CONTRACTING-OUT: A LITERATURE REVIEW

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When governments award contracts to private firms (or to other governments) for the production of goods or services which the contracting governments would otherwise produce themselves, the practice is described as contracting-out. Thus, contracting-out is a special type of privatization, a policy strongly advocated by the governments of the United States and the United Kingdom, among others.

I. Intellectual Underpinning

A review of the literature points to two major strands of thought that provide an intellectual underpinning for contracting-out. They are shirking-monitoring theory and public choice theory. The two will be taken up in turn.

A. Shirking-Monitoring Theory

In simple terms, this theory asserts that rewards to public employees are only loosely tied to performance, the employees tend to work below capacity. Such behavior has been referred to as shirking. While this behavior is not necessarily inefficient and socially undesirable, there is evidence that today public employees tend to trade off work and leisure in such a manner that the level of shirking is higher than the level which would be efficient.

In 1966 Harvey Leibenstein pointed to a number of cases in which output increased with no observable change in inputs. He asserted that the change came about because inputs were more efficiently used and he called this phenomenon X-efficiency.[1] He went on to argue that gains from eliminating X-

inefficiency are likely to exceed those from eliminating allocative inefficiency. Insofar as the labor input is concerned, X-inefficiency can be reduced by causing workers to exert themselves to a fuller extent, i.e., to "shirk" less. Armen Alchian and Harold Demsetz have developed a shirking-monitoring theory, whose focus is that workers trade off income for leisure (shirking) to achieve an efficient equilibrium. They point out that some shirking is desirable, and the individual worker will choose an amount of shirking in line with incentives and constraints.[2] Hirsch advanced the theory developed by Alchian and Demsetz by considering the cases of shirking behavior under additive team productivity and job security on the one hand, and under non-additive team productivity on the other.[3] He then developed implications of this theory for the public sector. A followup paper by Hirsch and Rufolo applied the shirking-monitoring theory to municipal labor markets.[4]

The shirking-monitoring theory can be summarized as follows -- Let us assume that a work day (k) can be completely divided between working hours (h) and shirking hours (s) and the worker is paid depending on the number of hours he works, i.e., his weekly money income (I) is the wage rate per hour worked (w) times the number of hours worked per week. In this setting, extending a one-hour task to occupy two hours is considered to be equivalent to shirking one hour.

The single worker faces a budget constraint with slope of -w in Figure 1. His decision to shirk at a specified level reflects his trading off of leisure and income. Let us turn to a team of n workers and assume for expositional simplicity that the product of the team is just the sum of the products of the members working separately, although each one is more productive than he would be working alone, and that all workers are identical. We assume also that it is not possible to measure each individual worker's productivity. Each worker
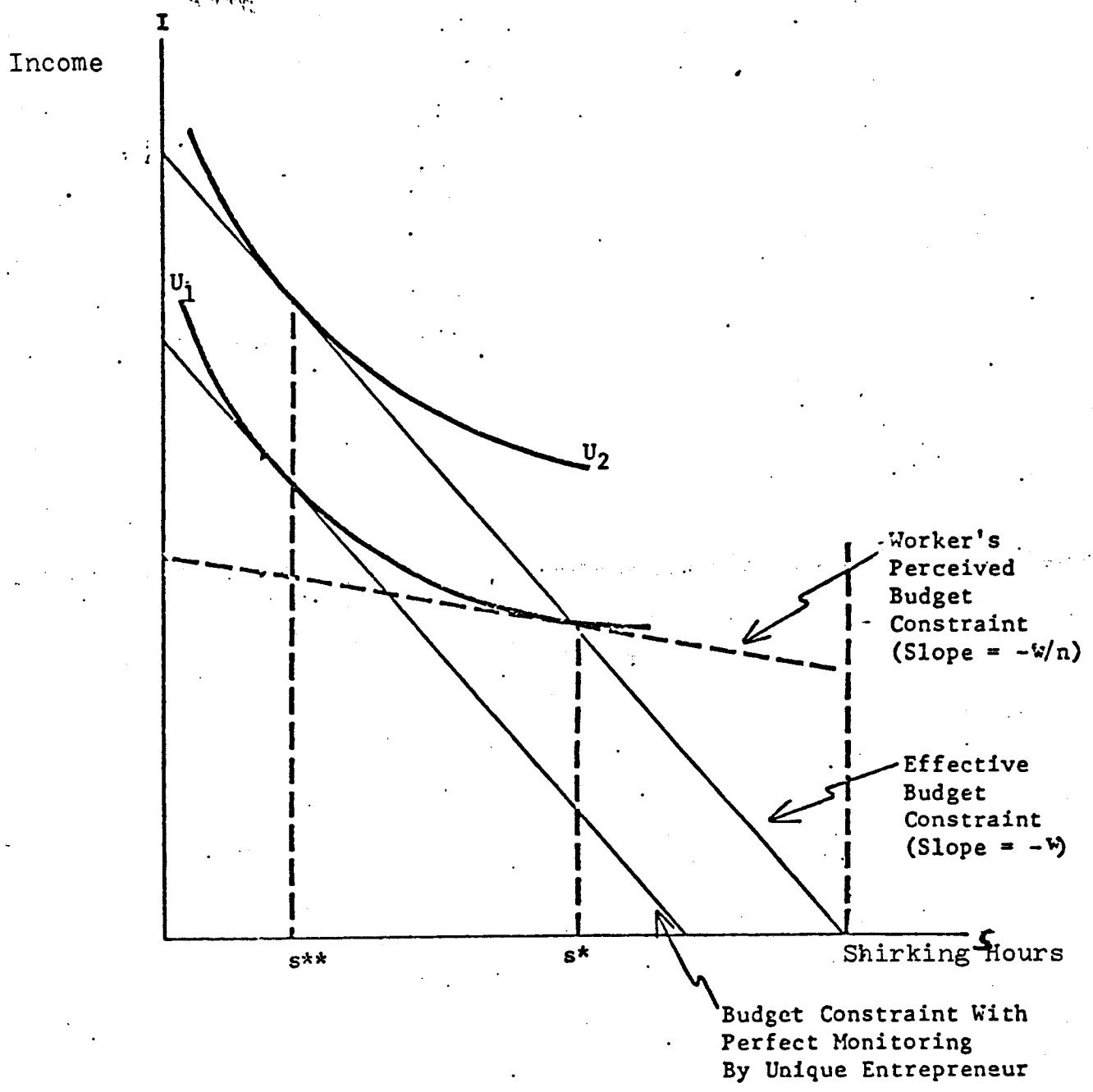
Figure 1

Figure 1

receives 1/n of the wages paid to the team. However, the wages paid are assumed to reflect the total number of hours worked by all team members. Each team member bears only a portion of the cost of his own shirking. An individual's wage has two parts -- an essentially fixed component equal to his share of the pay for work done by others plus a variable component equal to his share of the pay for the hours he works.

The following example can illustrate some of the issues: Assume 10 workers form a cooperative with the objective of producing 200 widgets per day. These widgets sell for $1 each, and the proceeds from the sales are distributed among the workers. Thus, if all workers do what is expected of them, each will take home $20 per day.

Now, suppose one worker values the time spent producing widgets at $.90/ widget. If he produces, say, only 18 widgets, he will enjoy $1.80 of leisure he would not have otherwise taken. However, the cooperative's output is only 198 widgets, so that each worker receives only $19.80 in the absence of monitoring. Thus, the shirker benefits fully from the $1.80 of leisure he took, but only bears $.20 of the cost, the rest having been distributed among the other workers. The purpose of monitoring may be seen as incurring costs in order to either avoid shirking or else to make the shirker bear a fuller share of the costs he incurs.

Figure 1 shows both the perceived budget constraint for worker 1 and the effective (group) budget constraint. Worker 1 will maximize his utility by choosing to shirk s^* hours, where his perceived budget constraint line is tangent to his highest indifference curve, i.e., U_1. If all team members could agree costlessly to shirk only a certain amount and agree to distribute team income according to total hours worked, and if enforcement were costless, they would pick an equilibrium where indifference curves were tangent to the

effective budget constraint line, increasing each person's utility. All
workers would then shirk less and receive more income, with worker 1 choosing
s** rather than s*, and each would be on a higher indifference curve, i.e.,
U_2. The larger the team size, n, the less steep is the individual's
perceived budget constraint line, moving points of tangency with the given
indifference curve to the right, and increasing the equilibrium number of
hours shirked.

Monitoring workers includes measurement of productivity and apportionment
of rewards of a contract. Under perfect monitoring, marginal factor rewards
are equal to the factor's marginal productivity, and the slope of the team
member's perceived budget constraint becomes identical with that of his
effective budget constraint line. If each person were then paid the value of
his marginal product per hour times hours worked, an equilibrium with s**
hours would result (Fig. 1).

We have assumed so far that, while the output of a team can be monitored
perfectly, that of individual members cannot be monitored at all and, thus,
that the average team productivity is attributed to each team member. A $1.00
change in productivity of an individual is associated with a $(1/n) change
in his reward. Thus, the slope of his perceived budget constraint line will
be 1/n times as steep as the effective constraint line, so that he will
choose an equilibrium with s* hours shirked (Fig. 1). Changes in the degree
of effectiveness of the monitoring process can be reflected diagrammatically
by changes in the slope of the worker's perceived budget constraint line. The
more effective the monitoring of the individual, the more closely will rewards
be associated with an individual's actual marginal productivity, i.e., the
closer will be the slopes of the perceived and effective budget constraint
lines. Monitoring of workers, thus, makes a large team appear to be a smaller

team in terms of incentives to the individual worker. More monitoring of output leads to an increase in the slope of the perceived budget constraint line, making the worker behave as if he were in a smaller team than is actually the case.

The developers of the shirking-monitoring framework pointed out that some shirking, i.e., having some leisure or slack during the working day, is beyond doubt efficient and socially desirable. This in turn will be anticipated in the wage actually paid. The crucial questions are: what is the most appropriate shirking level, and what are the incentives and constraints which should be imposed so as to induce individual workers to move toward socially desirable levels?

Answers to the second question focus on a number of strategies that can improve the performance of public employees. Perhaps the most promising one is the creation of competition through contracting-out.

B. **Public Choice Theory**

Public choice theory relies on differences in incentive structure to explain differences in behavior between public bureaucrats and private workers. For example, Niskanen[5] analyzed the behavior of bureaucrats based on the idea that, since the bureaucrats do not own any of the residual of the production process they are responsible for, they will try to maximize the amount of the budget of their agency that they can appropriate to increase their own utility. He concluded that this would lead to one of two outcomes: either the amount the government desires will be produced but at a cost higher than the minimum possible in a competitive market, or twice as much as the government desires will be produced but at the minimum cost. Niskanen also analyzes the behavior of legislators who, he postulates, seek to maximize votes and do not own the residual of any public production process for which

they are responsible. He finds that while they will use some control devices to try and reduce the inefficiency of bureaucratic production they will actively abeit the bureaucrats in overproducing.

Niskanen is perhaps the best known of those working in public choice theory. There are others such as Wagner and Webber[6] who derived from Niskanen's formulation the implication that local governments supplying more than one service would act like monopolists practicing full-line forcing in order to maximize their budgets. They tested this hypothesis by estimating a linear equation with county expenditures as the dependent variable for count- ies that had an independent school district and counties that had dependent schools, and found that the type of county government did influence spending as they had predicted; counties producing services through one government spent more than counties producing the same services through different governments. Nellor[7] argued that the monopoly power of a public bureau will grow as the population of a jurisdiction increases because each voter will have less influence on the government and therefore less incentive to try to influence it, leaving the bureau a freer hand; also as jurisdiction size increases, moving costs increase for citizens, so the government again has more monopoly power. He tested his hypotheses with a log-linear model, ordinary least squares regression and data on expenditures from several cities, obtaining results that were consistent with his predictions.

Public choice theory has also had its critics. Breton and Wintrobe[8] offered empirical evidence that public bureaucrats do not behave as predicted, for example, by cutting budgets to further their own careers. They also objected to the assumption that government bureaus could easily manipulate their overseers, elected officials, to get control of their own budgets. McGuire[9] showed that the assumption that bureaus have an informational

advantage over their sponsoring elected officials enabling them to maximize their budgets, implies that the demand for government output will always appear to be elastic. But several studies cited by McGuire estimate demand for public services to be inelastic; he concludes that public choice theory is inconsistent with the facts.

A comprehensive review of articles testing property rights theory and public choice theory was undertaken by Borcherding et al.[10] They found that forty-two out of fifty papers tended to support the validity of property rights theory. Empirical tests of public choice theory were not numerous, they wrote, but did tend to support that theory, though Borcherding et al. indicated the support was not as strong as for property rights theory. However, these authors were not ready to suspend public production and contract out all the services of government. Instead, they argued that since economists believe structures and behavior exist for rational reasons there could very well be a good reason for all the apparent inefficiency. They suggested that deliberate wealth transfers might explain the higher cost of government output, or perhaps the electorate does not want certain activities carried out by profit making entities; in any case, more research was considered necessary.

A number of efforts have been undertaken to understand the interests, objectives, and behavior of public employees. For example Courant, et al. found, in a survey of Michigan voters, that private sector employees wanted less state and local public spending than did public sector workers, although the difference was small.[11] Eckert has examined the behavior of government regulatory bodies.[12] His special interest has been the incentives faced by regulatory commissions and bureaucratic regulators. He found that commissioners have fixed tenures and fixed salaries and therefore are not

rewarded or punished for increasing or decreasing regulation of the industry under their jurisdiction, so Eckert hypothesized such commissions have an incentive to reduce the time and effort spent on regulatory duties. Bureaucrats, on the other hand, are rewarded for increasing regulation because, as staff expands to handle the increased work, the salaries of the bureaucrats rise. Eckert also argued that, even if commissioners' salaries rose like bureaucrats', they would still be less inclined to increase regulation because of shorter tenures in office compared to bureaucrats. Eckert drew a number of implications from his basic hypothesis and tested them with data on taxicab regulation in various U.S. cities, finding that his basic hypothesis was confirmed. He also cited anecdotal evidence that is consistent with his argument. Hilton[13] adopted Eckert's approach to explain the behavior of Federal regulatory boards, notably why the board members will adopt economically inefficient policies cartelizing the regulated industry or protecting it from market mandated decline. Logic similar to Eckert's was also used in a political science article by Kristensen[14] (to be cited again below for his article on Danish fire protection) in which he reasoned that, since the benefits of government programs accrue to the bureaucrats who run the programs and their client groups, and the costs are paid by all taxpayers, there is an inherent bias in favor of government growth. Reder[15] developed a theory of government behavior by assuming that the utility of government employers was principally dependent on vote maximization, and by using a vote production function to draw implications of his theory. He reasoned that the wages of public employees would include a payment for vote production, though this payment would not necessarily show up as a greater payment than private wages (required job effort might be less). Reder presents data to show that in 1959 and 1969 public sector employees were paid more than private sector workers

and the differential increased over that time period. An article by Lentz[16] adds support to Reder with a study of wage determinants of county employees in New York state. He used two-stage least squares to estimate his model and found evidence for his hypothesis that county employees were paid more than private workers. Lentz also contended that unionization of public workers serves not so much to increase pay as to prevent the imposition of disloyalty penalties (i.e., firing). (It is interesting to note that these researchers found government wages higher than private wages, but at the same time others have not found strong effects of unionism on public wages. These results are not mutually exclusive, however, because public wages could have been higher before the unionization of public employees.)

C. The Roles and Missions Framework of Randy Ross

Ross offers a framework for analyzing the choice of roles and missions for government and the private sector.[17] He does so by breaking down any program into four basic functions: (1) funding, (2) production, (3) utilization, (4) control. The task of deciding on roles and missions is the same as deciding which actors from the public and private sectors will fill each of the four core functions; the resulting arrangement is called an institutional structure. Examples of institutional structures include government service, intergovernmental agreement and grants.

Performance criteria for measuring how effectively the core functions are carried out are: (1) efficiency, (2) equity or distributional fairness, (3) participation by those affected by the program, (4) accountability of people involved in the program.

Ross points to three kinds of efficiency. First, cost efficiency which means that the desired output is produced at minimum cost; however, economic theory doesn't indicate which institutional arrangement is least costly.

Second, allocative efficiency which means that, given the output produced, welfare of the consuming group is at a maximum; again, economic theory does not show how this can be achieved. Third, since circumstances change over time, the institutional arrangement should maintain cost and allocative efficiency in different situations and this is termed dynamic efficiency.

Equity is a major consideration. Because government programs change income distribution there is great public interest in this issue. Participation in the program is an important function, since this is an excellent way of insuring that the output is what the users want. Finally, all actors in the program must be held accountable so that the program is as effective as possible.

Note that the four performance criteria have certain interesting attributes. First, other things equal, more of each is better. Second, the criteria are not independent and tradeoffs between some of them may be necessary in a particular program. Third, the criteria are not measured in the same units and are therefore not directly comparable.

Evaluating any program is now possible by considering how well any given institutional arrangement performs the four core functions as measured by the four evaluation criteria. For the purpose at hand, Ross offers a 4x4 matrix. Filling in this matrix now provides a systematic way to determine if a particular institutional arrangement is better than its alternatives. It also provides a way of organizing theoretical and empirical studies concerning these institutions.

Ross seeks to apply his framework first to alternative institutional arrangements for providing electric power. Since there are three different types of arrangements (private, regulated private, and public), there is ample opportunity to test the framework. Also, the economics literature provides

many articles on electricity generation which contain information necssary for determining how well each institutional arrangement satisfies the evaluation criteria. Drawing largely on de Alessi and Peltzman, eleven hypotheses are drawn from the literature and placed in the matrix, then the evidence concerning each hypothesis is reviewed to determine how well each type of arrangement satisfies the evaluation criteria for each core function.

Once the matrix had been filled in, it turned out that the hypotheses did not pertain to all sixteen of the function/criteria evaluation points; evaluation was made using available research.

	PROGRAM FUNCTIONS			
CRITERIA	FUNDING	PRODUCTION	UTILIZATION	CONTROL
EFFICIENCY		X		X
EQUITY	X			
PARTICIPATION				
ACCOUNTABILITY		X		X

Though de Alessi contends that theory and evidence suggest private firms are more efficient than the other types in production, other researchers, notably Neuberg, have obtained data that suggests municipal firms are more production efficient than private firms. Efficiency in control, the next focal point, requires an examination of pricing practices among the different institutions. Statistical tests show that private firms charge more for electricity than regulated private firms, but the differences are small. Also, comparisons show that political firms charge less than regulated private firms.

Equity in funding is a normative question, but published evidence can be useful in making a determination. Unfortunately the published results are not strong, but suggest that regulated private firms charge lower rates to large, commercial users than to small, residential users. Accountability in both

production and control cannot be decided because the evidence is inconclusive.

In summary, Ross found that public firms are the most efficient in production; given the evidence, a determination of efficiency in control is not possible; public firms are the most equitable in funding; and no decision is possible concerning accountability in production and control.

Ross next applies his analytical framework to five major income-tested welfare programs: general assistance, food stamps, supplemental security income, aid to families with dependent children and Medicaid. The federal government is a major funder of four of these five programs and sets eligibility standards for all of them; however, state and local governments administer four of the programs. In evaluating these programs three questions are asked: (1) which levels of government are most effective in financing transfer programs? (2) which levels of government perform best in establishing spending standards, eligibility and benefit levels (a control function)? and (3) which levels of government perform best in administering programs (the production function)?

Since funding and utilization are sharply separated in welfare programs, two questions arise about utilization: (1) who should receive welfare? and (2) how much welfare should eligibles receive? In regard to the first question, since poverty is a national concern the federal government should decide it, and for the same reason, it should decide the second question. Funding is most equitably provided by the level of government that sets spending standards, the federal government in this case, but efficiency would require that funding be provided by state and local governments since there will almost certainly be variations in the types and amounts of welfare that local voters want to provide. The resolution of this conflict must involve tradeoffs between equity and efficiency.

Administration, or control, of welfare programs should be assigned to the
level of government which is most efficient, and there is some evidence that
state agencies make fewer errors than local government agencies. But local
governments can assess the needs of recipients better, and are therefore more
efficient in allocation of payments. Maintaining accountability by administ-
rators is also important, and since the federal government sets standards for
the programs, it would be the obvious choice to administer them, as adminis-
tration by another level of government might lead to pursuit of unauthorized
objectives. However, holding the federal government accountable would require
the development of a large federal bureaucracy to monitor program utilizers,
an undesirable invasion of citizen privacy in the view of many.

There is less published research in this area than in the provision of
electric power; however this largely theoretical analysis can be summarized in
the following matrix:

SERVICE FUNCTIONS

ADMINISTRATION (PRODUCTION)

CRITERIA	CONTROL	FUNDING	CASH TRANSFERS	DIRECT SERVICES
EFFICIENCY				
ALLOCATIVE	F/S	F/S	*	L/P
COST	*	F/S	S/L	S/L
EQUITY	F/S	F/S	*	*
ACCOUNTABILITY	F/S	F/S	F/S	F/S
PARTICIPATION	L/S	L/S	L/S	L/S

F = federal government; S = state government; L = local government;

P = private sector; * = not applicable or "probably insignificant".

II. United States Studies of Municipal Services

In the following pages we will review the literature on contracting-out

by municipal governmments in the United States for such services as refuse

collection, fire protection, police protection, assessor's office, water,

electric power, hospital services, and the processing of medical insurance.

1. Refuse Collection

Hirsch estimated econometrically a cost function for refuse collection in

municipalities in the St. Louis metropolitan area and found that using private

contractors did not significantly reduce cost. In a study of the same area,

sometime later, Collins and Downes did find that individually billing customers

increased cost, but they could find no significant differences in cost between

municipal and private contract. systems of service. Savas[18,19,20,21,22,23] has

written extensively on the subject, using both case studies and nationwide

data. To summarize briefly his many articles, he finds that the lowest cost

arrangement for refuse collection is a contract between a municipality and a

private hauler; municipal collection is the next, more costly arrangement and

unrestricted competition among many private haulers is about as expensive as,

or more expensive than, municipal collection. This last finding he attributes

to billing expenses and to not having all customers geographically contiguous

as do the contract and municipal collectors.

Edwards and Stevens[24] reached the same conclusion as Savas (contract

collection is the cheapest means of providing service) by using ordinary least

squares to estimate a market equilibrium equation with price as the dependent

variable. And they, like Savas, preferred to concentrate on empirical results

and not offer a theoretical rationale for the data. Stevens[25] reached similar

results in a paper in which she used a slightly different market classifica-

tion scheme than that used in the other papers. Stevens estimated a total

cost function using two-stage least squares and found that private monopoly is the lowest cost means of refuse collection, a result virtually identical to other findings, and she also chose not to extensively analyze these findings with regard to theory. Bennett and Johnson[26] challenged the finding of many researchers that private collection is the most costly service arrangement. They noted that in Fairfax County, Virginia, refuse is collected by both a county agency and twenty-nine private haulers, and they found that a t-statistic test indicated the mean of the charges of the private haulers was significantly less than the county charge for the same service. Bennett and Johnson were concerned to dispute others' findings empirically, so they too did not write on the theory behind their results. Millar[27] reviewed the current state of residential refuse collection in 1983 and decided that th· evidence showed the lowest cost means of collection is for municipalities to contract with private firms. And in a result contradictory to all others, Pier and his associates[28] used data for Montana to find that beyond a certain small size public pickup is more efficient than private.

2. Fire Protection

Ahlbrandt[29] developed an output function for municipally supplied fire protection services. After demonstrating that the function gave accurate results in predicting the costs of several public fire fighting departments in Arizona, he used it to calculate the expected cost of supplying service to the city of Scottsdale, Arizona which is served by a private company that has a contract with the city. He concluded that the actual cost of fire services was about half of what it would have been for city rendered services in a similar city with a similar fire insurance rating. Ahlbrandt, however, offered little theoretical explanation of his results.

3. Police Protection

Colby examined the effectiveness of contracting for police services by Burbank, Illinois which obtains service from the Sheriff of Cook County.[30] He found that Burbank had the lowest per capita police cost of cities in the county with otherwise similar characteristics, while crime, arrest and clearance rates were comparable. Colby offered two possible reasons for these results, though without testing the validity of either explanation: (1) separation of demand and financing from production which encourages each to be performed more effectively and (2) increased competition in the provision of public services.

Many others have also investigated the contracting of police services despite the difficulty of measuring the output of police departments. Mehay[31] studied those cities of Los Angeles County which contract with the County Sheriff for police services. He found that the contracting cities had lower per capita expenses than those cities in the county which had their own police departments but also had lower output by some commonly used measures of police effectiveness. Since Mehay's emphasis was on organizational effectiveness, he did not offer a theoretical analysis of the reasons for his findings. Kirlin[32] also examined the contracting relationship between cities of Los Angeles County and the County Sheriff, citing evidence that the Sheriff had not been using marginal cost as the pricing policy for charging contract cities for units of services. He argued that the Sheriff's department had deliberately done this in order to retain these contracts with cities and thereby enhance the budget of the Sheriff's department. Kirlin's reasoning is quite similar to public choice theory. Kirlin and two colleagues[33] later again studied the Los Angeles County cities that contract with the Sheriff. Like Mehay, they found that per capita cost and output was lower than in other

cities in the county. The study concluded that there was no significant difference in productivity between the contracting cities and those which had their own police departments. But Kirlin et al. also pointed out that the cities which contracted for police service from the county also typically contracted for a number of other services, and that when all taxes paid were taken into account, including those paid to special districts, the contracting cities had property tax rates about equal to those in cities that provided their own services. The significance of this finding is not apparent from the authors' writing since they do not attempt a theoretical explanation.

Deacon,[34] however, another researcher to examine the contracting cities of Los Angeles County, offers some theoretical foundation for his hypotheses. He notes that the principles of comparative advantage and specialization imply that separating demand expression and production across markets will allow each to reach efficient scales separately. Then he turns to property rights theory to argue that separating production monitoring from demand expression will allow beneficial specialization in each of these activities. Finally he draws on public choice theory to propose that choosing public over private institutions of production may increase amounts delivered over what is actually desired. In order to test these hypotheses he develops a model of public expenditure based on consumer demand equations and uses data on total municipal expenditure, expenditure on police services and on street maintenance to test the model. Deacon finds that cities that contract for services spend significantly less than do cities that produce their own services; but he is unable to say which of his hypotheses explain this difference, and he concludes by asking, not unreasonably, why there isn't more contracting of public service production if the savings are so great?

4. Assessor's Office

Lowery,[35] a political scientist, did a study of assessor services of local governments in Michigan, where each government can set up its own office or contract with the County Equalization Office, a local office of the state. He found that contracting the assessment service led to lower cost but also lower quality, where quality is defined as the difference between the legally mandated assessment ratio (50% of market value in Michigan) and the actual ratio. Lowery did not consider whether the drop in "quality" might not be what demanders wanted, nor did he offer any other theoretical explanation for his findings.

5. Water

Crain and Zardkoohi[36.] studied water delivery. They drew specific hypotheses from property rights theory, arguing that (1) managerial activities such as organizing, coordinating and measuring production will be reduced in publicly owned firms and (2) since elections take place frequently, they effectively set the time horizon of public officials; therefore, the discount rate will be higher in public than in private enterprises. The authors estimated a cost equation for water utilities based on the Cobb-Douglas production function and found that the coefficient on the dummy variable for private ownership was negative and significant at a .05 significance level. They also estimated separate equations for private and public water utilities and used a Chow test to show that the coefficients of the two are not equal. Crain and Zardkoohi concluded that their findings strongly supported the prediction that nontransferability of ownership reduces the incentive to police managerial conduct.

Morgan[37] also investigated the effect of ownership on the costs of water utilities, comparing investor-owned to non-profit companies using an equation

with total operating costs as the dependent variable and various cost factors as explanatory variables. He found the coefficient on the dummy variable for ownership to be negative and significant. A Chow test indicated the coefficients for separately estimated equations for investor-owned versus non-profit companies were different. Morgan, therefore, concluded that investor-owned water agencies appeared to have lower cost structures.

6. Electric Power

In relation to electric power delivery there exist theoretical studies by de Alessi.[38,39] He argues that government managers tend to be under more constraints, such as statutory salary limits, than private managers. Such ceilings tend to lower the opportunity cost of non-pecuniary benefits, leading to various behaviors not found in private firms, such as greater responsiveness to employee wishes, longer vacations, etc. Government managers will also be more risk averse than others, because they have no way to capitalize the increased income of right but risky decisions, yet may be held responsible for any decisions that turn out to be wrong. de Alessi does not believe any general conclusions are possible about the capital to labor ratio in political firms, but argues that such firms will use more of both inputs for any given output than other firms. Also, governments will charge less and/or produce higher quality output for any given price than a private firm. Public managers will engage in price discrimination but to a lesser degree than private firms, and they will provide fewer variations in quality to satisfy consumer preferences. de Alessi tests his many hypotheses by reviewing past studies of electric power generation. He claims that the evidence suggests he is right, but recognizes that it is sparse.

7. Hospital Services

Clarkson[40] found that publicly owned hospitals had more, and more diverse, rules and greater variability of input combinations than privately owned hospitals. Lindsay,[41] in a lengthy study of Veterans Administration hospitals concluded that, among other things, quality of care was lower than in private hospitals and production technology was less efficient.

8. Processing Medical Insurance

Hsiao[42] conducted an empirical case study to determine whether a private or public agency would be the low cost processor of public health insurance claims. He examined only the cost per claim, noting that he was not analyzing effectiveness of cost control or quality assurance of the medical services themselves. Hsiao described his results as showing that the per claim cost was significantly lower for the private processor than the public agency.

III. Foreign Studies of Municipal Services

We will next review some foreign studies. Two more general papers by Keith Hartley of the University of York, England, and a long article on Privatization in the Economist (London) will be taken up before special country studies will be presented. Hartley's[43] "Policy Towards Contracting-Out: The Lessons of Experience," seeks to describe the policy issues created by inviting private bids on government work. First, what, precisely, does the government want to buy? If a product or service is already made commercially, then it is easy to specify the desired characteristics, but if not, the government may find it difficult to state what it wants, and may even wish to buy related "products" such as technology development, increases in employment for its citizens, etc.

The second policy issue is, what is the best type of organization for the government to use to carry out a private sector purchasing program? A related question is, how will government employees behave in this organization, since that behavior may have important consequences for the effectiveness of the purchasing program? Third, how is a supplier or contractor best chosen? Finally, what type of contract is best, fixed price, cost-plus or some other type?

As an example of how these policy issues might be answered, Hartley uses work by the Public Accounts Committee of Parliament, a body which oversees private procurement policies for the British government. This committee does not set out explicit guidelines or a model contract, but offers criticisms of current practices. These suggest that the Committee's "ideal" policy is a mix of normative and positive propositions dealing with such things as equity, prices, etc. Hartley criticizes these propositions on several grounds, noting that the behavior of bureaucrats is not taken into account, nor are the effects of government behavior on the structure and operation of markets. Also, the Committee lacks a clear definition of competition, and the government has been drifting towards a practice of selective competition in which only a few trusted companies are asked to tender bids on a contract.

In conclusion, three guidelines are offered for government contracting with the private sector: (1) A clearly specified contract is required; (2) Competition is both possible and necessary -- (i) there must be opportunities for new entrants, (ii) regular re-contracting, as at three year intervals, (iii) rivalry for a given level of service and for alternative levels of service; (3) Competitively determined fixed price contracts with meaningful penalty clauses for poor performance are required.

In his second paper, "Why Contract Out?", Hartley[44] attempts to answer the question, why government contracts out. He intends this paper to be an overview of the issues involved in contracting-out government services, as a prelude to a series of papers dealing with each of the issues in more detail. Although he does not say so, the papers, to judge by this one, are intended for a general audience.

The author begins by claiming that any service that is state financed, but which could be privately supplied, is a candidate for contracting; however, it is not clear what this means, as no boundary lines are obvious from this statement. Then he examines the basic problem which contracting-out is intended to solve: how can local governments assess the efficiency of their production departments? He thinks that the problem of assessment is created by the monopoly position that most government departments enjoy as the only suppliers of a particular service, a problem that cannot be eliminated by competition among departments because collusion between them is so easy; unfortunately he does not elaborate on this point. The result is that no feasible way is left to government to measure efficiency.

Hartley then reviews three aguments in favor of contracting-out, implying, without so stating, that contracting-out is the solution to the problem he has identified. He cites the lack of competition for government producers as leading to inefficiency; he notes that private firms are reputed to be more responsive to change and customer requirements than government bureaus; and he says that since government departments never go bankrupt they have little incentive to control costs.

To balance the argument he brings up four reasons against contracting-out. First, it is claimed that government departments are more reliable, since the workers are not constrained by a profit motive and can give free

rein to their best instincts. Second, private industry is monopolistic and bureaucratic, so is not likely to be more efficient than a government department. Third, the bidding process required for contracting-out is costly; and fourth there are not enough private firms and they are not large enough to meet government demand for products and services.

To resolve the question whether contracting out is a desirable means of determining the efficiency of government production as a way of reducing production costs, Hartley turns to the empirical evidence as reported in the economics literature, but finds it unfortunately limited and flawed, a conclusion with which this writer is in agreement. However, he reports that the literature does suggest that savings in the range of 10%-20% are typical when services formerly performed by government departments are contracted-out.

Hartley concludes this paper by offering the following policies for competitive bidding on government contracts: (1) Bids should be for a fixed amount, and there should be at least four to six bidders as well as the existing government department responsible for the service; (2) If the government unit is successful, it should be subjected to a fixed budget with at least some of any surplus going to the workers, and penalties for overruns.

The December 21, 1985 issue of the Economist devoted a long article to privatization, however, it concentrates almost exclusively on national governments.[45] Nevertheless, the article is of interest since it provides insight into the politics and economics of making decisions about privatization. It covers a vast range of government decisions in a large array of countries -- from the United Kingdom, where Prime Minister Margaret Thatcher has made privatization the cutting edge of her administration, to less developed countries. The article concludes that, "At its best, 'privatisation' creates competition, efficiency and wealth, at its worst, it substitutes insensitive privately-owned

monopolies for insensitive publicly-owned ones and feeds corruption" (p. 71).

We will next present a number of studies from various countries.

1. Denmark -- Fire

In Denmark a private company contracts with many municipalities to provide fire protection services, though quite a few local governments run their own services. However, both the firm and all municipal fire departments are heavily regulated by the Danish government as to details of equipment and organization.

The Danish experience has been studied by Kristensen.[46] Using a regression analysis he finds the private company, rather than municipal departments, to be the lower cost provider of fire protection services. Kristensen does not offer a careful theoretical explanation of his findings. However, he does suggest three factors that might account for the results: (1) economies of scale, (2) competition from alternative sources of supply, and (3) separation of the demand articulating unit from the producing unit.

2. Switzerland -- Sanitation

Garbage collection is a service which is frequently contracted-out. Pommerehne and Frey[47] investigated refuse collection in Switzerland where the service in some cities is municipally provided, and in others, privately provided. Like Deacon they informally discuss both property rights and public choice theory as possible explanations for greater efficiency in private than in public production. But they also speculate that imperfections in competitive markets could cause inefficiency as great as that in public production. Using an average cost function model based on Hirsch, they found that private refuse collection service had a lower average cost than public service.

3. Canada — Car Insurance

Kennedy and Mehr[48] compared automobile insurance in the Canadian provinces of Alberta, which has privately supplied insurance, and Manitoba, where an agency of the provincial government writes virtually all such insurance. Though theirs was not a study motivated by economic theory, one dimension of comparison was price. Kennedy and Mehr found that a policy limited to required coverages was cheaper in Alberta (private) than in Manitoba (public); comparing the price of a more comprehensive policy that the authors felt was more likely to be purchased by the typical customer, Manitoba appeared to offer the cheaper product, but this was achieved only by subsidizing the public agency with tax revenues. The authors concluded that insured persons in Manitoba were not better off than those in Alberta.

4. Australia — Airlines

Davies[49,50] compared two Australian airlines, one government owned and one privately owned. He tested the hypothesis that the decisionmaker for a publicly owned enterprise does not bear as many of the costs and rewards as the decisionmaker of a privately owned company, and therefore has less incentive to use inputs efficiently. The two airlines examined are closely regulated by the national government, which tries to make the two companies as alike as possible. Davies could not use statistical methods with only two cases, so he constructed three measures of labor productivity for each airline and found that the private line is more efficient than the public line; in a followup study, published several years later, he found the situation unchanged.

IV. Municipal Franchises

A franchise is a contract drawn between a local government and some individual or corporation, providing that that person or corporation may use the

city streets, alleys, and byways to provide specific goods or services to a

segment of the jurisdiction's population. Such goods or services include, but

are not limited to -- supply of water, sewage treatment, electricity, steam

heat, natural gas, pipeline transportation of oil, railroad, buses-mass trans-

portation systems, ambulances, taxicabs, swimming pools, tennis courts, golf

courses, refuse collection and disposal, cable television, and telephone

systems. Franchise fees are essentially the rental of public thoroughfares for

private use by an individual or firm, and usually constitute a percentage of the

gross revenue of that individual or firm in any fiscal quarter or year. While

the courts have been reluctant to see exclusive franchises granted, in the case

of certain utilities some states have adopted a "territorial allocation" law

dividing up a state's land area between competing companies. This is done

mainly to maintain the economic strength of companies having need for a large

amount of fixed capital investment, such as power and telephone companies.

In the abstract, any local jurisdiction interested in privatization can

consider contracting out or franchising as long as a price is charged for the

service rendered. Thus, franchising is seldom a viable substitute for

contracting out for police services, while it is an attractive alternative in

the case of golf courses, tennis courts and swimming pools.

A review of the literature revealed not a single study that compares the

advantages and disadvantages of contracting out in comparison with franchis-

ing. Much of the limited literature on franchising is by students of public

administration. The overwhelming emphasis is on water, electricity and gas on

the one hand, and taxicabs and cable television on the other. An example of

writings on electricity franchises is a book by Leonora Arent, Electric

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on cable television franchises is Television Franchises (Eugene, OR: Bureau

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APPENDIX

The following are some recent popular newspaper articles of possible interest:

"HMOs Scramble for Health-Care Funds of Elderly," Los Angeles Times, June 16, 1985. Medicare members may sign up with private health maintenance organizations. The HMO fees are paid by the federal government and the person must get medical care from the HMO instead of Medicare.

"Prisons for Profit Seen as Next Step," Los Angeles Times, December 27, 1983. A private for-profit corporation has built a minimum security prison in Houston to house illegal aliens awaiting deportation. The federal government will pay $23.50 a day for each inmate.

"American Golf Rakes in the Green," Los Angeles Times, April 11, 1985. A private firm manages golf courses for municipalities under long-term operating leases.

"Growth of Franchised Education Outlets Reflects Concerns About Public Schools," Wall Street Journal, October 15, 1985. Private franchise firms offer supplemental and remedial courses in basic skills. One runs some centers inside public schools for free to gain goodwill.

"Privately Operated Shuttle Fleet to Replace Downtown Minibuses," Los Angeles Times, October 21, 1985. Privately operated shuttle buses will replace buses operated by the RTD. Initial subsidy to the private operator will be one fourth of that formerly given to the RTD.

"More Private Firms Doing Public Tasks," Los Angeles Times, May 23, 1985. A general article. Cites a private company that contracts with the federal government to operate small airport control towers, principally providing air traffic control services. Municipal waste water treatment by private

firms is also mentioned.

"Putting Out a Contract on Government," by A. Pifer and F. Chisman, _Wall Street Journal_, October 15, 1985. Considers how far privatization of the federal government could go.