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Louis De Alessi

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# On The Nature And Consequences Of Private and Public Enterprises

Louis De Alessi\*

## I. INTRODUCTION

Current theoretical and empirical work in economics is occasioning a major reappraisal of the causes and consequences of alternative organizations of economic activity.<sup>1</sup> In particular, it is casting new light on the nature and role of both private and public business enterprises.

Within traditional economic theory, the behavior of the firm always has played a crucial role in determining the price and quantity of goods produced. The existence of the firm, however, typically has been taken for granted.<sup>2</sup> Indeed, within the world usually postulated in theoretical treatises—a world of zero information and transaction costs with fully allocated, privately held rights to the use of resources—firms would not exist.<sup>3</sup> Instead, each individual owning rights to the use of

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\* Professor of Economics, Law and Economics Center and Department of Economics, University of Miami. The author gratefully acknowledges helpful comments by David G. Davies and Robert J. Staaf.

1. The most important theoretical contributions to date include Alchian & Demsetz, *Production, Information Costs, and Economic Organization*, 62 AM. ECON. REV. 777 (1972); Fama, *Agency Problems and the Theory of the Firm*, 88 J. POL. ECON. 288 (1980); Jensen & Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure*, 3 J. FIN. ECON. 305 (1976); Klein, Crawford & Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978); Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233 (1979); Alchian, *Property Rights, Specialization, and the Firm* (1981) (unpublished manuscript) (on file at the *Minnesota Law Review*); Barzel, *The Firm: A Coordinator of Contracts* (1981) (unpublished manuscript) (on file at the *Minnesota Law Review*); Oi, *Heterogeneous Firms and the Organization of Production* (1981) (unpublished manuscript) (on file at the *Minnesota Law Review*).

Much empirical work also has been undertaken. For a critical review of the literature, see generally De Alessi, *The Economics of Property Rights: A Review of the Evidence*, 2 RESEARCH L. & ECON. 1 (1980).

2. Intermediate and advanced textbooks in economic theory usually do not even address the question of why firms exist. Alchian & Demsetz, *supra* note 1, at 778. See, e.g., J. HENDERSON & R. QUANDT, *MICROECONOMIC THEORY* 52-102 (1971).

3. For present purposes, the firm is defined as a coalition of resource own-

resources (including one's own labor) would be an independent contractor, buying the rights to the use of inputs owned by others, adding his or her own resources, and then selling the rights to the use of the output.<sup>4</sup>

The traditional explanations for the existence of firms have centered on the risk-bearing function of the entrepreneur, first articulated by Knight in 1921,<sup>5</sup> and on the cost of forming contracts in the market, first advanced by Coase in 1937.<sup>6</sup> But, at best, risk aversion only explains why one individual does not own all the assets within a productive organization. And the recognition that contracting in the market is costly, although it provides an important insight into the formation of firms, fails to yield fully testable hypotheses.<sup>7</sup>

Moreover, theorists only recently have begun to examine the effects of government regulation on the behavior of privately owned business organizations and to explore the economic consequences of public ownership.<sup>8</sup> Indeed, much of the literature on public enterprises still focuses on normative prescriptions, addressing why certain types of firms should be government owned and how such firms should behave, rather than why certain types of firms in fact are government owned and

ers engaged in a team production process in which one party is the centralized contractual agent. See Alchian & Demsetz, *supra* note 1, at 778, 779-83.

4. This possibility is not as farfetched as it may seem. For example, when the advent of electric power in England first led to the establishment of factories, it was not uncommon for weavers to rent space on a factory's floor, install their own equipment, buy yarn on credit, and sell the cloth produced. See, e.g., Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386, 388 (1937). Similarly, the putting-out system relied on contracts formed in the market rather than on the "firm." See S. CLOUGH & C. COLE, *ECONOMIC HISTORY OF EUROPE 177-85* (3d ed. 1946).

5. F. KNIGHT, *RISK, UNCERTAINTY, AND PROFIT* (1921).

6. Coase, *supra* note 4, at 386.

7. For an elaboration of these comments, see Alchian & Demsetz, *supra* note 1, at 783-85.

8. The seminal articles on the effects of government regulation are Alchian & Kessel, *Competition, Monopoly, and the Pursuit of Pecuniary Gain*, in *ASPECTS OF LABOR ECONOMICS* 157 (1962); Averch & Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 *AM. ECON. REV.* 1052 (1962); Stigler & Friedland, *What Can the Regulators Regulate? The Case of Electricity*, 5 *J.L. & ECON.* 1 (1962). See also Williamson, *Managerial Discretion and Business Behavior*, 53 *AM. ECON. REV.* 1032 (1963).

For a discussion of the consequences of government ownership, see Alchian, *Some Economics of Property Rights*, 30 *IL POLITICO* 816 (1965); De Alessi, *An Economic Analysis of Government Ownership and Regulation: Theory and the Evidence from the Electric Power Industry*, 19 *PUB. CHOICE* 1 (1974). For a summary of the subsequent theoretical and empirical work, see generally De Alessi, *supra* note 1.

how such firms in fact do behave.<sup>9</sup>

In the early 1970's, Alchian and Demsetz suggested that private business enterprises arise to solve the shirking-information problem of team production.<sup>10</sup> The Alchian and Demsetz approach has proven particularly useful<sup>11</sup> because it yields testable hypotheses not only with regard to the decision to form contractual coalitions, but also with regard to the choice of a particular organizational form, such as sole proprietorship, partnership, or corporation. Indeed, recent contributions suggest that the traditional concept of the firm as an independent, identifiable entity is too simplistic.<sup>12</sup> In order to predict business choices what matters is the set of constraints limiting the range of contractual relations available to owners of rights to the use of resources, and the nature of the contractual arrangements characterizing a particular coalition of resources. The distinction whether a particular set of contracts is within a "firm" or among "firms" in many cases is irrelevant to predicting its economic consequences.<sup>13</sup>

This Article summarizes and extends recent contributions to the economic analysis of business choices. Part II summarizes the analytical framework for predicting the nature and structure of private business enterprises. Part III extends this analytical framework to public business enterprises. Finally, Part IV explores some of the economic consequences of private versus public ownership.

## II. THE NATURE OF PRIVATE ENTERPRISES

Recent developments in economic theory suggest that positive transaction costs, broadly defined as the costs of acquiring and using information as well as of negotiating, monitoring, and enforcing contracts, are crucial in determining the choice of contractual arrangement for organizing production.<sup>14</sup> In conjunction with a growing body of empirical evidence on the economic consequences of alternative ownership structures, this work is providing a more rigorous framework for assessing the

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9. *But see* SCHMALENSEE, THE CONTROL OF NATURAL MONOPOLIES 85-99 (1979).

10. Alchian & Demsetz, *supra* note 1, at 777-95.

11. *See* authorities cited *supra* note 1.

12. *See, e.g.*, Klein, Crawford & Alchian, *supra* note 1, at 326.

13. For example, in order to predict the economic consequences of the reserve clause in professional sports, it is immaterial whether the team or the league is the "firm." *See, e.g.*, Alchian & Demsetz, *supra* note 1, at 790-91 n.15.

14. *See* Williamson, *supra* note 1, at 245-46.

behavior of privately owned, market-oriented business enterprises relative to other organizational forms, including government-owned business enterprises.

Current theory suggests that private business enterprises arise to solve the shirking-information problem of team production.<sup>15</sup> If the output produced by individuals working together as a team is greater than the sum of the outputs that each individual member of the team could produce separately (the production function is not separable), individuals have an incentive to engage in team production. If, however, the output, or marginal product, attributable to each member of the team is costly to measure, each team member has an incentive to shirk, because each individual can enjoy the full benefit of his or her own shirking while bearing only a pro-rata share of the resulting costs. The problem, therefore, is how to measure the productivity of the inputs and how to structure rewards in order to discourage shirking, including shirking by the monitors.

From this perspective, the privately owned firm is a set of voluntary contractual arrangements among utility-maximizing owners of rights to the use of resources.<sup>16</sup> The problem of who will police the monitors is solved by forming a contract that assigns to the monitors the residual claim to the coalition's net earnings, thereby providing monitors with an incentive to police themselves. The problem of who will be the monitors is solved by assigning the residual claim to the owners of the assets most specialized to the firm. These are the assets whose value in the next-best use is considerably less than their value in the present use. Thus, the free enterprise firm is a firm where one party, or group of individuals, has the right to the firm's residual, including the right to sell this residual claim, is a party to all contracts with joint inputs, has the right to renegotiate the contract of any input and to alter the composition of the team, and has the right to observe the behavior of inputs.<sup>17</sup>

Competitive forces also inhibit shirking. Competition from other enterprises with respect to product quality and price pro-

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15. Shirking is broadly defined as the unanticipated failure to meet contractual obligations. It includes opportunistic behavior by members of the team as well as by other business enterprises. See Klein, *Transaction Cost Determinants of "Unfair" Contractual Arrangements*, PAPERS & PROC. OF THE 92ND ANNUAL MEETING OF THE AM. ECON. ASS'N, 70 AM. ECON. REV. 356, 356-57 (1980).

16. Alchian & Demsetz, *supra* note 1, at 783; Klein, Crawford & Alchian, *supra* note 1, at 326.

17. See Alchian & Demsetz, *supra* note 1, at 781-83.

vides a check on performance, encourages the evolution of internal control devices, and ultimately eliminates higher-cost producers.<sup>18</sup> Competition in the capital market transfers ownership and control of specialized assets to those coalitions better able to use them. Finally, competition for managerial and other team positions from candidates within and outside the coalition discourages shirking by employees.

The focus on contractual relations suggests that one impetus to the organization of business enterprises is the desire to reduce the possibility of post-contractual opportunistic behavior. If a party to a contract commits resources in such a way that their value in the next-best alternative use is greatly diminished, that party becomes open to opportunistic behavior by the other parties to the contract. As a result, that party will have the incentive either to own the assets outright or to allocate resources to protect itself, perhaps through longer-term and more detailed contracts. Because opportunistic behavior raises the cost of contracting among business enterprises, a good deal of vertical integration simply may be an effort to lower the costs of doing business.<sup>19</sup>

Taking account of the possibility for opportunistic behavior, therefore, yields predictions as to which assets a business coalition is more likely to own and which it is more likely to rent. Enterprises using computers, for example, are more likely to own the computer tapes, which contain team-specific information with little value in the next-best use, than the computers, which could be reallocated elsewhere with little loss. Similarly, banks may be expected to own rather than to rent their bank vaults, and growers of agricultural products are more likely to own the land on which the crop is grown, the longer the crop's gestation period.<sup>20</sup>

This analytical approach also explains why particular forms of business organization are chosen. If production

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18. See generally De Alessi, Property Rights, Transaction Costs, and X-Efficiency: An Essay in Economic Theory (1983) (unpublished paper) (on file at the *Minnesota Law Review*) (effect of competitive forces on enterprise efficiency).

19. See, e.g., Liebler, *Bureau of Competition: Antitrust Enforcement Activities*, in THE FEDERAL TRADE COMMISSION SINCE 1970: ECONOMIC REGULATION AND BUREAUCRATIC BEHAVIOR 65-97 (K. Clarkson & T. Muris eds. 1981).

20. The point is that longer-term contracts, of which ownership is a special case, become relatively more attractive as the probability of opportunistic behavior increases rather than that long-term contracts are not a viable alternative to outright ownership. Alchian & Demsetz, *supra* note 1, at 792; Klein, Crawford & Alchian, *supra* note 1, at 302-04.

processes encourage relatively large team sizes and monitoring costs are relatively low, then employer-employee contracts will evolve (e.g., sole proprietorship, corporation).<sup>21</sup> In this context, the economics of raising large sums of equity capital has fostered the development of the modern corporation with transferable shares. Shareholders own the specialized assets and bear the value consequences of decisions made within the enterprise and changes in market conditions, while managers of the corporation generally specialize in deciding how resources are used and act as agents for the stockholders.<sup>22</sup>

Scholars currently are exploring, in increasing detail, the implications of this view of the principal-agent relationship.<sup>23</sup> For example, the existence of agency costs helps to explain the appearance of organizations with autonomous profit centers and conglomerates with wholly owned subsidiaries.<sup>24</sup>

Profit-sharing arrangements will evolve if team size can be relatively small and shirking is relatively costly to monitor.<sup>25</sup> This hypothesis explains the existence of partnerships in professional and intellectual work and share contracts in certain agricultural and mining activities.<sup>26</sup>

Mutuals and nonprofit organizations (e.g., mutual savings banks, churches, country clubs) will evolve if individuals desire less responsiveness to market incentives and more of certain kinds of "shirking."<sup>27</sup> These organizational forms do not encourage the capitalization of future consequences into current transfer prices, thus reducing the ability of any one group within the coalition to fully capture the gains from improved management, as judged by market standards.

The existence of transaction costs also affects the choice of technology. Other things being equal, transaction costs create an incentive to develop and adopt production processes which,

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21. Alchian & Demsetz, *supra* note 1, at 785-91.

22. The issue of separation of ownership and management popularized in A. BERLE & G. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* (1932) (study of corporations viewed as political institutions), lacks theoretical justification and empirical support. See De Alessi, *Private Property and Dispersion of Ownership in Large Corporations*, 28 J. FIN. 839, 849 (1973).

For a thorough discussion of the corporate form, see Williamson, *The Modern Corporation: Origin, Evolution, Attributes*, 19 J. ECON. LIT. 1537 (1981).

23. See, e.g., Jensen & Meckling, *supra* note 1, at 308-09; Alchian, *supra* note 1.

24. See Williamson, *supra* note 22, at 1557-60.

25. Alchian & Demsetz, *supra* note 1, at 785-86.

26. *Id.* at 786-87.

27. *Id.* at 790.

although costlier in other dimensions, sufficiently lower the cost of monitoring shirking.

The structure of property rights similarly affects the choice of technology and the variability of inputs. If private rights to the use of resources are weak, managers and other decisionmakers will have more opportunity to increase their own welfare at the expense of both the owners of the specialized assets and the taxpayers. Managers will have less incentive to minimize costs, yielding greater variations among enterprises in input proportions and in the choice of production techniques.

The analysis presented thus far clearly identifies variables that affect the characteristics of the coalition. As additional transactions are brought within the coalition, the costs of monitoring and coordinating production eventually will exceed the benefits, setting a limit to the size of the coalition. Moreover, differences in the availability and quality of entrepreneurial ability, including the ability to monitor, and differences in ownership arrangements imply the existence of enterprises differing in size, technology used, range and quality of output produced, and other characteristics. Thus, transaction costs help to explain the heterogeneity of firms within each industry.<sup>28</sup>

Focusing on transaction costs and the structure of property rights is yielding insights regarding not only why business coalitions are formed, but also why different forms of business organizations are chosen in different circumstances.<sup>29</sup> Work on the evolution and economic consequences of different systems of property rights is casting further light on these issues, thus paving the way for a more rigorous analysis of the nature and role of public enterprises.

It clearly is useful to be able to predict the circumstances under which enterprises arise, the choice of the particular form of business organization, and the economic consequences that flow from alternative organizational forms. In many cases, however, it would be misleading to focus wholly on the enterprise as the basic unit of analysis. For a broader range of purposes, including the analysis of collusive arrangements and the whole range of government business policies, it is far more useful to examine the goals and consequences of the alternative contractual arrangements used to coordinate business activi-

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28. See Williamson, *supra* note 22, at 1544; Oi, *supra* note 1.

29. See *supra* notes 20-21 and accompanying text.



ties, and disregard whether the relations are within a team or among teams.

The theoretical approach described in this Article also offers a new perspective on a broad range of government policies. In particular, it suggests that many business practices, attacked as anti-competitive under various antitrust programs, may be undertaken to protect enterprises from opportunistic behavior, thereby lowering production costs (e.g., by reducing monitoring costs through vertical integration) and enhancing competition. This new view of antitrust is shared by a growing number of economists and legal scholars.<sup>30</sup>

### III. THE NATURE OF PUBLIC ENTERPRISES

The reasons for government ownership of business enterprises are not well understood. Such reasons, however, are not separate from the reasons government itself exists and grows, phenomena which also have no generally accepted explanation.<sup>31</sup> This is not to say that such things as the movement from anarchy to some kind of government are not predictable.<sup>32</sup> Rather, the processes whereby particular forms of government arise and grow are not sufficiently well understood to permit accurate predictions.

For present purposes, it is sufficient to focus on why some business choices are solved through the political process, while other business choices are solved through the market. The question, therefore, is how to predict when political organizations will be used to make business choices. Several hypotheses, not mutually exclusive, are discussed below and should offer some insights.

One hypothesis is taste. To the extent that the nature of the economic system under which an individual lives is itself a source of utility, some individuals may prefer government to private ownership of certain enterprises. Thus, some individuals would be willing to have less of other sources of utility (e.g., less food, clothing, and hospital services) in order to have more

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30. See, e.g., O. WILLIAMSON, MARKET AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS 83-89 (1975); Klein, Crawford & Alchian, *supra* note 1, at 298-302; Williamson, *supra* note 22.

31. See, e.g., BUDGETS AND BUREAUCRATS: THE SOURCES OF GOVERNMENT GROWTH (T. Borcharding ed. 1977).

32. See, e.g., Bush, *Individual Welfare in Anarchy*, in EXPLORATIONS IN THE THEORY OF ANARCHY 5 (G. Tullock ed. 1972); Stubblebine, *On Property Rights and Institutions* in *id.* at 39.

government ownership of the business enterprises producing these or other goods and services.

Although taste may explain some instances of government ownership of business enterprises, it is unlikely to be a major explanation. Reason and evidence suggest that preference for one ownership arrangement over another generally rests on the belief that the behavior of the organizations differs. Thus, preference relates to perceived differences in outcomes rather than to the utility of the ownership form *per se*. For example, one can predict the political choice of whether a public transit system is to be privately or municipally owned on the basis of expected differences in such things as funding (e.g., user fees or general tax revenue) and the quality of the service provided, without taking into account possible differences in taste regarding ownership structure.<sup>33</sup>

A second hypothesis involves wealth redistribution.<sup>34</sup> Individuals with a comparative advantage in the use of political power have an incentive to use the state to redistribute resources toward themselves. At the same time, politicians have an incentive to provide services to buy political support. Under these conditions, government ownership may be used partly to mask wealth transfer. Indeed, there is some evidence to support this hypothesis. For example, Pashigian found that the conversion of urban transit systems from private to public ownership occurred earlier in those cities in which users had greater voting strength.<sup>35</sup> Detailed analysis of the factors influencing the probability of conversion from private to public control indicates that nonusers support profitable transit operations and oppose policies which result in higher taxes and public subsidies.<sup>36</sup>

A related hypothesis suggests that government ownership is encouraged by the desire of some members of the public and of some politicians to use the power of the state to modify behavior.<sup>37</sup> Under this variant of the wealth-transfer hypothesis, redistribution is a means rather than an end. The desired incentive structure, however, presumably could be organized

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33. See Pashigian, *Consequences and Causes of Public Ownership of Urban Transit Facilities*, 84 J. POL. ECON. 1239, 1256-57 (1976).

34. Buchanan and Tullock have made extensive contributions to this and related areas. See, e.g., J. BUCHANAN, R. TOLLISON & G. TULLOCK, *TOWARD A THEORY OF THE RENT-SEEKING SOCIETY* (1980).

35. Pashigian, *supra* note 33, at 1241.

36. Pashigian, *supra* note 33, at 1255-57.

37. For example, the public ownership of electric utilities could facilitate rate setting designed to reduce the use of energy.

through other means, such as direct grants. As a result, the choice of government ownership of business organizations as an instrument of social policy must rest either on the lower cost of this alternative or on the desire to mask the actual wealth transfer, rather than on the desirability of the ends being sought.

A third hypothesis relates to the costs of transacting for, establishing, and enforcing private property rights. One implication of these costs is that certain goods and services, (e.g., clean air) may not be produced at all, or may be produced in smaller quantities. The provision of public goods supplies an example. Public goods are goods, such as radio or television signals, whose consumption by one individual does not detract from anyone else's consumption. If the costs of excluding nonpayers are high enough, some public goods will not be privately produced, or will not be produced in sufficient quantities, even though consumers would be willing to pay for them.<sup>38</sup> Accordingly, one can argue that government should produce the service and then tax users.

Such an argument, however, can at best be used to support government *provision* of the goods at issue. Because the government typically has the option to contract with private enterprises for the *production* of the goods, government ownership of such business enterprises is not necessary. Thus, the argument that the costs of transacting or of establishing private property rights are sufficiently high to rule out the production of certain goods by private business enterprises does not explain their production by government. And this point applies whether or not the goods at issue are public, in the sense used above.<sup>39</sup>

On the other hand, the weakening of private property rights within government increases the difficulty of drafting a contract specific enough to permit meaningful monitoring,

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38. For a useful exchange on the nature and policy implications of public goods, compare Minasian, *Television Pricing and the Theory of Public Goods*, 7 J.L. & ECON. 71, 71-80 (1964) (addressing the problem of what goods to produce as well as how to distribute them) with Samuelson, *Public Goods and Subscription TV: Correction of the Record*, 7 J.L. & ECON. 81, 81-83 (1964) (focusing on the Pareto-optimal conditions relating to the distribution of commodities once they are produced). See also J. BUCHANAN, *THE DEMAND AND SUPPLY OF PUBLIC GOODS* (1968); Staaf & West, *Limits on Public Provision of Private Goods*, 70 AM. ECON. REV. 461 (1980).

39. The literature on the behavior of bureaucrats, defined as decisionmakers within large organizations, is extensive. The seminal contributions include W. NISKANEN, *BUREAUCRACY AND REPRESENTATIVE GOVERNMENT* (1971); G. TULLOCK, *THE POLITICS OF BUREAUCRACY* (1965).

thereby encouraging production within government.<sup>40</sup> For example, such terms as "in the public good" and "in the public interest," frequently used in legislation, simply are not specific enough to define the rights of taxpayers and the duties of bureaucrats, effectively ruling out enforcement of contracts in which they appear.

The extension of the framework developed earlier in the context of privately owned business enterprises suggests that some government ownership of business enterprises also occurs to solve the shirking-information problem of team production. As previously noted, government can contract with private enterprises to produce the goods desired. As the cost of monitoring whether output meets contract specifications increases relative to the cost of monitoring inputs when production is vertically integrated, however, the opportunities for shirking and the difficulty of drawing enforceable contracts also increase. As a result, government decisionmakers have the incentive to organize government owned business enterprises.

For example, it is relatively inexpensive to determine whether such physical entities as a tank, a missile, an airplane, a ship, a rifle, a pair of trousers, or a bedsheet meet the specifications provided in a procurement contract. Holding other variables constant, therefore, the analysis suggests that government representatives will contract to purchase such goods from private enterprises. As the cost of monitoring some of the desired output characteristics increases, the analysis implies that the contract will allow the buyer to place its own monitors to check performance along the production process. Such arrangements in fact are a common feature of government procurement contracts for relatively complex outputs, such as missiles and ships, but are not observed in the case of more readily checked entities such as trousers and bedsheets.

As the cost of monitoring outputs relative to inputs continues to increase, the extent of vertical integration within the government also will increase. For example, assuming such contracts could be drawn, in most cases it would be prohibitively expensive to determine the extent to which such commodities as the level of defense and the adroitness of foreign policy met contract specifications. As a result, such contracts formed in the market would provide an increased range of shirking, including opportunistic behavior. If defense or foreign policy were provided by private contractors, the latter would

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40. See W. NISKANEN, *supra* note 39, at 20.

have an incentive to increase their wealth at the expense of taxpayers by appropriating assets, including simply taking over the country. As the cost of reducing the range for such opportunistic behavior increases, more of these activities will be vertically integrated within government.<sup>41</sup> Note, however, that competing governments in a federal system can still be used to provide a check.

The tax structure also affects the choice of the particular business forms used to organize economic activity. For example, exempting state enterprises from property and certain other taxes lowers their production outlays relative to those of private firms and redistributes wealth from taxpayers to customers of the privileged firms. In addition, taxing the net income of private business enterprises lowers the returns to monitoring, weakening the property rights of the owners of the specialized assets and thus increasing the managers' opportunities for discretionary behavior.

The above discussion suggests two main explanations for government ownership of business enterprises: to redistribute wealth and to solve the shirking-information problem of team production.<sup>42</sup> The actual or fancied reasons for the establishment of government enterprises, however, will affect behavior only to the extent that they are reflected in binding constraints on the enterprises' decisionmakers. Thus, in order to predict behavior, it is necessary to disregard the rhetoric and focus on the cost-reward structures embedded in the particular organizational forms under consideration.<sup>43</sup> Part IV will illuminate these issues further by examining some of the economic consequences of government versus private ownership of business enterprises.

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41. For example, from the 1200's to the 1500's Swiss, German and other mercenaries specialized in providing military defense. As the size of the political entities increased and as defense became progressively more complex and sophisticated, monitoring costs increased and national armies replaced the mercenaries. A. VAGTS, *HISTORY OF MILITARISM* 41-49 (1937); J. VERBRUGGEN, *ART OF WARFARE IN WESTERN EUROPE IN THE MIDDLE AGES* 117-25 (1977).

42. Careful consideration suggests that other explanations, such as the desire to provide a check on the performance of private enterprise, essentially are variants of the hypotheses already discussed or mere rhetorical noise.

43. The extent to which the desire to establish various forms of political enterprises is implemented depends upon the nature of the constitution which constrains the political process. This topic will not be pursued here.

#### IV. THE ECONOMIC CONSEQUENCES OF PUBLIC RELATIVE TO PRIVATE ENTERPRISES

##### A. ANALYTICAL FRAMEWORK

Before examining the economic consequences of the effective constraints on decisionmakers within private and public business enterprises, it is useful to summarize the theoretical framework to be used.<sup>44</sup>

Briefly, all individuals are hypothesized to maximize their welfare (utility) subject to the limits on their choices.<sup>45</sup> At the margin all sources of utility (goods) are substitutable and individuals will adjust their consumption of each good until the rate at which each individual is willing to substitute one good for another is just equal to the rate at which he or she is able to do so. Among other things, this process implies that individuals respond to a change in circumstances by choosing relatively more of those goods which have become relatively cheaper; demand curves are negatively sloped.

In order to use the theory for predictive purposes, it is necessary and sufficient to identify the variables that enter an individual's utility function and to specify how changes in circumstances affect their relative cost to the chooser. The nature of these variables has been thoroughly explored in the literature and is sufficiently established to make further discussion unnecessary for present purposes.<sup>46</sup> The nature of the constraints, however, deserves closer investigation.

The contracts defining a particular organizational form specify the nature of the rights which various members of the coalition may hold to the use of resources, to the income the resources generate, and to the transferability of those resources

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44. For a general discussion of the theoretical framework herein adopted, see generally De Alessi, *supra* note 1.

45. Technically, an individual is hypothesized to maximize a strictly concave utility function subject to a strictly concave transformation function defined over both pecuniary and nonpecuniary variables. These variables reflect a variety of goals, such as health, security, prestige, and the welfare of others, as well as the public welfare. Thus, an individual is selfish in the sense that the right to make choices which affect his or her welfare is viewed as a good. See De Alessi, *Toward an Analysis of Post-Disaster Cooperation*, 65 AM. ECON. REV. 127, 128 (1975).

Note that, in economics, the term utility has no psychological connotations. It is merely an index of choice, in exactly the same sense that centigrades are an index of temperature. See A. ALCHIAN & W. ALLEN, *EXCHANGE AND PRODUCTION: COMPETITION, COORDINATION AND CONTROL* 40 (1977).

For an excellent introduction to the concept of utility and to economic theory and its application, see generally *id.*

46. See, e.g., A. ALCHIAN & W. ALLEN, *supra* note 45, at 24-40.

to other individuals. The system of property rights, or constraints, embedded in various alternative organizational forms thus determines, through actual or imputed prices, how benefits and harms resulting from a decision will be allocated between the decisionmaker and everyone else. The resulting cost-reward structure will affect choices systematically.<sup>47</sup>

The term "private property rights" means that an individual's rights to the use of resources are exclusive and voluntarily transferable. The more carefully these rights are defined, allocated, and enforced, the closer is the relationship between the welfare of the individual and the benefits and harms flowing from his or her decisions. As a result, the decisionmaker has greater incentive to take such economic, and social, effects into account when making decisions affecting such property rights. Indeed, with zero information and transaction costs there are no external effects and individuals bear the full consequences of their decisions.<sup>48</sup> Moreover, the initial partitioning of the rights does not affect their subsequent use.<sup>49</sup>

In practice, of course, information and transaction costs are positive. This encourages the organization of private business enterprises to solve the shirking-information problem of team production, and provides owners of the assets most specialized to the coalition with an incentive to maximize the value of such assets.<sup>50</sup>

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47. Property rights may be partitioned, so that different individuals concurrently may hold different rights to the use of a particular resource. For example, the lease of a house assigns different rights to the lessee and to the lessor regarding the use of the house. Moreover, other individuals may have the right to fly over it, dump smoke on it, make noise near it, or cast a shadow over it. Contract law deals explicitly with disagreements regarding the partitioning of rights intended by the parties, whereas tort and nuisance laws address conflicts arising when rights are partitioned and the exercise of rights by one or more owners imposes harms on owners of other rights.

48. Full consequences include all future outcomes, which are fully capitalized. See De Alessi, *Implications of Property Rights for Government Investment Choices*, 59 AM. ECON. REV. 13, 16-20 (1969).

49. Resource rights will flow to their highest-value use, regardless of their initial assignment. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 6 (1960).

50. To the extent that some individuals view participation in a business coalition as a source of utility in itself, they would be willing to accept a correspondingly lower rate of pecuniary compensation. Thus, the owners of the specialized assets might incur a smaller or even a negative rate of return on the current market value of the capital invested, with the exhaustion of the individuals' own wealth as the ultimate constraint.

Note, however, that as the opportunity cost of this source of utility increases (e.g., as individuals are faced with increasing loss of wealth), individuals' investments in such a utility source would decrease. J. HENDERSON & R. QUANDT, *supra* note 2, at 6-37.

An increase in information and transaction costs, other things being equal, will reduce the profitability of monitoring. The enterprise will undertake less monitoring, and decisionmakers within private organizations will have more opportunity to shirk and to increase their utility at the expense of the owners of the coalition's specialized assets. As a result, the behavior of the enterprise will stray further from that behavior implied by the owners' wealth-maximization hypothesis.<sup>51</sup>

Government regulation of private enterprises, other things being equal, will further reduce the profitability of monitoring by weakening owners' property rights. This also implies expanded managerial opportunity to shirk and increased deviation of enterprise behavior from that behavior implied by the owners' wealth-maximization hypothesis.<sup>52</sup>

Turning to public enterprises, their distinguishing characteristic is the relatively high cost of transferring ownership shares in their specialized assets. Taxpayers who wish to change their portfolio of these shares typically must change the political jurisdictions in which they work and live, or change the operation of the political enterprises, both relatively costly activities.<sup>53</sup> Because property rights in the specialized assets of political enterprises are effectively nontransferable, specialization in their ownership is ruled out. This inhibits the capitalization of future consequences into current transfer prices and reduces the incentive of owners to monitor managers.

In particular, one may expect that decisionmakers within political enterprises will have weaker constraints on their choices than the managers of regulated comparable private enterprises. Private enterprises are subject to the discipline of the market and must respond to market signals to survive. Managers of public firms, on the other hand, are less con-

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51. In neoclassical economic theory, which still dominates much current thinking, private business enterprises are viewed as strict wealth maximizers. See J. HENDERSON & R. QUANDT, *supra* note 2, at 98-100.

52. The literature dealing with the economics of government regulation of business is extensive. Important theoretical contributions include Demsetz, *Why Regulate Utilities?*, 11 J. L. & ECON. 55 (1968); Peltzman, *Toward a More General Theory of Regulation*, 19 J. L. & ECON. 211 (1976); Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971); Telser, *On the Regulation of Industry: A Note*, 77 J. POL. ECON. 937 (1969). On the behavior of regulators under alternative regulatory arrangements, see Eckert, *On the Incentives of Regulators: The Case of Taxicabs*, 14 PUB. CHOICE 83 (1973). See also authorities cited *supra* note 8.

53. See Alchian, *supra* note 1. But see Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416, 424 (1956). Federalism, of course, is designed to lower the cost to individuals of revising their portfolio of government assets.



strained by market considerations, and find it easier to obtain subsidies and to mask utility-maximizing behavior under the guise of fulfilling other social goals. Indeed, public enterprises, especially those endowed with politically influential clients, can survive for long time periods, and their managers prosper, even in the presence of persistent losses.<sup>54</sup> Depending upon the extent to which political firms meet the objectives assigned to them, that may well be as it should.

## B. ECONOMIC CONSEQUENCES

The above analysis suggests that managers of political enterprises have greater opportunity for discretionary behavior than managers of regulated and unregulated private enterprises. In particular, they have more opportunity to increase the resources (e.g., staff, assets) under their supervision and to allocate those resources in ways designed to enhance their own welfare. Salary and other contractual pecuniary rewards of government employees, however, usually are subject to statutory ceilings, whereas those paid to managers of private enterprises are not so limited. This difference implies that government employees have greater incentive to allocate resources to enhance their job security, thereby increasing the present value of all future job related pecuniary and nonpecuniary sources of utility. Future job related rewards, however, are not capitalizable and human life is finite. Moreover, it is costlier for owners to monitor the acquisition of nonpecuniary rather than pecuniary sources of utility. These considerations suggest that the cost of nonpecuniary sources is lower and managers of political enterprises will acquire more of them.

The analysis further implies that managers of political enterprises are more likely to adopt policies that will ease their work load and generally make their jobs more pleasant.<sup>55</sup> For example, they will choose pricing policies that are easier to administer. This strategy includes changing output prices less frequently, tailoring them less closely to existing demand and supply conditions, favoring vociferous special interest groups, and giving subordinates across-the-board wage increases. Similarly, they will be more likely to hire subordinates with characteristics they prefer, discriminating on the basis of race, sex, education, and congeniality, and giving such subordinates benefits designed to reduce friction. As a result of these and simi-

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54. See De Alessi, *supra* note 8, at 7.

55. See W. NISKANEN, *supra* note 39, at 38; De Alessi, *supra* note 1, at 41.

lar activities, political enterprises typically will incur higher production costs and will be less efficient by market standards.

There is a good deal of evidence regarding the economic consequences of government ownership of business enterprises. Compared to regulated private firms, for example, municipal electric utilities generally charge lower prices,<sup>56</sup> engage in less wealth-maximizing price discrimination,<sup>57</sup> including fewer peak-related tariffs,<sup>58</sup> favor business relative to residential users and voters to nonvoters,<sup>59</sup> change prices less frequently and in response to larger changes in economic determinants,<sup>60</sup> relate prices less closely to the costs of serving particular user groups,<sup>61</sup> sell wholesale electric power at lower prices and buy it at higher prices,<sup>62</sup> spend more on plant construction, have greater capacity and higher operating costs,<sup>63</sup> adopt cost-reducing innovations less readily,<sup>64</sup> offer a smaller variety of output,<sup>65</sup> maintain managers in office longer,<sup>66</sup> and exhibit greater variation in rates of return.<sup>67</sup>

Evidence from other industries provides additional support for several of these hypotheses and other implications of the analysis presented above. Relative to regulated private enterprises, municipal water utilities have lower tariffs with fewer service categories and fewer blocks within each category, have rate structures which favor more politically active groups, use

56. The price differential, however, seems largely accounted for by differential tax treatment. See Peltzman, *Pricing in Public and Private Enterprises: Electric Utilities in the United States*, 14 J.L. & ECON. 109, 125 (1971).

57. *Id.* at 117.

58. De Alessi, *Ownership and Peak-Load Pricing in the Electric Power Industry*, 17 Q. REV. ECON. & BUS. 7, 15 (1977).

59. Peltzman, *supra* note 56, at 114.

60. *Id.* at 122.

61. *Id.* at 118. See also Jackson, *Regulation and Electric Utility Rate Levels*, 45 LAND ECON. 372, 376 (1969); Mann & Mikesell, *Tax Payments and Electric Utility Prices*, 38 S. ECON. J. 69, 77-78 (1971); Mann & Seifried, *Pricing in the Case of Publicly-Owned Electric Utilities*, 12 Q. REV. ECON. & BUS. 77, 87 (1972).

62. De Alessi, *Some Effects of Ownership on the Wholesale Prices of Electric Power*, 13 ECON. INQUIRY 526, 537 (1975).

63. Moore, *The Effectiveness of Regulation of Electric Utility Prices*, 36 S. ECON. J. 365, 373 (1970).

64. Tilton, *The Nature of Firm Ownership and the Adoption of Innovations in the Electric Power Industry* (1973) (unpublished paper) (on file at the *Minnesota Law Review*).

65. Peltzman, *supra* note 56, at 118.

66. De Alessi, *Managerial Tenure Under Private and Government Ownership in the Electric Power Industry*, 82 J. POL. ECON. 645, 652 (1974).

67. Shepherd, *Utility Growth and Profits under Regulation*, in *UTILITY REGULATION: NEW DIRECTIONS IN THEORY AND POLICY* 3, 56 (W. Shepard & T. Gies eds. 1966).

more capital-intensive production techniques, and are generally less efficient by market standards.<sup>68</sup> It also appears that, compared with both regulated and unregulated private enterprises, political enterprises are less successful in satisfying consumer wants for urban transit,<sup>69</sup> are less efficient by market standards in providing bank<sup>70</sup> and airline services,<sup>71</sup> and incur higher costs in providing fire prevention<sup>72</sup> and refuse collection services.<sup>73</sup> Moreover, evidence from the U.S. hospital industry suggests that political enterprises have more binding and explicit internal monitoring rules,<sup>74</sup> make less use of market information,<sup>75</sup> are more likely to give across-the-board rather than selective wage increases,<sup>76</sup> are less likely to use cost-minimizing input combinations,<sup>77</sup> are more likely to respond to an increase in occupancy by increasing the proportion of administrative personnel at the expense of medical and other services,<sup>78</sup> are less efficient by market standards,<sup>79</sup> and emphasize the production of those services more easily monitored by trustees and legislators.<sup>80</sup> The validity of the hypotheses discussed in this section also is supported by indirect evidence relating to the economic consequences of government regulation

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68. See Crain & Zardkoohi, *A Test of the Property Rights Theory of the Firm: Water Utilities in the United States*, 21 J.L. & ECON. 395, 406 (1978); Hansman, *Urban Water Services Pricing: Public vs. Private Firms* (1976) (unpublished Ph.D. dissertation) (available at George Washington Univ., Washington, D.C., Dept. of Econ.).

69. Pashigian, *supra* note 33, at 1255.

70. Davies, *Property Rights and Economic Behavior in Private and Government Enterprises: The Case of Australia's Banking System*, 3 RESEARCH L. & ECON. 111, 136 (1981).

71. Davies, *The Efficiency of Public versus Private Firms: The Case of Australia's Two Airlines*, 14 J.L. & ECON. 149, 165 (1971).

72. Ahlbrandt, *Efficiency in the Provision of Fire Services*, 16 PUB. CHOICE 1, 14 (1973).

73. Bennett and Johnson, *Public versus Private Provision of Collective Goods and Services: Garbage Collection Revisited*, 34 PUB. CHOICE 55, 62-63 (1979); Savas, *Policy Analysis for Local Government: Public vs. Private Refuse Collection*, 3 POL'Y ANALYSIS 49, 65 (1977).

74. Clarkson, *Some Implications of Property Rights in Hospital Management*, 15 J.L. & ECON. 363, 365 (1972).

75. *Id.* at 368.

76. *Id.* at 377.

77. *Id.* at 379.

78. Rushing, *Differences in Profit and Nonprofit Organizations: A Study of Effectiveness and Efficiency in General Short-Stay Hospitals*, 19 AD. SC. Q. 474, 479 (1974).

79. *Id.* at 483.

80. Lindsay, *A Theory of Government Enterprise*, 84 J. POL. ECON. 1061, 1068 (1976).

of private enterprises.<sup>81</sup>

## V. CONCLUSION

A number of central arguments are presented in this Article. First, private business enterprises arise to solve the shirking-information problem of team production. Transaction costs also affect the specific choice of business organization. Second, public business enterprises also arise to solve the shirking-information problem of team production, (e.g., difficulty of drawing enforceable contracts), as well as to facilitate the redistribution of wealth. Third, management of business enterprises by government employees weakens individuals' private property rights to the use of resources. As a result, the behavior of public enterprises differs systematically and predictably from that of private enterprises, with the latter category typically observed as more efficient by market standards. Such an observation, however, is neutral with respect to the desirability of these two alternative ownership forms. To make that judgment, it is necessary to know how well each organizational form achieves its objectives relative to the next best alternative.

The extensions of current economic theory described in this Article are tentative. Although the evidence thus far supports them, more rigorous tests applied to a broader spectrum of business activities clearly are necessary. The theoretical and empirical work to date, however, provides a solid foundation for further research as well as for more informed decisionmaking in the courtroom and in government.

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81. For a detailed review of this and related evidence, see generally De Alessi, *supra* note 1, De Alessi, *supra* note 8.

