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**COMMISSION AUTHORIZED**

**BEFORE THE  
UNITED STATES OF AMERICA POSTAL RATE COMMISSION  
WASHINGTON, D.C. 20268-001**

Monopoly Theory Inquiry, 1989

Docket No. RM89-4

**COMMENTS OF  
THE STAFF OF THE BUREAU OF ECONOMICS OF THE  
FEDERAL TRADE COMMISSION\***

(submitted September 1, 1989)

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\* These comments represent the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Commission or any individual Commissioner. Questions about these comments may be addressed to John C. Hilke ((202) 326-3483), or Michael Vita ((202) 326-3493), Federal Trade Commission, Bureau of Economics, 6th Street and Pennsylvania Avenue, N.W., Washington, D.C. 20580,

**BEFORE THE  
UNITED STATES OF AMERICA POSTAL RATE COMMISSION  
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Monopoly Theory Inquiry, 1989

Docket No. RM89-3

**COMMENTS OF  
THE STAFF OF THE BUREAU OF ECONOMICS OF THE  
FEDERAL TRADE COMMISSION<sup>1</sup>  
(submitted September 1, 1989)**

**I. INTRODUCTION**

The staff of the Bureau of Economics of the Federal Trade Commission ("the FTC") appreciate the opportunity to submit these comments to the Postal Rate Commission ("PRC") concerning advances in the economic theory of regulated monopolies since the Reorganization of the postal service in 1971.<sup>2</sup> These comments address only efficiency issues, and do not discuss other policy considerations raised by the invitation to comment.

Two theoretical developments are particularly relevant to the policy of maintaining the government monopoly on letter mail.<sup>3</sup> First, although there continues to be a potentially valid economic efficiency rationale for allowing certain postal services to be produced only by a protected government monopoly, the technological relationships supporting such a policy are now understood to be considerably more limited than they were believed to be at the time of the Reorganization.

Second, the efficiency justification for the government postal monopoly has been based not only on the belief that technological considerations

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<sup>2</sup> The invitation to comment appeared in the *Federal Register* (Vol. 54, No. 89) on May 10, 1989, pp. 20220-20221. The Third Class Mail Association's complaint, and comments from other parties on this complaint, including comments of the FTC's Bureau of Economics staff, were received under the PRC's Docket No. C89-1.

The Post Office Department, a cabinet-level executive branch agency, was reorganized into the United States Postal Service, a government enterprise, on July 1, 1971.

<sup>3</sup> Although there may be equity rationales for providing government enterprises with statutory protection from entry, our discussion focuses chiefly upon efficiency rationales. Equity considerations are briefly touched upon in § V.

justify the continued existence of a protected monopoly, but also upon the view that managers of government monopolies will vigorously attempt to minimize costs. Developments in the theory of "principal-agent" relationships and in the theory of "public choice" suggest that this latter assumption may be incorrect.

There may be other rationales, unrelated to economic efficiency, for perpetuating the postal monopoly, such as the belief that competition would impair the government's ability to subsidize certain groups of postal service consumers at the expense of others. Economic theory suggests that there may be alternative, lower cost methods of achieving these distributional goals.

## II. EXPERTISE OF THE STAFF OF THE FEDERAL TRADE COMMISSION

The FTC is an independent regulatory agency responsible for maintaining competition and safeguarding the interests of consumers.<sup>4</sup> The staff of the FTC, upon request by federal, state, and local government bodies, often analyze regulatory or legislative proposals that may affect competition or the efficiency of the economy. In the course of this work, as well as in antitrust and consumer protection research and litigation, the staff apply established principles and recent developments in economic theory to competition and consumer protection issues, including efficiency rationales for rate and entry regulation.

The FTC staff have commented previously on various issues before the PRC, including: (1) use of a single set of rate hearings to establish a series of United States Postal Service ("USPS") rate changes;<sup>5</sup> (2) elaboration of competition issues inherent in proposed rate and classification changes related to electronic computer originated mail ("ECOM");<sup>6</sup> (3) drawbacks to a proposed modification of the test period for cost recovery in ECOM;<sup>7</sup> (4) advantages of setting ECOM rates to cover full costs;<sup>8</sup> (5) costs and benefits of current preferred mail rates;<sup>9</sup> (6) expedited procedures in reviewing proposed rate changes for Express Mail;<sup>10</sup> (7) a complaint urging a study of the potential public benefits of exempting addressed third class mail from

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<sup>4</sup> 15 U.S.C. Section 41 *et seq.*

<sup>5</sup> PRC Docket No. MR82-3, filed November 4, 1982.

<sup>6</sup> PRC Docket No. R83-1, filed June 1, 1983.

<sup>7</sup> PRC Docket No. R83-1, filed June 16, 1983.

<sup>8</sup> PRC Docket No. R84-1, filed December 23, 1983.

<sup>9</sup> PRC Docket No. SS86-1, filed April 20, 1986.

<sup>10</sup> PRC Docket No. RM88-2, filed October 14, 1988.

the private express statutes;<sup>11</sup> and most recently, (8) proposals to improve documentation of statistical analyses presented to the PRC.<sup>12</sup>

### III. NARROWING THE EFFICIENCY RATIONALE FOR THE GOVERNMENT'S POSTAL MONOPOLY

If the costs of providing postal services are minimized when these services are provided by a single firm, then it could be efficient to allow the continuation of a postal monopoly. However, even if costs are minimized by the existence of a monopoly, it does not necessarily follow that the monopolist should enjoy statutory protection from entry. In this section we briefly review the cost conditions under which production by a single firm will minimize total production costs, and the conditions under which it would be efficient to protect the monopolist from entry.

#### A. Entry Prohibitions When the Firm Produces Only One Type of Output

Since the Reorganization, advances in economic theory have narrowed the range of cost conditions that can justify protecting a monopolist from entry. Prior to the Reorganization, economic theory focused principally on understanding production relationships within a firm assumed to produce only one product. Up through the mid-1970s, it was commonly believed that a protected monopoly could be justified if production of such a product was subject to "economies of scale" over the relevant range of production.<sup>13</sup> An economy of scale exists when a proportionate increase in all of a firm's inputs leads to a more than proportionate increase in its output. Economies of scale imply that the per unit cost of providing a single good decreases as the output of that good increases.

Theoretical work performed in the late-1970s has shown, however, that monopoly may be the least-cost industry structure even when there are not scale economies (or decreasing unit costs) over the *entire* range of possible output levels.<sup>14</sup> It is now recognized that monopoly is the least-cost

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<sup>11</sup> PRC Docket No. C89-1, filed February 28, 1989, was the predecessor of the present matter.

<sup>12</sup> PRC Docket No. RM89-3, filed April 24, 1989 and June 13, 1989.

<sup>13</sup> See Schmalensee (1979), pp. 3-7. For example, economies of scale may exist in providing automated package sorting services. If the cost of installing and maintaining machinery used for package sorting is the same, regardless of the number of packages sorted (within some range), then the sorting cost per package will fall as more packages are sorted.

<sup>14</sup> This body of work is summarized in Baumol, Panzar, and Willig (1982) and Sharkey (1982).

industry structure when the cost function has the property of *subadditivity*. Costs are said to be subadditive at some level of output if one firm can always produce that level of output at lower cost than can two or more firms.

In a single product setting, continuously decreasing unit costs up to a particular level of output are sufficient (but not necessary) to imply that costs are subadditive at that output. In figure 1, for example, unit costs continue to fall until output  $Q^1$  is reached. It can therefore be concluded that costs are subadditive at any output level between 0 and  $Q^1$ . What is not immediately apparent, however, is that costs continue to be subadditive (up to a point) even for outputs exceeding  $Q^1$ , notwithstanding that average costs begin to rise once  $Q^1$  is exceeded. Monopoly therefore may be the cost-minimizing industry structure even when per-unit costs do not fall continuously over the entire range of possible output levels.

This is an important principle, especially in its implications for the issue of entry protection. Legal protection from entry is not necessary to ensure least-cost production when scale economies exist over the entire range of possible output levels. For then, as one observer has noted, "[l]arger firms always have lower costs than smaller competitors [when there are scale economies]. The largest firm at any instant is thus in the best position to compete for sales. If the largest firm is sufficiently aggressive, it will drive all rivals from the field and still earn substantial excess profits."<sup>15</sup> In this instance, the monopoly is said to be *sustainable*. Sustainability means that the market demand and cost functions make available to the monopolist a price such that (1) the market clears (i.e., the monopolist produces all that is demanded at that price), (2) the monopolist breaks even, and (3) entry is unprofitable. When the existence of a monopoly rests entirely upon scale economies (or decreasing unit costs), there is no need for a legal prohibition on entry to ensure lowest cost production.<sup>16</sup>

The case for legal protection from entry is more compelling when monopoly is the least-cost industry structure, and when scale economies (or decreasing unit costs) do not exist over the *entire* range of possible

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<sup>15</sup> Schmalensee (1979), p. 4. See Baumol *et al.* (1982), chapter 8, for conditions under which the threat of entry will provide a monopolist with the incentive to charge a competitive price (i.e., a price at which it earns no "excess profits").

<sup>16</sup> Regulation may be necessary to ensure that such a monopolist charges a competitive price. The literature on *sustainability* (see Baumol *et al.* (1982) and Sharkey (1982)) describes conditions under which the threat of entry will provide a monopolist with an incentive to charge a competitive price.

production levels. For example (see figure 1),<sup>17</sup> suppose that the firm's long-run average cost function has a "U" shape (i.e., average costs fall until they reach some minimum point, beyond which they begin to rise). Suppose further that the market demand curve intersects this cost function to the right of its minimum point (but not far enough to its right to accommodate two firms producing at minimum average cost.) As drawn, the cost function in figure 1 is subadditive at output  $Q^*$ . This set of circumstances will result in an *unsustainable* natural monopoly. That is, given the market demand, total production costs would be minimized if a single firm produces  $Q^*$ . However, such a monopolist would not be able to charge a price that both covers its costs and deters entry.

To see why, suppose this monopolist selects a price and output (denoted as  $P^*$  and  $Q^*$ ) that allow it to cover exactly its average cost at the level of output where demand intersects the cost function (i.e., it chooses a price exactly equal to average cost at output  $Q^*$ ). The monopolist is vulnerable to an entrant which produces less than  $Q^*$  (e.g., output level  $Q^1$ , the level of output at which average cost is lowest) and sells it at a price less than  $P^*$ , such as  $P^1$ . Thus, if an entrant were to produce  $Q^1$ , selling at  $P^1$ , what would remain for the monopolist to produce is  $Q^* - Q^1 (= Q^0)$ . The latter could be produced only at a cost of  $P^0$ , which is above  $P^*$ . In fact, if an entrant produced  $Q^1$ , the monopolist would not have available to it any output between  $Q^* - Q^1$  that it could produce and cover costs, whereas the total output  $Q^*$  could be produced if the monopoly is protected from entry. We note that if  $Q^*$  is produced and priced at  $P^*$  by a protected monopoly, then  $Q^*$  may be produced at lower cost than if  $Q^*$  is produced by more than one firm. If  $Q^1$  is produced by an entrant and  $Q^0$  is produced by the incumbent, the total cost of  $Q^*$  is  $(P^1 \times Q^1) + (P^0 \times Q^0)$ . With the market protected from entry, the total cost  $Q^*$  is  $P^* \times Q^*$ . The total cost of producing  $Q^*$  will be higher with entry if (as is the case) shaded area (A) exceeds shaded area (B). Absent entry restrictions, an excessive number of firms may exist along with a consequent waste of resources.

If the monopolist initially charges a price below  $P^*$ , say  $P^1$ , and supplies the whole of the amount demanded so to deter entry, then total output would exceed  $Q^*$ , and price would fall below cost, causing losses to be incurred. If price is raised to  $P^*$  to avoid the loss, and  $Q^*$  is produced, the monopoly would be vulnerable to entry. This is the situation described just above. If the monopoly initially produces less than  $Q^*$ , charging a price above  $P^*$ , the incentive to enter is not diminished by this. Thus, if the monopoly is vulnerable to entry when it charges  $P^*$ , it is vulnerable if price exceeds  $P^*$ . Thus, if the monopolist were initially to produce  $Q^1$  and charge  $P^{11}$ , it would be vulnerable to entry by a firm producing  $Q^1$  and selling at  $P^1$ . If the entrant charges  $P^1$  and produces  $Q^1$ , there is no output that the monopolist could produce and sell profitably, as noted before.

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<sup>17</sup> This example was first presented in Baumol, Panzar, and Willig (1982), pp. 29-32, and Sharkey (1982), pp. 88-9, and is discussed in greater detail in Brock and Evans (1983), pp. 69-76.

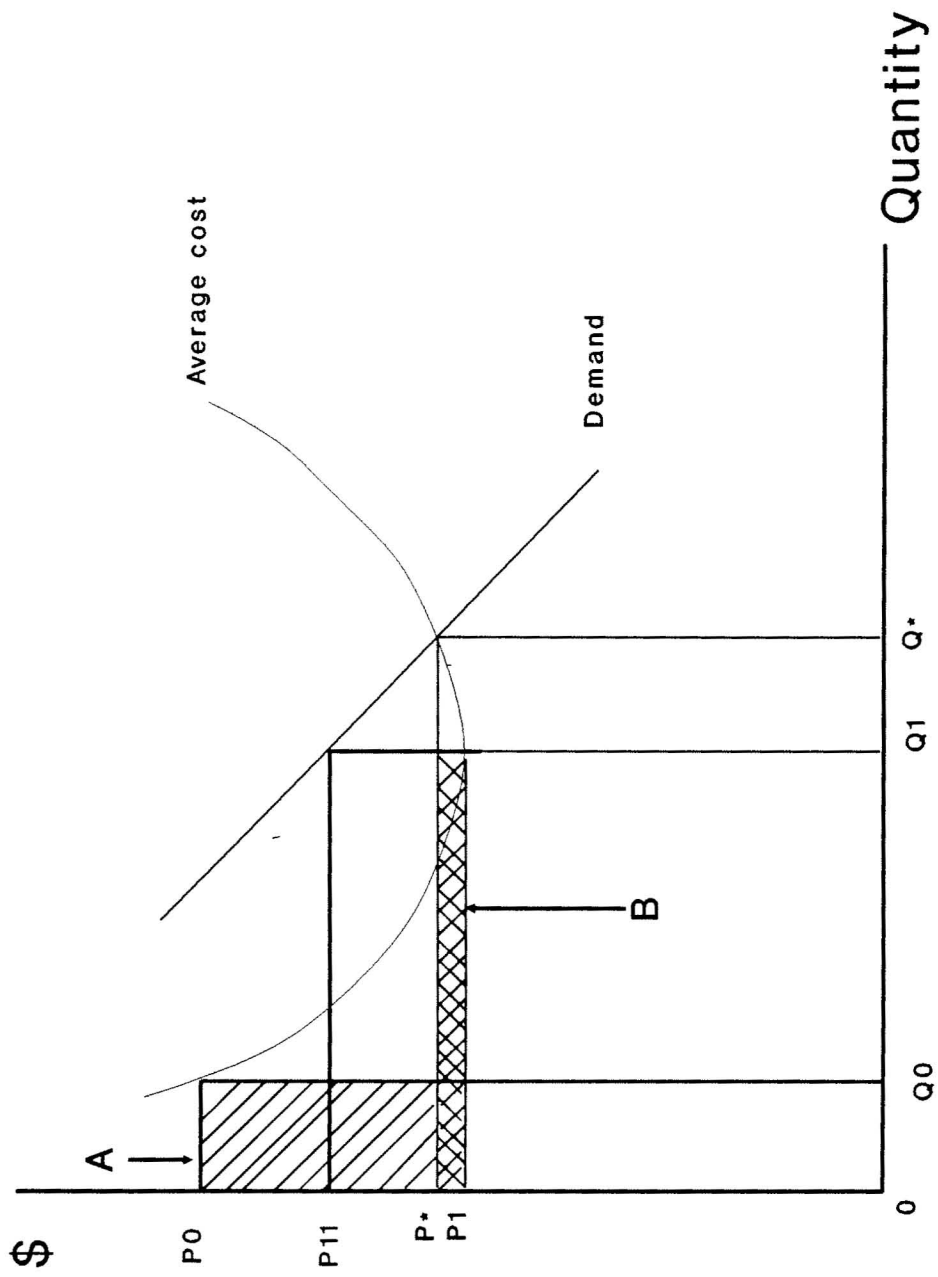


Figure 1

## B. Entry Protection When the Firm Produces Many Types of Output

The analysis of entry protection becomes more complicated when a firm produces more than one output. Prior to the mid-1970s, there was relatively little formal analysis of the implications of multiple product production for industry structure and entry regulation. Subsequent work has shown that, as in the case of single output firms, the existence of a multiproduct natural monopoly rests upon the notion of subadditivity. Subadditivity has the same meaning in a multiproduct setting as in the single output case -- i.e., costs are subadditive when the cost of producing some set of products is lower when it is produced by a single firm than when the same set is produced by more than one firm. However, when a firm produces several products, it becomes difficult to determine whether the firm is a natural monopoly, and if so, whether the monopoly is sustainable. This difficulty arises because multiproduct production makes costs dependent upon the mix, as well as the quantities, of the different products produced.

A full discussion of the conditions under which a multiproduct natural monopoly exists, and when it is sustainable, extends far beyond the scope of these comments. There are numerous excellent discussions of this issue available in the literature.<sup>18</sup> The chief implication of this literature can, however, be succinctly summarized: as in the case of a single product firm, there is no efficiency basis for protecting a monopolist from entry unless there is a good reason to believe that the industry is an *unsustainable* natural monopoly. Unless the monopoly is unsustainable, market forces will induce and sustain the monopoly as the least-cost industry structure.

To determine whether any particular industry, such as the postal service, possibly merits (on efficiency grounds) protection from entry, some empirical evidence should be brought to bear on the subadditivity and sustainability issues. The theoretical literature on multiproduct natural monopoly has developed a set of necessary conditions and sufficient conditions<sup>19</sup> that must be satisfied if it is to be concluded that an industry is a natural monopoly. There is also a set of necessary conditions and sufficient conditions to establish whether a natural monopoly is sustainable. Whether the necessary conditions and sufficient conditions for the existence of a natural monopoly are satisfied in any given industry can, in principle, be assessed empirically via the estimation of cost functions. However, the

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<sup>18</sup> See Baumol, Panzar, and Willig (1982), Bailey and Friedlaender (1982), and Sharkey (1982).

<sup>19</sup> There are unfortunately no analytically tractable conditions that are both necessary *and* sufficient for determining whether an industry is a multiproduct natural monopoly. See Baumol, Panzar, and Willig (1982), p. 170.



data requirements for conclusively determining whether an industry is a *sustainable* natural monopoly are formidable.<sup>20</sup>

Fortunately, one can often derive information of enormous practical significance to policymakers without answering the sustainability question. To establish that an industry is an *unsustainable* natural monopoly requires first a showing that the costs of production are subadditive (i.e., that total costs are minimized when there is only one firm in the industry). Subadditivity can be ruled out if it can be shown that the necessary conditions for subadditivity are not satisfied. Economists have devised and implemented empirical techniques for assessing these necessary conditions whose data requirements are far less burdensome than the requirements for affirmatively demonstrating the presence of a natural monopoly.<sup>21</sup> If cost, output, and input price data are available for the various services provided by the postal service, it should be possible to assess whether the necessary conditions for subadditivity are met. If these conditions are not satisfied, the sustainability issue need never be addressed, and a strong case can be made for allowing free entry into the provision of all postal services. If they do exist, then the case for entry prohibition is strengthened, though not definitively established. Which condition exists is not known at present.

#### IV. THEORIES OF INEFFICIENT PRODUCTION

The natural monopoly theory discussed in the preceding section assumes that managers of firms, whether government- or privately-owned, attempt to produce goods and services at minimum possible cost, given whatever constraints are imposed by existing technology and the prices of factors of production. That is, firms are assumed to operate on the "efficiency frontier."<sup>22</sup>

Recent extensions of theory in the area of "principal-agent" relationships suggest that the assumption of least-cost production may be inappropriate when competition does not constrain the behavior of agents.<sup>23</sup>

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<sup>20</sup> Specifically, to establish subadditivity of the cost function, a researcher would require enough data to estimate the properties of a cost function at all possible levels of the different outputs. In practice, the investigator will only have data on the output levels that the firm has actually produced.

<sup>21</sup> See Evans and Heckman (1983) for an example of this procedure.

<sup>22</sup> The "efficiency frontier" gives the lowest possible cost combination of production inputs for any given level of output.

<sup>23</sup> Agency problems may arise whenever the interests of owners are not identical with those of managers and workers. This literature has a long history reaching back at least to Berle and Means. See Berle and Means (1932). However, this theme has received a great deal of attention from economists since the Reorganization. Much of this has centered around the

In situations where a firm's managers (the "agents") are not the same as its owners (the "principals"), the managers may have the ability and the incentive to pursue goals and objectives that differ from those of the owners. Below we describe a rationale, stemming from work in the theory of bureaucracy, for why a protected government monopoly may fail to minimize costs.<sup>24</sup>

Developments in the public choice theory of government decision-making may also be pertinent, since they help to explain why a principal-agent problem (and a failure to minimize costs) may persist in government monopolies. We also discuss this below.

*Theory of Bureaucracy:* Production inefficiency in monopolies can arise because these firms are not subject to competition.<sup>25</sup> This absence of competition provides managers with some relief from the constant pressure to minimize production costs.<sup>26</sup> If one regards taxpayers as the "principals"

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market for corporate control. See Jensen (1988); Jensen and Meckling (1976); Smiley (1976); Fama (1980); Williamson (1964), (1975).

<sup>24</sup> Additional theoretical work has been done on two other sources of higher costs in government enterprises: excessive rules and regulations, and adoption of additional goals. For a discussion of these issues, see Millward (1982); Frug (1987); Asher and Popkin (1984); and Perloff and Wachter (1984).

<sup>25</sup> Under competition, organizations that supply output of a higher level of quality (at a given price) or at a lower price (at a given level of quality) are likely to attract more customers and to be more profitable than those that serve customers less well. Ultimately, firms that fail to meet the challenges of competition will exit from the market, and investors, managers, and other personnel associated with the firm may find this a costly process. In contrast, managers and workers in monopolies often face very limited competition for consumers' patronage, and, therefore, lack the same incentives to increase quality and decrease costs. They may share in little - if any -- of the monetary gain from superior performance and may suffer fewer consequences from poor performance. Without equivalent incentives to perform well, they may not produce as efficiently as they might in more competitive circumstances. Early work in this area includes: Alchian (1965); Simon, Smithburg, and Thompson (1950); Tullock (1965); Lindsay (1976); Migue and Belanger (1974), and Brenton and Wintrobe (1975); Downs (1967); and Thompson (1969). More recently, see Pommerehne and Schneider (1985); Vickers and Yarrow (1988), Chapters 2-4; and Wolf (1988), Chapter 6.

<sup>26</sup> A related perspective on the efficiency of government enterprise is known as the "X-inefficiency" theory. See Leibenstein (1976). For a discussion of differences between the X-inefficiency theory of the firm and the standard (or "neo-classical") approach, see Alam (March 1983); Leibenstein (March 1983); De Alessi (March 1983); Leibenstein (September 1983); and De Alessi (September 1983).

of a government-owned monopoly, this absence of competition may permit managers to neglect taxpayers' presumed objective of cost minimization.

This attenuation of competitive pressure could manifest itself in a variety of ways. Managers might find themselves able to expend resources on managerial perquisites (e.g., plush offices), or to bargain less energetically with factor suppliers (e.g., labor unions).<sup>27</sup> Because this ability to pursue objectives other than cost-minimization is believed to be positively correlated with the size of the enterprise, government managers may attempt to maximize the size of their enterprises, rather than operate them at lowest cost consistent with market demand.<sup>28</sup>

It is also possible that managers of government enterprises have better information (e.g., better information on production technologies and input prices) than the elected or appointed officials to whom they report. If these officials share the same goals as taxpayers (i.e., they desire cost minimization), this lack of information may prevent them from monitoring effectively the performance of government enterprises. In general, recent work in the analysis of bureaucracy suggests that managers of government enterprises are likely to produce different outputs, and use higher cost production techniques, than would managers of private, competitive firms operating in the same industry.<sup>29</sup>

Managers of any protected enterprise will have some ability to engage in inefficient behavior, regardless of whether the enterprise is privately-owned or government-owned. However, a privately-owned firm protected from competition will face constraints on managerial discretion if there is an active market for corporate control.<sup>30</sup> The market for corporate control cannot discipline the managers of government-owned firms. Such discipline must be imposed by political institutions. The theory of "public choice," described below, explains why the political system may be unable to constrain effectively the behavior of government-owned monopoly enterprises.

*Public Choice Theory:* The theory of "public choice" provides a rationale for why inefficient government monopolies may continue to exist.<sup>31</sup> Public

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<sup>27</sup> Research into effects of entry regulation in other industries has found that entry protection often creates "economic rents" (i.e., above-competitive returns) that are captured by input suppliers. See, for example, Rose (1987).

<sup>28</sup> See Niskanen (1971) and Baumol (1967).

<sup>29</sup> There is a large literature comparing production costs of private firms and government enterprises. See, for example, Boardman and Vining (1989); Davies (1981); and Stevens (1984).

<sup>30</sup> See Jensen (1988).

<sup>31</sup> The public choice literature is reviewed in Mueller (1979). Also see the references therein.

choice theory regards managers and employees of government enterprises simply as two of the many special interest groups that attempt to use the power of government for personal enrichment. From this perspective, it is clear that, unlike taxpayers or the customers of the government enterprise, employees of government enterprises do not have an interest in minimizing the cost of the enterprise. Taxpayers and customers may be poorly situated to force these firms to minimize costs, however, because they are disorganized (relative to the employees). This lack of organization by taxpayers and customers can arise because the benefits of lower costs by government enterprises are widely dispersed (i.e., they are shared by all taxpayers and customers of the postal system), while the expenditures necessary to secure these reductions are not.

This distribution of benefits and costs creates a "free-rider" problem that discourages the formation of political coalitions to lower the enterprise's costs. Since all taxpayers and postal service users share in the gains from such cost reductions, whether or not the individual taxpayer or customer participated in the effort to obtain these reductions, no individual taxpayer or customer has the incentive to incur the costs of actively opposing excessive enterprise expenditures, as the personal costs are likely to exceed the personal benefits. Thus, individual taxpayers and customers cannot profitably incur the costs necessary to oppose excessive enterprise expenditures, even though collectively they would be made better off if such reductions could be obtained.<sup>32</sup>

The beneficiaries of government inefficiency, by contrast, are a much smaller group. As a result, the personal benefits of maintaining the status quo (e.g., greater managerial perks) may well offset the corresponding personal costs.

The key implication here of the theories of bureaucracy and public choice is that government monopolies may have inherent tendencies toward inefficiency. The theory of bureaucracy suggests that private competition with government enterprise can establish limits on the latter's costs through ordinary market competition, and by providing elected officials with increased information on minimum costs and on demanded levels of service quality. With better informed supervisory officials, efforts to inflate an enterprise's budget will increase the probability that the government enterprise will be displaced by outside producers (private or public) or otherwise be more strictly constrained. The theory of public choice suggests that competing suppliers of an initially monopolized industry can reduce the political advantages of enterprise employees by forming a countervailing interest group that may oppose the interests of incumbent employees.

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<sup>32</sup> See Olson (1965); also see Lentz (1981) and Courant et al. (1980). Some empirical work supports the hypothesis that tighter citizen control is associated with reduced costs of municipal operations. Pommerehne and Schneider found that municipalities with strong citizen control averaged 15% to 30% lower costs, primarily because such control restrained wage increases. Pommerehne and Schneider (1985). Also see Pommerehne and Frey (1978); and Borchering (1978).

The existence of a "principal-agent" problem may force policymakers to make a trade-off. In certain situations, a protected monopoly might be the least-cost market structure, absent any principal-agent problem. However, in the presence of a principal-agent problem, permitting more than one firm to enter the industry may be preferable. Even though additional entry would entail some efficiency losses (because some of the advantages of a subadditive cost function<sup>33</sup> would be lost), these losses conceivably could be more than offset by the gains that would arise when firms are constrained by competition to pursue cost minimization with greater vigor.

## V. CROSS-SUBSIDIZATION AND "CREAM-SKIMMING"

The price structure of the postal service likely results in some cross-subsidization. Cross-subsidization occurs when one group of customers is charged a price that exceeds the cost of service while another group of customers is charged a price that is less than the cost of service.<sup>34</sup> Many proponents of the current price system argue that cross-subsidization should be deliberately pursued as a method of redistributing income to certain deserving groups. These advocates maintain that removal of entry restrictions would encourage the creation of new suppliers that would "skim the cream" by producing only the services for which prices exceed costs. Such entry would erode the ability of the postal service to provide below-cost prices to preferred customers. Thus, increased competition induced by free entry could result in higher prices for those services currently priced below costs.

The extent of cross-subsidization in postal rates remains an empirical question, and we take no position on the appropriateness of any distributional objectives that may be reflected in the current rate structure. However, we note that selected groups of customers could be favored without using entry restrictions and a set of inefficient prices. The alternative method involves the use of explicit subsidies. Explicit subsidies make conspicuous what would otherwise be implicit taxes whose effects are hidden from policy makers and the public.<sup>35</sup> When subsidies are explicit, voters and officials are better able to weigh rationally the costs and benefits of transferring income to selected consumers.

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<sup>33</sup> See § III, above, for a discussion of subadditivity.

<sup>34</sup> Cross-subsidization within the same class of service may occur between urban and rural consumers, between long-haul and short-haul deliveries, and between door to door and postal box delivery.

<sup>35</sup> Brennen and Buchanan (1977) suggest that a primary purpose of the tax system is to constrain government expenditures. Other methods of financing government expenditures, such as cross-subsidization, effectively circumvent the safeguards of the tax system.

Explicit subsidies could, for example, be instituted to provide single-price first class mail service to higher cost areas, just as subsidies have been provided to maintain air service to certain small communities in the aftermath of airline deregulation.<sup>36</sup>

## VI. SUMMARY AND TESTS OF THE THEORIES

In the preceding sections, we discussed some developments in economic theory that have narrowed the support for a protected government postal monopoly, and we emphasized the possibility that the postal service currently may lack the incentive to deliver mail efficiently. Our analysis indicates that a government-protected monopoly will not be the most efficient structure for the postal service unless such a monopolist (1) has subadditive costs, (2) is unsustainable against entry, and (3) avoids inefficient conduct on the part of its managers and employees.

Moreover, although we take no position on the appropriateness of any distributional goals that may be embodied in the existing rate structure, our discussion suggests that the same goals could be attained through explicit subsidies. An explicit subsidy may be preferable to an implicit one because it may enable voters to make better-informed decisions about government taxation and expenditure policies. Further, fewer distortions in the pricing of services to various customer groups would remain.

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<sup>36</sup> The Essential Air Service Subsidy Program provided subsidies to small communities that feared the loss of air service after the deregulation of the airline industry. See Adie (1989), pp. 69-70, and Ogur et al. (1988), pp. 12-16.

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