \\
g_2 &= s_2 (x_1, x_2, x_3)
\end{align*}
\]

of the public sector; all partial derivatives of \( g_1 \) and \( g_2 \) are positive and it is assumed that the two goods are independent in production. Given the levels of \( g_1 \) and \( g_2 \) and the prices of the respective inputs, the "economically efficient" quantities of \( x_1, x_2 \) and \( x_3 \) are determined.

But this does not determine the quantities that the public sector will use. The competitive process that drives private producers to minimize factor outlay per output unit need not operate in the public sector. A government that pays more for productive services than factor markets and technology require will need more tax revenue than otherwise, and will alienate tax-oriented votes unnecessarily. But it may gain more votes from "overpaid" factor suppliers than it loses from "overburdened" taxpayers so that its political advantage is served by what would seem to be productive inefficiency.

To pursue this further, let us define \( x_1^* = x_1^t - x_1^l \) (1 = 1, 2, 3) as the difference between the amount of \( x_1 \) required by (6) and the amount required for maximization of (2), \( x_1^t \). Normally \( x_1^* \) will be positive, but could be negative; e.g. if \( x_1 \) is Jewish labor, in Nazi Germany, \( x_1^* \) would be negative. \( w_1^* = w_1^t - w_1^l \) (1 = 1, 2) and \( r^* = r^t - r^l \) are, by analogy, the differences
between the market prices for the various factor inputs \((w_i^* \text{ and } r)\) and those that vote maximization impels the government to pay.

Further define

\[
S = \sum x_i^* w_i^* + r x_3^* + Z
\]

(7)

where \(S\) is the total amount of subsidies paid by the public sector to factor suppliers, and \(Z\) is that part of subsidies not paid to suppliers of productive services. In (2) \(V'_S > 0\), and the partial derivative of \(V\) with respect to every term in (7) is positive. That is, hiring more factor units than the technology requires will get votes; this holds a fortiori, if the units are paid more than the market requires. \(^{21}\) Neither \(w_i^*, x_i^*, r^*\) nor their unstarred analogues are directly observable. Only the primed variables may, in principle, be observed. However, as will be seen, some inferences about starred variables may be possible.

To facilitate discussion, assume that all wage and employment decisions in the public sector may be (conceptually) divided into two parts: (a) hiring decision determined by market prices and the production functions, (6) assumed the same in all sectors, and (b) decisions as to the subsidy, \(w_i^*\), to be paid to each factor unit hired and the subsidy to be paid by hiring more units than is required by the level of output, the technology, and factor prices, \(x_i^*\). We shall concentrate our attention on (b). \(^{22}\) In effect, this means that we shall ignore differences in wage rates and employment per output unit, as between the public and non-public sectors, except insofar as they are reflected in \(w_i^*\) and \(x_i^*\).

Let me venture the following (speculative) argument: the disposition of funds for hiring workers to perform a given task by any employer (private or public) will depend upon the nature of his (the employer's) objective or payoff function. If paid on a cost plus fixed fee basis, and with little or no risk of audit, few employers are likely to strain themselves to hold down costs. Conversely, payment by a fixed fee for a rigidly specified task, with
all cost minimization. In general, employer concern with cost minimization is likely to vary directly with the strength of the relation between his reward and his effectiveness in limiting cost. 23

In the public sector, it is only rarely, if ever, that anyone is given a task that is so defined that he has an incentive to minimize costs. Tasks are almost never defined so that performance can be judged in terms of cost-effectiveness. Indeed, spending less than the total of one's budget is likely to serve as a signal for a subsequent budget cut. Saving resources to go beyond one's assigned target to achieve unassigned objectives may be punished as exceeding one's authority.

Per se, there is nothing about the activities in which the public sector engages that compels it to avoid payment by results. It is rather that tasks—parts of activities—where payment by results is feasible tend to be contracted out to the private sector. One reason for this is that it is on these tasks that large profits can be made, and that contractors seek (pay for) opportunities to participate. Another reason is the fear of civil servants that high earnings by any government employee will attract hostile inquiries from the legislature or the press. Moreover, the possibility of getting assignments that yielded high earnings would create opportunities for favoritism and/or corruption that would be very destructive of Civil Service morale.

In other words, the tasks on which governments use their own employees tend to be those where the incentive for cost minimization is weak. This permits the individuals entrusted with the authority to set the budgetary and staffing constraints that condition hiring, as well as those who make the actual hiring decisions, to exercise considerable latitude in pursuing objectives other than minimization of pecuniary costs of the public body employing them. Let us consider some of these objectives.
It seems plausible to suppose that from time to time some groups of workers have been able to pressure government to pay them higher wage rates, and to use more man hours per unit of output, than would have been paid and used in the absence of political activity. Examples that come to mind are teachers, military officers, police and firemen, and social workers.

Here, as in virtually all cases where public employees press for better pay and conditions, they argue not only on equitable grounds, but also on the (alleged) public need for better quality output. That such arguments are self-serving does not imply that they are false. What usually is implied is that more money should be spent on the activity in question and, especially, that better trained, qualified and paid individuals be hired to engage in them. The political pressure generated is support of these goals may be quite substantial.

Votes cannot be obtained by offering public sector jobs at such wage rates and in such quantities that both $w_i^*$ and $x_i^*$ are zero. It is only by making either or both $w_i^*$ and $x_i^*$ positive that public employment can be made to yield votes. The (voter) cost of positive $w_i^*$ and $x_i^*$ is whatever votes are lost because of higher taxes and/or poorer quality of public output. Without the argument that the subject deserves, I shall assume that the political influence of employees is sufficiently strong vis-a-vis tax payers and consumers of public goods to make it politically rational to set $w_i^*$ and $x_i^*$ at positive values.

The rationale for this assumption by considering briefly the processes by which jobs are traded for votes and contributions. At the outset, I mention over-the-counter, cash for job, transactions that will probably always be with us, but which are not of great analytical significance. More interesting are the job sales that arise vis special considerations in the hiring process.

For example, on civil service examinations, additional points are often
awarded to candidates who are war veterans, or who are handicapped, or who are native sons, etc. Sometimes, certain jobs or licenses will be open only to citizens, or to persons who have resided in a given geographical area for a specified period of time. More recently, need to provide evidence of good faith compliance with state and federal Fair Employment legislation has led to giving preference in hiring to females and members of minority groups. The process of establishing each of these hiring advantages (justified or not), whether by legislation or by administrative ruling, provided an opportunity for vote seekers to trade (sell) a political favor for votes. Less obvious, but also of considerable importance, is the opportunity for individual sale of jobs by exploitation of loopholes in hiring and appointment regulations; e.g. by making jobs is such a way as to block all applicants but one, etc.

In effect, vote seeking politicians have an incentive to overpay public jobs and allocate—sell—them for votes. They will be likely to set $w^*$ higher, the greater the political contribution a prospective beneficiary can make. That is, $w^*$ will be set higher on jobs sought by articulate and politically active individuals, especially if they are part of an organization with capacity to mobilize political resources and get out the vote, than on jobs sought by individuals with the opposite characteristics. Nevertheless, any citizen can cast one vote, and has the capacity to join a crowd. The potential value of this political influence to the individual citizen depends on the government's political entrepreneurship.

Grossly to simplify matters, economies of scale in communication make it difficult for highly placed individuals whose decision determine $w_i$ and $x_i$ directly to transact—politically or otherwise—with low level job holders. Political transactions must, and do, proceed through a chain of intermediaries sometimes described as a political machine. In essence, citizens of negligible political influence are those who have not been able, for whatever reason,
to make arrangements with an intermediary for sale of his political potential.

Since political intermediation in the U.S. has often moved through ethnic and/or residential channels, the politically impoverished have tended to be those whose ethnic or residential neighborhoods are under-supplied with political brokers. These are the homeless of all groups, as well as blacks, American Indians, Spanish-Speaking Americans, etc. From one point of view, the War on Poverty of the latter 1960's was an attempt to create political intermediaries for these groups and, indirectly, to increase their "political wealth."

For a number of obvious reasons, the jobs for which the politically uninfluential can be made to qualify are at the bottom of the community job hierarchy in wages and perquisites. While \( w^* \) on the public sector jobs offered these workers may be positive, it is less essential that it should be so than on jobs open to workers of more schooling. This is because the politically impoverished workers generally have higher turnover and are unemployed more weeks per year (spend a larger fraction of their time in job search ) than the rest of the labor force. Therefore, providing them with additional job openings in the public sector at rates of pay equal to those in the private sector reduces job search cost which is worth more to these individuals than it would be to other workers. Consequently, substantial political benefit may be achieved on these jobs simply by paying wages (and offering conditions) equal to those paid in the private sector, but reducing job search cost by making \( x^* \) positive.

Rationality and Responsibility, Political Style

Opposition to increases in \( w^* \) and \( x^* \) comes from two sources; voter opposition to tax increases and client resistance to deterioration of public output. Equation (3) constrains the government to an annually balanced budget. This precludes consideration of an important facet of behavior that distinguishes
the public and private sectors. In the private sector, an entrepreneur normally expects to pay his debts and generally to bear the consequences of his behavior. Even if he anticipates selling his business, the effects of actions currently undertaken will be reflected in the sale price of his equity. This serves to hold him reasonably close to the mark of cost minimization.

In the public sector, it is often quite different. If defeated in an election, a politician or a party has virtually no liability for the fiscal mess they may leave behind. (As noted above, voters are assumed to have short memories.) The difference in utility between current electoral victory and current defeat is large enough to swamp fear of all but the largest fiscal disasters in the event of victory. 27/

Hence political rationality implies behaving as though the world ended on next election day; in buying votes by raising \( w_i^* \) and \( x_i^* \), and running deficits in lieu of tax increases to the fullest extent possible. Consequently, statutory limits on debt and deficits, or fear of deterioration of the credit of the governmental unit, often function as immediately effective restraints on current expenditure, rather than as warnings that prompt anticipatory slowdowns. This means that government expenditure in general, and its behavior with respect to \( \sum w_i^* x_i^* \) in particular, will exhibit more of a crisis-prone, stop-and-go character than will the expenditure of the private sector. 28/

Perhaps an even more fundamental difference between the public and private sectors is the frequent separation in the public sector of responsibility for raising funds and authority to spend them. This separation of spending and funding authority is masked by the excessive aggregation of (2) and (3). There is not one government, but many governmental bodies with joint and imprecisely allocated responsibilities both to spend and fund. Hence, political rationality often suggests undertaking expenditures for political
gain, leaving others to find the finance. Similarly, the complexity of
government accounting encourages the hiding of obligations incurred, trenching
on reserves and generally minimizing taxes or the threat thereof (i.e. bond
issues).

Yet a further consequence of the diffusion of authority within the
government is the propensity for making gestures and passing the buck.
(Modeling this would go well beyond anything attempted here, so I shall
merely comment ad hoc.) To gain votes, executives will sometimes recommend
and legislatures sometimes vote, for measures they really oppose in the hope
that the other branch of government will prevent final enactment. Sometimes
this buckpassing works in that the other branch accepts the onus of blocking
the measure, but sometimes both parties acquiesce in what neither desires.
It is rather obvious that this generates an upward bias in expenditure and a
downward bias in taxation. At bottom the difference between the behavior of
the private and the public sectors lies in the fact that contingent obliga-
tions of a business firm are rapidly capitalized by the equity market while
those of a public body may be hidden for substantial periods of time. This,
together with the very uncertain character of a politician's (or political
party's) "property rights" in the government, encourage a tropism for buying
votes with borrowed resources and camouflaging both the resulting debt and
the responsibility for incurring it.

If taken as a description of actual behavior, these remarks would be
highly misleading. They suggest a chronic tendency for expenditure to grow
relative to taxes, and especially for $\sum \omega^X_i$ to grow relative to $\sum \omega^X_i$.
While this tendency may well exist in some countries, it does not seem
strikingly applicable to the United States for any prolonged time period.
But once we abandon the assumption of a balanced budget, our model of vote
maximization gives no clue as to what it is that limits the size of government
deficits or of any of the expenditure objects which they finance. Briefly, let us indicate how this deficiency can be remedied.

(1) The assumption that governments always concentrate on the next election to the exclusion of the more distant future is not always true; it applies much more strongly to governments in grave danger of losing (for whatever reasons) than to those with a strong chance of winning and hence a rational interest in next year's situation. (2) At all levels of government below the federal, restraints on indebtedness effectively limit expenditure. At the federal level, budget deficits trigger increases in the money supply which generate inflation. While voters may accept a wide range of rates of inflation, given time to adjust, rapid increases in the rate have a strong adverse effect on the vote for incumbents.

Thus there are political limits (i.e., limits set by vote maximization) to the rate of increase, and possibly the level (share of GNP) of government expenditure. These limits, in turn, limit \( \mathbf{w}_k x_k^* \). As we have developed the argument, it is the levels of \( w_k^* \) and \( x_k^* \) that are discussed, but if required the argument could easily be adapted to consider their rates of change.

Vote Maximization and Worker Productivity

For government officials at high levels utility and vote maximization have very similar implications. For those at lower levels, especially if protected by Civil Service regulations, all sorts of personal objectives (e.g. helping friends, fellow ethnics, etc.) influence the hiring process. However, relative to the private sector there will be a tendency to hire people who have less ability or who extend less effort for given compensation.

That is, workers with preferred (non-productive) characteristics (in effect) furnish two jointly produced services; productive services as usually measured and the utility of personal contact to the person doing the hiring.
The demand price for the "contact utility" is either higher pay for given characteristics than would be offered in the private sector, and/or non-equalizing non-pecuniary advantages of public employment. These last are reflected in less intensive work activity in the public sector (more time spent on coffee breaks, more paid holidays, more paid absenteeism) possibly accompanied by a greater than average propensity to moonlight (see below).

The obverse side of this is, presumably, relatively poor performance on the job. For reasons already indicated, the public sector tends to specialize in tasks where output quality is difficult to measure. This does not mean that quality standards are non-existent; only that their enforcement is erratic. To a large extent such standards must be enforced by "voice" rather than by seeking alternative suppliers. Complaint about quality of service to the public will be effective to the extent that it is persistent, articulate and emanates from sources able to affect votes. Effective complaint is likely to increase the resources devoted to the service complained about as well as (or instead of ) increasing worker productivity, but in any event it will set some sort of floor under worker performance.

The use of complaint to improve the quality of public service involves an investment of time and trouble by the complainant. Such investment is likely to occur only where contact with the offending government agency is expected to continue. Therefore, cet. par., one would expect performance to be better--both because of greater resources per unit of output and more effort per worker--where the agency's clientele is dominated by repeaters rather than by "one shot" contacts; roughly, by producers rather than by consumers.

One would also expect that frequent transactors would develop special, gratuity reinforced, relationships with appropriate employees to improve the quality of the service rendered to them. Such relationships will increase
real earnings on the job, and also increase effort expended; to some extent
the increased effort on behalf of "gratuity" payers will be offset by reduced
effort on behalf of others. Obviously, some jobs will yield more gratuities
than others, which will (cet. par.) make them more coveted, and power to
assign a (potential) source of utility to those with power to assign, etc.

In order to fully understand wage and employment behavior in the
public sector, it is essential to explore in some detail (a) the set of
activities associated with each job; (b) the net advantages, to the job assigner
of assigning a particular job to a given individual, etc. Otherwise, differ-
ences in productivity and output quality, among different branches of
government, and on different jobs, will never be properly understood.
(Indeed, to a lesser extent, surreptitious use of incentive payments and related
phenomena, also exist in the private sector.) These differences are measure-
able, though not so easily as what can be inferred from a manning table or a
payroll sheet.

Summary of Demand

In essence, the theory of demand for labor in the public sector is as
follows: (1) as in the private sector, the demand for an input is derived
from the (final) demand for the output it helps to produce; but in the public
sector the demand for output is primarily an offer of votes, or of vote
producing contributions, which the government attempts to maximize subject to
a resource constraint requiring it to tax or sell its output to pay for the
inputs used to produce it.

(2) As a result of (1), the public sector produces the vote maximizing
quantity of each technologically possible output; in many cases this is zero.
In vote maximization, any votes lost on account of increasing the output of
a good, or from the tax increase its output entails, must be subtracted from
the votes gained from increasing its output.

(3) The output mix of the public sector consists of (i) the service of law enforcer of last resort; (ii) those services whose inputs can be obtained more cheaply by the government or to whose technology the government has better access; (iii) those services for which the vote demand for low (or zero) money prices, together with (exogenously determined) unit costs, mandate a subsidy, and where it is politically more profitable for the government to absorb the loss directly rather than pay the subsidy to a private producer. This consideration is especially important where the private producers are politically ineligible for a subsidy; (iv) where a strong vested interest in the public sector favors continuation of a given activity under public control and (v) where activities cannot readily be compensated on a payment by result basis.

(4) The public sector shares a common technology with the rest of the economy, but considerations of vote maximization lead it to use more labor per output unit, and to pay more per hour for whatever labor is used than the private sector.

(5) The forces that lead to the behavior described in (4) also lead to less output and to output of poorer quality in the public sector than would be tolerated in the absence of a desire to maximize votes.

The Supply of Labor to the Public Sector

Per force, the treatment of supply can be much briefer than the discussion of demand. In general, there is no reason to suppose that there is a non-pecuniary advantage (or disadvantage) to working in the public sector. Therefore, workers embodying equal amounts of human capital should (in equilibrium) obtain the same pecuniary and non-pecuniary rewards in the public sector as elsewhere.
The exceptions to this statement are: (1) the very high level jobs in government that bring great publicity and great opportunity for achievement to their holders. These jobs typically afford their incumbents less pecuniary, and more non-pecuniary, benefits than these individuals would earn in the private sector, though for relatively young holders these jobs are also a source of training and reputation. (2) The (alleged) bias of the public sector against payment by results should lead those individuals who wish to work harder, or who are more efficient than the average, to concentrate in the private sector. Cet. par., this would lead to greater effort and earnings, for otherwise similar workers, in the private sector.

Abstracting from these two exceptions, assume the supply price of equally (human) capital intensive man hours to be the same in the public sector as elsewhere. But, note the difference in demand prices: the political component of public sector labor demand makes \( w^* \) positive in the public sector. This should make the net advantage of public employment greater than private: This, in turn, implies either (1) those employed in the private sector must have (contrary to hypothesis) a relative non-pecuniary distaste for public employment or (2) that there is some as yet unspecified cost to obtaining a public sector job.

Consider this latter possibility: in the demand discussion it was argued that a public sector job is offered in exchange for a vote or a contribution. If this is true then public sector employment entails a special political cost which, at the margin, equalizes the net advantage of working in the public and private sectors; i.e. the marginal political cost of getting a public sector job is equal to \( w^* \). This implies that the holder of a public sector job will pay an equalizing differential either in the form of a cash contribution or of extra political activity.

This may strike the reader as a bit fine spun. Even in those govern-
ment jobs where a personal recommendation from a politically well-connected person is involved—and the need for such recommendations is far from universal—the political payoff by the recipient is often uncertain and very small. However, this does not imply that the total political payoff is negligible; political transactions are often many sided involving a number of intermediaries.

For example, a job may be arranged for A by a political contact of a friend of a relative whom A does not even know. But why does the friend of A's relative want to use his political influence to do this favor? And why does the relative want to help A? The hypothesis offered here is that A's relative trades a favor—or is expected to do so—for use of the friend's political influence. The favor may be a political contribution, but it need not be; it may be the opportunity of buying some articles at wholesale prices or use of guest privileges at a club. Favors such as these may be consumption benefits for the politico, or they may be exchanged for political contributions. The relation between A and his relative may similarly involve one or more exchanges of favors.

The point of this argument is that political favors, like jobs with positive \( w^* \), can be exchanged through intermediaries for non-political favors as well as directly for votes or contributions. The hypothesis is that in any series of transactions involving exchange of favors without explicit prices (including political favors) the favors exchanged are (roughly) of equivalent value. As a result the fact that \( w^* \) on a given job appreciably exceeds the job holder's (direct) political contribution does not imply that the job was sold for less than \( w^* \).

Now let us consider another possible objection to this argument; many jobs are filled under Civil Service regulations where political exchanges of the kind discussed here cannot occur legally, and where they often do not occur.
in fact. Civil Service regulations barring or impeding political transactions involving jobs, or other statutes to the same effect, are analogous to statutes outlawing certain types of commercial transactions. This does not mean that such transactions do not occur, but only that they are subject to a tax; the tax being uncertain (depending on the probabilities of apprehension and conviction) and varying with the size and character of the punishment (fine or imprisonment) if convicted of a violation.

The effects of this sort of political transactions tax are (1) to reduce the volume of such transactions; (2) to increase the minimum size of the expected gain necessary to induce such a transaction; (3) to discourage multi-sided transactions because increasing the number of parties increases the probability of detection; (4) to increase the importance of personal confidence in the discretion and fidelity of those with whom one transacts relative to other elements of compensation, etc. In short, the theory of the black-market can be appropriately applied to this species of transaction.

Where voter pressure enforces the maintenance of performance standards in the activities of the public sector, vote maximization may imply filling some (even many) jobs with workers fully specialized to doing their jobs, as defined in the job description, and affording their superiors no (direct) political benefits. However, the political sacrifice made by filling some jobs in this manner will be balanced, at the margin, by the greater political contribution (and hence the greater $w^*$) required of the holders of other jobs.

In short, a worker in the public sector supplies some mixture of political contribution and productivity (in the job description sense) in exchange for a wage rate that contains a positive $w^*$. The relative amounts of political and non-political input vary inversely from one worker to another, among workers of given characteristics, rates of compensation and effort the same. Because $w^*$ is non-negative, workers making no political contribution
(direct or indirect) will provide as good or better service than workers of similar characteristics in the private sector.

The bias of the public sector against payment by results (noted above) causes it to attract workers who (with given characteristics and rates of real remuneration) prefer relatively more non-pecuniary benefits per hour (leisure on the job) and less cash. The "leisure bias" works counter to the quality effect of a positive \( w \); i.e. where no political activity is expected the public sector will tend to attract workers with superior endowment to perform given jobs, but among workers of given endowment, those attracted to the public sector will tend to be those less willing (than the average) to extend themselves to earn money. The net effect on relative output per manpower in the public sector will vary with the strength of the above two tendencies.

Unionism

After one has analyzed the effects of demand and supply on relative wages and employment in the public sector, what explanatory categories are left? Adjustment mechanisms and unionism: we make no attempt explicitly to consider the first of these, and discuss the second only briefly. The brevity of the treatment of unionism reflect my dissatisfaction with the theory of how unionism affects wage rates in the public sector. Many of my remarks apply to unionism in the private sector as well, but they apply with special force to unions of government employees.

It is generally conceded that unionism has the effect of raising the hourly wage rate of workers in the relevant bargaining unit. But the mechanism by which this is accomplished is not clear; the usual account would rationalize this effect as the result of replacing a competitive labor market with a monopoly seller (union). Without necessarily denying the relevance of this
explanation of the wage advantage associated with unionism, let me suggest a more specific hypothesis: unions tend to raise the relative wages of workers who would otherwise receive less than the average for individuals of their socio-economic characteristics, especially the average of those in comparable jobs.

The pressure of unions on wages envisaged in this hypothesis might operate either through the "supply of unionism" or through the labor demand function, or both. Supply: low paid workers feel relatively deprived and are therefore easier to unionize. Demand: the tolerance of public opinion for strike action increases with the apparent "relative deprivation" of the strikers. (This is especially pertinent to the public sector.) Hence, it is easier for unions to improve conditions of the "relatively underpaid;" this would reinforce the supply of unionism effect. If this argument has any validity, we would expect unionism, ceter. par., to raise (say) the lower quartile of hourly earnings of (relevant) employees relative to the mean, in addition to any effect it might have on mean earnings.

Treating unionism as exogenous to the wage-employment determination model may be a source of specification error. It seems to me that one of the important channels through which unionism may operate on wage rates in the public sector is by creating a political climate favorable to higher wage rates. But their ability to do this will depend upon the political predisposition of the voters toward higher wage rates; this predisposition is likely to be correlated with their attitude toward unionism itself. If so, the measured effect of unionism on wage rates is likely to include not only the "true effect," but also the correlated effect of tolerance of unionism (and therefore lower costs of recruiting union members) with willingness to pay high wages to public employees. That is, it is possible that this latter relation could produce the illusion of a union effect on wage rates, even
though such an effect would not appear if political attitudes were held constant.

The practical significance of this argument is that the effect of unionism on public sector wage rates cannot be appraised validly except in the context of an explicit model of governmental decision making that determines, inter alia, wage rates and labor quantities hired. This is not to offer a counsel of perfection. Obviously, estimates of the effect of unionism on wage rates will improve along with estimates of the coefficients of other relevant variables. What is urged is greater care in the construction of the model of public sector decision making, and in the interaction of its variables with both unionism and wage rates.

Specifically, let me note the interesting finding of Ehrenberg [4] that, cet. par., annual salaries are higher, hourly wage rates lower, and annual hours greater for firefighters in cities run by city managers than in cities governed by mayor-council arrangements. Ehrenberg also found that cities run by elected commissioners pay lower hourly wages to their firefighters, and worked them more hours per year, cet. par., than "mayor-council cities." My quarrel is not with the substance of this argument, but with the absence of an acceptable rationale for choosing this characteristic of political structure as relevant to explaining inter-city differences in firefighter wages. Indeed, as Ehrenberg notes, the direction of the effect of the city-manager form of government was, in a number of cases, opposite to that hypothesized, and was often statistically insignificant.

It is also important carefully to specify the labor supply equation to the public sector. In particular, note that some public sector workers (notably teachers, firemen and policemen) are more prone to hold second jobs than are workers generally. Hence intercity differences in public sector wage rates may be related to earning opportunities in secondary employment through their effect on labor supply; i.e. the better the second job employment
opportunities in a city, the lower the supply price of labor to the public sector.

The Non-Profit Sector

My remarks on the non-profit sector must be brief almost, though I hope not quite, to the point of being cryptic. For the most part, non-profit enterprises are those which cannot sell their output at prices that will cover costs and which for one reason or another, cannot be consigned to the public sector. These activities, variously related to charity, education, the arts and religion, are supported by cash contributions from those who want these services provided to others in quantities such that their marginal costs will exceed their selling prices. I.e. in the non-profit sector subsidies are paid to the producers of "merit goods" by private parties rather than by the government.

These subsidies are paid in cash by patrons and also by factor suppliers, especially labor, who sometimes accept lower wages than they could earn elsewhere because they derive non-pecuniary benefits from producing those services. In the cases of charity and religion, the non-pecuniary satisfaction is provided by the feeling of "doing good;" in the case of education and the arts, the satisfaction is more likely to lie in the activity itself. In either case, the pecuniary wage rate for labor of any given quality will be lower in the non-profit than in the profit seeking sector or, except for those jobs that attract "dollar-a-year" men (see above), in the public sector.

The non-pecuniary attractions of the private non-profit sector are closely related to the quality of its output. In virtually all of the industries in this sector, lower priced and/or user preferred output varieties (qualities) are in competition with varieties that producers prefer and which to some extent they subsidize by accepting lower wages when engaged in their
production. In the arts, producer preference is rationalized by claims of aesthetic superiority over vulgar uninformed consumer taste. In education and in charity, producer preference is rationalized by claims of superior benefit to recipients afforded by professionally approved varieties of non-profit hospital care, by aid to indigents when such aid dispensed by professionally trained social workers and the like.  

There is an obvious and continuing tension between the public and non-profit sectors resulting from the desire of (many) workers in the non-profit sector to reduce their implicit subsidy to consumers. That is, the producers want the government to assume a larger share of the cost of financing producer approved varieties of output. In effect this would increase the demand for and raise the wages of those who wish to engage in the production of producer approved output varieties. This is an important cause of political demand for government funds to extend the benefits of high-quality health care, education, art, etc., to larger segments of the population than currently receive them.

The need for a government subsidy to extend the reach of the non-profit sector reflects labor supply conditions to this portion of the economy. At any given level (and distribution) of community wealth, there is only a limited fraction of the labor force willing to work at pecuniary wages below those received by comparable workers elsewhere. To increase this fraction it is necessary to raise their relative wage rates; as sale of the product will not cover cost (by hypothesis), a subsidy (increasing with the relative fraction it is desired to attract) is needed. Absent wage discrimination, this will shift the demand function upward and raise the wages of all who are engaged.

It seems plausible to suppose that participation in non-profit activities is a normal good and that the relative supply of labor to this sector
should increase with per capita wealth. Moreover, the association of education with per capita wealth almost certainly strengthens this relation. Cet. par., this should lead to a secularly increasing relative quantity supplied at given relative wages, and to a secular decline in the equilibrium relative wage. However, increased education generates political pressure to increase the relative demand for these activities in order to maintain or even increase the relative wage rates of those engaged in them. 40 The net effect of these two forces is difficult to predict.

Looked at in a different way, the "traditional" labor supply for the private non-profit sector came from three sources: (1) those rich enough to make the required pecuniary sacrifice; (2) those for whom this sector provided the best pecuniary option available because of their low alternative earning power, and (3) those dedicated enough to do the work regardless of wealth. Economic progress has reduced the fraction of the population in (2) and has not obviously increased the fraction in (3).

The spread of education has affected the fraction of the population in (1) in two ways: (a) it has greatly increased the average ratio of human to non-human capital among the well-educated and (b) it has increased the fraction of the population that has the tastes of the rich. The combined effect is to create a sizeable and growing fraction of the population who wish to indulge a taste for non-profit activity, but cannot do so without falling below the consumption level of their educational peers; hence there is a rising demand for increased government support of their preferred activities.
1. Throughout the paper I shall abstract from wage differentials associated with length of work week. For simplicity, and at the price of some inaccuracy, I shall assume that the price of an hour of labor given quality is the same whatever the number of weekly hours hired.

2. That is, the optimal input-output combinations chosen under any set of input and output prices are independent of whatever resource allocations are made within or between any other sector or sectors of the economy.

3. As written, (1) implies that a government has no tradeoff between votes and pecuniary payoffs for its members. At least in some circumstances this is descriptively inaccurate. Its justification is the assumption that there is a fairly steady rate of exchange between dollars and votes. That is, a political party can convert (sure) dollars into (probabilistic) votes by various combinations of advertising and personal canvassing (both purchaseable) and can trade votes of its "dedicated supporters" for dollars of contributions from others by means of joining coalitions, endorsements of other candidates and the like. As a rule actions that increase a government's (expected) $V$ will also increase its $C$, and vice-versa. An exception should be made for crude sellouts that enrich government members, but disgust voters. This last case aside, what improves the government's vote prospects is likely to increase its contributed resources which, in various ways, can be converted into consumption for its members. Hence vote maximization is a reasonable first approximation to a government's behavior function.

4. Clearly, the survival values of governments with greater and less ideological rigidity (lower and higher values of $\frac{d^2V}{da^2}$ is an interesting and important matter, but one that cannot be discussed here.


6. Notoriously, voters have short memories. Otherwise, they would remember the failures of the "outs" during their last period of incumbency. Also they would heavily discount actions taken immediately prior to an election. Our argument, like any that explains political behavior as inspired by a desire to attract votes, must posit (1) some positive association between current performance and voter expectation of future behavior and (2) rather weak voter memories. However, the detailed structure of such models cannot be considered here.

7. As indicated in n. 6, this type of rationale requires the assumption that voters to some extent extrapolate future from present performance.

8. It is assumed that the probability of any voter casting his ballot in favor of the government (in the next election) is a function of a number of variables including the price of $i$th good, $p_i$. The probability of individual $j$ voting for the government is the non-increasing function of $p_j$ given the values of the other arguments of his voting function. In principle, from these voting functions, one can calculate the expected gain in votes from a small decrease in $p_i$. 
9. This simplifying assumption enables us to avoid some complex questions on the distribution of the tax burden.

10. Obviously, voters may be both buyers of good \( L \) and taxpayers. We assume that most of them respond as voters more to the stimulus of one variable or the other.

Symbolically, the effect on \( V \) of reducing \( p_1 \) is given by differentiating (2) wrt \( p_1 \) subject to \( dX = 0 \) in (3), with all variables except \( p_1 \), \( g_1 \) and \( T \) constant. The demand function, \( g_1 = g_1 (p_1, p_2) \), is a side relation.

\[
\frac{dV}{dp_1} = \frac{\partial V}{\partial p_1} + \frac{\partial V}{\partial g_1} \frac{dg_1}{dp_1} + \frac{\partial V}{\partial T} \frac{dT}{dp_1}
\]

From (3) \( \frac{dT}{dp_1} = -\left[ \frac{dp_1}{dp_1} + g_1 \right] \) and, because of the side relation, \( \frac{dg_1}{dp_1} = \frac{\partial g_1}{\partial p_1} \)

so that \( \frac{dV}{dp_1} = \frac{\partial V}{\partial p_1} + \left[ \frac{\partial V}{\partial g_1} - \frac{\partial V}{\partial T} \frac{dp_1}{dp_1} - g_1 \frac{\partial V}{\partial g_1} \right] \)

11. A negative contribution is one made to a political opponent.

12. (4a) is a reduced form derived from constrained maximization of a contributor's utility function.

13. Among workers at or near their peak earning years, recruits for these jobs frequently will accept actual per century wage reductions, not usually compensated by subsequent higher earnings; i.e. these jobs must furnish consumption utility to their holders as part of their compensation. Among young workers, jobs of this kind are often a way of accumulating human capital in the form of a reputation which later pays off in higher earnings.

14. This statement refers to annual earnings. On an hourly basis, it holds a fortiori as the holders of these jobs normally work as long or longer hours than they would in the private sector.

15. This implies that politicians are not so averse to high salaries for employees of government contractors as they are to high salaries for government employees. If there is this kind of payroll illusion, it acts as a kind of negative transaction cost, encouraging contracting out.

16. E. G. West, "

17. "Too rudimentary" means that the marginal policing cost was unacceptably high. The argument of this paragraph is offered as a speculative reconstruction of "virtual history"—what would have happened if history had been different—and not as an historical account.

18. Such competitive challenge to public education as has arisen has come mainly from not-for-profit organizations; co-operative and church
affiliated schools.

19. In effect, the government obtains working capital (from the taxpayers) on more favorable terms than private entrepreneurs can, even from private or public sources. This is a testable conjecture; what is suggested is that legislative bodies will accept bigger operating losses from publicly operated enterprises than they will subsidize for privately operated firms.

20. This statement might not hold in the long run if workers are risk averse and treat the lesser risk in the public sector as a net advantage thereby increasing relative supply to the private sector with given probability distributions of wages in both sectors.

21. A word is in order concerning the assumption that $V_{x_{4}} > 0$. It might well be asked why anyone should vote for a government simply because it provided jobs at the market wage rate when said market was in equilibrium. The answer is that, for reasons of simplicity, we have not introduced any notion of job search cost into our equations. However, it is reasonable to assume that offering additional jobs at the going wage rate is perceived (and reacted to) as reducing job search cost, thereby increasing $V$.

22. These remarks assume that the market price is independent of the level of government demand; i.e., the government is not a monopsonist. This assumption does not greatly restrict the applicability of the argument, but it is abandoned below, p.

23. Such a relation need not involve direct incentive payments. For example: if it is known that promotion within an organization is closely related to effectiveness in limiting costs, efforts in this direction may be quite as strong as though "cost savings" were shared with the employed manager responsible.

24. The role of unions in affecting demand via political pressure is mentioned below, pp.

25. The effect of the employee demand would be to make $w_{4}$ and $x_{4}$ positive, and to alter (improve?) the quality of the output; i.e., to shift $g_{4}$ and $g_{2}$ to $g_{4}'$ and $g_{2}'$. (While recognizing this change in output quality, we shall abstract from it.)

26. The only exception to this is where he goes bankrupt. And even in this case, concern for his equity normally exercises powerful restraint on any tendency to pile up dept.

27. One reason for the emphasis on victory in the next election is the danger that a defeated leader or clique will be ousted from party control.

28. Highly speculative enterprises striving to expand faster than the growth of their equity capital comfortably permits will behave much as the governmental units we are describing. The argument of the text implies that such enterprises do not normally characterize the private sector, though they become quite prominent during speculative booms. But however expansionary private firms may become, they are not likely to be tempted to overpay labor to the same degree as the public sector.
29. "Voice" here refers to complaint by dissatisfied recipients of the government service. The concept of "voice" was introduced by Hirschman [2].

30. Thus payment by results enters the public sector through an (illegal) backdoor. The comparative roles of bribery and complaint in maintaining service quality in different branches of the public sector is obviously a matter of interest. In principle, a user would optimize by an appropriate combination of complaint and bribery, varying with costs and circumstances.

31. What must be done is (the analogue of) time and motion studies of the work behavior appropriately selected individuals and (typical holders of) particular jobs; in particular it is necessary to study the time and effort spent in dealing with the various clients of the governmental entity employing the job holder. Also, the difficulty of filling particular jobs should be analyzed; jobs where non-pecuniary (or hidden pecuniary) benefits are important should be easier to fill than others. Cet. par., this should be reflected in lower average intervals in which such jobs are vacant; in lower quite rates; in above average qualifications of incumbents on these jobs relative to others having the same organizational rank, etc.

32. The idea that many (and possibly all) favors done by individuals for one another may be treated as an exchange of services of roughly equal market value goes far beyond anything explicitly argued here. But it is implicit in the argument of the previous paragraph.

33. For examples of this literature see Bronfenbrenner [5], Gonesay [10], Gould and Henry [11]. I am not suggesting that all or most situations in which job assignment contains an element of political transaction are illegal. There are numerous loopholes in the regulations governing the filling of jobs in the public sector, so that political considerations may enter without any suggestion of illegal behavior.

34. This statement assumes effort constant. In fact, political workers who make no political contribution may merely work harder at their "jobs" than others, but not be otherwise superior.

35. However, employers who use relatively deprived workers may be unusually resistant to unionization. Obviously this force must be considered simultaneously with that mentioned in the text.

36. For example, see Ashenfelter [4], pp.

37. Ehrenberg argues that if (as is often supposed) city managers are more efficient than elected officials, this should be reflected in superior bargaining tactics resulting lower wage rates. But this is plausible only if worker quality is held constant. If, as is quite likely, managers have a comparative advantage in utilizing highly trained workers, they may opt for higher wage rates to get lower unit costs through greater productivity. Furthermore, it is not clear how the greater capacity of city-managers (relative to elected officials) interacts with the incidence of unionism; it might be that they can make better deals with a union, but these might take the form of buying greater productivity gains for given increases in hourly labor costs than elected officials can obtain, resulting in a (rational) decision by managers to accept unions pay higher wages than elected officials.
38. See V. C. Perrella, "Moonlighters: Their Motivations and Characteristics," Monthly Labor Review, August 1970, pp. 57-63, especially Table 6, p. 62. "Persons who were protective service workers (policemen, security guards and firemen, for example) and farmers on their primary jobs had the highest multiple job holding rates." (op. cit., p. 61)

39. These remarks are not intended pejoratively; the fact that producer-sponsored propaganda is self-serving does not imply that the claims made are false—or true—or that recipients do not (also) benefit, more or less as alleged.

40. Unionization is part of this process, but for lack of space I shall do more than mention it.