

Before the
FEDERAL TRADE COMMISSION
Washington, D.C. 20580

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Postal Service Study, Project No. P071200)
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DECLARATION OF J. GREGORY SIDAK

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PURPOSE

I have been requested by UPS to provide my opinion in this proceeding in response to the notice requesting information and comment, United States Postal Service Study, Project No. P071200, 72 *Federal Register* 23,822 (May 1, 2007), which the Federal Trade Commission (FTC) has issued pursuant to the Postal Accountability and Enhancement Act (PAEA), Pub. L. 109-435, 120 Stat. 3201 (2006). The purpose of the declaration is to comment on special advantages that the U.S. Postal Service (Postal Service) derives in competitive markets from its statutory monopolies and other special privileges. In particular, the declaration addresses Question 2 posed by the FTC in its notice, which requests analysis of “any benefits the Postal Service derives, in providing competitive services, from its legal monopolies over letter delivery and mailboxes,” including analysis of economies of scope and interconnection with the Postal Service network.

QUALIFICATIONS

My name is J. Gregory Sidak. My business addresses are Criterion Economics, L.L.C., 1620 Eye Street, NW, Suite 800, Washington, D.C., 20006, and Georgetown University Law Center, 6018 Hotung International Law Building, 600 New Jersey Avenue, N.W., Washington, D.C. 20001. I am Visiting Professor of Law at Georgetown University Law Center; founder of Criterion Economics, L.L.C., an economic consulting firm in Washington, D.C.; and founding U.S. editor of the *Journal of Competition Law & Economics*, an international peer-reviewed

journal on antitrust and regulation published by the Oxford University Press. My academic and consulting work concerns antitrust policy, the regulation of network industries, intellectual property, and constitutional issues regarding economic regulation.

I received a law degree and a master's degree in economics from Stanford University in 1981, and a bachelor's degree in economics from Stanford University in 1977. I previously held the F.K. Weyerhaeuser Chair in Law and Economics at the American Enterprise Institute for Public Policy Research, where I was a resident scholar from 1992 until 2005. Between 1993 and 1999, I also held the position of Senior Lecturer at the Yale School of Management, where I taught a graduate course with Dean Paul W. MacAvoy on regulation and competitive strategy in the telecommunications industry.

I was Deputy General Counsel of the Federal Communications Commission from 1987 until 1989. I was the agency's second-highest attorney and oversaw a department of roughly fifty attorneys. From 1986 until 1987, I was Senior Counsel and Economist at the Council of Economic Advisers in the Executive Office of the President. There, my portfolio included economic policy issues concerning antitrust and deregulation of network industries, such as evaluation of the efficacy of the AT&T divestiture decree three years after its imposition. From 1981 to 1982, I served as Law Clerk to Judge Richard A. Posner of the U.S. Court of Appeals for the Seventh Circuit.

From 1989 until 1992, I was in private law practice with Covington & Burling in Washington, D.C. I worked on antitrust cases and federal administrative, legislative, and appellate matters concerning regulated network industries, including the postal industry.

I have submitted expert economics testimony before numerous courts and regulatory bodies, including the former Postal Rate Commission. I have also submitted an expert report to

the Presidential Commission on the United States Postal Service. I have given live expert testimony before state public utility commissions in Indiana, Iowa, Kentucky, Minnesota, New Mexico, Ohio, Pennsylvania, and Texas. I have given live expert testimony before the Federal Energy Regulatory Commission, and I have submitted numerous declarations and affidavits to the Federal Communications Commission. I have testified or submitted expert reports in several U.S. district courts and in the U.S. Court of Federal Claims. I have submitted expert reports in state trial courts in New York and California. I have testified before committees of the U.S. Senate and House of Representatives on regulatory and constitutional law matters, including postal regulation.

In foreign proceedings, I have filed testimony or expert reports with the Australian Competition and Consumer Commission, the Canadian Radio-television and Telecommunications Commission, the Competition Bureau (Canada), the Commission for Communications Regulation (Ireland), the Competition Directorate of the European Commission, the Court of First Instance of the High Court of the Hong Kong Special Administrative Region, the High Court of the Republic of Ireland, the Office of the Director of Telecommunications Regulation (Ireland), and the Office of Telecommunications Authority (Hong Kong). I have submitted an expert report (under seal) before the London Court of International Arbitration. In addition to submitting testimony to these courts or regulatory bodies, I have submitted an opinion of law to the Australian Parliament; an expert economic report to the Australian Minister for Communications, the Information Economy, and the Arts; and an economic report to the Canada Post Corporation Mandate Review Committee.

I have published several dozen scholarly articles, in both law reviews and economics journals, on regulated network industries. Journals in which my articles have appeared include

the *American Economic Association Papers and Proceedings*, *Antitrust Law Journal*, *Columbia Law Review*, *Journal of Competition Law & Economics*, *Journal of Political Economy*, *New York University Law Review*, *Stanford Law Review*, *University of Chicago Law Review*, *Yale Journal on Regulation*, and *Yale Law Journal*.

I have written six books on regulated network industries. In chronological order, they are *Toward Competition in Local Telephony* (MIT Press 1994), co-authored with William J. Baumol; *Transmission Pricing and Stranded Costs in the Electric Power Industry* (AEI Press 1995), co-authored with William J. Baumol; *Protecting Competition from the Postal Monopoly* (AEI Press 1996), co-authored with Daniel F. Spulber; *Deregulatory Takings and the Regulatory Contract: The Competitive Transformation of Network Industries in the United States* (Cambridge University Press 1997), co-authored with Daniel F. Spulber; *Foreign Investment in American Telecommunications* (University of Chicago Press 1997); *Broadband in Europe: How Brussels Can Wire the Information Society* (Kluwer/Springer 2005), co-authored with Dan Maldoom, Richard Marsden, and Hal J. Singer.

My writings have been cited by the Supreme Court of the United States, the lower federal and state supreme courts, state and federal regulatory commissions, and the European Commission. In *Case COMP/35.141—Deutsche Post AG*, decided in March 2001, the European Commission quoted my writings with Professors Baumol and Spulber on the relevance of common costs and universal service obligations to the proper calculation of a predatory pricing floor for a regulated multiproduct postal monopoly.

I am testifying on behalf of UPS, but the views that I present are my own. In addition, such views are not those of Georgetown University Law Center, which does not take institutional positions on specific legislative, regulatory, adjudicatory, or executive matters.

I. INTRODUCTION

State-owned enterprises (SOEs) such as the U.S. Postal Service often have stronger incentives than profit-maximizing firms to use their networks to pursue activities that are harmful to competition and consumers, even though SOEs may be less concerned with generating profit. In particular, the Postal Service has heightened incentives to discount costs in the pursuit of an expanded operating scale, particularly when setting prices in competitive markets. In fact, the Postal Service may find it optimal to set prices below marginal costs. The Postal Service has been granted a unique statutory monopoly, created when Congress chose, through the Private Express Statutes and the mailbox access restrictions, to establish and perpetuate a public enterprise with monopoly power. Owing to this statutory monopoly, the Postal Service enjoys a significant network advantage due to uniquely available economies of scale and scope. This competitive advantage may further encourage and enable the Postal Service to price competitive products below rivals' costs. Because it is important to gauge the magnitude of the network advantage that the Postal Service enjoys, in this declaration I propose a simple methodology for the measurement of network advantage. I also show that numerous empirical studies have concluded that postal operations exhibit significant economies of scope. Hence, the anticompetitive concerns arising from network advantage are of particular relevance to the Postal Service.

II. THE STATUTORY MONOPOLIES ENJOYED BY THE POSTAL SERVICE

Article I of the Constitution empowers, but does not mandate, Congress “[t]o establish Post Offices and post Roads.”¹ Nothing in this constitutional text requires Congress either to

1. U.S. Const., art. I, § 8, cl. 7.

establish a public enterprise to deliver the mail or to create a monopoly over mail delivery.² Nonetheless, the Supreme Court long ago established that the “power possessed by Congress embraces the regulation of the entire postal system of the country.”³ Rather than promote a competitive mail delivery industry, Congress chose to create and perpetuate through the Private Express Statutes a public enterprise with monopoly power. The courts have repeatedly upheld the Private Express Statutes in the face of constitutional challenges to the monopoly.⁴

The postal monopoly is a combination of statutory law and regulation encompassing “letters” and the archaic and now-irrelevant term “packets.” The definition of “letters” consequently is critical to understanding the extent to which the letter segments of first class and standard mail are closed to competition.⁵ The Postal Service has defined a letter to be “a message directed to a specific person or address and recorded in or on a tangible object,” although that definition is subject to a multitude of qualifications and caveats.⁶ The result has been unlike that in any other regulated industry. Because the Postal Service has (at least until passage of the PAEA) claimed for itself the term “letter,” which defines the extent of its monopoly, the

2. For analyses of the history of the U.S. postal monopoly, see William Ty Mayton, *The Mission and Methods of the Postal Service*, in GOVERNING THE POSTAL SERVICE 60 (J. Gregory Sidak ed., 1994); George L. Priest, *Socialism, Eastern Europe, and the Question of the Postal Monopoly*, in *id.* at 46, 54; George L. Priest, *The History of the Postal Monopoly in the United States*, 18 J.L. & ECON. 33 (1975). These authors extend Ronald Coase’s critiques of the British postal monopoly. R.H. Coase, *The British Post Office and the Messenger Companies*, 4 J.L. & ECON. 12 (1961); R.H. Coase, *The Postal Monopoly in Great Britain: An Historical Survey*, in ECONOMIC ESSAYS IN COMMEMORATION OF THE DUNDEE SCHOOL OF ECONOMICS 1931-1955 at 25 (J. K. Eastham ed. 1955); R.H. Coase, *Rowland Hill and the Penny Post*, 6 ECONOMICA 423 (n.s. 1939).

3. *Ex parte Jackson*, 96 U.S. (6 Otto) 727, 732 (1878).

4. *Associated Third Class Mail Users v. United States Postal Serv.*, 600 F.2d 824 (D.C. Cir.), *cert. denied*, 444 U.S. 837 (1979); *United States Postal Serv. v. Brennan*, 574 F.2d 712 (2d Cir. 1978); *United States v. Black*, 569 F.2d 1111 (10th Cir. 1978); *Williams v. Wells Fargo & Co. Express*, 177 F. 352 (8th Cir. 1910); *Blackham v. Gresham*, 16 F. 609 (C.C.N.Y 1883); *Associated Third Class Mail Users v. United States Postal Serv.*, 440 F. Supp 1211 (D.D.C. 1977). *See also* *United States v. Thompson*, F. Cas. No. 16489 (D. Mass. 1846).

5. Second class mail was renamed “periodicals” in 1996. In addition, third and fourth class mail were restructured into “standard mail.” *See, e.g., Opinion and Recommended Decision*, 1996, Dkt. No. MC95-1 (Postal Rate Comm’n 1996).

6. 39 C.F.R. § 310.1(a).

monopolist has had the power largely to define the scope of its own monopoly.⁷ Writing in 1974, John Haldi observed that “the one consistent thread running through” the “complex and conflicting interpretations of what constitutes a letter” is that “the Post Office has construed the term so as to restrict competition and maximize its own revenues.”⁸ Thus, certain “nonletters”—such as bills, which constitute a substantial fraction of the mail stream—are construed to be letters. At the same time, some kinds of letters are exempted from the Private Express Statutes and may be carried “out of mail.” Nonetheless, Postal Service regulations may have established price floors for its private competitors, as in the case of certain expedited delivery services.

A. The Framing of the Private Express Statutes as Criminal Prohibitions

What is most notable about the Private Express Statutes is that their key provisions appear in the United States Criminal Code. Apart from all else that it is, the postal monopoly is the threat of criminal punishment. Section 1694 of Title 18 forbids the carriage of matter out of mail over post routes:

Whoever, having charge or control of any conveyance operating by land, air, or water, which regularly performs trips at stated periods on any post route, or from one place to another between which the mail is regularly carried, carries, otherwise than in the mail, any letters or packets, except such as relate to some part of the cargo of such conveyance, or to the current business of the carrier, or to some article carried at the same time by the same conveyance, shall except as otherwise provided by law, be fined under this title.⁹

7. Pursuant to the PAEA, the Postal Service can no longer enact regulations whose effect is to preclude competition. *See* 39 U.S.C. § 404(a). However, the existing regulations that significantly limit competition faced by the Postal Service remain in effect.

8. JOHN HALDI, *POSTAL MONOPOLY: AN ASSESSMENT OF THE PRIVATE EXPRESS STATUTES* 13 (AEI Press 1974).

9. 18 U.S.C. § 1694.

An analogous provision, section 1695, forbids the carriage of matter out of mail on vessels and adds the threat of imprisonment.¹⁰ Likewise, section 1693 makes the carriage of mail in contravention of the Private Express Statutes punishable by both fine and imprisonment.¹¹

Another punishable crime in addition to the mere carriage of matter out of mail is the creation of a private express network capable of competing with the Postal Service. While sections 1693, 1694, and 1695 take aim at the labor and transportation inputs that would be directly used to provide competitive delivery of letters, section 1696 addresses the deployment of capital and managerial labor to establish a private express network:

Whoever establishes any private express for the conveyance of letters or packets, or in any manner causes or provides for the conveyance of the same by regular trips or at stated periods over any post route which is or may be established by law, or from any city, town, or place to any other city, town, or place, between which the mail is regularly carried, shall be fined not more than \$500 or imprisoned not more than six months, or both.¹²

The Private Express Statutes do not merely punish entrepreneurs who establish or operate private express networks. Any *consumer* of a private express company in violation of section 1696 is also subject to fine.¹³ A person also is subject to fine if he knowingly transports a person who is acting as a private express.¹⁴ Amplifying those statutory prohibitions on private express are numerous postal regulations, the broadest of which provides: "It is generally unlawful under the

10. "Whoever carries any letter or packet on board any vessel which carries the mail, otherwise than in such mail, shall, except as otherwise provided by law, be fined under this title or imprisoned not more than thirty days, or both." *Id.* § 1695.

11. "Whoever, being concerned in carrying the mail, collects, receives, or carries any letter or packet, contrary to law, shall be fined under this title or imprisoned not more than thirty days, or both." *Id.* § 1693.

12. *Id.* § 1696(a). Perhaps because this portion of section 1696(a) is so heavy-handed, the subsection continues with the following safe harbor that would seem obvious; "This section shall not prohibit any person from receiving and delivering to the nearest post office, postal car, or other authorized depository for mail matter any mail matter properly stamped." *Id.*

13. "Whoever transmits by private express or other unlawful means, or delivers to any agent thereof, or deposits at any appointed place, for the purpose of being so transmitted any letter or packet, shall be fined under this title." *Id.* § 1696(b).

14. "Whoever, having charge or control of any conveyance operating by land, air, or water, knowingly conveys or knowingly permits the conveyance of any person acting or employed as a private express for the conveyance of letters or packets, and actually in possession of the same for the purpose of conveying them contrary to law, shall be fined under this title." *Id.* § 1697.

Private Express Statutes for any person other than the Postal Service in any manner to send or carry a letter on a post route or in any manner to cause or assist such activity. Violation may result in injunction, fine or imprisonment or both and payment of postage lost as a result of the illegal activity.”¹⁵

Despite their relative obscurity—and perhaps as an indication of the strain being placed on the postal monopoly—the Private Express Statutes generated four Supreme Court decisions between 1981 and 1991.¹⁶ Writing for the Court in *Air Courier Conference of America v. American Postal Workers Union*, the late Chief Justice Rehnquist described the Private Express Statutes as a classic attempt by government to prevent cream skimming in the name of preserving universal service at a (subsidized) uniform price:

The monopoly was created by Congress as a revenue protection measure for the Postal Service to enable it to fulfill its mission. It prevents private competitors from offering service on low-cost routes at prices below those of the Postal Service, while leaving the Service with high-cost routes and insufficient means to fulfill its mandate of providing uniform rates and service to patrons in all areas, including those that are remote or less populated.¹⁷

Thus, the postal monopoly is yet another example of the most pervasive and contentious issue in regulated industries: the suppression of competitive entry to prevent cream skimming.¹⁸

Typically, a private firm subject to regulation has assumed “incumbent burdens” in return for the regulator’s assurance that the firm will have the opportunity to earn a competitive return on, and recovery of, its invested capital, along with the compensation for the full cost of

15. 39 C.F.R. § 310.2.

16. *Air Courier Conf. of Am. v. American Postal Workers Union*, 498 U.S. 517 (1991); *Regents of Univ. of Cal. v. Public Employment Relations Bd.*, 485 U.S. 589 (1988); *Perry Education Ass’n v. Perry Local Educators’ Ass’n*, 460 U.S. 37 (1983); *United States Postal Serv. v. Council of Greensburgh Civic Ass’ns*, 453 U.S. 114 (1981) (construing 18 U.S.C. § 1725, which prohibits the deposit of unstamped “mailable matter” in a letterbox approved by the Postal Service).

17. 498 U.S. 517, 519 (1991) (citations omitted). *Accord*, *Regents of Univ. of Cal. v. Public Employment Relations Bd.*, 485 U.S. 589, 598 (1988).

18. See 2 ALFRED E. KAHN, *THE ECONOMICS OF REGULATION* 220-46 (MIT Press rev. ed. 1988).

providing service.¹⁹ The incumbent burdens usually include the obligation to provide universal service at a fixed price, regardless of the true cost of service. Chief Justice Rehnquist observed in *Air Courier Conference* that the legislative history from 1845 revealed that one of the two intended purposes of the Private Express Statutes was to ensure subsidized universal mail service:

[I]t was thought to be the duty of the Government to serve outlying, frontier areas, even if it meant doing so below cost. Thus, the revenue protection provisions were not seen as an end in themselves, nor in any sense as a means of ensuring certain levels of public employment, but rather were seen as the means to achieve national integration and to ensure that all areas of the Nation were equally served by the Postal Service.²⁰

New entrants into regulated markets, of course, first target the customers who are required by regulators to pay prices exceeding cost so that other customers may be charged prices below cost. Furthermore, new entrants may be able to avoid regulations that thwart the use of the least-cost production technology and in this sense may be more efficient producers than the incumbent. Again, as *Air Courier Conference* indicates, the Supreme Court subscribes to that view of the postal monopoly:

The [Private Express Statutes] enable the Postal Service to fulfill its responsibility to provide service to all communities at a uniform rate by preventing private courier services from competing selectively with the Postal Service on its most profitable routes. If competitors could serve the lower cost segment of the market, leaving the Postal Service to handle the high-cost services, the Service would lose lucrative portions of its business, thereby increasing its average unit cost and requiring higher prices to all users.²¹

19. See WILLIAM J. BAUMOL & J. GREGORY SIDAK, TRANSMISSION PRICING AND STRANDED COSTS IN THE ELECTRIC POWER INDUSTRY 101-02 (AEI Press 1995); William J. Baumol & J. Gregory Sidak, *Stranded Costs*, 18 HARV. J.L. & PUB. POL'Y 835 (1995); Paul W. MacAvoy, Daniel F. Spulber & Bruce E. Stangle, *Is Competitive Entry Free?: Bypass and Partial Deregulation in Natural Gas Markets*, 6 YALE J. ON REG. 209, 210 (1989).

20. 498 U.S. at 527 (citation omitted). According to Chief Justice Rehnquist, the second purpose for the Private Express Statutes was, surprisingly, to prevent arbitrage: "[T]he Postmaster General and the States most distant from the commercial centers of the Northeast believed that the postal monopoly was necessary to prevent users of faster private expresses from taking advantage of early market intelligence and news of international affairs that had not yet reached the general populace through the slower mails." *Id.* (citing S. DOC. NO. 66, 28th Cong., 2d Sess. 3-4 (1845)). The advent of ubiquitous, instantaneous, and inexpensive telecommunications obviously makes this second justification for the statutory monopoly over letter mail obsolete.

21. *Id.* at 527-28.

This analysis requires some modification when applied to a publicly owned and controlled enterprise like the Postal Service. Nonetheless, the policy concerns offered to justify the Private Express Statutes are thoroughly familiar to anyone conversant in the economics of regulated industries.

The Private Express Statutes create the postal monopoly and set forth the conditions under which private persons may carry letters. But those statutes are singularly vague as to what mail comprises a “letter.” Thus, the scope of the monopoly, enforceable by criminal sanctions, is itself vague. The legislative and administrative histories of the Private Express Statutes do not cure the ambiguity, for they can be simultaneously cited to support both the broadest and narrowest possible interpretations of the scope of the Postal Service’s monopoly.²² This ambiguity is particularly manifest with respect to that portion of standard mail previously referred to as third class mail, which consists primarily of advertising circulars and handbills—mail material that does not intuitively fit the common conception of a letter.

The Postal Service considers such mail to be a “letter” and thus within the postal monopoly created by the Private Express Statutes as long as it has an address marked on it. In *Associated Third Class Mail Users v. United States Postal Service*, the U.S. Court of Appeals for the District of Columbia Circuit agreed. The court acknowledged that the statutes, as well as their legislative and administrative histories, “belie any notion that a single definition of ‘letter’ flows ineluctably from the materials at hand.”²³ Nonetheless, the D.C. Circuit deferred to the Postal Service’s broad test for defining a letter on the basis of “the presence or absence of an

22. See *Associated Third Class Mail Users v. United States Postal Serv.*, 600 F.2d 824 (D.C. Cir. 1979) (Wright, J.).

23. *Id.* at 827.

address.”²⁴ The Court concluded that “the Postal service has settled upon a reasonable criterion,” and “its definition suffers from no more than the level of arbitrariness which is inevitable.”²⁵ Consequently, much advertising mail is construed by law to be within the scope of the Postal Service’s monopoly.

B. Exemptions from and Exceptions to the Private Express Statutes

The Private Express Statutes and the regulations interpreting them contain a number of exceptions that permit competition to develop for the delivery of certain kinds of letters.

1. Out of Mail Letters Bearing Postage

The Private Express Statutes provide a blanket exemption for letters carried out of mail if the letter bears the full postage and conforms to certain other conditions. Section 601(a) of Title 39 provides:

A letter may be carried out of the mails when—

- (1) it is enclosed in an envelope;
- (2) the amount of postage which would have been charged on the letter if it had been sent by mail is paid by stamps, or postage meter stamps, on the envelope;
- (3) the envelope is properly addressed;
- (4) the envelope is so sealed that the letter cannot be taken from it without defacing the envelope;
- (5) any stamps on the envelope are canceled in ink by the sender; and
- (6) the date of the letter, of its transmission or receipt by the carrier is endorsed on the envelope in ink.²⁶

As a matter of elementary economic theory, this provision is flawed because it overcompensates the Postal Service. The opportunity cost to the Postal Service from the delivery of a letter out of mail is the forgone contribution that the letter would make to the recovery of the Service’s common fixed costs. The opportunity cost is *not* the full price of postage for that letter. The

24. *Id.* at 830.

25. *Id.*

26. 39 U.S.C. § 601(a).

Postal Service, after all, avoids costs when out-of-mail delivery occurs, and cost avoidance is the very rationale that the Postal Service offers in a different context when giving discounts for presorted mail.²⁷

Overcompensating the Postal Service for its opportunity costs deters entry into the provision of end-to-end mail services for letters. That result is not surprising, of course. The purpose of the Private Express Statutes is to suppress competition.

2. General Exceptions

There are five general exceptions to the statutory monopoly on letter mail: letters accompanying cargo, letters of the carrier, letters by private hands without compensation, letters by special messenger, and carriage of letters before or after mailing.²⁸

Letters Accompanying Cargo. Section 1694's prohibition on the private carriage of mail excludes "letters or packets . . . [that] relate to some part of the cargo of such conveyance . . . or to some article carried at the same time by the same conveyance."²⁹ Accordingly, Postal Service regulations permit the sending or carrying of letters if they "accompany and relate in all substantial respects to some part of the cargo or to the ordering, shipping, or delivering of the cargo."³⁰ A packing slip, for example, that is enclosed with a parcel that is being privately delivered need not be carried by the Postal Service. The necessity of such an exception on grounds of transactional efficiency is obvious.

Letters of the Carrier. Section 1694's prohibition on the private carriage of mail also excludes "letters or packets . . . [that] relate . . . to the current business of the carrier."³¹ This

27. See, e.g., Postal Rate and Fee Changes, 2007, Dkt. No. R2006-1, at 83-85 (Postal Rate Comm'n 2007).

28. 39 C.F.R. § 310.3.

29. 18 U.S.C. § 1694.

30. 39 C.F.R. § 310.3(a).

31. 18 U.S.C. § 1694.

proviso is known as the “letters of the carrier” exception to the Private Express Statutes.³² The Postal Service has promulgated the following regulation to implement this exception:

The sending or carrying of letters is permissible if they are sent by or addressed to the person carrying them. If the individual actually carrying the letters is not the person sending the letters or to whom the letters are addressed, then such individual must be an officer or employee of such person . . . and the letters must relate to the current business of such person.³³

The letters of the carrier exception would, for example, permit United Airlines to carry on its aircraft interoffice letters relating to the “current business” of that company.

In *Regents of the University of California v. Public Employment Relations Board*, the Supreme Court considered whether, for purposes of section 1694, certain letters were related to the current business of the University of California.³⁴ A union attempting to organize the employees of the university tried to send them letters through the university’s internal mail. When the university refused to deliver the letters, it was sued by the union. The Supreme Court held that the union’s letters did not qualify for the letters of the carrier exception because they did not relate to the “current business” of the university; rather, the letters related to “the Union’s efforts to organize certain of [the university’s] employees into a bargaining unit,” which, the Court said, “can be accurately described only as the Union’s current business,” not the university’s.³⁵

The letters of the carrier exception raises two interesting analytical problems. First, as *Regents of the University of California* demonstrates, the exception is a rule that turns on the content of the letter. Thus, it leads to relatively intrusive, fact-specific inquiries. Second, because

32. See 39 C.F.R. § 310.3(b); *Regents of the Univ. of Cal. v. Public Employment Relations Bd.*, 485 U.S. 589 (1988); *Perry Ed. Ass’n. v. Perry Local Educators’ Ass’n*, 460 U.S. 37 (1983); *United States v. Erie R.R.*, 235 U.S. 513 (1915); *Fort Wayne Community Schools v. Fort Wayne Ed. Ass’n, Inc.*, 977 F.2d 358 (7th Cir. 1992); *Letters Outside of the Mails Carried by Railroad Companies—Statutory Construction*, 21 OP. ATT’Y GEN. 394 (1886).

33. 39 C.F.R. § 310.3(b)(1).

34. 485 U.S. 589 (1988).

35. *Id.* at 594.

the exception requires that the letter relate to the current business of the carrier, it expands with the scale and scope of the enterprise of which the carrier is a part.³⁶ Thus, two letters being transported from New York to Los Angeles, one by United Airlines and the other by American Airlines, could be treated differently under this exception depending on what the letters said and what the current lines of business of the two airlines happened to be at that moment.

Letters by Private Hands Without Compensation. Section 1696 contains an exception for “the conveyance or transmission of letters or packets by private hands without compensation.”³⁷ Although this statutory provision enables the Postal Service to state affirmatively in its regulations that the “sending or carrying of letters without compensation is permitted,”³⁸ the Postal Service is then compelled to specify at considerable length what constitutes “compensation.” The Postal Service considers compensation to consist of not only “a monetary payment for services rendered,” but also “non-monetary valuable consideration and . . . good will.”³⁹

Letters by Special Messenger. Section 1696 also exempts private carriage “by special messenger employed for the particular occasion only.”⁴⁰ The Postal Service interprets that provision to permit the “use of a special messenger employed for the particular occasion only . . . to transmit letters if not more than twenty-five letters are involved,” but the messenger service

36. “Separately incorporated carriers are separate entities for purposes of this exception, regardless of any subsidiary, ownership, or leasing arrangement. When, however, two concerns jointly operate an enterprise with joint employees and share directly in its revenues and expenses, either of the concerns may carry the letters of the joint enterprise.” 39 C.F.R. § 310(b)(3). *See also* United States v. Erie R.R., 235 U.S. 513 (1915).

37. 18 U.S.C. § 1696(c).

38. 39 C.F.R. § 310.3(c)

39. *Id.* “Thus, for example, when a business relationship exists or is sought between the carrier and its user, carriage by the carrier of the user’s letter will ordinarily not fall under this exception; or, when a person is engaged in the transportation of goods or persons for hire, his carrying of letters ‘free of charge’ for customers whom he does charge for the carriage of goods or persons do not fall under this exception.” *Id.*

40. 18 U.S.C. § 1696(c).

may only be used “on an infrequent, irregular basis by the sender or addressee of the message.”⁴¹ A special messenger is defined to be someone “who, at the request of either the sender or the addressee, picks up a letter from the sender’s home or place of business and carries it to the addressee’s home or place of business.”⁴² This exception permits, for example, the familiar phenomenon in any major city of bicycle couriers who speed time-sensitive documents from one business office to another.

By itself, however, the special messenger exemption is not so broad as to permit a private express company to engage in the aggregation of mail for distribution and delivery (as through a hub-and-spoke network, for example). A special messenger may not be “a messenger or carrier operating regularly between fixed points.”⁴³ The creation of a hub-and-spoke network would obviously entail regular carriage between fixed points. The special messenger exemption can therefore be viewed as constraining the efficiency of private express companies by denying them the opportunity to employ a network architecture of node and fixed links.

Carriage of Letters Before or After Mailing. The Postal Service permits the private carriage of letters “which enter the mail stream at some point between their origin and their destination.”⁴⁴ So, for example, the Postal Service allows private firms to engage in

the pickup and carriage of letters which are delivered to post offices for mailing; the pickup and carriage of letters at post offices for delivery to addressees; and the bulk shipment of individually addressed letters ultimately carried by the Postal Service.⁴⁵

This exception to the Private Express Statutes makes it easier for the Postal Service to offer discounts for bulk mailing and presorting.⁴⁶ Without this exception, bulk mailing and presorting

41. 39 C.F.R. § 310.3(d)(1).

42. *Id.* § 310.3(d)(2).

43. *Id.*

44. *Id.* § 310.3(e)(1).

45. *Id.* § 310.3(e)(2).

could still be done *by the mailer*, and discounts could be given to that mailer; but mailers would not be able to employ bulk mailing and presorting bureaus to deliver mail to the Postal Service for the mailer.

3. Extremely Urgent Letters

The most significant exceptions to the Private Express Statutes (technically termed a “suspension” of the Statutes by the Postal Service) is for “extremely urgent letters.”⁴⁷ Without that exception, UPS and other private firms would be unable to compete in the express mail business. The PAEA codified two specific exceptions to the Private Express Statutes.⁴⁸ The first statutory exception encompasses letters where “the amount paid for the private carriage of the letter is at least the amount equal to 6 times the rate then currently charged for the 1st ounce of a single-piece first class letter.”⁴⁹ The second statutory exception encompasses letters weighing “at least 12 ½ ounces.”⁵⁰ In addition to these two statutory exceptions, the PAEA also recognized the Postal Service regulations then in effect.⁵¹ Under those preexisting regulations, to be able to deliver extremely urgent letters, a private firm must satisfy either of two primary conditions, and then several secondary conditions of a more mechanical nature.

a. Primary Conditions

The Postal Service defines the primary, alternative conditions for private carriage of an extremely urgent letter in terms of (1) the timeliness of its delivery and (2) its price relative to first class mail.

46. “The private carriage of letters from branches of an organization to a location for preparation for mailing does not constitute a consolidation. The private carriage of letters from an organization’s point of mail delivery to its branches in the locality does not constitute a separation.” *Id.* 310.3(e)(3).

47. 39 C.F.R. § 320.6.

48. 39 U.S.C. § 601(b).

49. *Id.* § 601(b)(1).

50. *Id.* § 601(b)(2).

51. *Id.* § 601(b)(3).

Timeliness of Delivery. One criterion by which the Postal Service will suspend the Private Express Statutes for urgent letters is if “the value or usefulness of the letter would be lost or greatly diminished if it is not delivered within [the] time limits” specified in the Service’s regulations.⁵² The applicable time limits depend on the distance of the delivery:

For letters dispatched within 50 miles of the intended destination, delivery of those dispatched by noon must be completed within 6 hours or by the close of the addressee’s normal business hours that day, whichever is later, and delivery of those dispatched after noon and before midnight must be completed by 10 A.M. of the addressee’s next business day. For other letters, delivery must be completed within 12 hours or by noon of the addressee’s next business day.⁵³

In addition to locations within the forty-eight contiguous states, the time limits also apply “to letters dispatched and delivered wholly within Alaska, Hawaii, Puerto Rico or a territory or possession of the United States.”⁵⁴ The Postal Service has said, and at least one court has agreed, that, even if the time limits are met, the exception for extremely urgent letters does not apply if the value of the letter does not depend on meeting the time limit.⁵⁵

Price. Price is the second, alternative criterion by which the Postal Service will determine whether to suspend the Private Express Statutes. One of the exceptions to the Private Express Statutes that the PAEA codified encompasses letters charging “6 times the rate then currently charged”⁵⁶ for a first class letter.

As a practical business matter, this price test has become the operative standard for establishing that a letter is eligible for delivery by private carriers. That is so since the price test, unlike the test of timeliness of delivery, enables the private carrier to offer mailers the choice of delivery at any time, without regard to the letter’s destination. Of course, one practical effect of the price test is that it sets a floor for the prices that private competitors may charge.

52. 39 C.F.R. § 320.6(b)(1).

53. *Id.*

54. *Id.* § 320.3(b)(3).

55. *United States Postal Serv. v. O’Brien*, 644 F. Supp. 140 (D.D.C. 1986).

56. 39 U.S.C. § 601(b)(1).

b. Secondary Conditions

The secondary requirements for private carriage of extremely urgent letters are more mechanical. Nonetheless, those additional requirements provide insights into why a company like UPS conducts business in the way it does. The first such requirement concerns labeling:

The sender must prominently mark the outside covers or containers of letters carried under this suspension with the words “Extremely Urgent” or “Private Carriage Authorized by Postal Regulations (39 CFR 320.6)” or with a similar legend identifying the letters are carried pursuant to this suspension [of the Private Express Statutes].⁵⁷

It is surely because of that regulatory categorization, and not because of any inherent marketing value in the form of the label, that a Next Day Air letter of UPS states across the front, “EXTREMELY URGENT—Notify addressee immediately upon receipt.”

A second requirement is that each outside container or cover must show the name and address of the carrier and the addressee.⁵⁸ This requirement reiterates a statutory requirement.⁵⁹

A third requirement concerns the recording of the delivery time. The carrier’s record “must be sufficient to show that the delivery of the letters was completed within the applicable time limitations, if carried under the authority of [timeliness of delivery], and must be made available for inspection at the request of the Postal Service.”⁶⁰ This requirement also helps to explain why, apart from their desire to have continuous tracking of letters because customers value such service, a company like UPS requires its employees to record the time that an extremely urgent letter is delivered.

57. *Id.* § 320.6(d).

58. *Id.*

59. 39 U.S.C. § 601.

60. 39 C.F.R. § 320.6(d). “The required records may be either in the form of notations on the containers or covers of any letters asserted to be carried under this suspension, or in the form of records kept by the employees of the actual times they pick up and deliver such materials.” *Id.*

c. Penalties for Violating the Terms of Suspension

Postal Service regulations provide: “Upon discovery of activity made unlawful by the Private Express Statutes, the Postal Service may require any person or persons who engage in, cause, or assist such activity to pay an amount or amounts not exceeding the total postage to which it would have been entitled had it carried the letters between their origin and destination.”⁶¹ Moreover, if a private express company violates the terms of the Postal Service’s suspension of the Private Express Statutes for extremely urgent mail, the penalty may be “administrative revocation of the suspension as to such shipper or carrier for a period of one year” following a proceeding before a judicial officer of the Postal Service.⁶² The judicial officer may reduce or extend the period of the revocation by not more than one year, “depending on such mitigating or aggravating factors as the extent of the postal revenue lost because of the violation and the presence or absence of good faith error or of previous violations.”⁶³ In other words, the judicial officer really has the authority to revoke the suspension for up to twenty-four months. Furthermore, a revocation of the suspension “shall in no way limit other actions as to such shipper or carrier to enforce the Private Express Statutes by administrative proceedings for collection of postage . . . or by civil or criminal proceedings.”⁶⁴

For reasons to be explained presently, this administrative procedure for revoking the suspension of the Private Express Statutes for extremely urgent mail can provide the Postal Service powerful leverage over private express companies and their customers:

The failure of a shipper or carrier to cooperate with an authorized inspection or audit conducted by the Postal Inspection Service for the purpose of determining compliance with the terms of this

61. *Id.* § 310.5(a).

62. *Id.* § 320.6(e).

63. *Id.*

64. *Id.*

suspension shall be deemed to create a presumption of a violation . . . and shall shift to the shipper or carrier the burden of establishing the fact of compliance.⁶⁵

Because a judicial officer of the Postal Service—rather than an Article III judge or even an independent administrative law judge—is the person deciding the revocation proceeding, the Postal Service can, at will, raise the expected losses of such litigation for the shipper or carrier by asserting that the firm has failed to be sufficiently cooperative with inspectors, thereby shifting the burden of proof from the Postal Service to the firm.

C. The Statutory Monopoly over the Customer's Mailbox

The mailbox is to the postal monopoly what the customer's telephone was to the former Bell System. The mailbox is the customer premises equipment. Just as the Bell System assiduously fought, starting with the *Hush-A-Phone* case, any attempt by the customer to attach unapproved devices to his telephone (which is to say, devices not manufactured by the Bell System's own Western Electric),⁶⁶ so also the Postal Service regulates what the customer may do with his own mailbox. This restriction is actually more overreaching than that of the monolithic Bell System in its heyday because the mailbox is clearly the customer's private property, whereas before the AT&T divestiture the customer merely leased his telephone from the Bell System.

Section 1725 of the Criminal Code prohibits the deposit of unstamped "mailable matter" in a customer letterbox approved by the Postal Service, and violations are subject to a fine.⁶⁷ In turn, the *Domestic Mail Manual*, which is incorporated by reference into Title 39 of the Code of

65. *Id.* (emphasis added).

66. *Hush-A-Phone Corp. v. United States*, 238 F.2d 266 (D.C. Cir. 1956). See MICHAEL K. KELLOGG, JOHN THORNE & PETER W. HUBER, *FEDERAL TELECOMMUNICATIONS LAW* 171-75, 494-95, 499-502 (Little, Brown & Co. 1992) (discussing *Hush-A-Phone* and other "foreign attachment" cases).

67. "Whoever knowingly and willfully deposits any mailable matter such as statements of accounts, circulars, sale bills, or other like matter, on which no postage has been paid, in any letter box established, approved, or accepted by the Postal Service for the receipt or delivery of mail matter on any mail route with intent to avoid payment of lawful postage thereon, shall for each such offense be fined under this title." 18 U.S.C. § 1725.

Federal Regulations,⁶⁸ specifies the size, shape, and dimensions of mail receptacles.⁶⁹ Letterboxes and other receptacles designed for the delivery of mail “may be used *only* for matter bearing postage.”⁷⁰

The Postal Service’s monopoly over mailbox access has three significant economic consequences. First, it raises the cost of its rivals’ deliveries: UPS, for example, may not leave its overnight letter in the mailbox if the recipient is not home. Unless the sender designates that the urgent letter may be left at the door if the recipient is not there, the carrier will typically have to attempt another delivery. A second and related consequence is to deter vertical integration into mail delivery by businesses (such as banks and utilities) with large numbers of routine mailings to virtually every postal customer on a given route. Congress did not enact section 1725 in 1845 as part of the original Private Express Statutes, but rather in 1934 to counteract vertical integration by such businesses into the delivery of bills:

Business concerns, particularly utility companies, have within the last few years adopted the practice of having circulars, statements of account, etc., delivered by private messenger, and have used as receptacles the letter boxes erected for the purpose of holding mail matter and approved by the Post Office Department for such purpose. This practice is depriving the Post Office Department of considerable revenue on matter which would otherwise go through the mails, and at the same time is resulting in the stuffing of letter boxes with extraneous matter.⁷¹

The third competitive consequence of section 1725 is that it raises the cost to the customer of substituting alternative delivery services for those of the Postal Service because his reliance on the former will require him to construct a new receptacle for private express deliveries.

In 1981 the Supreme Court considered in *United States Postal Service v. Council of Greenburgh Civic Associations* whether section 1725 violated the First Amendment on the

68. 39 C.F.R. pt. 111.

69. DOMESTIC MAIL MANUAL § 508, 3.0.

70. *Id.* § 508, 3.1.3 (emphasis added).

71. H.R. REP. NO. 709, 73d Cong., 2d Sess. 1 (1934); S. REP. NO. 742, 73d Cong., 2d Sess. 1 (1934).

grounds that a mailbox is a “public forum.”⁷² Government may regulate the time, manner, and place of speech conducted in a public forum, but speakers may not be excluded entirely from the public forum.⁷³ In the course of deciding this constitutional question with respect to mailboxes in *Greenburgh*, the Court construed section 1725 in a way that has significant consequences for the growth of competitive postal services.

In *Greenburgh*, the local postmaster notified a civic association that its practice of delivering messages to residents by placing unstamped notices in the letterboxes of private homes violated section 1725 and that, if the association persisted, it could be fined. The association then sued the Postal Service for declaratory and injunctive relief, contending that the enforcement of section 1725 would inhibit the association’s communications with local residents and deny them the freedom of speech and press secured by the First Amendment.⁷⁴

The Supreme Court upheld section 1725 in *Greenburgh*, holding that the statute was neutral with respect to the content of the message sought to be placed in the mailbox.⁷⁵ Associate Justice Rehnquist then presented a puzzling rationale for the majority’s view that a citizen has limited rights to offer access to his own mailbox:

Nothing in any of the legislation or regulations recited above requires any person to become a postal customer. Anyone is free to live in any part of the country without having letters or packages delivered or received by the Postal Service by simply failing to provide the receptacle for those letters and packages which the statutes and regulations require. Indeed, the provision for “General Delivery” in most post offices enables a person to take advantage of the facilities of the Postal Service without ever having provided a receptacle at or near his premises conforming to the regulations of the Postal Service. What the legislation and regulations do require is that those persons who *do* wish to receive and deposit their mail at their home or business do so under the direction and control of the Postal Service.⁷⁶

72. 453 U.S. 114 (1981).

73. See Lillian R. BeVier, *Rehabilitating the Public Forum Doctrine: In Defense of Categories*, 1994 SUP. CT. REV. 79.

74. 453 U.S. at 116-20.

75. *Id.* at 127.

76. *Id.* at 125-26 (emphasis in original).

This reasoning is unpersuasive. The Court, having explained on one page why Congress considered universal mail service to be so essential to binding the republic together as to justify the creation of a public monopoly,⁷⁷ a few pages later feigns indifference about the prospect of a nation of hermits who decline “to become . . . postal customer[s].”⁷⁸

The Court then followed this argument with the strained assertion that a quid pro quo had taken place, whereby the postal customer conveyed control over his mailbox to the Postal Service in return for the privilege of subjecting himself to its monopoly over letter mail:

What is at issue in this case is solely the constitutionality of an Act of Congress which makes it unlawful for persons to use, without payment of a fee, a letterbox which has been designated an “authorized depository” of the mail by the Postal Service. As has been previously explained, when a letterbox is so designated, it becomes an essential part of the Postal Service’s nationwide system for the delivery and receipt of mail. In effect, the postal customer, although he pays for the physical components of the “authorized depository,” agrees to abide by the Postal Service’s regulations in exchange for the Postal Service agreeing to deliver and pick up his mail.⁷⁹

In all of its conjectures on the implicit contract between the citizen and the state, the Court evidently did not consider that some consumers might be willing to pay a higher price for the services of the Postal Service if they could keep the right to offer private express companies (or simply the local electric utility) access to their mailboxes. Although all the collected Private Express Statutes may be criticized for causing the allocative inefficiency and dynamic losses in innovation that economic analysis associates with statutory monopoly, none matches section 1725 in its reliance on facile arguments to imply that consumers have willingly consented to the government’s monopolization of their own property. *Greenburgh* invites the question, evidently not raised in the case, whether the federal government would be liable under the Takings Clause

77. *Id.* at 121-22.

78. *Id.* at 125.

79. *Id.* at 128.

of the Fifth Amendment for the diminution of the value of the customer's mailbox caused by the mailbox monopoly.⁸⁰

D. Summary and Implications

In the history of American regulation of industry, the Private Express Statutes are extraordinary in the manner in which they grant and perpetuate monopoly power. The Postal Service has not passively reaped the benefits of a monopoly conferred upon it by Congress. To the contrary, the Postal Service has had the power to expand the boundaries of that monopoly through the promulgation of its own regulations; the power to prosecute alleged violations of the monopoly through its own searches and seizures and its own enforcement actions for postage due; and the power to adjudicate alleged violations of the monopoly.

III. THE ECONOMIC CAUSE AND EFFECT OF NETWORK ADVANTAGE

A. Market Dominant Products versus Competitive Products

The PAEA categorizes Postal Service products as either "market-dominant" or "competitive." The Act defines the market-dominant category as

each product in the sale of which the Postal Service exercises sufficient market power that it can effectively set the price of such product substantially above costs, raise prices significantly, decrease quality, or decrease output, without risk of losing a significant level of business to other firms offering similar products.⁸¹

The competitive products category is defined as consisting of "all other products."⁸² Therefore, when the Postal Service produces a competitive product, its production and pricing of that product is, by definition, constrained by at least one other firm.

If significant economies of scope exist in the production of Postal Service products, possibly combined with economies of scale, network advantage may exist. For example, if the

80. U.S. CONST. amend. V.

81. 39 U.S.C. § 3642(b)(1).

82. *Id.*

production of market dominant products allows the Postal Service to produce competitive products at a price less than the competitive stand-alone cost, then the Postal Service has a network advantage over its rivals. As I explain in more detail below, the economic consequence of network advantage is that the Postal Service can price competitive products below its rivals' costs.

B. The Incentive to Maximize the Volume of Competitive Products

Even if an SOE is authorized to make a profit and retain earnings, it is quite common for an SOE to pursue goals such as revenue or volume maximization rather than profit maximization. The incentive to maximize the volume of competitive products can be created by governmental policy objectives that lead SOEs to pursue an expanded operating scale. For example, SOEs are often charged with increasing or maintaining local employment or with providing a given service ubiquitously to a target population. More generally, governments typically give SOEs missions and goals beyond the scope of mere profitability. For instance, the Postal Service itself is required to provide ubiquitous delivery service throughout the United States. As a consequence, the Postal Service has incentives other than solely to maximize the difference between revenues and costs. Instead, SOEs generally pursue goals that are distinct from profit maximization, and frequently face incentives to maximize the scale and/or scope of their operations. The PAEA does not alter the fundamental incentives guiding the Postal Service to pursue goals other than profit maximization.⁸³

The emphasis that SOEs typically place on expanded scale suggests that their true operational objectives might involve maximizing some combination of profit and operating

83. The PAEA does eliminate the break-even rule, establish a price cap, and partially relax the senior executive pay cap. But these changes do not amount to a congressional mandate to pursue profit maximization.

scale.⁸⁴ In practice, revenue constitutes a useful proxy for scale, particularly when dealing with multiproduct firms.⁸⁵ Revenue provides a uniform basis for comparing the outputs of multiple products. Thus, it is sensible to characterize the SOE as seeking to maximize some combination of revenue and profit. Using a theoretical framework, David E. M. Sappington and I have explored the implications of SOEs' preference for expanded scale and scope of operations.⁸⁶ In particular, our analytical framework allows for the possibility that SOEs pursue pricing policies designed to maximize a weighted average of revenue and profit.⁸⁷ Sappington and I demonstrate that SOEs may have stronger incentives than profit-maximizing firms to pursue activities that disadvantage competitors, precisely because SOEs may be less concerned with generating profit.

This conclusion emerges from an analysis of the differences between the decision rules of SOEs and profit-maximizing firms. When setting prices for its various products, a profit-maximizing multiproduct private firm always sets the price of each of its products at or above the marginal cost of production for that product. To expand volume to a point where marginal cost exceeds price is inconsistent with profit maximization, as this scenario would require the firm to sell some portion of its output at a loss. In contrast, a multiproduct SOE sets prices according to a

84. Cf. Ray Rees, *A Positive Theory of The Public Enterprise*, in *THE PERFORMANCE OF PUBLIC ENTERPRISES: CONCEPTS AND MEASUREMENT* 179 (Maurice Marchand, Pierre Pestieau & Henry Tulkens eds., 1984) (assumes that managers in a public enterprise seek to maximize an increasing, concave function of output, subject to capital constraints and workers' preferences for high wages and expanded employment).

85. William Baumol has observed: "In ordinary business parlance the term 'sales' refers not to the number of physical units . . . but, rather, to the *total revenue* obtained by the firm from the purchases of its customers." WILLIAM J. BAUMOL, *BUSINESS BEHAVIOR, VALUE AND GROWTH* 32 (MacMillan Co. 1959) (emphasis added). Furthermore, "in the near universal multi-product firm any measure of overall physical volume must involve index number problems, and the adoption of a value measure is doubtless to be expected." *Id.* at 45.

86. David E. M. Sappington & J. Gregory Sidak, *Competition Law for State-Owned Enterprises*, 71 *ANTITRUST L.J.* 479 (2003); see also David E.M. Sappington & J. Gregory Sidak, *Incentives for Anticompetitive Behavior by Public Enterprises*, 22 *REV. INDUS. ORG.* 183 (2003).

87. It is certainly possible that SOEs pursue alternative objectives. For example, managers of SOEs may seek to maximize those dimensions of output that are most highly valued by and most readily monitored by Congress, and that are subject to specified budget constraints. See Cotton Lindsay, *A Theory of Government Enterprise*, 84 *J. POL. ECON.* 1067 (1976). For simplicity, Sappington and I abstract from multiple performance dimensions.

modified inverse-elasticity rule.⁸⁸ The key distinction between the two rules is that marginal costs for the SOE are given less weight due to a diminished emphasis on profit. Furthermore, the greater the emphasis on operating scale over profit, the more the SOE tends to disregard marginal costs in setting prices.

Moreover, the SOE's price-setting rule indicates that the SOE is more inclined to set prices below marginal cost for products with a relatively high elasticity of demand. All else equal, demand elasticities are higher for competitive products, as consumers have the option of purchasing from alternate suppliers in the face of any price increases by the SOE. When competition makes demand for the SOE's services more elastic, it is necessary for the SOE to maintain lower prices to prevent current and prospective customers from defecting to the SOE's competitors. In other words, the SOE can sustain an expanded operating scale only if its prices are low enough to lure a sufficiently large customer base away from the SOE's competitors. The incentive to set an artificially low price is thus magnified in the case of competitive products. Hence, when a given product is subject to competition, SOEs are more likely to expand production volumes to a point at which marginal cost exceeds price.

Anecdotal evidence supports the practical applicability of these theoretical conclusions. The tendency for the U.S. Postal Service to maximize revenue has been noted previously by scholars and government analysts, who point to several specific investments and market-entry decisions that appear to favor revenue over profit.⁸⁹ The Postal Service's forays into non-postal

88. *Id.*

89. *See, e.g.*, J. GREGORY SIDAK & DANIEL F. SPULBER, PROTECTING COMPETITION FROM THE POSTAL MONOPOLY 158-59 (1996) ("The Postal Service no longer seeks to plug gaps in the provision of public services. Rather, it seeks to divert business from private firms in existing and emerging industries."); RICK GEDDES, SAVING THE MAIL: HOW TO SOLVE THE PROBLEMS OF THE U.S. POSTAL SERVICE (2003).

markets frequently entail substantial risk, and some have produced financial losses.⁹⁰ The losses incurred in non-postal markets suggest an overriding concern with expanded scale and scope, as opposed to profitability.

C. The Harm to Competitive Markets from the Postal Service's Use of a Delivery Network that Produces Both Market-Dominant and Competitive Products

1. Denying the Competitor the Ability to Reduce Costs in the Competitive Market by the Amount of the Economies of Scope

The Postal Service operates in market-dominant markets (such as letter delivery services) served exclusively or almost exclusively by the Postal Service and in competitive markets (such as parcel delivery services) served by the Postal Service and one or more rivals. Consequently, the Postal Service can exploit the economies of scope that exist between the two markets. The Postal Service may achieve substantial gains in productive efficiency from these cost complementarities.

A statutory monopoly, such as that granted to the Postal Service, truncates the range of services that an entrant can offer in competition with the Postal Service. The effect of this truncation is to prevent an efficient entrant from achieving economies of scope that would lower its incremental cost of supplying the *competitive* product. Although reminiscent of "raising rivals' costs,"⁹¹ this phenomenon is more accurately described as "denying rivals the opportunity to lower their costs." The European Commission has briefly recognized this problem. In what may be the most important passage in the *Deutsche Post* decision, the EC noted that "joint deliveries [of mail-order parcels and letters] create economies of scope that exist between the

90. The General Accounting Office found that the Postal Service lost more than \$84 million on development and marketing of non-postal products from 1995 through 1997. GENERAL ACCOUNTING OFFICE, U.S. POSTAL SERVICE: DEVELOPMENT AND INVENTORY OF NEW PRODUCTS (GAO/GGD-99-15, Nov. 24 1998).

91. See Thomas Krattenmaker & Steven Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986); Steven Salop, *Strategic Entry Deterrence*, 69 AM. ECON. REV. 415 (1979); Steven Salop & David Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267 (1983).

reserved product and the competitive product. Due to the reserved area these economies of scope are not available to competitors.”⁹² All other things remaining constant, the private competitors face higher costs in the competitive market than the SOE experiences. This result is the “direct effect” of the statutory monopoly in the competitive market.⁹³

2. Compounding the Postal Service’s Advantage in the Competitive Market If That Market Exhibits Economies of Scale

In addition to this direct effect, an “indirect effect” may arise if economies of scale exist in the competitive market. If the Postal Service sets a lower price in the competitive market because of the realized economies of scope, demand will shift from the rival to the Postal Service.⁹⁴ As the Postal Service’s output of the competitive product increases, the Postal Service may realize economies of scale that its rivals cannot achieve. The resulting decline in the Postal Service’s unit cost of operation (and hence its price) in the competitive market may cause a further shift in sales from competitors to the Postal Service, depending upon the Postal Service’s objectives and the nature of the competitive interaction between the Postal Service and its rivals.

The key conclusion here is that the Postal Service may derive, from its statutory monopoly over the market-dominant product, an incremental benefit in the form of both

92. Case COMP/35.141, *Deutsche Post AG*, 2001 O.J. (L 125) 27 at ¶ 11 n.17 [hereinafter *Deutsche Post Predatory Pricing Decision*]. The EC, however, did not draw any legal conclusion from this observation, as further analysis was not necessary in the *Deutsche Post* case. The EC had already found that Deutsche Post had abused its dominant position by pricing below the incremental cost of providing mail-order parcel service.

93. Private competitors generally have the unfettered right to enter any commercial line of business. Such entry may convey the ability to create economies of scope. For private firms supplying postal services, such economies of scope are not likely to be of the order of magnitude as the economies of scope created by the Postal Service’s network. And, of course, private firms are not granted exclusivity, under a statutory monopoly, to attain particular economies of scope.

94. Note that demand for the rival’s product shifts *relative* to the level of demand that would have prevailed if Postal Service had set a higher price in the competitive market. Thus, the fact that Postal Service may have lost market share to competitors in some markets is not inconsistent with the notion that Postal Service may set lower prices in competitive markets due to realized economies of scope. Setting lower prices would simply decrease the rate at which the Postal Service loses market share to competitors. In addition, the fact that the Postal Service prices may be lower than competitors’ rates in nominal terms does not necessarily imply that the same relationship holds for quality-adjusted prices.

economies of scope *and* economies of scale *in the competitive market*. Both incremental effects result from the statutory monopoly that the Postal Service is awarded, not from an inherent cost advantage that only the Postal Service has the skill or acumen to obtain.

3. Relevant Telecommunications Regulations

In telecommunications regulation, a legal rule has been imposed to prevent the asymmetric exploitation of economies of scale and scope by the dominant firm. The Telecommunications Act of 1996 requires an incumbent local exchange carrier (ILEC)—which is not a public enterprise and no longer is permitted to hold any statutory monopoly—to share economies of scale and scope with entrants (known as “qualifying carriers”) that request unbundled access to the ILEC’s local exchange network. Section 259(b) of the Communications Act states that FCC regulations shall “ensure that such local exchange carrier makes such infrastructure, technology, information, facilities, or functions available to a qualifying carrier on just and reasonable terms and conditions that permit such qualifying carrier to fully benefit from the economies of scale and scope of such local exchange carrier”⁹⁵ If an analogous requirement were imposed on the U.S. Postal Service, it would be required to provide a competing carrier such as UPS with the benefit of the Postal Service’s economies of scale and scope when the competing carrier purchases unbundled access to the network infrastructure with which the Postal Service supplies delivery of its market-dominant product, letter mail.

However, there is no congressional mandate in the PAEA to abolish the statutory monopolies that give rise to the distinction between market-dominant and competitive products. Rather, the economic question at hand concerns the competing carrier’s inability to achieve economies of scale and scope in the *competitive market*. Consequently, section 259(b) is not

95. 47 U.S.C. § 259(b)(4).

directly analogous to the situation in which private carriers compete with the U.S. Postal Service in the supply of a competitive product. Nevertheless, this provision regarding scope and scale economies in telecommunications regulation represents the closest available approximation to key economic and regulatory issues confronting the Postal Service and its regulators.

D. The Harm from Pricing Competitive Products below Marginal Cost

To the extent that the Postal Service passes on cost savings derived from scale and scope economies in the form of lower prices for competitive products, consumers of these products will clearly benefit. For this reason, there may exist a tendency for regulators and policymakers to disregard the detrimental consequences of the Postal Service's network advantage. Here it is important to recognize that low prices for competitive products may come at the expense of higher prices for market-dominant products. Such a pricing structure would effectively penalize the designated beneficiaries of the Postal Service's core mandate. In addition, it bears emphasis that lower prices are not always better, particularly if price falls below marginal cost.⁹⁶ As David Sappington and I have noted, pricing below marginal cost is undesirable because it can create three forms of inefficiency: allocative, productive, and dynamic.⁹⁷ Allocative inefficiency occurs when too much of a service is consumed. As a result, the resources employed to produce the marginal units of the service exceed the value to consumers of those units. When the marginal

96. Even if the Postal Service does not set price for competitive products below marginal cost, it does not follow immediately that entry by the Postal Service into competitive markets increases economic welfare significantly. Entry by Postal Service will generally enhance welfare substantially only if, in the absence of entry, an oligopolistic form of competition somehow constrains output or quality in the competitive market significantly below the socially optimal level. If private enterprises are not competing vigorously to best serve consumers of competitive services, prices for the competitive services may be relatively high and service quality may be relatively low in the absence of entry by the Postal Service. However, if competition among private enterprises already generates high-quality services and low prices for consumers, the potential increase in consumer welfare that is likely to result from the Postal Service's entry into competitive markets may be limited.

97. See Sappington & Sidak, *supra* note 86, at 506. Antitrust cases in network industries can present particularly subtle tensions between these three distinct forms of economic efficiency. See Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1, 16-31 (2001) (discussing allocative, productive, and dynamic efficiency in the context of fashioning remedies in the *Microsoft* case).

cost of producing a service exceeds the marginal value derived from the service, society as a whole would be better off if less of the service were produced. The reduced production level could then be redeployed to produce services that consumers value more highly. Pricing a service below its marginal cost of production results in allocative inefficiency because some consumers choose to purchase the service even though their marginal valuation of the service is less than the marginal cost of producing the service. Although allocative inefficiency benefits consumers that purchase the service at a price below its marginal cost of production, those benefits come at the expense of consumers who are unable to purchase the services that would be provided if society's assets were redeployed in an efficient manner. Therefore, on balance, society as a whole would gain if the allocative inefficiency were eliminated by ensuring that prices do not fall below marginal production costs.⁹⁸

The second form of inefficiency that can result from pricing below marginal cost is production inefficiency. Production inefficiency occurs when a service is produced by a firm that is not the least-cost producer of that service. Pricing below marginal cost can make it unprofitable for the least-cost firm to supply the service in question. Because production inefficiency can increase the overall cost of producing a fixed quantity of a service, it can reduce the net benefits to society.⁹⁹

Dynamic inefficiency occurs when research and development expenditures are below their optimal levels. Pricing below marginal cost can preclude firms from making positive expected profits on the sale of service. As a consequence, firms would be reluctant to undertake

98. *See, e.g.*, MICHAEL L. KATZ & HARVEY S. ROSEN, MICROECONOMICS 482 (1991).

99. To illustrate this point, consider a setting where there are two potential producers, firm *A* and firm *B*, each of which operates with constant unit production costs. Suppose that firm *B* is the least-cost producer because its marginal cost of production is 6, while firm *A*'s marginal cost is 7. If firm *A* charges a price of 4 for its product, firm *B* cannot profitably match this (below-cost) price, even though it is the least-cost provider of the service. Consequently, below-cost pricing results in production by a high-cost supplier in this setting, as it can more generally.

research and development projects if they believe they will be unable to make a positive return on those investments. They would either allocate research and development expenditures to other projects, or they might reduce their overall expenditures on research and development. In either scenario, the net benefits to society are reduced.¹⁰⁰

IV. THE ECONOMIC AND EMPIRICAL FRAMEWORK FOR DETECTING THE U.S. POSTAL SERVICE'S NETWORK ADVANTAGE

The Postal Service is barred from engaging in cross-subsidy, a fact that is unaltered by the PAEA, which states that regulations should “prohibit the subsidization of competitive products by market-dominant products”¹⁰¹ However, as I explain in this section, the absence of cross-subsidization is not sufficient to demonstrate that the Postal Service does not exploit its network advantage to the detriment of its competitors. In addition, the standard framework for detecting cross-subsidization provides a useful starting point for evaluating the Postal Service's network advantage.

A. Standard Tests for Cross Subsidization

The *stand-alone cost test* and the related *incremental cost test* are two standard methods in the economics of regulation for detecting the presence of cross-subsidy. Gerald Faulhaber formally proposed both tests as a part of an economic framework developed for cross-subsidization¹⁰² analysis in a classic 1975 article.¹⁰³ In what has become a standard reference for

100. To illustrate this point, return to the simple setting considered in note 99 *supra*, where firm *A*'s marginal cost is 7 but it sets a price of 4. Now suppose that firm *B* could reduce its marginal cost from 6 to 5 by incurring negligible research and development expenditures. Absent the below-cost pricing by firm *A*, firm *B* would undertake the research and development expenditures because the expenditures would increase its profit by reducing its operating costs. However, firm *B* will not undertake the socially beneficial investment when firm *A* charges a unit price of 4, because firm *B* cannot operate profitably in the industry even when its unit costs are reduced to 5. Consequently, below-cost pricing eliminates a firm's incentives to undertake socially desirable research and development expenditures in this setting, as it can more generally.

101. 39 U.S.C. § 3633(a)(1).

102. What distinguishes a cross-subsidy from an ordinary subsidy is that the former addresses the internal cash flows implicit in the rate structure of a firm that provides two or more products or services. In contrast, a subsidy involves payments from an external entity, usually the government.

scholars and regulators, Faulhaber rigorously defines cross-subsidization and analyzes methods for detecting its existence.¹⁰⁴

Faulhaber's first test for the existence of cross-subsidy is the incremental cost test.¹⁰⁵ The incremental cost of product *X* is the amount by which a multiproduct firm's costs increase as a result of producing *X*. Incremental cost is therefore the difference between the multiproduct firm's total cost—assuming all products, including *X*, are produced—and the total cost that would be incurred if the firm were to produce all of its products except product *X*. The concept of incremental cost applies equally well to groupings of products. If a multiproduct firm produces three outputs, referred to as *X*, *Y*, and *Z*, then the incremental cost of *X* and *Y* is the additional cost incurred due to the combined production of these two outputs. A related but distinct cost concept is the stand-alone cost of *X*, defined as the total cost that a firm must incur to produce *X* by itself. Again, this concept is valid in a multiproduct context: the stand-alone cost of *X* and *Y* is simply the total cost to the firm of producing these two outputs, and nothing else.

The incremental cost test is satisfied if the revenue derived from every product by itself, and the consolidated revenue of each possible combination of the firm's products, exceeds the corresponding incremental costs of production. For example, consider a simple multiproduct firm producing two outputs, *X* and *Y*. To pass the incremental cost test, three conditions must be satisfied: (1) total revenues for product *X* must not be below the incremental cost of *X*; (2) total revenues for product *Y* must not be below the incremental cost of *Y*; and (3) combined revenues for *X* and *Y* must be greater than or equal to the combined incremental cost of *X* and *Y* together.

103. Gerald R. Faulhaber, *Cross-Subsidization: Pricing in Public Enterprise*, 65 AM. ECON. REV. 966 (1975).

104. For a thirty-year retrospective on the acceptance and application of Faulhaber's cross-subsidization analysis by regulators, see Gerald R. Faulhaber, *Cross-Subsidy Analysis with More Than Two Services*, 2 J. COMPETITION L. & ECON. 441 (2005).

105. See Faulhaber, *supra* note 103, at 969.

If the conditions for the incremental cost test are met, the multiproduct pricing structure is free of cross subsidy.

A second test for detecting cross-subsidization is given by the stand-alone cost test. In contrast to the incremental cost test, which employs the concept of incremental cost to develop lower bounds for subsidy-free revenues, the stand-alone cost test approaches the problem from the opposite direction. In particular, the stand-alone cost test imposes maximum possible values for subsidy-free revenues, based on the concept of stand-alone cost. One may conclude that prices are subsidy-free if the revenue for each product and each possible grouping of products is less than or equal to the corresponding stand-alone costs of production. Hence, to satisfy the stand-alone cost test, a multiproduct firm producing only X and Y must satisfy three conditions: (1) total revenues for product X must not be above the stand-alone cost of X ; (2) total revenues for product Y must not be above the stand-alone cost of Y ; and (3) combined revenues for X and Y must be less than or equal to the combined stand-alone cost of producing X and Y together.

Given the existence of two seemingly distinct tests for cross-subsidization, it is natural to ask how they differ. Intuition suggests that the incremental cost test might favor rate structures with “higher” prices (as this test places a minimum threshold on revenues), and that the stand-alone cost test might be more forgiving of rate structures characterized by “lower” prices (as the stand-alone cost test does the opposite). As it happens, these perceived distinctions are illusory. As long as the firm earns zero economic profits, it can be shown that the stand-alone cost test and the incremental cost test are equivalent. If either of the two tests is violated, one may

conclude that the rate structure is not free of cross-subsidization. This equivalence result constitutes the central contribution of Faulhaber's analysis.¹⁰⁶

If the Postal Service rate structure were to violate the standard cross-subsidization tests described above, there would exist clear evidence of anticompetitive behavior. However, as I explain in more detail below, in the presence of significant network advantage, it is possible for the Postal Service to price significantly below competitors' costs even while satisfying both the stand-alone cost test and the incremental cost test. Thus, the absence of cross-subsidization is best characterized as a necessary rather than a sufficient condition for ensuring that the Postal Service does not exploit its network advantage.

B. Cross Subsidization and Network Advantage

A simple model illustrates the role that network advantage plays in allowing the Postal Service to set prices below the costs of competitive firms, and it suggests a simple methodology for gauging the magnitude of the network advantage enjoyed by the Postal Service. Suppose that the Postal Service is allowed to produce two outputs, X and Y . Let X be the competitive product that both the Postal Service and its competitors produce. Furthermore, assume that the Postal Service, and only the Postal Service, is permitted to produce the market-dominant product Y . Hence, the competitive firm must produce X on a stand-alone basis, while the Postal Service may engage in joint production of both X and Y . The Postal Service enjoys a network advantage in the production of X to the extent that the stand-alone cost of X exceeds its incremental cost when Y is also produced.

106. See Faulhaber, *supra* note 103, at 971. Note also that recent research by Jörg Borrmann and Klaus Zauner provides a generalized version of Faulhaber's equivalence result. Borrmann and Zauner develop a less restrictive concept of cross subsidization that can be applied when regulators permit firms to earn non-zero profits. Given this framework, they propose both a generalized stand-alone cost test (GSAC) and a generalized incremental cost test (GIC), and prove an equivalence result analogous to that of Faulhaber. See Jörg Borrmann & Klaus G. Zauner, *Cross-Subsidization when Firms are Allowed to Make Non-zero Profits*, 11 INT'L J. ECON. BUS. 241 (2004).

To illustrate, assume that both the Postal Service and the competitive firm operate using the same multiproduct cost function, $C(X, Y)$, which gives the minimum cost of producing X and Y . However, the competitive firm is constrained to hold production of Y constant at zero, which prevents it from realizing economies of scope. Assume in this example that any economies of scope are driven by network effects. The network advantage (NA) available to the Postal Service in the production of X can now be defined as follows:

$$NA \equiv SAC(X) - IC(X) \quad (1)$$

In this context, stand-alone costs and incremental costs are denoted as follows:

$$SAC(X) \equiv C(X, 0) \quad (2)$$

$$IC(X) \equiv C(X, Y) - C(0, Y) \quad (3)$$

Now assume that the Postal Service does not engage in cross-subsidization, and therefore satisfies both the incremental cost test and the stand-alone cost test. The Postal Service's revenues for product X , given by $TR_{Postal\ Service}(X)$, are bounded above by the stand-alone cost, and bounded below by the incremental cost. In particular, conditions for the Postal Service's pricing to be free of cross-subsidization include:

$$TR_{USPS}(X) \geq IC(X) = C(X, Y) - C(0, Y) \quad (4)$$

$$TR_{USPS}(X) \leq SAC(X) = C(X, 0) \quad (5)$$

Dividing equation (5) by X , one obtains:

$$P_{USPS}(X) \leq C(X, 0) / X = ASAC_{CF}(X) \quad (6)$$

Here, $ASAC_{CF}(X)$ represents the average stand-alone cost of X , which is the minimum average cost attainable by the competitive firm.

Thus, equations (5) and (6) imply that the Postal Service must set a price less than or equal to the average stand-alone cost of X , which is the average cost of the competitive firm. In

other words, the Postal Service will use its network advantage to price below the competitor's costs whenever the cross-subsidization constraint in (5) does not hold with strict equality. If the Postal Service has the ability and the incentive to avoid a "knife-edge" pricing solution of exact equality, then it will set prices that the competitor cannot possibly match. Possible reasons for doing so include the incentives for maximizing the volume of competitive products enumerated in section III.B; by setting price less than the average stand-alone cost, the Postal Service could expand its operating scale significantly. In addition, there will always be some degree of uncertainty and debate regarding the true value of the stand-alone cost of any product. If the Postal Service were to set price equal to the average stand-alone cost of X , there could be some risk that subsequent adjustments to accepted stand-alone cost metrics would indicate that Postal Service was in violation of the stand-alone cost test. Thus, setting prices below the "knife-edge" solution could also reflect a desire to avoid the risk of being accused of cross-subsidization.

Thus, if network advantage exists, the same framework used to police cross-subsidization allows for the use of network advantage by the Postal Service to set price below the costs of competitors. The greater the network advantage bestowed on the Postal Service through uniquely available economies of scope, the greater the potential for the Postal Service to set a price that undercuts its competitors' cost. This implies that an incremental cost test by itself, while capable of detecting cross-subsidy, is incapable of detecting the full extent to which the Postal Service may use its network advantage to disadvantage its competitors.

Network advantage, as measured by the difference between stand-alone cost and incremental cost, is therefore a useful benchmark for gauging the extent to which Postal Service receives an advantage that is unavailable to its competitors. All else equal, the larger this difference is, the greater the benefit the Postal Service has relative to its competitors. In the case

of the Postal Service, attributable cost serves as a useful proxy for incremental cost. Thus, an appropriate proxy for network advantage is the difference between stand-alone cost and attributable cost, and this is the methodology that I propose.

C. The Estimation of Economies of Scope

Econometric studies of postal operations have produced evidence of substantial economies of scope, suggesting that network advantage does in fact imply significantly higher costs for private firms competing with the Postal Service. In this section, I provide a brief overview of empirical work in this area. As the studies surveyed demonstrate, the basic finding of scope economies in postal operations is an empirical regularity spanning various time periods, datasets, methodologies, and countries.

1. Bradley, Colvin, and Perkins (2006)

The most recent empirical evidence on economies of scope in the Postal Service comes from a study published in 2006 by Michael Bradley, Jeff Colvin, and Mary Perkins, who employ a structural model to estimate economies of both scale and scope with respect to street delivery time.¹⁰⁷ Using Postal Service data, Bradley, Colvin, and Perkins estimate a two stage model of the Postal Service's delivery optimization process, with the ZIP code as the basic unit of observation. The study makes use of daily observations on street times and delivery volumes for a sample of ZIP codes during 11 delivery days in the year 2002.¹⁰⁸ The first stage of the model determines the number of routes within each ZIP code. The second stage takes the number of routes as constant, and determines the average street time per route within each ZIP code. To categorize different varieties of Postal Service output, the study employs data on four product

107. Michael D. Bradley, Jeff Colvin & Mary K. Perkins, *Measuring Scale and Scope Economies with A Structural Model of Postal Delivery*, in LIBERALIZATION OF THE POSTAL AND DELIVERY SECTOR 103 (Michael A. Crew & Paul R. Kleindorfer eds., Edward Elgar Publishing, Inc. 2006).

108. *Id.* at 109.

categories, or “volume vectors,” which are incorporated into both stages of the structural model.¹⁰⁹

Given their model parameter estimates, Bradley, Colvin, and Perkins are able to construct two types of scope economy estimates. First, the study reports four sets of product-specific scope economy estimates, corresponding to the four volume vectors. The product-specific estimates capture the extent to which street time would increase if the Postal Service were constrained to deliver a single product separately, but still permitted to process all remaining products collectively. Second, the study reports a single estimate of “overall” scope economies, which is a generalized version of the product-specific estimates. In particular, the estimate of overall scope economies measures the amount of additional street time that would be incurred in the event that the Postal Service were to process all four of the volume vectors on a stand-alone basis.¹¹⁰

Both the overall and the product-specific estimates indicate that economies of scope are substantial. With respect to the product-specific estimates, the econometric estimates imply that the Postal Service would incur an increase in street time of 61.6 percent if it were constrained to deliver prepared mail separately.¹¹¹ Product-specific estimates for the other volume vectors yield results of similar magnitude. In particular, the corresponding figures for cased mail, customer contact mail, and collection mail are 45.3 percent, 56.3 percent, and 58.5 percent.¹¹² The estimate

109. The first volume vector, “prepared mail,” consists of mail that is presorted in the order of delivery such that there is no need for the letter carrier to “case” the mail. Prepared mail thus implies substantial reductions in office time preparation. (In some cases, the Postal Service’s mail processing equipment presorts the mail; in other instances, the Postal Service’s customers perform the task). The second volume vector, “cased mail,” consists of items such as non-machinable letters, residual letters, and small parcels; in contrast to prepared mail, cased mail must be sorted by the carrier. The third volume vector, termed “customer contact mail,” is comprised of items whose delivery requires some form of contact with the recipient—carriers cannot simply deposit such items in the mail receptacle. This category includes large packages that a carrier must attempt to deliver directly to the customer. Finally, the fourth volume vector consists of mail that carriers collect from mail receptacles, and is referred to as “collection mail.” *Id.* at 108-09.

110. *Id.* at 114-16.

111. *Id.* at 116.

112. *Id.*

of overall scope economies implies that street time would more than double if the Postal Service were constrained to process each of the volume vectors separately, increasing by 166 percent.¹¹³

2. Bradley and Colvin (1995)

Using Postal Service data, a 1995 study by Michael Bradley and Jeff Colvin provides evidence on scope economies through analysis of the so-called “access” portion of street delivery.¹¹⁴ The modeling framework for the study is based on the observation that the Postal Service must be prepared to make deliveries to any of the registered addresses contained in the network it covers. Thus, each address in the network represents a potential delivery, or a “potential stop.” When a potential delivery becomes an actual delivery, Bradley and Colvin describe this event as an “actual stop” or an “access.”¹¹⁵ The model allows the probability that a potential stop yields an actual stop to depend on the delivery volumes of several categories of mail. The study obtains estimates of scope economies through analysis of the relationship between potential stops, actual stops, and the observed volumes of the various mail categories.

Bradley and Colvin’s dataset contains information on mail volumes and delivery stops for a cross section of carrier routes from the year 1990.¹¹⁶ The mail categories employed in the empirical analysis are distinct from those that appear in the more recent study by Bradley, Colvin, and Perkins.¹¹⁷ Instead of employing categories of output based on differences in the delivery process, Bradley and Colvin’s dataset classifies mail according to categories defined by the Postal Service. The five principal mail categories employed in the empirical analysis are

113. *Id.* at 117.

114. Michael D. Bradley & Jeff Colvin, *An Econometric Model of Postal Delivery*, in *COMMERCIALIZATION OF POSTAL AND DELIVERY SERVICES: NATIONAL AND INTERNATIONAL PERSPECTIVES* 137 (Michael A. Crew & Paul R. Kleindorfer eds., Kluwer Academic Publishers 1994).

115. *Id.* at 141.

116. *Id.* at 146.

117. Bradley, Colvin, & Perkins, *supra* note 107.

simply defined by the class of mail that they represent: first class, second class, third class, fourth class, and “other.”¹¹⁸

Bradley and Colvin’s empirical results yield evidence that the Postal Service enjoys substantial economies of scope. For example, in the case of first class single piece mail, the estimate for economies of scope indicates that costs would increase by 54 percent if the Postal Service were constrained to deliver first class single piece mail separately (while continuing to deliver all other classes together).¹¹⁹ The average scope economy estimate across all mail classes reported is 30 percent.¹²⁰

3. Gupta and Gupta (1985)

Empirical work by Satinder Gupta and Jatinder Gupta from 1985 provides additional evidence in favor of the existence of scope economies.¹²¹ Gupta and Gupta use annual Postal Service data from 1961 to 1980 to estimate a multiproduct cost function for postal operations. Estimating a cost function allows the researcher to study relationships between total cost and output, while holding input prices fixed. Hence, Gupta and Gupta employ labor, capital, transportation, and space cost data, in addition to data on the prices paid for these four inputs, and the volumes of various types of mail. Instead of using mail categories delineated according to the delivery process (as in the 2006 study by Bradley, Colvin, and Perkins),¹²² Gupta and Gupta employ data on four categories of mail, divided according to mail class (as in Bradley and Colvin’s 1994 study).¹²³

118. Bradley & Colvin, *supra* note 114, at 149.

119. *Id.*

120. *Id.*

121. Satinder N. Gupta & Jatinder N.D. Gupta, *Economies of Scale and Economies of Scope in the Postal Service*, 8 *ENGINEERING COSTS AND PRODUCTION ECONOMICS* 269 (1985).

122. Bradley, Colvin & Perkins, *supra* note 107.

123. Bradley & Colvin, *supra* note 114, at 149. Due to statistical considerations relating to the limited number of data points available, and in contrast to Bradley & Colvin, Gupta & Gupta treat certain classes of mail as identical

By estimating a cost function, the study is able to draw inferences with respect to the structure of production in the Postal Service. Although the main focus of the study is on economies of scale, the estimated parameters of the multiproduct cost function also reveal information on economies of scope. The cost function that Gupta and Gupta employ is not well defined when output takes on a value of zero, which frustrates a straightforward approach to computing scope economies.¹²⁴ However, the estimated cost function parameters exhibit cost complementarities between the classes of mail analyzed, which constitutes evidence of scope economies.¹²⁵ Gupta and Gupta therefore conclude that postal operations exhibit economies of scope.¹²⁶

4. Farsi, Filippini, and Trinker (2006)

Evidence on postal economies of scope in European postal operations appears in a study of Swiss Post by Mehdi Farsi, Massimo Filippini, and Urs Trinker.¹²⁷ The study employs a dataset from 2004 containing information derived from a sample of mail delivery units.¹²⁸ Using a cross-section of delivery units, Farsi, Filippini, and Trinker model cost as a function of input prices and multiple output volumes. In particular, the econometric model specifies total cost as a function of salaries, capital goods prices, and output. Output volumes are disaggregated into two

products. In particular, they aggregate first and third class mail into a single category, and do the same with second and fourth class mail. Therefore, although the dataset contains information on four different categories of output, the econometric modeling proceeds as if there were only two. *See* Gupta & Gupta, *supra* note 121, at 277.

124. A straightforward calculation of scale economies requires a prediction of total cost when output of a given mail class is constrained to zero.

125. Gupta & Gupta, *supra* note 121, at 274.

126. Gupta & Gupta report findings on cost complementarities only for the year 1980. For the other years covered in the dataset, the parameter restrictions that cost complementarities imply would be different. Perhaps because scope economies are not the primary focus of their study, Gupta & Gupta do not provide additional evidence to support or refute the existence of cost complementarities in years other than 1980. *Id.*

127. Mehdi Farsi, Massimo Filippini & Urs Trinker, *Economies of Scale, Density and Scope in Swiss Post's Mail Delivery*, in LIBERALIZATION OF THE POSTAL AND DELIVERY SECTOR 91 (Michael A. Crew & Paul R. Kleindorfer eds., Edward Elgar Publishing, Inc. 2006).

128. In Switzerland, such delivery units constitute starting points for a total of roughly 10,000 mail carriers that deliver to essentially every household in the country. *Id.* at 91.

simple and broadly defined categories: mail and parcels. The econometric specification also controls for the number of delivery points in the service area of a given delivery unit, the number of affiliated local delivery units, and regional effects.¹²⁹

In contrast to Gupta and Gupta's study,¹³⁰ Farsi, Filippini, and Trinker's cost function is well-defined when output is set to zero for a given mail class. Thus, it is feasible to compute a straightforward estimate of economies of scope, simply by comparing the predicted costs of separate delivery to those of consolidated delivery. The median scope economy estimates reported range from 33.4 percent to 45.5 percent, implying that costs would increase substantially if Swiss Post were to deliver mail and parcels separately.¹³¹

5. Wada, Tsunoda, and Nemoto (1997)

A 1997 study by Tetsuo Wada, Chieko Tsunoda, and Jiro Nemoto provides an analysis of the cost structure of the Japanese mail service through econometric cost function estimation.¹³² The dataset employed is a panel covering 12 regional postal service bureaus collected over a 15 year period, from 1980 to 1994.¹³³ The econometric model specifies total cost as a flexible function of wages, capital goods prices, and two measures of postal output. The first category of output is the number of letter mail items delivered in a year for each regional bureau. The second output metric is the number of parcels delivered. In addition, the study includes the population served by each bureau as a control variable in the cost function.¹³⁴

129. *Id.* at 94.

130. Gupta & Gupta, *supra* note 121.

131. The first quartile estimates of scope economies range from 30.5% to 38.9%, while the third quartile estimates range from 37.7% to 51.9%. *See* Farsi, Filippini & Trinker, *supra* note 127, at 99.

132. Tetsuo Wada, Chieko Tsunoda, & Jiro Nemoto, *Empirical Analysis of Economies of Scale, Economies of Scope, and Cost Subadditivity in Japanese Mail Service* (IPTP Discussion paper series 1997).

133. *Id.* at 10.

134. *Id.* at 11.

The multiproduct cost function specified in the study is not well-behaved if one of the output metrics is constrained to zero. Therefore, direct computations of scope economies, which rely on predicted costs when either mail or parcel volume is set to zero, do not yield sensible estimates.¹³⁵ Nevertheless, the cost function parameter estimates reveal information on economies of scope. In particular, Wada, Tsunoda, and Nemoto compute cost complementarities numerically, and report that cost complementarities between mail and parcels are evident for all data points in their sample. They therefore conclude that their econometric estimates are indicative of economies of scope in the Japanese postal service.¹³⁶

CONCLUSION

The Postal Service has stronger incentives than profit-maximizing firms to pursue activities that harm competition and consumers. SOEs such as the Postal Service face incentives to discount costs when setting prices in competitive markets, and may even set prices below marginal costs. The Postal Service also enjoys a unique statutory monopoly, created when Congress chose to establish and perpetuate a public enterprise with monopoly power. This statutory monopoly confers a substantial network advantage, which may further encourage and enable the Postal Service to set prices for competitive products that fall well below rivals' costs. In particular, if significant economies of scope exist in the production of Postal Service products, combined with economies of scale, the Postal Service will be able produce competitive products at a price less than the competitive stand-alone cost. Consequently, the Postal Service will be able to exploit cost complementarities that exist between market-dominant and competitive markets. Moreover, the anticompetitive concerns raised by network advantage are of particular relevance to postal markets: Numerous empirical studies (spanning various time periods,

135. *Id.* at 7, 15.

136. *Id.* at 12.

datasets, methodologies, and countries) have concluded that postal operations exhibit significant economies of scope.

Network advantage, as measured by the difference between stand-alone cost and incremental cost, is a useful benchmark for gauging the extent to which Postal Service enjoys an advantage that is unavailable to its competitors. All else equal, the larger this difference is, the greater the benefit the Postal Service enjoys relative to competitive rivals. Because it is important to gauge the magnitude of the Postal Service's network advantage, in this declaration I propose a simple methodology for the measurement of network advantage. In the case of the Postal Service, attributable cost can serve as a reliable proxy for incremental cost. Thus, an appropriate proxy for network advantage is simply the difference between stand-alone cost and attributable cost.

To the extent that the Postal Service passes on cost savings derived from network advantage in the form of lower prices for competitive products, consumers of these products will benefit, at least in the short run. Hence, there may exist a tendency for regulators and policymakers to disregard or minimize the anticompetitive consequences of the Postal Service's network advantage. Therefore, it bears emphasis that lower prices are not always better, particularly if price falls below marginal cost. In addition, low prices for competitive products may come at the expense of higher prices for market-dominant products. Such a pricing structure would effectively penalize the designated beneficiaries of the Postal Service's core mandate.

Congress chose not to repeal the Postal Service's statutory monopolies. That decision, however, does not imply that the Postal Service should be given carte blanche to use its resulting network advantage in competitive markets to harm captive consumers and efficient competitors.

Respectfully submitted,

J. Gregory Sidak