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DISCUSSION PAPER NO. 334

Government Enterprise and Organizational Efficiency

by

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RÉSUMÉ

L'auteur du présent document étudie les conditions dans lesquelles l'entreprise publique peut éventuellement constituer une forme d'organisation efficace. La création d'une entreprise publique comporte deux décisions : d'abord, confier une certaine production au secteur public, plutôt que de l'obtenir à contrat d'un fournisseur privé, et ensuite, adopter en vue de cette production une structure d'entreprise plutôt qu'une structure ministérielle. L'une ou l'autre de ces décisions convient à des circonstances particulières, comme l'indique un examen de la réaction d'entreprises privées à des problèmes d'organisation analogues.

Dans le cas où un arrangement sans lien de dépendance est souhaitable, ou que des gains sont réalisables en soustrayant l'activité en cause aux lois, règlements et contraintes politiques applicables aux ministères gouvernementaux, il conviendra de confier telle production à une société publique. Les avantages éventuels d'un arrangement sans lien de dépendance sont manifestes dans l'expérience des entreprises du secteur privé qui ont adopté une structure prévoyant des divisions multiples afin de réduire leurs risques de déséconomies d'échelle. Les avantages et les coûts de la délégation dépendent de la nature particulière des activités considérées. Dans le cas d'activités commerciales, il sera habituellement plus efficace de déléguer les responsabilités de gestion, et de soustraire ces activités aux règles applicables aux ministères gouvernementaux.

Lorsqu'on examine le choix entre la production par le secteur public ou par le secteur privé, il faut d'abord se demander s'il est possible pour le gouvernement de conclure une entente contractuelle concurrentielle à court terme avec une entreprise privée. Dans l'affirmative, la conclusion d'un contrat sera habituellement la méthode choisie. De nombreuses expériences prouvent la supériorité du secteur privé sur le secteur public, lorsque la production par contrat concurrentiel est possible.

C'est lorsqu'une entente contractuelle comporte des problèmes considérables qu'il y a lieu d'envisager la possibilité de confier telle production au secteur public. Les difficultés peuvent surgir soit parce qu'il est difficile de spécifier et d'évaluer la production souhaitée, soit parce que l'important investissement nécessité par une telle transaction lie le gouvernement à une entreprise particulière, soit parce que l'objectif politique est défini d'une façon qui rend impossible une entente contractuelle. La production par le secteur public peut être justifiée lorsque des difficultés de ce genre rendraient coûteuse la poursuite d'un objectif politique par l'entremise d'entreprises privées.

Pour pouvoir évaluer globalement la situation, il importe toutefois de considérer tout ce qu'implique l'établissement d'une entité publique aux facettes multiples. Les sociétés publiques

n'ont pas seulement pour tâche de réaliser la politique publique, elles ont aussi un rôle commercial et politique. Dans leur rôle commercial, elles sont vulnérables à certains problèmes qui risquent de rendre leur performance de beaucoup inférieure à celle d'entreprises privées. Le rôle politique des entreprises publiques découle de leur influence sur la scène politique. En particulier, certaines mesures peuvent avoir tendance à protéger et à appuyer l'entité publique. Somme toute, l'avantage de confier la production au secteur public dépendra de l'équilibre entre les gains à tirer d'un meilleur arrangement pour la réalisation d'un certain objectif politique et les pertes liées aux aspects commerciaux et politiques de l'exploitation d'une entreprise publique.

SUMMARY

This paper is an inquiry into the conditions under which government enterprise is likely to represent an efficient organizational arrangement. The establishment of a public enterprise involves two decisions: to undertake public production rather than to contract with a private supplier; and to adopt a corporate rather than a departmental structure for public production. Each of these decisions is appropriate under particular circumstances as an examination of the response of private sector firms to analogous organizational problems indicates.

In terms of the organization of public production, a public corporation will be appropriate where an arms' length arrangement is desirable, and/or where there are gains to be realized by removing an activity from the legislation or the regulatory and political constraints applying to government departments. The potential advantages of an arms' length arrangement can be seen from the experience of private sector firms that have adopted a multidivisional structure to reduce their susceptibility to diseconomies of scale. The benefits and costs of delegation depend on the nature of the particular activities. For commercial activities, it will tend to be efficient both to delegate management responsibilities and to remove these activities from the confines of rules and regulations applying to government departments.

In examining the choice between public production and private production it is necessary, first, to consider whether it is possible for the government to enter into a competitive short-term contractual arrangement with a private firm. If so, contracting-out will tend to be the preferred approach. There is considerable evidence indicating the superiority of private to public production where competitive contracting is possible.

It is where contracting-out would encounter certain significant problems that public production warrants consideration. Problems could arise because the desired output is difficult to specify and evaluate; because the need for a major transaction-specific investment ties the government to a specific firm; or because the policy objective is defined so specifically as to preclude competitive contracting. Public production may be reasonable where these types of contractual problems make it costly to pursue a policy objective through private firms.

In coming to an overall assessment, however, it is necessary to consider the full implications of establishing a multi-faceted public entity. Public corporations are not only purveyors of public policy; they also have a commercial and a political role. In their commercial role public firms are vulnerable to certain problems which may lead to a performance significantly inferior

to that of private firms. The political role of public corporations arises from their influence on the policy agenda; in particular, there may be a bias towards measures that are protective and supportive of the public entity. The desirability of public production will depend on the balance between the gains that come from a better arrangement for achieving certain policy objective and the losses associated with the commercial and political aspects of public enterprise activity.

CONTENTS

FOREWORD

The study was undertaken as part of the Council's recent project on government enterprise. The Council report on this subject, Minding the Public's Business, came out at the end of 1986. The overall aim of this project has been to improve our understanding about federally and provincially owned and controlled entities which operate at arm's length from government and have important commercial functions. The project attempted in particular to answer two questions: What is the appropriate role of government enterprise as one of a number of instruments of public policy? And, second, how should the apparatus of control within government be structured so as to realize the full potential of this instrument?

The research initiated for the project included both the examination of general questions pertaining to government ownership and the investigation of specific public corporations. The present study is of the former type. It examines government enterprise as a way of organizing the provision of public policy services and attempts to determine under what conditions this is likely to be preferable to an alternative such as subsidizing a private firm. The establishment of a government enterprise involves two important organizational decisions: to undertake public production and to adopt a corporate rather than a departmental structure. These are each examined with a view to determining when they are likely to represent the economically appropriate organizational decision.

The author of this study, Ron Hirshhorn, was Research Director for the government enterprise project. Mr. Hirshhorn is presently on loan to the Study Team examining the Canadian postal system.

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INTRODUCTION

There is now an extensive literature that seeks to explain organizational structures in the private sector in terms of their contribution to efficient production and exchange. The literature covers a broad terrain, but is unified by its emphasis on the significance of transactions costs. From this vantage point important insights have been developed into the evolution of the firm as well as the introduction of organizational innovations within the firm, and the development of corporate structures such as the conglomerate.

This paper attempts to examine the relevance of these concepts of organizational efficiency to government enterprise. The possibility that transaction cost considerations, which greatly extend our understanding of the private firm, may help explain the existence of the public firm, has been raised in a number of recent articles.[1] While the analogy has appeal, there are a number of important differences between public and private institutions. The most obvious distinction is with respect to the nature of the forces at play within the two environments. While survival in the private sector requires efficient production, longevity in the public realm depends on an institution's ability to respond to a complex and shifting balance of political influences. The effect of the latter may be to relegate efficiency to a minor consideration in the delivery of public services. At the same time, however, politicians are unlikely to be indifferent to transactions costs which may well bear on the demands made of their own time and of their department's resources. Organizational structures which economize on transactions costs, moreover, may be perfectly compatible with the achievement of other, more influential, political objectives. One cannot in general assume that governments will adopt an efficient organizational mode for their activities, but neither can one dismiss this possibility. The economic merit of government enterprise as an organizational structure is therefore an open question, and one deserving analysis.

In the next section we elaborate on the concept of organizational efficiency. The application of the relevant considerations to government enterprise is undertaken in Sections II and III. Government enterprise involves a decision to undertake public production and to do so within a corporate rather than a departmental structure. The latter decision - to adopt the corporate form for public production - is examined in Section II. The former decision - to undertake public production rather than to contract with a private firm - is examined in Section III. To investigate the 'make or buy' decision it is necessary to examine the contracting problems bearing on the the 'buy' option, and to take account of the tendency for the 'make' option to involve the establishment of a complex organization with a number of distinct roles. Given the multi-faceted structure that is likely to come into existence, what we want to determine is when, if at all, public production would represent an efficient way of meeting the government's public policy objectives.

For the purposes of this paper, the term "government enterprise" refers to distinct legal entities (usually, but not necessarily, corporations) which are wholly-owned by a government; which need not, but often have, a high degree of operating autonomy; and which tend to derive a substantial portion of their revenue from commercial activities. The definition allows for the fact that most government corporations are involved in a combination of commercial and non-commercial activities, and that even those entities that are mainly engaged in marketable activities may receive significant public subsidies. It is generally consistent with other definitions, such as that of the Lambert Commission, although there are a few differences. We exclude mixed enterprises from our definition. Mixed enterprises are in many ways a distinct organizational form and they raise considerations that are not addressed in this study. And, contrary to Lambert, we do not insist that public enterprises have a high degree of autonomy in management. In our view, the appropriate degree of autonomy is a normative issue which should be left open to analysis; the reasoning here is developed in Section II. Our definition is not based on any particular assumptions about the type of control regime for government enterprises that is in place. However, the broad framework of laws and regulations in the system and the special status of corporations that are agents of the Crown are taken as givens.

I THE CONCEPT OF ORGANIZATIONAL EFFICIENCY

In an early and widely-cited article Coase (1937) observed that with zero transactions costs the equilibrium form of economic organization is indeterminate. An efficient organizational structure is in fact one that minimizes all costs of production and exchange, thereby yielding the maximum consumption possibilities for the individuals concerned. Nonetheless Coase's early insight did put a much needed spotlight on the important role of transactions costs in a world in which arrangements between contracting parties are subject to significant informational constraints.

All transactions involve certain information costs. Even a seemingly simple exchange may involve commodities in which the relevant attributes are difficult and costly to measure. The response to informational constraints can take a variety of forms. Warranties, brand names, professional certification and franchising contracts are among the devices that have come into being to reduce transactions costs in markets.[2] In some situations, however, information problems may be such that if new organizational arrangements which economize on transactions costs cannot be introduced, the opportunity for exchange must be forgone entirely. There is now a significant literature which views the firm itself as an organizational response to information problems with which markets are ill-equipped to deal.

Recent literature has served to emphasize the central role of transactions costs in explaining economic organization, and to amplify our understanding of the underlying contractual problems. Contract problems arise both because it is difficult for the parties to an exchange to obtain all the requisite information relating to the transaction, and because the interests of the two parties will tend, to some degree, conflict. Williamson (1975) traces the former problem to the fact that individual decision-making is characterized by "bounded rationality"; there are limits in the capacity of individuals to gather and process complex information. The divergence in the interest of the two parties is of importance because of another behavioural attribute, "opportunism"; economic agents will pursue their own best interests in a sophisticated and perhaps guileful manner.

While Coase singled out the cost of "discovering what the relevant prices are" - a cost which is not obviously and necessarily lower within the firm, recent literature focuses on the transactions costs associated with the more general problems of contract negotiation and enforcement subject to informational constraints. Williamson (1981) identifies the relevant transactions components as the "ex ante costs of negotiating and writing, as well as the ex post costs of executing, policing, and when disputes arise, remedying the (explicit or implicit) contract". The nature of transactions costs has also come to be more precisely identified. It is now recognized that transactions costs have two components: the direct costs of structuring, monitoring and enforcing contracts, and also the forgone gains from trade because the costs of full enforcement of contracts exceed the benefits.[3]

A major contribution of the more recent literature is to recognize the inappropriateness of sharp distinctions of the sort drawn by Coase and other early writers between market and non-market transactions. The firm is itself a nexus of contracts and it is also subject to the direct and indirect costs associated with contract negotiation and enforcement. To understand why certain transactions are executed within firms it is therefore necessary not only to account for why markets don't work, but also to explain why similar problems do not confound the contractual arrangements which constitute the firm. The latter has been the subject of an important and extensive literature. What has been found in essence, is that the contractual problems confronting the firm have been contained through the existence of various control mechanisms (such as those operating through the capital market) and a well developed process of organizational adaptation. These have served to limit the so-called 'agency problems' that arise due to the separation of ownership and control in the modern corporation, and the fact that the managers who initiate and implement major decisions are distinct from the residual claimants who bear the major wealth effects of these decisions. Innovations in organizational structure have also helped to ameliorate the problems that senior management face in controlling and directing the operations of large and complex organizations.

There are a number of implications that follow for our examination of organizational efficiency in the public sector. In the private sector the opportunities for greater efficiency have been realized through an appropriate allocation of transactions between markets and firms, and by institutional adaptations which have reduced transactions costs within each of these modes. Governments, like private firms, have the option of contracting with independent suppliers for a specific output, or of undertaking production themselves and thereby confronting the contractual problems that attend internalization. By extension we may ask whether transactions in the public sector have been allocated to the most efficient mode, and whether the opportunities for reducing costs within each mode have been fully realized. In the latter respect, is government enterprise consistent with an efficient organizational design for public production? And is public production itself preferable to the alternative option of contracting with private suppliers?

The answer to these questions will turn to an important degree on transaction cost considerations of the sort that have been discussed. There is a need, for example, to consider whether, in the same way that certain private sector transactions pose a problem for markets, there are some types of public sector transactions involving independent suppliers which are particularly difficult and costly to execute. The nature of the transactions costs that are associated with the alternative of government production, are also at issue. It is necessary to determine under what conditions public production can reduce the transactions costs associated with the pursuit of a particular policy objective.

The efficiency of a particular organizational form depends not just on transactions costs, but also on the manner in which production costs are affected by prevailing legal and political constraints. The latter could make public production undesirable, notwithstanding the advantages it offers in terms of lower transactions costs. Where public production is chosen, legal and political constraints will also help determine whether the most efficient arrangement is a government department or a public corporation.

Our approach to the topic differs from other studies where the significance of public enterprise is seen to arise from the possibility it provides for the commercialization of public sector activities. From an organizational perspective, the emphasis on the commercial attributes of public enterprise is misleading. Particular organizational forms are compatible with different financing arrangements, and one can indeed find examples both of the services of government departments being sold to consumers, and the services of government enterprises being heavily subsidized.

More generally, it's important to distinguish the question of whether goods and services should be financed by consumers or taxpayers, from the issue of how to organize production. The former has received considerable attention and the economies and the "exclusion costs" that explain joint consumption, and the external benefits that justify subsidization, have been well explored. The analysis of alternative options for the public provision of goods and services, which is the focus of this study, is, by comparison, at a much more rudimentary stage of development.

In what follows we explore these issues in greater detail. The next section focuses on government enterprise as an organizational arrangement for the delivery of public output, applying the lessons on organizational design suggested by the experience of the private sector. We then go on to compare this form of internal production with the alternative involving procurement from a private firm under various contractual arrangements.

II GOVERNMENT ENTERPRISE AND THE INTERNAL ORGANIZATION OF GOVERNMENT ACTIVITIES

In this section we focus on the choice between undertaking public production through a government department and through a public enterprise. The most appropriate organizational arrangement for public production will depend on a number of considerations. In some cases, a public enterprise may be preferred because an arm's length relationship will reduce the threat of political partisanship. This is a major consideration, for example, for a corporation such as the CBC which must be seen to operate without political interference. The establishment of a public enterprise might also be politically expedient; it might reduce the government's responsibility for management decisions that are largely beyond its ability to control. Our interest in this section, however - in keeping with the general focus of the study - is on efficiency considerations. We examine the conditions under which the establishment of a public enterprise is likely to economize on the transactions and production costs of public production.

A. Implications of Greater Delegation

One potentially important difference between a government department and a public enterprise is that the latter often involves a greater delegation of decision-making responsibilities. What we want to determine is whether, and under what circumstances, this will contribute to increased efficiency.

The Multidivisional Firm

The division in decision- making responsibilities which often occurs with public enterprise is not unlike that to be found in many private organizations. The principle of dividing large organizations into quasi-autonomous divisions is well established among large private corporations. In his history of the large American industrial enterprise Alfred Chandler (1962) identifies four phases: "the initial expansion and accumulation of resources; the rationalization of the use of resources; the expansion into new markets and lines to help assure the continuing full use of resources; and finally the development of a new structure to make possible continuing effective mobilization of resources to meet both changing short-term market demands and long-term market trends." In the third stage, with the increase in complexity of corporate operations, the inadequacies of the traditional centralized structure in which the firm is departmentalized by function (i.e. sales, engineering, production, etc.) became apparent. Chandler describes, for example, how as a result of diversification, the top management of DuPont found themselves in a situation in the early 1920s where they were unable to adequately handle both short-run administrative and long-run entrepreneurial responsibilities. The response at DuPont, and later at other corporations, was to establish a multidivisional structure, which would allow a separation of operating and strategic decisions. In the multidivisional structure, quasi-autonomous divisions headed by a general manager look after the implementation of corporate initiatives, leaving the head office management free to monitor performance of their divisional agents and to consider major questions relating to the utilization of corporate resources.

The success of the multidivisional form of organization is indicated by the increasing popularity of this structure among major corporations. Over the period 1949-69, for example, the proportion of U.S. firms among the largest 500 having product-division organizations rose from 20 per cent to 76 per cent; the proportion of firms with a unitary or functional structure fell from 63 per cent to 11 per cent. While the more diversified a firm the more likely it is to have a multidivisional structure, there has been a secular trend towards divisionalization among large firms generally.[4]

The attraction of the multidivisional structure lies in its capacity to reduce the administrative load on senior management while simultaneously providing for effective internal control. With operating decisions being resolved at the divisional level, information is transmitted over shorter distances and is less subject to loss and distortion. The multidivisional structure reduces overlap and provides for a clearer allocation of responsibilities. And it contributes to effective corporate planning and control by assigning these responsibilities to a general office which has its own resources and is not dependent on the input of managers who have a particular departmental or divisional perspective.[5] As a result of these factors, multidivisional corporations have been able to realize transactional economies that are sufficient to offset many of the diseconomies of large-scale organization.

Application to Government Enterprise

To determine whether such gains can in fact be realized, and whether private sector experience is relevant to government enterprise, it is necessary to examine the pre-conditions for the establishment of quasi-autonomous units within a large organizational entity. A multidivisional structure presupposes the possibility of dividing "the total system of decisions that need to be made into relatively independent subsystems, each one of which can be designed with only minimal concern for its interactions with the others".[6] Such a subdivision is not possible, nor is it necessary in "non-complex" organizations of the sort described by Fama and Jensen (1983) where all the specific information relevant for decisions is concentrated in one or a few persons. These are to be distinguished from complex organizations, such as the public sector, where the relevant information is diffused over many individuals.

Within complex organizations it may be difficult to effectively divide responsibilities if decision-making requires constant interaction between each of the supposedly autonomous subunits or between the subunits and the central office. While there are special considerations that apply to the public sector, the general nature of decision-making demands is not unlike that faced by other complex organizations. As Williamson points out, drawing on the work of ogranizational theorists such as Herbert Simon (1957) and Ross Ashby, all complex physical, biological and social systems are subject to a mixture of "high frequency" and "low frequency" demands. Decision-making systems can thus be factored so as, first, to distinguish between low frequency (or strategic planning) and high frequency (or operating) elements, and, secondly, to group together those high frequency components of the system which have strong interconnections. In the public sector as in other complex organizations, there are many programs in which the linkages to other activities are sufficiently weak, and the requirements for policy direction are sufficiently low so as to make the establishment of a separate subsystem a viable possibility.

The divisability of a system of decisions into subsystems is a necessary, but not a sufficient condition for the establishment of a multidivisional structure. While a rational division of decision-making responsibilities will contribute to efficient information gathering and processing, the costs of the delegation in authority will be exorbitant if the accompanying agency problems are not effectively addressed. Within multidivisional corporations internal control problems are handled through an accountability regime centred on measures of financial performance. The general approach and the critical role of the measurement system is described by a former executive of General Motors:

> -- it was on the financial side that the last necessary key to decentralization with coordinated control was found. That key, in principle, was the concept that, if we had the means to review and judge the effectiveness of operations, we could safely leave the prosecution of those operations to the men in charge of them. The means as it turned out was a method of financial control which converted the broad principle of return on investment into one of the important working instruments for measuring the operations of the divisions --[7]

To establish an effective control regime multidivisional firms to a considerable extent mimic the market. The separate divisions become profit centers, and the managers of the divisions become akin to the executive officers of small firms. Bonuses and most other management incentives are explicitly linked to the performance of the profit centers.

The profit center approach is not without its problems. Divisional profits are sensitive to the external environment and the economic conditions affecting to the unit's particular activities. Current financial results, moreover, may be a poor reflection of the longer-term economic consequences of recent management initiatives. Nonetheless, financial data appropriately adjusted for extraordinary events and compared with the results of other entities in the same area of activity, can provide valuable information on management performance. Where such measures are not available or not meaningful, the difficulty of controlling divisional operations is likely to lead to reduced divisional autonomy. Measurement problems will ultimately result in the elimination of the division as a distinct operating unit:

> The more difficult it is, in a particular situation, effectively to measure divisional performance by the profit test, the more circumscribed is divisional freedom of decision-making likely to be. The difficulty is likely to arise whenever a division's affairs cannot be sufficiently disentangled from other parts of the business. Ultimately a point is reached when the

"division" loses the right to be regarded as a genuine division at all.[8]

Very often multidivisional organization will arrive at a balance in which decentralized decision-making is permitted while divisional autonomy is far less than complete. Information and control systems will generally be heavily financial in nature, but may incorporate other performance data. Head office management will tend to concentrate on strategic decisions while ensuring that it has the opportunity to participate in major operating decisions. Some overlap and even some ambiguity in roles may be purposely sought. There are limits, however, as to how far managerial discretion may be circumscribed in a multidivisional structure. As Williamson (1975, p. 148) points out, "the M-form structure is thoroughly corrupted when the general management involves itself in the operating affairs of the divisions in an extensive and continuing way".

In the public as in the private sector the optimum degree of autonomy is likely to vary, depending on the adequacy of the performance and control measures that are available. If we think of autonomy as a variable which can be increased as desired, then the optimum is reached when the marginal gain no longer exceeds the marginal cost of a further delegation of responsibility. The gains relate to the reduced decision-making demands on politicians and senior civil servants, along with any improvement in the quality of decision-making stemming from the existence of shorter and less crowded channels of communication. The costs consist of the resources devoted to monitoring the management of public corporations, along with any remaining losses because such monitoring will necessarily be incomplete. The existence of appropriate performance measures helps to moderate the growth in marginal costs and extend the optimal degree of autonomy.

The development of an information and control system that will permit decentralization is a more challenging task in the public than in the private sector. Even where public corporations are involved in commercial activities in competitive markets, data on financial performance will be misleading if they are not adjusted for the preferential position of many public corporations with respect to borrowing, taxation, and other matters. Where competition is weak or absent, or the public corporation has important social responsibilities, financial measures will be especially incomplete, if not totally inappropriate, as indicators of management performance. It will, nevertheless, often be possible to establish an efficient monitoring system for activities undertaken by the public sector. Most non-commercial services are amenable to the use of broad performance measures. What is required, as Drucker (1973) points out, is to establish objectives and goals that are sufficiently precise to be operationally useful. Where the public corporation is engaged in competition with private sector producers, but simultaneously has certain social obligations, it may be feasible to cost out its non-commercial activities so financial measures of performance are of relevance. Where inordinate resources would be absorbed in attempting to seperate out the costs of non-commercial activities, it may still be possible to establish a reasonably efficient control framework based on a combination of financial and non-financial indicators of management performance.

Agency costs - and the appropriate degree of autonomy - may be significantly influenced by other factors. Some activities may be particularly prone to opportunism because attractive non-pecunary benefits are available and the complexity of the operations makes management behavior difficult to monitor. The possibilities for discretionary behavior may also increase significantly if managers possess highly specialized knowledge, so that monitoring is especially costly and the replacement of management is especially difficult. Different activities may, moreover, afford different opportunities for applying less costly control mechanisms. In some situations, for example, it may be possible to enforce behavioral rules which effectively limit opportunism without impinging on the quality of managerial decision-making.

There will be circumstances in which a significant delegation of responsibilities will entail substantial costs. For various reasons, public policy goals may not be defined with sufficient precision to allow performance to be measured. The relevant dimensions of a particular service may be such that performance cannot be adequately assessed without monitoring the inputs that go into the production process; in the extreme case decentralization would involve a costly duplication of the information and control procedures which the corporation has itself put in place. In some cases the nature of the service being produced may be such that any lapse in enforcement would be highly detrimental to the public interest. In other situations, problems may arise from the interrelationship between different public policy decisions, and the consequent difficulty of establishing a regime in which public managers can be held truly accountable.

In the public as in the private sector there is a need to balance the costs and benefits from a delegation in decision-making responsibilities. The transactional gains that tend to be associated with a multidivisional organizational structure are, at least in principle, accessible to the public sector -- to answer the question we raised some pages back. While these gains are unlikely to be realized in the case of certain types of activities and within certain policy environments, that still leaves considerable scope for the establishment of quasi-independent operating entities in the public sector.

B. Implications of Freer Operating Environment

A second potentially important difference between government departments and public enterprises is that the latter function within an environment characterized by fewer and less restrictive rules and regulations. While all complex organizations are subject to some rules and rigidities, within governments these often seem to assume a life of their own. J. A. Corry has described the problem as follows:

> Any human organization operating on such a scale that policy must be executed by subordinates is necessarily cursed with the rigidity of rules. Red tape was the essential discovery of the first despot who extended his sway beyond the village. Constitutional government is the perfection of that discovery - how to manipulate rolls of it that are larger and redder.[9]

The increased operating freedom and flexibility that tend to be made possible by the multidivisional structure, therefore, has particular significance for the public sector. Increased autonomy would allow freedom from many of the restrictions imposed by central bodies (such as Treasury Board and the Public Service Commission, at the federal level), and relief from limiting rules and regulations with respect to disbursements, contracts, purchases and personnel. Managers of operating units would thus acquire the greater discretion that is necessary for effective decision-making in a commercial environment marked by rapidly changing opportunities and challenges.

The transfer of public production from a government department to a government corporation may also be accompanied by significant changes in the applicable legislation. For example, the public corporations in six provinces (Alberta, B.C., Manitoba, Nova Scotia, Quebec and Saskatchewan), along with a few major Ontario enterprises (i.e. Ontario Hydro), and most large federal public enterprises are subject to private sector labour legislation.

Most employees of public enterprises are thus able to negotiate a full range of job issues in a manner similar to their private sector counterparts. In the case of Canada Post Corporation, the transformation from a department to a public corporation was motivated in part by the perceived advantages of transferring the corporation from the ambit of the Public Service Staff Relations Act (PSSRA) to that of the Canada Labour Code. Under the PSSRA, labour relations were complicated by factors such as the multiple parties representing the "employer interest," and the high degree of judicial involvement in the collective bargaining process.[10]

The costs of alternative forms of public production will be more seriously affected where legal and political constraints impact directly on the production process. Of particular significance are restrictions on markets that can be served which reduce the opportunity for achieving economies of scale, and limitations on activities that can be pursued which prevent the realization of available economies of scope. While such restrictions may be imposed on both government departments and public corporations, they are generally a more serious constraint in the case of departments. Where market limits are defined by the size of the political jurisdiction, as is the case where production is by a government department or bureau, there is no assurance that efficiency requirements will be met. This applies particularly to municipalities which tend to produce a variety of services at the same scale, notwithstanding the significant differences that may exist in minimum average cost production levels for these services. A public corporation, by comparison, is less likely to be constrained by jurisdictional considerations. In his study of municipal services in Los Angeles County, for example, Deacon (1979) found that the major public enterprise in the area could provide certain police protection services at substantially lower cost than the city departments. The lower costs were attributed in part to the ability of the enterprise to maintain crime laboratories, forensic personnel, helicopter surveillance and other specialized services which it would be extremely costly for a small municipality to provide.

While both economies of scale and scope tend to be more accessible to government corporations than government departments, exceptions can be found. Where the complementarity that exists is between activity X and other governmental activities, hiving off X to a separate corporation will result in higher costs of production. In his study of water provision in Canadian cities and towns, for example, Kitchen (1975, 1977) found that costs were significantly greater when the supplier was a separate water or utilities commission rather than a department directly under City Council. A major advantage of the government departments was their access to underutilized facilities, equipment, and labour within City Hall. As Kitchen points out, this source of economies is more important for smaller cities, which are much more likely to encounter indivisibilities in capital and labour inputs.

C. Autonomy and the Choice of Public Enterprise

We stated in the introduction that we were adopting a broad definition of public enterprise which would allow for varying degrees of corporate autonomy. This can be understood in terms of our discussion in Section A which indicated that the optimal degree of autonomy will depend on the balance between a number of factors bearing on the costs of benefits of delegating decision-making responsibilities in specific situations. When this analysis is undertaken, the appropriate degree of delegation might be found to be of the sort that is more generally associated with a government department rather than a public enterprise. While under these circumstances there may be a temptation to adopt the departmental rather than the corporate form of organization, this will be undesirable where the legislation, rules, and regulations applying to government departments would significantly impede performance. In other words, the considerations discussed in Section B might be important enough to still justify the use of a public corporation. The appeal of a broad definition is that it allows us to establish an organizational arrangement that is optimal in terms of both the considerations in Section A (pertaining to efficient delegation) and in Section B (pertaining to the appropriate operating environment).

III GOVERNMENT ENTERPRISE AND 'THE MAKE OR BUY' DECISION

A convincing case for government enterprise must establish not only that this represents an efficient structure for the organization of public production but also that public production is itself superior to various alternatives involving contractual arrangements with private producers. The latter part of this argument constitutes the subject matter of this section of the paper. Our approach, as in the previous section, is to explore the lessons that arise from the experience of the private sector.

A. The Advantages of Competitive Contracting

The focus of much of the literature on internalization in the private sector is on contractual problems which could explain the inability of markets to handle certain types of transactions. The underlying notion that "in the beginning -- there were markets", and that markets are to be preferred in the absence of serious contractual problems, rests on a number of considerations. Well functioning competitive markets minimize transactions costs. What is remarkable about the price system, as Hayek (1945, p 526) long ago pointed out, "is the economy of knowledge with which it operates, or how little the individual participants need to know in order to be able to take the right action". Notwithstanding organizational adaptations, it is unlikely that a firm could replicate the efficiency of competitive markets in transmitting information and holding opportunistic inclinations in check. Lower transactions costs are likely to be reinforced by lower production costs arising from the greater possibility for the realization of economies of scale and scope, and by the benefits of the market in terms of risk pooling. Market exchange also alleviates the "bureaucratic distortions" which Williamson has identified as a problem in firms of significant size and complexity. The "bureaucratic" pressure to maintain and expand internal operations may bias internal decisions and ultimately lead the costs of production to be significantly higher than the costs of procurement.

The analogue to market exchange in the context of the public policy requirements of government is a well-defined short-term contractual arrangement with a private firm. Both market exchange and contractual arrangements involve enforcement costs, but these will differ because the nature of the commitment differs in the two cases. There are also differences in terms of the flexibility of the two modes. While the price mechanism allows for a rapid response to changing market conditions, a contract establishes terms which are binding over a fixed period of time, unless a new and mutually advantageous agreement can be reached in the interim.

More significant for our purpose, however, are the important similarities between market exchange and short-term contracting. The factors that suggest the superiority of market to non-market institutions in the absence of serious contractual problems, also suggest the superiority of short-term contracting to government production. Given effective competition there will be the same pressures as there are in well-functioning markets to reduce production costs, to innovate, and to maintain quality standards.[11] In a competitive environment in which each of the parties is free to enter into a new contract with other traders, there is limited scope for various forms of opportunistic behavior. While short-term contractual arrangements lack the flexibility of the price system, they nevertheless allow for a relatively prompt response to changing circumstances. The ability to renegotiate contracts after short intervals limits the losses from either a failure to adequately define contractual terms, or from the occurrence of new and unforeseen events.

While adaptations can also be introduced when production is internalized, the adjustment process is likely to be more difficult. Negotiations within an organization occur within a small-numbers bargaining situation, which is to be contrasted with the large-numbers bargaining condition that prevails under competitive contracting. Because internal transactions are insulated from competition, and internal monitoring and control mechanisms are necessarily highly imperfect, internalization will entail increased risks of opportunistic behavior.

The parallel between the superiority of markets for private sector transactions and the superiority of short-term contracts for public sector transactions extends beyond purely transaction cost considerations. For governments, as for private firms, internal production is subject to constraints and biases which will tend to raise the cost of making relative to buying. Such constraints are likely to be particularly limiting for public managers. The legal and political limitations on the activities of government departments were discussed in Section II. While public corporations are generally subject to less onerous constraints than government departments, investment and operating decisions may nonetheless depart significantly from decisions based on strictly commercial criterion. Through their mandate public corporations may be limited in both the activities they can pursue and the markets they can enter. Where legal factors do not inhibit the realization of available economies of scale and scope political factors may do so. Political influences may also contribute to a reduced responsiveness to changes in economic conditions.

The superiority of short-term contracting for services which are not subject to contractual problems is supported by Canadian and foreign studies of cleaning services, debt collection, fire protection, refuse collection and urban transit. The evidence, as reviewed by Borcherding, Pommerhne and Schneider (1982), is that public production is consistently, and generally significantly, more costly than private production under contract. Savas (1980), who reviews a number of studies on the costs of public and private refuse collection, found that municipal agencies were less efficient because of poorer management, inadequate supervision and a failure to employ the most productive capital equipment.

In the case of urban transit services, the evidence shows that where a short-term contract is feasible, as in the case of bus services, private production again tends to be preferable. A recent study by Kitchen (1986) found the situation in Canada to be similar to that in other countries, as discussed in Lave (1985): competitive contracting lowers the cost of providing municipal transit services. While the lower costs are in some cases partly attributable to wage differentials, there is ample evidence that private production involves increased efficiency and significant real resource savings.

B. Contractual Problems

Given the advantages of short-term contracts, this will be the preferred organizational mode unless short-term arrangements are subject to serious transactional problems. The existence of contractual problems does not ensure that internalization is the most efficient arrangement, but it does at least suggest the possibility of significant transaction cost economies from resorting to production, rather than procurement.

B.1 Measurement Problems

The literature on the organization of markets suggests a number of circumstances in which major problems of contract negotiation and enforcement are likely to arise. An important set of issues relate to problems in measuring and evaluating output. Where, for example, there is team production arising from technological non-seprabilities, it is exceedingly difficult to measure the contribution of each member of the team to total output.[12]

Alternatively it may be difficult to assess the output of a worker because the relevant characteristics of the product vary substantially and are difficult to specify and/or measure. Enforcement costs may be substantially reduced in both cases by resorting to a proxy measure involving the metering of labour input.[13] The emergence of the firm can be explained in terms of such problems in enforcing market agreements and the resulting pecuniary incentives for one party to impose damages on other parties to the exchange. As McManus (1975) shows, in circumstances in which output is especially difficult to monitor, there may be gains from adopting a centralized organization and contending with the more manageable and less costly task of controlling the non-pecuniary consumption of workers on the job.

Problems of output measurement and evaluation have special relevance to government. It is very difficult to design relevant measures for many outputs which are of interest to governments. While education, to take a frequently cited example, could be contracted out to private suppliers there are numerous complexities associated with the formulation and enforcement of the contract. Gearing payments to the number of students graduating, for example, would be likely to distort decisions with respect both to the type of students accepted and the nature of training provided. It is more feasible and conceivably more appropriate to measure education services by monitoring inputs rather than by evaluating outputs. The difficulty of defining outputs with sufficient precision to contract for their supply is a general problem and Niskanen (1971) has identified it as the major factor underlying the decision to allot production to government bureaus rather than profit seeking organizations.

Input measurement, however, could conceivably be an aspect of a contract between two independent entities and it does not in itself provide a completely satisfactory explanation for internalization. In the simple case where there are two workers, the second worker could undertake to purchase the production of the first through a payment system scaled to the latter's labour contribution. There is a definitional issue that arises here, for where incentives are fundamentally changed as in the case of the first worker, the distinction between a firm and an employee becomes blurred. Input measurement may, however, give rise to more formal and complete integration because of the availability of monitoring economies. Barzel (1982) demonstrates this by describing a production process involving several workers, and intermediate outputs which are most easily evaluated using input proxies. While each worker could constitute a separate firm the resulting transactions between firms would require several replications in monitoring. The second firm must meter the inputs of the first, and the third firm must both monitor the inputs of the second firm and verify the available information on the value of the first firm's production. The costs due to repetitive monitoring will escalate as the number of steps in the production process increase. By bringing the separate workers within a single firm, and thereby eliminating the need for verification, there is an opportunity for substantial savings in monitoring costs.

Notwithstanding the existence of measurement problems that cannot be resolved, or may be too costly to resolve, through input monitoring, contracting may constitute an efficient organizational arrangement. While internalization may offer lower monitoring costs, this may be more than offset by the advantages of short-term contracting in facilitating adjustments and by the less onerous legal and political constraints associated with private sector production. Moreover, the knowledge and experience gained over time may enable the government to better determine the ability of contract producers to meet its requirements. With a short-term arrangement the contract can be revised at intervals to incorporate new information and gradually reduce the government's losses from incomplete enforcement.

Contracting will be inappropriate where learning is slow and/or where there are especially high costs associated with problems of measurement and evaluation. Measurement problems could lead to contractual arrangements in which incentives are impaired and important moral hazard concerns arise. One can conceive, for example, of private firms undertaking policing functions on the basis of market-oriented contracts relating payment to performance. The resulting incentive for zealous law enforcement, however, could significantly endanger individual rights and liberties. Similarly, contracting out the protection of the state to private armies would entail substantial risk given the difficulty of specifying and enforcing a contractual arrangement to ensure the activities of the private firm are consistent with the interests of the state. In such cases production by both private firms and public corporations would require detailed monitoring. With these functions performed by departments of government, major and costly replications in monitoring are avoided.

Incrementality Problems

Those situations where the government is contracting with private firms, not for goods and services, but for a change in the production process - as occurs, for example, with the provision of employment or R&D subsidies - are prone to especially difficult enforcement problems. Usher (1983), among others, has analysed the difficulties that arise in attempting to ensure that subsidies lead to the desired change in firm behaviour. Available studies would suggest that a large portion of subsidies goes to the support of activities that are not incremental - that would have occurred in the absence of public support.[14] Incrementality problems largely result in a transfer to the beneficiaries of the subsidy rather than a real resource loss. But where there are serious incrementality problems, along with limited funding for a particular program, a contractual arrangement with a private firm will be ineffective in achieving a given policy objective.

Public production provides a response to the concern that the investment or hiring undertaken by subsidized firms is not incremental. But while public production can be an effective response to the incrementality problem at the level of the firm, it does not ensure that the particular activity is incremental in terms of the industry or in terms of the economy more generally. It may be, for example, that the jobs created by establishing a public firm are offset by the employment loss experienced by domestic firms competing in the same market. Also, the resources that are utilized by the public firm may be drawn from production activities elsewhere in the economy, so that again there are substantial offsetting losses in employment.

In assessing the desirability of public production, it is necessary to balance concerns about incrementality problems at the firm level against considerations that would suggest a preference for private production. With a short-term contractual arrangement, the losses arising from incrementality problems will be limited. Public production, on the other hand, could entail substantial longer-term losses, as we will discuss in Section C.

B.2 Asset Specificity

A second major set of contractual problems are encountered in the case of transactions involving durable, specialized, physical or human assets. Williamson (1975, 1981) has elaborated at some length on the exchange problems that arise as a consequence of the fact that such specialized investment ties the parties into a situation of mutual dependency. Short-term contracting of the type described in Section A is not possible under these circumstances. While competitive bidding is possible at the time of the original agreement, the parties thereafter become "locked-in", and the trading environment becomes transformed into a situation of bilateral exchange.

Transaction-specific investment may take different forms. It may involve an investment in physical assets that is made expressly to meet the needs of a particular customer. Or it may involve the siting a firm's production facilities so that their value is highly dependent on the proximity to a particular supplier or buyer. Alternatively, it may consist of the investment in knowledge and skills that is made in the course of responding to the needs of a certain buyer. The latter situation will be similar to the others to the extent that the investment in human capital provides a firm with a significant cost advantage and market imperfections impede the transfer of the relevant worker or manager. Here again, the buyer may be unable to terminate the contract and turn to other producers in the case of inadequate performance.

Since the relevant transactions involve long-term commitments, there is a need for an exchange relation with "good continuity properties". Long-term contracts have appeal in this regard, but long-term arrangements must necessarily be highly incomplete since it is not possible (given bounded rationality) to take account of all future contingencies and expressly provide for required adaptations in the original agreement. The more complex the agreement and the greater uncertainty to which it is subject, the more incomplete the contract will be. Due to their inevitable imprecision, long-term agreements will come to be characterized by costly bilateral bargaining and the attendant risks of opportunistic behavior.

These issues are well illustrated by considerations relating to the provision of public utility services subject to substantial economies of scale. While the economies of production require that there be one supplier, as Demsetz (1968) shows effective competition may nevertheless exist at the initial bidding stage where the supply franchise is awarded. Given the limitations of any contractual arrangement in an uncertain environment, however, some mechanism must also be introduced to allow for adjustments over time. If the plant and equipment had a relatively short life, the periodic need for new investment would provide a natural opportunity for renegotiation of the contract. Alternatively, if investment requirements were relatively unspecialized so capital assets could be adapted to other uses at minor cost, contract renewal could occur within a competitive environment. Public utility investment, however, gives rise to durable, highly specialized assets. Under these conditions outside bidders are at a major disadvantage when a contract comes up for renewal unless there is an effective system in place to transfer assets from incumbent firms to their successors. Williamson (1976) has shown that it is exceedingly difficult to work out a scheme that ensures parity and completely eliminates any advantages of the incumbent in terms of his access to specialized physcial, and also specialized human, capital. While some of those advantages could have been taken into account in the bid for the original franchise, the anticipation of subsequent bidding disparities would at best be highly incomplete and imperfect.

Transactions cost analysis leads to conclusions similar to those emerging from the theory of contestable markets. Both approaches lead to a recognition of the important role of potential entrants in limiting the opportunity for monopoly profits. This constraint may exist even in industries subject to substantial economies of scale. In such cases, competition <u>for</u> the market through franchise building, can be an effective substitute for competition <u>in</u> the market. The conditions for both contestability and for short-term contracting are violated, however, by the existence of barriers to entry. Sunk capital, of the sort that comes into being with the initial awarding of a public utility franchise, constitutes one of the most important barriers to entry. For contestability, as for competitive recontracting, the key requirements are that durable capital goods are saleable or redeployable, and that human capital skills are transferable to alternative markets.

The concept of contestability has recently been extended to the case of multiproduct industries, where production is characterized by important economies of scope, as well, perhaps, as of scale. This case is of importance because many of the products of interest to the public sector are produced jointly or in common with other outputs. Contracts with multiproduct industries give rise to some important issues with respect to the allocation of common costs between public and commercial outputs. The contestability literature would suggest, however, that in the absence of barriers to entry, economies of scope offer limited opportunity for the exercise of market power.[15] The implications are similar to those for a single product industry subject to substantial scale economies. So long as there are not important barriers to entry competitive short-term contracting can occur. Competitive tendering for the right to supply the public output will in this case resolve the problem of cost allocation and eliminate the opportunity for monopoly profits.

B.3 Firm-Specific Policy Objections

Competitive contracting may be precluded, not because of asset specifity, but rather because the public policy objective is defined very narrowly. Where the objective pertains, for example, to the survival of a particular enterprise or the development of a firm-specific technology, there is clearly no possibility for competitive contracting. If there is an enforcement problem, the government cannot turn to an alternative supplier. It could reformulate its objective but, in many cases, the nature and extent of the political pressures may be such as to make this an unrealistic alternative.

The extent of the contracting problem in these situations will depend on the degree of support required by the private firm as well as the pressures on the government to continue providing support. As the size and importance of public support increases, the incentive of owners and private lenders to monitor the performance of the firm will diminish. The vulnerability of the government will also increase as political pressures preclude the withdrawal or reduction of support. The government is again "locked-in" to an arrangement with all the risks this involves, but this is now due to political factors, not to technological considerations relating to the achievement of a particular policy objective.

C. Government Enterprise vs Imperfect Contracting

In many situations the problems we identified in the previous section will be present to some degree and the relevant choice will be between public production and a somewhat problematic arrangement with a private firm. For our purpose, interest centers on that subset of situations where pursuit of the government's objectives entails commercial production and where (based on the considerations in Section II) the relevant choice is between contracting-out and public production within a government enterprise. Whether government enterprise will be the preferred arrangement will depend on a number of considerations: the extent to which transactions can be reduced by internalizing production of the relevant public policy output; the efficiency of public relative to private performance of related commercial activities; and the more general implications of government enterprise for the policymaking process.

In what follows we attempt to shed some light on each of these factors. The discussion focuses, in turn, on the role of public enterprises as purveyors of public policy, as commercial entities, and as components of the political process.

C.1 Transactions Costs in the Pursuit of Public Policy Objectives

C.1.1 General Considerations

It is far from obvious why the control problems associated with the pursuit of a specific public policy objective should be lower with public than with private production. Both government enterprise and the contractual alternative depend on the enforcement provided by bureaucrats and politicians representing voter interests. To the extent there is an enforcement problem arising either from the difficulty of monitoring a particular activity or the nature of political and bureaucratic incentives, this will affect both approaches.

One possible source of difference relates to the nature of management's perception of its responsibilities and roles in public and private corporations. Public managers may attach greater importance to their public service obligations and indeed see themselves, in accordance with Howard's (1982) description, as fiduciaries, who have been entrusted with power and resources to be used for the benefit of the community. This could reduce the probability of shirking, but result in control problems of a different nature as public manager assert their perceived right to represent the public interest.[16] In what follows, we assume that opportunities for discretionary behaviour will be pursued by both public and private managers, and we take the view that these activities are of concern, notwithstanding the possibility that the underlying motives may be entirely laudable.

Consider first the case where there are significant problems in assessing performance and these measurement problems are similar whether production is by a government firm or a private firm under contract. High monitoring costs will give rise to certain types of opportunistic behaviour by employees of the government firm in the one case, and by managers of the private firm in the other. This will be reflected in increased consumption on the job and lower measured productivity for the government firm and, quite possibly some decrease in the quality of the service provided by the private firm. In both cases there will be an absolute loss resulting from the forgone opportunities for a more mutually satisfactory arrangement.

There would also be a transfer to the employees of the public firm, or the owners of the private firm (assuming relatively low private sector agency costs), to the extent that the gains associated with inadequate monitoring were not anticipated and competed away. In the competitive case the gains from opportunistic behaviour would be offset by the lower wages received by employees of the public firm, and by the increased bidding expenses incurred by the private firm.

The magnitude of the redistribution and the net resource loss will depend on the implicit calculations by the relevant decision-makers in private and public firms of the expected gains and losses from cheating. These will depend, in addition to monitoring costs, on the ease with which public managers and private owners can realize their preferences, and on the degree of concern about the respective penalties to which they could be subject upon detection. The opportunism under alternative arrangements could be significantly influenced if it was more possible, in one case, to enforce rules which limit the opportunity for gain, or it was more feasible to implement an incentive scheme linking compensation to performance. Monitoring costs, which bear on the probability of detection, are likely, however, to constitute a key variable in the calculation of decision-makers in both firms. Indeed, one might expect that in many cases, measurement problems will dominate the other factors in the calculation. Monitoring gaps that arise because an output or activity is inherently difficult to measure will tend to create corresponding opportunities for gain. To the extent this is so, and we are indifferent as whether the possible gains accrue to the benefit of government employees or private sector shareholders, there is no priori reason to distinguish between production by a public firm and by a private firm under contract.

Contrary to the previous assumption, however, measurement problems may not be similar. Where government is providing for its own needs there may be a greater access to information and the capacity to monitor a broader range of performance criteria than where requirements are being fulfilled through procurement. These informational advantages may, moreover, be of particular importance where the alternative of purchasing the good or service from a private producer is subject to major problems of cost allocation and price determination. As McFetridge (1985) notes, government production allows for the possibility of introducing alternative measures of performance where there are inordinate difficulties in costing a service that is being produced jointly or in common with other outputs.

Managers of public firms like independent contractors are likely to pursue whatever opportunities are available within the constraints established by the control system. It will often be difficult to establish a control system that closes all the gaps, and as Lindsay (1976) shows, where there are dimensions of performance that are not being closely monitored there may be significant opportunities for discretionary behaviour by the employees of public corporations. Nonetheless, to the extent central-administrators are better able to probe the activities of publicly-owned corporations, they will be in an improved position to limit opportunism.

Still, it is not altogether clear why there should be informational advantages associated with public production - particularly when we abstract from the problem of uncertainty (which is introduced in the next section). Competitive tendering might often be expected to resolve problems of cost allocation and of information access, and competition should characterize the initial contracting stage even where durable, specialized assets are involved. In the usual case where the cost of cheating to the government exceeds its value to the contracting firm and where improved monitoring can effectively reduce the degree of cheating, we might expect that competition will indeed lead to inclusion of appropriate monitoring provisions in the contractual agreement.

Contracting, however, will not always lead to a satisfactory resolution of information problems. One difficulty arises from the fact, as noted previously, that many public policy objectives are defined so narrowly as to preclude competitive contracting. Where this occurs there is no assurance that the necessary information access provisions will be incorporated in the contractual arrangement. Information problems may also remain unresolved because private firms attach substantial importance to normal commercial confidentiality. A competitive contracting process will not produce the requisite information access provisions where the cost of these provisions to private firms exceed their value to the government. The latter situation is possible particularly where a government contract would extend to only a portion of a firm's output, but where the relevant monitoring would involve the firm's other activities and have general implications for the independence and autonomy of the firm and its management.

Moreover, even a contractual arrangement involving a high degree of information access may not enable the government to resolve the incrementality problem. It is only by undertaking a specific investment itself that the government can be assured that public funds are leading to new investment in the desired activity. Substantial incrementality problems strengthen the case for public as distinct from private, production.

Information access is not the only consideration in determining whether contracting would constitute an efficient organizational arrangement. Even where the requisite information is made available contracting may be inappropriate because of exceptionally high enforcement costs. This will occur where the nature of the output is such that opportunism cannot be substantially reduced without a large monitoring effort that would to a considerable extent replicate the monitoring activities undertaken by the firm itself. Contracting will also be inappropriate where the opportunism which can result from inadequate monitoring is greatly inimical to the public interest. These problems were referred to in our discussions of the organization of government activities. Under these circumstances it will not only be inappropriate to contract out, it will also be undesirable to establish an arm's length arrangement within the public sectior.

C.1.2 Dynamic Considerations

The existence of uncertainty introduces an important additional consideration into the choice of organizational structure. Conditions inevitably change over time, and it is extremely difficult to contractually account for all possible contingencies. Transaction costs will increase as the costs of introducing adjustments to unforeseen developments increase, or as negotiating difficulties result in foregone gains from trade. There will also be additional costs to the extent that resources must be devoted to contending with the greater risk of opportunism that exists in an uncertain environment.

What is of particular interest is the existence of uncertainty in a situation where the government is "locked in" to dealing with a specific producer. In the absence of the latter situation, uncertainty can be dealt with by limiting the term of the agreement and frequently renegotiating the contract to take account of new information. It is where competitive recontracting is not possible that uncertainty poses a serious challenge. As we discussed earlier, the government may become "locked in" to a long-term arrangement because of either political or technological factors. Where political pressures prevent the government from modifying its objectives and turning to alternative private suppliers, the introduction of uncertainty only serves to exarcerbate problems arising from the government's inability to take advantage of the competitive process in either contracting initially or in recontracting. Where a long-term arrangement is dictated by technological factors, namely the existence of asset specificity, competitive contracting is possible initially, but this will generally not in itself allow a satisfactory arrangement to be worked out in conditions of substantial uncertainty.

Williamson's work suggests that in the private sector an arrangement which meets the need for continuity and stability and simultaneously for adaptation and change, has been achieved through the process of integration. The firm, as distinct from other forms of long-term contracting, is seen to allow for a relatively smooth process of adaptation to changing conditions. The alleged advantages of internal organization include the more favourable motivation of the trading parties, increased information access, and the opportunity to appeal to fiat to resolve negotiating differences. It is necessary to look at these factors more closely and determine their relevance for the public sector generally and for government enterprise in particular.

Common Adjustment Costs

The recent attention given in the literature to the dynamic aspects of internalization can obscure the fact that long-term contractual arrangements between autonomous traders can, and do, allow for adjustments over time. Flexibility may be introduced by a formula providing for automatic adjustments in response to known events, such as the movements in some index of prices or costs. Not all contingencies can be foreseen and adequately allowed for within a written contract. Adaptations to unpredictable events can take place, however, where, as is often the case, the contract can be reopened and renegotiated subject to specific penalty provisions. Clearly it is in the interests of both parties to ensure that there is a possibility for adjustment to important new developments. Changes in the environment provide new opportunities for mutually advantageous exchange and both parties are worse off if the contract cannot be reopened to pursue these opportunities.

Although a contract may allow for adjustments, the required negotiations may be difficult and costly. While the use of an arbitrator, as distinct from the courts, will reduce the costs of settling disputes, these costs will nonetheless be substantial in a changing environment where contracts are necessarily incomplete. Organizations however, are subject to many of the same adjustment problems that affect autonomous contractors. What makes the incorporation of new developments into a contract particularly difficult is the absence of specified guidelines by which to establish the value of the required change in trading activities. But as Evans and Grossman (1983) point out, organizations face similar problems in assessing new developments to which they are subject. Within a multidivisional organization the managers of each of the divisions that are affected by a change, have an interest in ensuring that measures are adjusted in a way that is likely to be favourable to their division's measured performance. Where market measures are lacking, the establishment of values, such as, for example, the transfer prices for parts exchanged between divisions of a corporation, is open to potentially costly dispute.

Analogous difficulties could arise with a government enterprise. Where control arrangements require that an enterprise be compensated for its noncommercial undertakings, or that measures of enterprise performance be adjusted to reflect the corporation's public policy obligations, a government directive necessitating a significant change in activities is potentially problematic. Given the distinct perspective and interest of the managers of the enterprise, and the lack of competitive tendering, the cost and implications of the required changes is open to judgment and, possibly, dispute. Monitoring arrangements, however, need not require that adjustments be introduced for each particular policy obligation and constraint. Instead, a comprehensive information system may be established in an effort to provide ministers with the assurance that there is no waste and no undue slack in various sub-activities being undertaken by the enterprise. In this case control arrangements will be less akin to an implicit agreement between the manager of the enterprise and the government, and the difficulties that arise will be less analogous to those which confront autonomous traders involved in a long-term contract.

Negotiations that take place within an organization are, of course, generally subject to certain well-defined and well-understood rules and protocols. The divisional manager who violates these codes does so at some cost to his own reputation and prospects. Autonomous parties involved in a long-term contractual arrangement, however, face similar pressures to contain the area and the degree of conflict in their relationship. Given the costs of attempting to write comprehensive contracts, and of using the legal system to enforce obligations, there is an incentive for the parties to develop norms of trustworthy behaviour. There will be an attempt to supplement what Ouchi (1979) refers to as "hard contracting," with "soft contracting," in which formal contracts are less complete and there is a greater appreciation of the identity of interests between the parties. Contracting parties may therefore rely less on the letter of the law, and more on accepted modes of behaviour. The latter will increase in importance as they come to be enforced by informal sanctions. Individuals or firms that violate accepted norms will impair their own reputations, and their ability to pursue normal business relations with their peers.

The problems of adjustment within an uncertain environment, therefore, do not vanish with internalization. Organizations and autonomous traders subject to a long-term contractual arrangement may indeed confront many analogous problems.

Advantages of Internalization

While the preceding comparison is useful it is inadequate as it stands, primarily because it understates the risks of opportunism to which the parties to a long-term arrangement are subject. Where an arrangement requires an investment in durable, specialized assets, both the party making the investment and the party dependent on the output of the capital facilities are vulnerable to the threat of post-contractual opportunistic behaviour. Indeed, where a private firm is the investor and the government is the purchaser of capital services, it may well be the public sector that has the greater market power. Because of the specialized nature of the asset and the high cost of removing it there may be substantial quasi-rents, which are potentially appropriable by the government.[17]

The threat of opportunistic behaviour - or what has been called the "hold-up" problem - has important implications for efficiency, along with its obvious wealth-distribution effects. A firm that faces a significant threat of opportunistic behaviour will require compensation in accordance with the increased element of risk. This could prevent the negotiation of a satisfactory contract, or lead to a second best arrangement (from a production viewpoint), involving less durable or less specific capital. There is also the cost of the real resources that each of the parties will devote towards improving its post-contractual bargaining position and protecting itself from the attendant risks.

While post-transactual opportunism may occur even with well specified contracts, it is an especially serious concern because of the existance of uncertainty and the difficulty of adequately specifying all relevant contingencies in the contract. The latter gives rise to a number of problems. It increases the threat of opportunistic bargaining, because the resulting contractual vagueness and imprecision allows the party in the stonger bargaining position to press its advantage and remain relatively immune from legal action. Alternatively, one of the parties may simply refuse to negotiate an agreement which has turned out to be unexpectedly favourable because of unforeseen developments.

Where the government negotiates the terms of an agreement with a private firm there is a need to ensure that public officials are in a position to monitor and enforce the new arrangements. But this is likely to be more problematic where changes in an arrangement are being worked out through bilateral negotiations. Whereas the initial contracting stage allowed for the possibility of competitive bidding, the recontracting process involves negotiations between two autonomous entities. And under these conditions it will often prove very difficult to arrive at an arrangement providing for the necessary information access.

The nature of the exchange hazards that may exist is illustrated by the situation in which the government enters into a long-term contract with a private producer who is thereby required to make a large, highly specific investment. The agreement would need to assure the producer that he would have a continuing market for his output, and the government that it would not be required to pay a monopoly price for its purchases. However, numerous complexities are involved devising appropriate pricing provisions which allow for relevant economic changes over time. An appropriate provision might attempt to compensate the producer for reasonable costs and provide him with a reasonable profit. But even a precise specification of what is "reasonable" would be unlikely to eliminate the threat of opportunistic behaviour. While the government faces the threat of prices which don't accurately reflect costs, the producer faces the danger that allowable costs and profits will come to be interpreted so restrictively as to result in the confiscation of his property.

These sorts of problems were encountered early in this century when municipal governments attempted to contract with private firms for electricity generation and distribution, and for municipal transit services. In both cases there was a need for long-lived, specialized capital facilities, and private investors accordingly required a long-term contract from the municipality - about 30 years. And in both cases new developments led to unanticipated changes in supply and demand for the service. Private firms with electricity franchises became embarrassingly profitable in the early 1900s as a result of a sharp growth in demand and rapid improvements in technology. In the case of urban transit the main complicating factor was the decline in demand (arising from the spread of motor vehicles) which made it increasingly difficult for private firms to sustain profits and provide a satisfactory level of service.

In the private sector, vertical integration has provided an attractive alternative to contracting under conditions in which asset specificity and uncertainty have led to great risks of opportunism. The lessons are to some extent transferable to the public sector. With public production, the threat of confiscation of privately-owned assets is removed. There is an assurance that changes can be introduced to respond to unexpected market developments or to shifts in policy. And while the threat of opportunism would continue to exist with public production, the remaining risks can be more effectively addressed through the government's enhanced ability to undertake the necessary monitoring and auditing.

The advantages of internalization may indeed be greater in the public sector since long-term contracting may be subject to increased exchange risk when the public sector is one of the contracting parties. In addition to the usual contingencies, there is now the added uncertainty as to the nature of future public policy requirements. It will generally be extremely difficult to introduce the flexibility that is necessary for an agreement to be responsive to changes in policy preference. As well, it may be difficult to adopt some of the implicit constraints on opportunism that exist in the private sector to arrangements involving the government. Extralegal sanctions, such as the loss of goodwill or of reputation, are largely inapplicable to the public sector, and they will provide only a limited constraint on the private party to the agreement so long as there is doubt about the government's inclination or ability to influence the opinion of other participants in the relevant market.

It is perhaps useful to re-emphasize that the relevant informational advantages are due to government production, and they do not necessarily suggest the desirability of an arms' length organization. Integration may be warranteed because of substantial risks of opportunism, but it may well be that conditions set out in the first section for the establishment of a quasi-autonomous entity cannot be met.

C.1.3 Public Production vs. Regulation

While opportunistic risks may justify integration, there remains the question as to why contractual arrangements could not be adjusted as to reduce these risks. Even in the case of transactions involving durable, specialized assets, competitive bidding will often prevail at the initial contracting stage. This being the case, conceivably enforcement risks and subsequent adjustment problems could have been taken into account in the initial negotiations. We might indeed expect that a key consideration in the award of the initial contract would be the availability of information which would limit the government's subsequent vulnerability to opportunism.

As we have seen, broad information access provisions of the sort that could provide the required degree of protection to the government may be very costly from the perspective of the owners of the private firm. This is particularly so when the agreement with the government pertains to only a minor portion of the firm's production. These costs are most likely to be acceptable where firms are bidding for a large and lucrative contract, such as an exclusive market franchise. Indeed in the case of regulated monopolies, the regulatory board is typically given extensive auditing and monitoring powers to enable it to address any issue that could arise over time. Regulation is a form of "administered contract" in which certain basic principles are defined, and specifics like prices are left to be worked out over time in a series of recontracting exercises (i.e. the regulatory hearings). As a result of this built-in flexibility and as a consequence of their broad information access provisions, regulatory arrangements are not subject to the same risks as other long-term contractual agreements.

Regulation and public production are alternative responses to the situation where specialized, long-lived investment gives rise to conditions of monopoly supply. Regulation represents the 'buy' alternative in terms of the 'make a buy' choice facing governments; in regulating the state is essentially assuming the role of a purchasing agent for consumers. While the need for consumer support and protection could conceivably be met by private agents, the costs of organizing a large number of consumers, each of whom is affected only slightly by the absence of competition, will generally be prohibitive. For reasons of the sort that were partly touched on in Section II, governments are in turn motivated to delegate the buying activities they undertake on behalf of consumers. Regulatory boards are the agents with responsibility for administering the contracts governments have negotiated with monopoly producers.

Regulatory boards provide a response not only to the opportunistic risks faced by the government, but also to those encountered by private firms who enter into a contract with the government requiring large specialized investments. The protection available to private firms comes, as Baldwin (1984) explains, not just from regulation, but from regulation combined with judicial and/or constitutional guarantees against confiscation. The latter did not always exist, and in an earlier period in Canada's history there is evidence suggesting governments did, on occasion, act opportunistically in their dealings with private firms.[18] This has changed with the evolution of a system of legal constraints that protects private property and reduces the hazards confronted by a producer when he enters into a long-term agreement with the government.

Where contractual arrangements provide private firms with an effective guarantee against postcontractual opportunism and provide the government with the broad information access that is necessary so arrangements can be effectively adapted to a changing environment, it is difficult on the basis of the considerations discussed previously to distinguish between the 'make or buy' decision. Public production provides an effective response to the risks inherent in long-term contracting; but so does a regulatory board with broad powers of information access and subject to common law or constitutional constraints that prevent the expropriation of private property. The crucial role of information in determining the efficiency of alternative organizational frameworks has been demonstrated formally by Manove (1982).[19]

There could nonetheless be a basis for favouring one organizational arrangement if it could be established that the relevant public sector decision-makers were more accountable. It could be argued, for example, that regulatory officials functioning within a system characterized by open decision-making and broad participation are accountable in a way that the bureaucrats monitoring public corporations are not.[20] While in the latter case Ministers may directly assume some of the responsibilities rather than delegating them to departmental officials, the issue of accountability may still arise. Schultz, Swedlove and Swinton (1980), for example, found that the federal Cabinet was not in any true sense accountable to Parliament for its administration of the Foreign Investment Review Act. In a more pertinent study of a provincially-owned telephone company (Sasktel), Waverman (1981) found that while the Saskatchewan government's decisions were open to parliamentary review, the Standing Committee lacked the necessary resources to effectively challenge the government. The concern that public oversight will be less thorough in the absence of an open hearing and an opportunity for public input has also arisen in the case of the publicly-owned electric utilities. Forecasting errors made by Ontario Hydro in the 1970s, for example, have been seen as evidence of the need for an independent and open review of the utility's load requirements.[21] Of course, regulatory commissions can also be established to oversee the activities of publicly-owned monopolies; and in this case there is no basis for distinguishing between the public sector decision-making mechanisms which exist with public and private production.

A different concern pertains to the nature of the control arrangements that tend to apply to publicly-owned, as distinct from privately-owned, monopolies. It has been found in particular, that important allocative inefficiencies have resulted from the pricing and investment practices of public utilities such as Ontario Hydro.[22] In general, prices are set at a low level reflecting the favourable borrowing terms available to the utility, and the fact that, as a public utility, it need not earn an appropriate return on equity or pay corporate taxes. In theory governments or their agents could ensure that the prices set by publicly-owned utilities reflect the opportunity costs of the resources used and are therefore broadly consistent with the requirements for economic efficiency. Nonetheless the distinction between the practices of publicly-owned and privately-owned but regulated utilities is striking. This difference suggests that public policy objectives in this area are not strictly exogenous, but rather they are influenced to an important degree by the type of organizational arrangement that is selected.

Another potentially important distinction arises in connection with the government's needs in terms of providing policy direction. While both public ownership and regulation afford the government a high degree of flexibility as compared to other types of long-term arrangements, it is still possible to conceive of circumstances in which regulation might be unduly limiting. Where public policy objectives are ill-defined or likely to be change frequently, it will be impossible for the government to formulate appropriate guidelines to govern the deliberations of a regulatory commission. While directives can be issued by the government from time to time, this power must be exercised sparingly if it is not to be seen as a threat to the independence and authority of the regulatory board. Moreover a directive may be inappropriate because time is of the essence, or because confidentiality is important. Under these circumstances it will be most appropriate to resort to public production, with control of the public enterprise being exercised directly by government rather than by a regulatory commission.

In sum, then, while both public ownership and regulation provide an effective response to the risks inherent in long-term contracting, there are potentially important differences between these two alternatives. Regulated private monopolists are less prone to the distortions associated with inappropriate pricing decisions. There are also benefits from a decision-making process characterized by openness and an opportunity for wide participation. With regulation, however, the policymaker's freedom to provide direction will be somewhat more constrained, and this could be costly in some circumstances.

C.2 Relative Cost of Commercial Pursuits

Our focus in this section is on the commercial activities pursued by public corporations. Most government enterprises are heavily involved in commercial activities and these often dominate the policy role of the corporation. The overall merits of public production, therefore, depend to an important degree on the relative costs of undertaking commercial activities in the public, as distinct from the private, sector.

Much attention has been given in the literature to assessing the relative efficiency of public and private firms. This, however, is not the only factor bearing on the relative cost of public production. These are costs associated with the compulsory nature of "public shareholding" and there are differences in the costs of controlling public, as opposed to private sector, activities and these must also be entered on the ledger.

C.2.1 The Costs of "Public Shareholding"

When the state pursues commercial activities and when private firms do so, there are very different implications for individual investors. All Canadians are shareholders in public firms. By using a public corporation for commercial pursuits, the government is essentially establishing a compulsory investment fund; individuals are being taxed and the resulting savings are being invested on their behalf. In the absence of such intervention, individuals would be free to allocate these funds according to their own needs and preferences. They could decide what proportion, if any, should be saved and how these savings should be allocated among different capital market instruments so as to arrive at a portfolio that suited their particular risk preferences. This restriction in choice is one of the costs that is incurred when the state undertakes commercial activities that could be pursued by private firms.

C.2.2 The Costs of Public Monitoring and Control

The costs of monitoring and control will generally be higher when commercial activities are performed by the state, rather than by private firms. Public production involves multiple agents, and each link in the chain of delegation, from taxpayers to elected representatives, to Ministers, to government officials, to the corporation board and management is associated with its own enforcement costs. The cumulative costs are likely to significantly exceed the costs associated with the comparatively simple delegation from owners to managers of private corporations.

Decision-making generally is costly in a democratic state. As a consequence of the large umber of participants involved and of the controls built into the system, costs are incurred which would not be incurred in a private sector organization. When the state undertakes commercial production, an additional burden is imposed on this system. The scarce time of Ministers, senior public servants, and the legislature must be drawn from policy-making to overseeing the production of commercial goods and services.

Not only is the process for monitoring agents inherently less cumbersome and costly in the private sector but, in addition, monitoring is facilitated by the trading of equity capital. The market for the equity of private firms provides a low-cost mechanism for monitoring management performance. When commercial activities are performed by the state, additional resources are required to oversee management performance to compensate for the absence of equity trading.

C.2.3 The Relative Efficiency of Public and Private Firms

The relative efficiency of public and private firms in pursuing commercial activities can be analysed, first, by looking at the different incentives and constraints to which each is subject. In both public and private firms, there is a delegation of decision-making responsibilities and this presents a problem of control; the separation of ownership and management creates the need for mechanisms to ensure that managers or agents act on behalf of the owners or principals. In the absence of adequate control mechanisms, managers may be inclined to appropriate perquisites for themselves out of the firm's resources, and they may not devote effort to creative activities that can increase the firm's value.

Within the modern private corporation, a number of mechanisms exist to constrain management and help safeguard the interests of shareholders: stock prices summarize the implications of internal decisions for current and future net cash flows and provide an important monitoring mechanism; the takeover market provides an opportunity for either dissident shareholders or outside investors to change the direction and the management of the corporation; the managerial labour market, which establishes the opportunities and rewards for a firm's management, reinforces the latter's concern with the signals of the capital market and the impressions of competence being relayed to others; and a board of directors whose members are concerned with their reputation as "experts in decision control" may provide a significant independent check on discretionary behaviour by management.[23] In addition, stock-based management compensation schemes along with significant management shareholdings have reduced the disparity between manager and owner interest.[24] While managers do pursue goals other than the maximization of shareholder wealth, the costs of detecting and policing managerial decisions have been reduced sufficiently to make the modern corporation an attractive organizational alternative in many situations.

In discussions of government enterprise, much attention has focused on the inapplicability of the incentives and controls which exist in the private sector. A major point of focus is on the nontransferability of ownership claims in public corporations. The potential significance of this, as initially noted by Alchian (1961) and described more recently by De Alessi (1983, p. 68), is that it "rules out specialization in ownership, inhibiting the capitalization of future value consequences into current transfer prices and reducing the incentive of those who bear such consequences to monitor managerial behaviour."

While these type of distinctions are useful as far as they go, they constitute only one part of the story. It does not necessarily follow from the nontransferability of ownership claims that "managers of political firms typically have greater opportunity for discretionary behaviour than do managers of privately-owned firms".[25] Distinct mechanisms exist to enforce the desired pattern of behaviour by managers of government corporations.[26] In place of ownership specialists are administrative specialists within government who monitor the activities and performance of public enterprises on behalf of their political masters and the corporation's ultimate owners. Carrying forward the previous comparison with private sector corporations, the CEO of a government enterprise is analogous to the divisional manager within a multidivisional organization, and the officials within the government departments to which they report are analogous to the central staff within corporate headquarters. Like the latter, government officials have the responsibility and the resources to monitor management performance. They are assisted in this task by outside auditors, parliamentary committees, and institutions such as public interest groups, and the media. Within a democratic state, these are the mechanisms which fill the control function and contribute to the enforcement of appropriate managerial behaviour.

Political and bureaucratic control systems, of course, have their own limitations. Not the least of these derive from the fact that bureaucrats and politicians are themselves "agents" and have their own objectives which may be distinct from those of voters. It is not obvious, however, that managers of public corporations will necessarily have a greater opportunity for discretionary behaviour than their counterparts in private corporations. If we consider, for example, the government officials who monitor public corporations, it is reasonable to expect that their behaviour will be motivated by the immediate opportunities for pecuniary and non-pecuniary gain, but also by the pressures to fulfill the requirements of their position. Their performance on the job will influence opportunities for promotion and bear on non-pecuniary rewards such as prestige and integrity. It is reasonable to expect, moreover, that their performance will have an inverse association with monitoring costs. The lower monitoring costs, the higher will be the level of bureaucratic performance, both because under these circumstances, the fulfillment of job responsibilities impinges less on non-pecuniary 'consumption on the job', and because a failure to perform adequately involves a greater risk of detection. Managers of public corporations, for their part, are sensitive to the monitoring exercise since the results are likely to impact on the degree of corporate autonomy and to more generally influence their work environment and personal employment prospects. Therefore, where monitoring costs are low, as is often the case with public corporations involved in commercial activities in competitive markets, one might expect the opportunities for managers to pursue their personal interests to be limited.[27]

The empirical evidence that is available suggests that ownership can, but does not always, make a difference with respect to commercial performance.[28] In some comparative studies, privately-owned firms were found to be more efficient, while in others, the difference in performance did not turn out to be statistically significant. There is no offsetting evidence suggesting public firms can perform more efficiently than private firms. Some of the evidence purporting to show the greater efficiency of private firms is based on a comparison of public production with contracting out; as we discussed earlier, these differences in performance are due not so much to production being public or private as to the existence of a monopolistic market structure in one case, and a competitive structure in the other. But even excluding these situations, there is sufficient evidence to suggest that public firms will not consistently perform as efficiently as private firms. This is what one might expect from an examination of different constraints on agents in the public and private sectors.

Studies of particular public enterprises have highlighted the sorts of problems that can lead to a deterioration in performance. In some cases, managerial incentives have been weakened by the inadequacy of the system for monitoring and assessing corporate performance. In particular, governments have not always introduced appropriate adjustments for the privileges - especially the favourable borrowing rates and (in the case of provincial enterprises) the tax exemptions - that public corporations enjoy. Those monitoring public enterprises have also had difficulty taking into account the many public policy obligations imposed on some corporations. The latter problem, in turn, reflects the fact that policy-makers have given insufficient attention to how the imposition of increasing responsibilities will affect the government's ability to monitor and control corporate performance.

Another problem relates to the disabilities of size to which large organizations are subject. The establishment of an independent entity is intended to overcome these diseconomies of scale. But a more reasonable presumption - given that the delegation of responsibilities to the public enterprise is less than complete - is that diseconomies are reduced but not eliminated. To some extent, therefore, public corporations suffer from the lags and distortions associated with the flow of information up and down a multi-tiered organization. These impediments of size have been especially problematic for public firms in dynamic and rapidly-evolving industries where there is a need to respond promptly to market developments.[29] Here, government monitoring and control arrangements have often been directly in conflict with the management freedom and flexibility required for commercial success.

The commercial performance of public firms has also been affected by restrictions governments have imposed on public corporations' investment activities. These restrictions have been prompted by concerns about the growth in public sector direct and contingent liabilities. They also reflect the efforts by governments to delimit public enterprise activities. The effect has been to put public firms at a disadvantage relative to their private sector counterparts in pursuing promising investment opportunities. Stringent controls on the expansion of public corporations into new areas of activity may, moreover, prevent the realization of important economies of scope.

A final problem meriting attention pertains to those situations where there has been a serious miscalculation or error of judgment and corrective action is required. These situations are not unique to public corporations, but they do cause particular difficulty within the public sector. As a result of the overriding concern with the political consequences of failure, or what may be perceived as failure, problems tend to be identified and dealt with much more slowly in the public sector. In a number of cases, corrective action has come only after the problems besetting public corporations reached a size where they could no longer be ignored or denied.[30]

C.3 Influence on the Political Process

In our discussion of transaction costs, we looked at the relative advantages of public production for the achievement of given public policy objectives. But public corporations are more than passive instruments of public policy; they also have an important influence on the policy agenda. Our focus in this section is on the manner in which public production affects the political calculus of decision-makers and thereby influences the nature and extent of government intervention.

C.3.1 Policies to Support Public Production

A potentially important implication of public production is that politicians and public servants are likely to have greater involvement in, and greater commitment to, the relevant activities. The responsible minister and his advisors may have been involved in the original decision to undertake public production, and they would at least have been consulted, if not more directly involved, in all major planning and investment decisions. Since they bear some responsibility for the results, policy-makers are likely to have a significant personal interest in the success of the public venture.

A commitment to ongoing programs is a common characteristic of all organizations. Williamson (1975, Chapter 6) refers to this as the phenomenon of "persistence" and he quotes Campbell (1969, p. 10) who believes that "if the ... administrative system has committed itself in advance to the correctness and efficacy of its reforms, it cannot tolerate learning of failure." What is distinct about persistence within the public sector is that decision-makers in this case have access to policy levers which can significantly reduce the prospect of failure. The result may therefore be a bias towards the introduction of policy measures that are protective and supportive of public production. Ironically, what is occurring in this situation is that policy objectives are being shaped to serve the policy instrument; rather than just being a means to an end, the public corporation is the focus of government policy.

It is difficult to establish with certainty where, and to what extent, government policies have been influenced by the policy-maker's desire to support public production. There is enough suggestive evidence, however, to indicate the potential importance of this phenomenon. In telecommunications, for example, the publicly-owned telephone companies in the Prairie provinces (particularly Saskatchewan and Manitoba) have been significantly less exposed to competition than the private telephone companies in the rest of the country. In an international context, similar differences have been observed between the protective environment in Europe, where all the major companies had, until recently, been publicly-owned and the competitive environment in the United States, where the major telecommunications companies are private.[31] Another example comes from the airline industry. The Regional Air Carrier Policy of the mid-60s, which confined regional and local air carriers to one of five regions, was supported by Air Canada and seems to have been strongly influenced by the government's desire to protect the national carrier. In the case of Ontario Hydro, we have the attempt by the provincial government to promote energy conservation through increased electricity use at a time, not coincidentally, when the provincial utility was faced with substantial excess capacity.

A final example of the influence of public production on public policy is the National Energy Program (NEP) introduced by the federal government in 1980. Among other things, the NEP changed the system of incentives for exploration and development. Corporations would now receive a refund of a portion of their exploration and development expenditures, with rates of refund skewed to promote exploration (over development), frontier activities (over conventional activities), and activities by corporations with higher degrees of Canadian ownership and control. But the prime example of a Canadian-owned company, heavily involved in frontier exploration and unable (because it was not fully taxable) to take advantage of the previous policy, was Petro-Canada. It is significant that Petro-Canada was consulted by the government and that some of its senior officers were directly involved in the design of the NEP.

C.3.2 Effect on the Political Cost of Intervention

The second way in which public production influences the policy agenda is through its impact on the political costs of intervention. Public enterprise can be a very subtle form of government intervention. Public policy objectives pursued through a public corporation may not be tabled in the legislature or otherwise made public. In addition, it may be possible to finance public policy pursuits internally, using the profits generated by the corporation's commercial activities. By thus making the costs of government intervention less visible, government enterprise may facilitate the pursuit of public policy objectives which are seen to entail a significant political risk.

The political appeal of public enterprise rests on its ability to capitalize on the information asymmetry between the winners and losers from intervention. The information problems that arise where the costs of government policies are widely dispersed are accentuated where these policies do not impact on the public accounts and thereby "leave tracks." Policies that can be financed internally, or cross-subsidized, will have particular political appeal at a time when there is a great concern about the size of the budgetary deficit. But in contrast to those who bear the costs of intervention, the concentrated interests who have pressed for, and are the beneficiaries of, the policy will be well aware of their gains. Government enterprise can - in the words of Trebilcock, Hartle et al. - "magnify the gain and depreciate the pain" from intervention.

When we broaden our perspective, however, and attempt more generally to assess the implications of this type of political calculus, a number of concerns arise. In obscuring the nature and costs of government intervention, ministers will reduce the ability of the legislature and of the public to hold the government accountable. Accountability is enhanced by requirements for ministers to report on the manner in which their responsibilities have been discharged; a form of intervention which makes it more difficult to identify and cost public policy activities will undermine accountability. Concern also arises in connection with the effect on the government's ability to control its own activities. Where a policy objective is financed through cross-subsidies it is not subjected to ongoing review, as are those activities which must compete for funds during the budgetary process. While this may be politically advantageous, it creates a potentially sizable gap in the process by which policy priorities are established and public funds are allocated.

Control over public enterprises may also become more problematic where the emphasis is on maximizing the policy-makers' flexibility and reducing the political costs of intervention. A control regime in which the managers and board of a public corporation are effectively accountable requires that the objectives assigned to the corporation and the constraints imposed on the corporation can be clearly identified. But administrative arrangements that clarified responsibilities in this way would limit the policy-makers' freedom and flexibility. Where the focus, therefore, is on the political attributes of public enterprise, administrative arrangements are likely to depart significantly from what is required for the government to exercise effective control over its public corporations.

IV CONCLUSION

The discussion has explored the organizational characteristics of public enterprise and identified the conditions under which it is likely to represent an appropriate instrument of government policy. The establishment of a public enterprise involves two decisions: to undertake public production rather than to contract with a private supplier; and to adopt a corporate, rather than a departmental, structure for public production. By examining the response of private sector firms to analogous problems, it is possible to come to an understanding as to when these decisions are consistent with efficient organizational design.

Public production is generally not reasonable where policy objectives can be pursued through a well-defined, short-term contractual arrangement with a private firm. By contracting-out governments can take advantage of the flexibility of these arrangements and of the incentives they provide for a high level of performance. There is considerable evidence indicating the superiority of private to public production where competitive contracting is possible.

In many cases, however, if the government was to pursue its policy objective through a private firm, the resulting contractual arrangement would be highly imperfect. Problems could arise because the desired output is difficult to measure and evaluate, or perhaps even to define; because the objective requires a major transaction-specific investment by the private firm; or because the policy objective is defined so specifically as to preclude competitive contracting. Internalization can help resolve these problems for the government, much as it has helped resolve similar contractual problems encountered by private firms. Whether public production is indeed desirable will depend on the balance between these transaction cost savings and the increased costs associated with any concomitant commercial and political activities pursued within the public sector.

A number of factors will influence the nature of these tradeoffs. The costs of private production - and the gains from public production - will increase, for example, as the specificity and durability of the requisite investment increases; as the specialized or idiosyncratic investment increases in size relative to the costs of the total transaction; and as the degree of uncertainty to which the transaction is subject increases. The costs of public production will increase as the commercial activities pursued in conjunction with the policy activities increase in size and importance, and as there is greater involvement in those commercial activities with requirements for flexibility and market responsiveness of the sort that are difficult to meet within the public sector. Public production will also entail higher costs to the extent that there are important policy decisions which could be influenced by the vested interest of policy-makers in fostering and protecting public sector activities.

When the source of the contractual problem is the need for a major investment in highly durable, highly specialized capital, regulation provides a reasonable alternative to public production. Regulation, like public production, provides an effective response to the risks inherent in long-term contracting. But while there are benefits to the openness and the participatory nature of the regulatory process, the policy-makers' freedom to provide direction will be somewhat more constrained than with public production. This will make regulation inappropriate in some circumstances.

When public production is appropriate, it is necessary to determine if this should occur through a public corporation or a government department. The former will be desirable where - given the nature of the activity and the possibilities for monitoring performance - there are benefits to be realized from a delegation of decision-making responsibilities; and/or where there are gains from withdrawing an activity from the ambit of legislation, rules, regulations, and other constraints applying to government departments. It could be that, because of these latter considerations, it is desirable to situate an activity in a "corporation" rather than a "department," but that the appropriate degree of delegation is quite modest. The optimal organizational arrangement in this situation would be a public corporation, but one which would not fit comfortably within the usual definition of public enterprise; the resulting entity would not be "quasi-autonomous" and it would not operate at "arm's length."

This study, therefore, indicates that public enterprise, broadly defined, can be an efficient organizational arrangement under various circumstances. What remains to be determined is the empirical importance of these circumstances and their relevance to existing federal, provincial, and municipal government enterprises.

NOTES

1 For example, Bocherding (1983), Trebilcock and Prichard (1983), Baldwin (1984)

2 See Akerloff (1970), Barzel (1982), McManus (1975).

3 See McManus (1975) and Jensen and Meckling (1976).

4 See Rumelt (1974).

5 Williamson (1975), Chapter 8.

6 Simon quoted in Williamson (1981).

7 Sloan (1964) p. 140.

8 Solomons (1965).

9 J.A. Corry, Canadian Journal of Economics and Political Science, Vol. 11, No. 3, p. 364.

10 See Postmaster General's Study Group (1978).

11 The implicit assumption is that a tendering process can be implemented to allow contracts to be awarded on a competitive basis. To the extent contracting is subject to political favoritism and this practice cannot be controlled at reasonable cost, short-term contracting loses much, if not all, of its appeal.

12 Alchian and Demsetz (1972).

13 As described by Cheung (1983).

14 See, for example, Usher (1983), Bernstein (1986), Mcfetridge and Howe (1976) and Mansfield and Switzer (1985).

15 Baumol, Panzar and Willig (1982).

16 See Aharoni (1982).

17 Klein, Crawford and Alchian (1978) see "appropriable quasi rents" as a source of market power, which is distinct from that which exists in situations of monopoly. Market power arises from the specialized nature and relative immobility of some assets, which suggest, that their services would conceivably be made available at a price well below what is being paid. Klein et.al. distinguish between "quasi-rents" and "appropriable quasi-rents"; "The quasi-rent value of the

asset is the excess of the value over its salvage value, that is, its value in its next best use to another renter. The potentially appropriable specialized portion of the quasi rent is that portion, if any, in excess of its value to the second highest-valuing user."

18 Baldwin (1984).

19 In Manove's model public enterprise has an advantage over economic regulation. This follows directly from the special assumption that the central-administrators of public corporations have greater information on costs than the regulators of private corporations. In a situation of equal information access the model suggests there is no reason to distinguish between regulation and government ownership.

20 On the other hand, it has been argued that the regulatory process is oriented towards the provision of benefits to narrowly-based and well-organized interest groups. The proponents of "regulatory capture" include Bernstein (1955) and Eckert (1972).

21 See, for example, the report of the Select Committee on Ontario Hydro Affairs (Toronto: Legislative Assembly of Ontario, December 1979).

22 See Berkowitz and Halpern (1981), and Zuker and Jenkins (1984).

23 Fama and Jensen (1983a, 1983b), Jensen and Meckling (1976), Fama (1980).

23 As discussed in Demsetz (1968) and Williamson (1976).

24 Demsetz (1983).

25 De Alessi (1983), p. 68.

26 This point is made more emphatically by Wintrobe (1984) who attempts to show the parallels between the control mechanisms operating in the public and private sectors.

27 This is not inconsistent with Jensen and Meckling (1976), who find that market structure doesn't influence the incentives of owners to reduce opportunism and minimize managerial costs. The focus in the discussion is not on the incentives of owners, but on the size of monitoring costs. The relationship between monitoring costs and market structure is likely to differ in public and private corporations, because the owners of government corporations are unable to rely on the information provided by equity markets.

28 See, for example, Borcherding, Pommerehne and Schneider (1982), and Millward (1982).

29 Doutriaux and Henin (1985), White (1982), and Borins and Brown (1985) discuss aspects of this.

30 Borins and Brown (1985).

31 Tandon and Vogelsang (1983).

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