

**Postal Revenues and Costs from Workshared Activities:
An Evaluation of USPS Worksharing**

by

John Haldi
Haldi Associates, Inc.
Economic Consultants

and

William J. Olson
William J. Olson, P.C.
Attorneys-at-Law

Paper to be presented at
Eleventh Conference on Postal and Delivery Economics
Rutgers University Center for Research in Regulated Industries
Toledo, Spain
June 4-7, 2003

CONTENTS

	Page
1.0 Introduction	1
2.0 Model for Aggregate Revenue-Cost Comparisons	5
3.0 Revenue from Upstream Activities	10
4.0 Cost of Upstream Activities	13
5.0 Revenue-Cost Comparison	15
6.0 Conclusions	17
6.1 Implicit Rates Charged for Upstream Services Are Not Compensatory .	19
6.2 Within Most Classes of Mail, Upstream Costs Are Subsidized	20
6.3 Mail Processing Subsidies Should Be Eliminated	21
6.4 Non-Compensatory Rates Can Subject Competitors to a Vertical Price Squeeze	23
6.5 Mail Processing Subsidies Detract from the USO	24
6.6 Cross-Subsidies Between Classes of Mail Do Not Exist	25
6.7 Charging Unbundled Rates for Upstream Services Would Help Expose Cross-Subsidies, Price Discrimination, and Poor Business Practices ..	27
6.8 Compensatory Rate Differentials Would Represent a Natural Evolution to Full Competition in Mail Processing and Transportation	30
6.9 Liberalization May Not Be Synonymous With Unbundling and Full Competition	31
References	33
Appendix	35

Postal Revenues and Costs From Workshared Activities: An Evaluation of USPS Worksharing

By

John Haldi and William J. Olson

1.0 Introduction

The United States Postal Service (“USPS”) allows access to its network at intermediary points, down to and including local delivery units, for mail that is prepared in accordance with postal regulations. Mailers and other private intermediaries that take advantage of this open access to the network by performing various optional activities such as sorting and transportation are said to engage in “worksharing.”¹

Lower rates for workshared mail were introduced in 1976, with the offering of a small discount for presorted First-Class Mail. Since then, worksharing opportunities have expanded considerably. They now include virtually all classes of mail and all types of activities upstream of delivery. The major exception is that, as yet, no rate incentive is given to enter First-Class Mail at destinating facilities.

¹ Worksharing in its broadest sense can be thought of as any mailer activity that systematically reduces cost for a postal administration. One such example is mailers’ use of meters to affix postage on single-piece mail, which helps reduce retail costs significantly, but in few countries does this particular activity receive an economic incentive from the postal administration. The principal worksharing activities receiving economic incentives in the United States now consist of barcoding, sorting and transporting mail to destinating facilities. Since the first two activities, when performed by independent entities, occur before the mail is entered with the USPS, they customarily are referred to, respectively, as “prebarcoding” and “presorting.” See Cohen, Ferguson, Waller and Xenakis (2001) for a more detailed discussion of worksharing.

The incentives extended to mailers to perform activities upstream of delivery were described by Elcano, German and Pickett (2000) as liberalization of the postal system. As they pointed out, this is the route by which competition has been introduced into the postal market in the United States, rather than by having competition for delivery of targeted products in selected geographic locales — as has occurred, for example, in Sweden. In the United States, the monopoly over delivery of letter mail remains intact. The delivery portion of the USPS network can thus be considered a “bottleneck” or “essential” facility.²

As Panzar (2002) has observed, giving downstream access to the network, coupled with economic incentives, will increase contestability of the market for upstream postal services. Experience in the United States clearly bears this out. In the year 2000, approximately 67 percent of all mail was workshared to some degree.³ Presort bureaus and other intermediaries proliferate. Today, “consolidators and third-party logistics companies [that specialize in mail] are an emerging, rapidly growing component of the shipping industry.”⁴

According to Elcano, *et al.*, “worksharing has a value [to mailers] of \$11.7 billion per year.” This represents the sum of price reductions that mailers received in 1998.

² The USPS has a statutory monopoly on (i) ordinary letter mail, including addressed advertising mail (express services provided at premium rates have an exemption from the monopoly), (ii) delivery to residential mailboxes, and (iii) delivery to post office boxes. The USPS does not have a monopoly on delivery of periodicals, but the statutory monopoly makes it the dominant provider of residential delivery services and gives it a *de facto* monopoly over delivery of periodicals. The USPS monopoly on delivery to residential mailboxes is discussed in a report by the General Accounting Office (1997).

³ Postal Service (2002), App. C, p. C-3.

⁴ Postal Service (2002), App. C, p. C-5.

Since rates for worksharing are optional, it is reasonable to assume that the private sector spent less than \$11.7 billion to do the work.

Cohen, *et al.* (2001) estimate that worksharing saved the USPS \$15.3 billion in costs in 1999. The Elcano and Cohen data differ by one year. Nevertheless, it is reasonable to conclude that in 1999 the private sector spent no more than \$11.7 billion to do work that would have cost the USPS \$15.3 billion. Offering downstream access to the postal network, coupled with lower rates for workshared mail, was a bold and imaginative move by the USPS. Several important implications are worth noting.

First, because the cost of the worksharing undertaken by the private sector has been substantially less than the USPS's cost, social efficiency has improved.

Second, the USPS has taken the position that the monopoly protections do not apply to upstream work; hence, the USPS considers private sector competition for such work involving letter mail to be legal.

Third, the lower rates charged for workshared mail have encouraged competition for the upstream portion of the postal value chain, which is not considered to be characterized by either excessive barriers to entry or meaningful economies of scale or scope. As a result, the upstream portion of the postal network is no longer the monopoly it once was. Such competition effectively demonstrates that the upstream portion of the network is neither a natural monopoly nor an essential operation.

Fourth, the competition introduced by worksharing has reduced effective rates and the total cost of mailing, thereby helping to maintain mail volume and economic viability of the delivery network. This competition certainly has not undermined the

USPS's ability to fulfill its Universal Service Obligation ("USO"); it probably has made it easier to sustain the USO.

With worksharing, liberalization of a postal system need not be viewed as an "either-or" proposition. Rather, liberalization can vary by degree, depending on how the postal administration prices its worksharing services. One purpose of this paper is to propose a methodology for assessing the extent to which access prices have liberalized the portion of the postal network upstream of delivery. Succinctly, the revenues derived from providing mail processing and transportation services are estimated using the access prices for workshared mail. These revenues then are compared with the cost of providing those services.⁵ If complete liberalization is considered to occur when the revenue from upstream services equals the cost of upstream providing those services, this paper demonstrates that the USPS has not yet reached that point.

By way of overview, Section 2 presents the model that underlies the approach used in this paper. Sections 3 and 4 discuss the development, respectively, of upstream revenues and costs, using data from FY 2000. Section 5 compares upstream revenue with upstream costs. The analysis in Section 5 reveals that in FY 2000 the revenue from upstream services failed to cover their cost by a significant amount.⁶ This failure to cover cost means that the monopoly on delivery service was used to cross-

⁵ The paper draws on (i) Haldi and Olson (2003a), which develops an estimate of the USPS's revenues derived from upstream services, and (ii) Haldi and Olson (2003b) which develops the USPS's cost of providing those upstream services.

⁶ Whether worksharing discounts offered to mailers exceed the cost savings realized by the USPS has been raised repeatedly by the American Postal Workers Union, AFL-CIO. APWU's concern led to a May 15, 2002 request by three members of Congress that the U. S. General Accounting Office study the issue.

subsidize competitive upstream services. Section 6 concludes this paper with a discussion of policy and regulatory issues raised by these results. The Appendix gives information on individual classes of mail below the level of the aggregate data in the body of the paper.

The exclusive focus of the paper is on the USPS, since it has led the way in opening access to its network and enabling competition for upstream services to develop. However, the issues discussed here also should be of interest to regulators and policymakers in other countries where incumbent postal administrations offer similar downstream access to their networks.

2.0 Model for Aggregate Revenue-Cost Comparisons

Panzar (2002) describes the conditions for access pricing to promote efficient entry into a vertically integrated postal network. In brief, for each class of mail

(1) Access price = Full bundled price – Incumbent’s average avoided cost

or

$$(1') \quad P_d = P_f - C_a$$

where P_d is the discounted access price, P_f is the full bundled price, and C_a is the incumbent postal administration’s average avoided cost.⁷

⁷ Each class of mail may contain a multiplicity of access prices; e.g., separate access prices for letters and flats, with or without transportation to various destinating facilities. To accommodate this, each such access price would be distinguished by adding a subscript “i” to each term in (1').

In First-Class Mail, the full bundled price, P_f , would be the rate for single-piece letters. A similar benchmark (*i.e.*, the highest rate for pieces using the entire network) would apply with respect to other classes of mail.

For mail that avoids using one or more functions in the postal value chain, such as sorting or transportation, it is possible to estimate the incumbent's unit cost that will be avoided. When the USPS files a rate case with the Postal Rate Commission ("PRC"), it prepares such estimates routinely.⁸ Once discounts have been established, however, and a significant volume of mail has been sorted and transported outside the incumbent's network, the accounting records of the incumbent postal administration do not report aggregate avoided costs.⁹ It may be possible, of course, to estimate the extent of avoided costs. But any estimate of such "savings" — or what it would have cost the postal administration to process and transport all that mail — becomes increasingly speculative as greater and greater volumes of mail are diverted from the postal administration's network, because over time USPS facilities, employment and transportation capacity all adapt to the volume in the postal network.

An alternative approach to evaluating whether access pricing conforms to the efficiency condition is to compare (i) the revenue from upstream functions based on the fees charged (*i.e.*, fees based on the difference between the fully bundled rate, P_f , and the discounted rate, P_d), with (ii) the cost to sort and transport the mail that uses some portion of the upstream network. Revenues that implicitly are derived from mail using

⁸ These estimates have not been without controversy.

⁹ The ability of the USPS to capture cost savings from workshared mail has been a controversial subject.

the upstream functions can be estimated directly from data in the postal administration's accounting records by using the methodology described herein (see Section 2.1, *infra*). The cost to process and transport mail in the upstream portion of the network also can be estimated from the accounting records (see Section 2.2, *infra*).

Under the above-described approach, comparison of upstream costs and revenues becomes a straightforward proposition (see Section 2.3, *infra*). Importantly, rather than speculating about what the cost might have been to process mail that avoided part of the network, this approach focuses on the revenue and cost of mail in the network, drawn from a postal administration's accounting records.

The approach just described can be related to the efficient pricing rule in equation (1), above, as follows. Transposing terms, that equation is the same as

$$(2) \quad C_a = P_f - P_d$$

For any one product, the difference between the full bundled price, P_f , and the access price, P_d , is typically referred to as the discount for worksharing. Equation (2) thus states that for access pricing to promote economic efficiency, the difference in rates should be equal to the avoided cost. Let V equal the volume of mail that pays for some amount of sortation or non-local transportation by the postal administration.

Then, multiplying equation (2) by V gives

$$(3) \quad V * C_a = V * (P_f - P_d)$$

The left hand side of equation (3) will equal the upstream cost of the mail volume, V , that is processed and transported by the postal administration if its avoided cost, C_a , is equal to the postal administration's actual costs of processing and transporting mail. In other words, the actual cost of mail using the upstream portion of the network is

treated as a proxy for the avoided cost of mail that bypasses some or all of the upstream network.

The term on the right hand side of equation (3) is the amount of revenue that the postal administration receives for processing and transporting volume V , subject to the proviso that the term P_d in equation (3) is the postal administration's implicit internal transfer price for delivery.¹⁰ This approach accords with Panzar's economic efficiency requirement that the incumbent's non-delivery operations should be charged an implicit price equal to the access price for workshared mail, P_d .

Recall that equation (3) is derived from the efficiency condition in equation (1). It turns out, then, that in order for the efficiency test to be met, the postal administration's cost of providing services upstream of delivery should equal the net revenue received for providing those services, where net revenue is defined as the full bundled revenue less revenue derived from charging an implicit internal transfer price equal to the external access price charged for delivery.

Whether the equality in equation (3) will hold is not assured. In fact, if the postal administration's actual cost of sorting and transporting mail is not equal to the estimate of avoided cost used to establish the access price, the equality implied by equation (3) almost surely will not obtain. Panzar discusses the possibility that access prices can be set at a level that is either too high or too low in terms of an economically efficient outcome. Comparing (i) the revenues derived from providing upstream services with

¹⁰ Although internal transfer prices are not customary in postal administrations, they are in common use by many vertically-integrated firms.

(ii) the cost of providing those services can indicate the extent to which established access prices are promoting efficient entry and the optimum amount of competition.

The efficiency condition reduces to a simple breakeven requirement — namely, a postal administration’s revenue from competitive services should equal its cost of providing those services. Not surprisingly, this implies that the price which the postal administration charges for its competitive upstream services should equal the unit cost of providing those services.

3.0 Revenue from Upstream Activities

The rate schedule for most classes of mail typically contains a number of rate differentials reflecting different access prices.¹¹ The multiplicity of access prices within each class enables mailers and other intermediaries to perform as much upstream work as they consider economic.¹² They can then relegate to the USPS any remaining mail processing and transportation.

¹¹ As a matter of convention, rate differentials often are referred to as “discounts” from the category of mail with the highest cost and rate. Setting discounts equal to avoided long-run cost results in what Crew and Kleindorfer (1995) describe as “Top-down Efficient Component Pricing.” The lower rates that result from discounts are the access prices paid by mailers or other intermediaries. Note, however, that if the same rate schedule were to be presented by first quoting the lowest available rate (which would be applicable to the most workshared mail), and then adding appropriate differentials to achieve higher rates applicable to less workshared mail, those rate differentials instead would be viewed as “surcharges” or “upcharges” — *i.e.*, a rate schedule presented in this format would contain no “discounts.”

¹² When timely delivery is an important consideration, some mailers may undertake to presort and transport mail even though their costs exceed whatever savings they obtain from discounts.

In the revenue allocation model used here, differentials in published rate schedules are viewed as the prices that the USPS charges to process or transport mail. They are available to any mailer who, for whatever reason, prefers to have the USPS provide those services. When mailers either do not or cannot take advantage of all available worksharing discounts, they pay the USPS to do work that now also is provided extensively by the private sector.

Within several classes (e.g., advertising mail) the lowest access rate is for mail that (i) has been presorted to the sequence in which carriers traverse their routes, and (ii) is transported by the mailer to a destination delivery unit (“DDU”). Such mail is ready to be cased by carriers and then taken directly to their routes for delivery. Because this mail bypasses the entire upstream portion of the postal network, the rate charged for carrier-sequenced DDU-entered mail should exclude any consideration of the cost for mail processing and transportation, as these workshared services are priced separately via published rate differentials.

Within each class of mail, the computation of revenues derived from upstream activities is straightforward: total volume for the class first is multiplied by the lowest access price that reflects delivery only, and the resulting amount is then deducted from total revenues for the class. This residual amount represents upstream revenues.¹³

Computation of revenues for upstream activities cited in this paper assumes that comparable pieces of mail within a class are charged the same rate for delivery (see

¹³ This procedure set out in the text is equivalent to (i) taking the volumes of mail that the postal administration accepts in various presort conditions, and at different upstream locations, and (ii) multiplying those volumes by the rate differentials, or prices, charged for each, and (iii) the summing the results. It is somewhat easier to implement, however.

Section 6.7, *infra*, for further discussion on this point). In other words, an implicit internal transfer price equal to the lowest access rate for delivery — *i.e.*, P_d in equations (1) and (2) — is charged to mail with a bundled rate that includes some amount of processing and transportation. Charging all mail within a class the same access price for delivery is consistent with the efficiency conditions discussed previously,

Haldi, *et al.* (2003a) estimate that in FY 2000 the USPS's aggregate net revenues from the rate differentials charged for mail processing and transportation amounted to \$21.8 billion.

The balance of USPS operating revenues in FY 2000 (\$42.8 billion) reflected the access price charged for “delivery only.” Of course, the access price for delivery only covers far more than the cost of the delivery network itself. Revenue from the access price for delivery covers everything except mail processing and non-local transportation. That is, revenue from delivery covers all unattributed institutional costs, such as maintenance of address correction services, the communications network, etc. It also includes all services that the USPS is required to perform in order to meet its USO.¹⁴

Mail processing and transportation are not considered part of the USO. Those services are available competitively from a growing panoply of intermediary providers. It is thus appropriate to compare the \$21.8 billion of revenues derived from the fees charged for mail processing and transportation with the costs incurred to provide those services.

¹⁴ The USO is generally construed to include (i) delivery of mail six days per week, (ii) daily pickup of mail deposited in hundreds of thousands of collection boxes, and (iii) operation of thousands of post offices, many of which are small and costly to maintain.

4.0 Cost of Upstream Activities

The USPS's costs of providing mail processing and inter-city transportation in FY 2000, as estimated by Haldi, *et al.* (2003b), are shown in Table 1.

Table 1

**U. S. Postal Service Upstream Costs
FY 2000
(\$, billions)**

Cost Measure	(1) Mail Processing	(2) Transpor- tation	(3) Total Cost
Volume Variable	19.6	4.0	23.6
Attributable	22.0	4.3	26.3
Incremental	23.6	4.7	28.3

Sources: Volume variable cost, Appendix, Table A-1.
Attributable cost, Appendix, Table A-2.
Incremental cost, Appendix, Section A.3.

The mail processing cost shown in Table 1 consists only of direct costs in Cost Segment 3.1 (mail processing) and Cost Segment 4.0 (clerks CAG-K), plus indirect costs estimated using piggybacks. As explained in Haldi, *et al.* (2003b), the piggyback factors used to develop these cost estimates capture approximately 93 percent of all indirect costs. To the extent that not all indirect costs are captured in the piggybacks, each estimate of mail processing cost is seen to be conservatively low. Expressly excluded from the mail processing costs in Table 1 is the cost of window service clerks.

This cost item is considered part of the USO, because window clerks are part of the cost of maintaining retail post offices.

The transportation cost shown in Table 1 is limited to Cost Segment 14 (purchased transportation), which for the most part represents inter-city transportation. Vehicle service drivers and all other costs of transporting mail locally are excluded from the transportation costs in Table 1.

Attributable costs, shown in the second row of Table 1, include virtually all volume variable costs.¹⁵ In addition, a number of other costs that are considered to be caused by the provision of individual postal products or services — *e.g.*, product specific costs — are classified as attributable. As a result, attributable costs exceed volume variable costs by a significant amount.

Incremental cost, shown on the third row of Table 1, measures the total cost caused by providing mail processing and transportation services. Incremental cost is defined here as attributable cost plus those non-attributed institutional costs that would cease to exist if the USPS no longer engaged in those activities; *e.g.*, as would occur if the private sector processed and transported all mail directly to destination delivery units, presorted to carrier route.

See the Appendix for further discussion about differences between the three different cost measures shown in Table 1.

¹⁵ The chief exception is certain Alaska air transportation costs, which the USPS treats as volume variable, while the PRC classifies those costs as institutional.

5.0 Revenue-Cost Comparison

The \$21.8 billion of total revenue generated from the fees charged for worksharing activities is less than any of the three types of total costs shown in Table 1. In FY 2000, the estimated revenues from mail processing and transportation fell (i) \$1.8 billion short of their estimated volume variable costs, (ii) \$4.5 billion short of their estimated attributable costs, and (iii) \$6.5 billion short of their estimated incremental costs. In order for the revenues from implicit mail processing and transportation fees to have covered their volume variable, attributable and incremental costs, they would have needed to increase by 8.3, 20.6, and 29.8 percent, respectively.

The fact that upstream revenues did not cover costs in FY 2000 is an indication that below-cost rates charged for upstream activities may be restricting efficient entry. Data comparable to those in Table 1 can be developed for subsequent (or prior) years, and such data could be used to help form an educated opinion about progress — or lack thereof — in liberalizing access to the upstream portion of the postal network. To illustrate, if the methodology here is applied consistently over time, and upstream revenues are found to be recovering an increasing proportion of upstream costs, then liberalization would appear to be continuing. And, contrariwise, if upstream revenues continue to exhibit the same proportionate shortfall, then liberalization would appear to be stagnating.

To be sure, the revenues and costs presented here are all estimates, and subject to further refinement. At the same time, the revenues have been allocated between the upstream and downstream portions of the network using the lowest access price charged to mailers. This allocates the maximum amount of revenue to the upstream

portion of the network, consistent with Panzar's efficient pricing rule.¹⁶ The costs of upstream services here are likewise restricted to mail processing and purchased transportation. No non-attributed institutional costs, including USO costs such as window clerks or collection routes, are included in the cost of upstream services. All those costs are recovered through the access price for delivery only, which is the one essential bottleneck facility. Therefore, it seems unlikely that the size of the shortfall between revenues and costs has been overstated.

The fact that revenues from mail processing and transportation failed to cover their volume variable, attributable, or incremental cost does not imply that the USPS actually lost money in FY 2000.¹⁷ It does mean, however, that the access prices for delivery had to be set excessively high in order to cover the shortfall from below-cost fees charged for upstream services. In other words, the USPS used its monopoly and dominant position with respect to delivery to subsidize the cost of upstream services that now compete with the private sector.

The accepted economic test for cross-subsidy is to compare revenues with incremental costs.¹⁸ Using this test, upstream services were cross-subsidized to the

¹⁶ The effect of weight on mail processing cost has been a controversial topic for some time. Under the procedure used in this study, 100 percent of all weight-related revenue is allocated to mail processing and transportation; see Haldi, *et al.* (2003a). To the extent that heavier weight pieces cause some increase in delivery costs, the procedure here overstates the amount of revenue properly assigned to mail processing and transportation.

¹⁷ In FY 2000, the USPS had a net reported loss amounting to \$199 million.

¹⁸ Panzar states that an efficient discount is based on an incumbent's average incremental cost savings. In rate cases, the USPS tests for cross-subsidy of mail classes and subclasses by ascertaining that revenues from each class and subclass cover their incremental cost.

tune of at least \$6.5 billion in FY 2000. These billions of dollars of upstream costs not recovered by rates charged for upstream services thus imposed an additional burden on the delivery network and the rates which the USPS charged for delivery.

The failure of aggregate upstream revenues to cover the total costs of upstream services means that in one or more classes of mail the rate structure enables cross-subsidization of upstream services. In fact, such cross-subsidization pervades most major classes of mail — *i.e.*, it is not confined to any single mail class (see Appendix, especially Tables A-1 and A-2).

6.0 Conclusions

Prior to the introduction of worksharing discounts by the USPS, rate differences within the various classes were restricted essentially to weight and, for periodicals and parcels, distance (*i.e.*, zone). The postal monopoly reigned supreme, and the issue of using the monopoly on delivery to subsidize upstream mail processing activities was moot. At the same time, mail within each class was far from uniform. It ran the gamut from “clean,” or easy to process, to “dirty” — that is, expensive to process. The rate structure for each class thus reflected a substantial amount of averaging over somewhat disparate costs.

With the introduction of rate differences for worksharing activity in 1976, the rate structure began to recognize identifiable, measurable cost differences. As a rule, worksharing discounts were set initially at something less than 100 percent of avoided

attributable costs.¹⁹ In subsequent rate cases, a number of worksharing discounts gradually were increased to a level that now approaches or even equals 100 percent of measured savings in attributable cost. This has increased liberalization of the upstream portion of the postal network, and resulted in rates that progressively have become more cost-based.²⁰

The gradual approach to rate de-averaging has helped temper increases for mailers who, for whatever reason, have not taken advantage of worksharing. As a general rule, those mailers who supplied the “dirtier,” or more expensive, portion of the mailstream have been among those who have chosen to relegate all or most of their work to the USPS.

6.1 Implicit Rates Charged for Upstream Services Are Not Compensatory

Since worksharing discounts first were adopted, the USPS, generally with PRC concurrence, has tended to measure cost savings, or avoided cost, rather narrowly.²¹ As a rule, when establishing rate differentials for worksharing, the PRC has restricted

¹⁹ The PRC subsequently adopted as a guideline that worksharing discounts should not exceed 100 percent of avoided costs. See PRC (1996), ¶¶ 3068, 3074-79, PRC (1998), ¶ 5516, PRC (2000), ¶ 5060. The PRC on occasion has rejected explicit proposals to pass through more than 100 percent of avoided costs; see PRC (1998), ¶¶ 5521-24, 5526, 5530, 5561-62; PRC (2000) ¶¶ 5409, 5412.

²⁰ To the extent that worksharing discounts have in fact differed from their avoided attributable cost, on average they have tended to be less than 100 percent. Examples exist, however, where the PRC has adopted discounts which have exceeded 100 percent of avoided attributable cost. PRC (1998) ¶ 5635; PRC (2000) ¶ 5562.

²¹ The size of rate differentials has not been without controversy. To the extent that differences have existed between the USPS and the PRC, it is the PRC that has sided in part with mailers seeking higher differentials.

discounts to “clearly capturable avoided costs.”²² That is, the PRC has included only certain clearly identified cost-saving activities in its measure of avoided cost. This approach thus excludes from estimated savings the cost of any other mail processing and transportation activities that may be performed by the private sector and that reduce cost for the USPS; see Gillotte (2002). Consequently, the PRC’s estimate of cost savings has a systematic tendency to reduce the rate differentials between workshared and non-workshared mail. With this understanding, it should be no surprise that when rate differentials based on these cost savings are used to compute USPS revenues from processing and transporting non-workshared mail, they fail to compensate the USPS for those upstream costs which it incurs.

6.2 Within Most Classes of Mail, Upstream Costs Are Subsidized

The substantial revenue shortfall and cross-subsidy identified in Section 5, *supra*, is an immediate and inevitable result of establishing rate differentials too low to recover the cost of mail processing and transportation incurred by the USPS. Those subsidies *within* classes have their roots in the narrowly-defined cost savings, discussed above, plus the methodology used to establish rate differentials.

The PRC’s standard for assessing adequacy of worksharing rate differentials would be unlikely to eliminate the cross-subsidy, even if the PRC adopted a broader definition of “avoided attributable costs.” The Efficient Component Pricing Rule (“ECPR”) states that rate differentials in network industries should reflect *average*

²² PRC (1998), ¶ 3079.

incremental cost; see Baumol and Sidak (1994). However, the USPS and the PRC apply the incremental cost test only to entire classes and subclasses of mail, not to upstream activities separately. For mail processing and transportation, the data in Table 1 indicate that their incremental cost exceeded their attributable cost by some \$2.0 billion.²³ These incremental costs were estimated on a conservative basis; *i.e.*, if the incremental costs for mail processing and transportation were refined further, they likely would exceed attributable costs by a larger amount. Consequently, even if the PRC were to define avoided attributable costs more inclusively, it seems likely that the resulting rate differentials would not reflect total incremental costs. Thus, some of those costs still would need to be subsidized because rate differentials would be too low to cover all costs.

Although cross-subsidies *within* classes may not violate the *letter* of the existing law, they clearly violate the *spirit* of any law designed to keep the monopoly from being used to cross-subsidize products and services subject to competition.

When the fees charged for upstream services fail to compensate for the cost of those services, as here, a postal administration should prefer mail that is workshared. Further, the larger the shortfall between upstream fees and costs, the greater should be the postal administration's preference for workshared mail. In other words, when fees are non-compensatory, a postal administration most definitely should not feel indifferent as between workshared and non-workshared mail. Lack of such indifference reflects, of

²³ This represents unattributed costs specific to mail processing and transportation. No attempt was made to ascertain whether any other USPS costs are incremental to mail processing and transportation.

course, a departure from Efficient Component Pricing, which ostensibly should leave the postal administration indifferent. In other words, non-compensatory rate differentials for upstream services that result in a preference for workshared mail should not be regarded as reflecting Efficient Component Pricing.

6.3 Mail Processing Subsidies Should Be Eliminated

The existing rate differentials for worksharing might be adequate if the USPS could increase the efficiency and productivity of mail processing sharply. That is, if mail processing costs could be reduced substantially below the level that existed in FY 2000, existing rate differentials then might provide revenues sufficient to eliminate the subsidy.²⁴ Increasing the efficiency and competitiveness of mail processing by the USPS, of course, would be the best way to rectify the cross-subsidy problem. Such a cure would help to hold down rates for all mail that buys upstream services from the USPS, including single-piece mail.

If the USPS should be unable to reduce its mail processing costs, then the only other way to eliminate the subsidy is to increase the prices charged for upstream services. One obvious way to do this would be simply to increase the existing rate differentials within the various classes. Another, perhaps better, way to increase the rates charged to mail that is more expensive to process and transport would be to de-average rates further on the basis of cost-driving criteria; *e.g.*, replace unzoned

²⁴ The USPS now uses a substantial amount of automation equipment to process mail, but historically it has had difficulty capturing savings from its investment in such equipment. Any effort to explain the low growth of USPS productivity is beyond the scope of this paper, however.

transportation rates with zoned rates.²⁵ Further de-averaging can be a significant help in achieving better alignment of rates with costs. That, in turn, would help to minimize adverse selection and promote only entry which is efficient. Within the context of financial breakeven, further de-averaging would tend to minimize (or possibly even decrease) rate changes for workshared mail, while increasing the rates for mail that requires the USPS to provide substantial upstream services.

An increase in rate differentials, whether done within the existing rate structure or via further de-averaging, also would be likely to increase the amount of worksharing performed by the private sector. That, in turn, would (i) reduce the effective rate to mail, (ii) increase viability of the delivery network, as well as sustainability of the USO, and (iii) possibly help reduce the size of the USPS labor force.²⁶

In view of the USPS's large off-balance-sheet, unfunded liabilities for retiree health care, plus the accumulated net deficit already on the balance sheet, the USPS can ill afford to continue setting rates in a manner that limits desirable competition, protects inefficiencies from market forces, and each year gives rise to multi-billion dollar cross-subsidies to competitive upstream services. Such subsidies needlessly drive up rates for the most profitable products, thereby adding incentive for migration to

²⁵ In a country as large as the United States, unzoned rates can obscure substantial cost differences. Such further de-averaging would help address the issue of adverse selection and cherry-picking; *i.e.*, selective erosion by the least costly mail, leaving the postal administration with only the most costly mail. Rate averaging, which can be viewed as a failure to use prices as effective signals to mailers, can invite inefficient practices, including entry by higher-cost competitors.

²⁶ Assuming financial breakeven, rate increases for some mailers within a class would be offset by rate decreases for others. Hence, any change in volume due to price elasticity should be minimal. Since the monopoly on delivery would remain intact, the USPS would continue to deliver all mail.

electronic alternatives. The USPS instead needs to start pricing its upstream services competitively, with rates for those services (*i.e.*, rate differentials) designed at least to cover their average long-run cost.

6.4 Non-Compensatory Rates Can Subject Competitors to a Vertical Price Squeeze

Cross-subsidies *within* classes promote social inefficiency by protecting and preserving high-cost upstream operations that instead could be performed by private sector competitors. Below-cost pricing of competitive services, if undertaken by vertically integrated utilities, common carriers, or other private firms, would be condemned by antitrust regulators and federal courts as making competitors vulnerable to a vertical or predatory price squeeze. If the USPS and the PRC cannot remedy this problem, the issue of permitting the dominant provider to use its monopoly over delivery services to cross-subsidize competitive upstream services should be revisited when the President's Commission on the United States Postal Service and Congress consider new postal legislation.

6.5 Mail Processing Subsidies Detract from the USO

As noted previously, mail processing and transportation are not customarily included in the USO. The USO traditionally has been defined to include daily delivery and collection of mail, plus maintenance of many thousands of small, uneconomical retail postal outlets. The traditional USO imposes on the USPS (and other postal administrations) a cost burden that, although unquantified, is doubtless substantial.

This cost burden has given rise to questioning whether the USO can be sustained in the face of competition.²⁷

The way that USPS revenues have been allocated here, all costs of the USO are amply covered in the rate for delivery, over which the USPS continues to enjoy significant monopoly protection. What deserves more recognition is that the rates for delivery also contain a multi-billion dollar subsidy used to support mail processing and transportation. Absent the burden of that subsidy, the traditional USO would be considerably more sustainable, and any potential threat of a “death spiral” also would be reduced significantly. If stagnant or declining mail volume should mandate cost-cutting, this multi-billion dollar subsidy to upstream services should be targeted for elimination before redefining and reducing the USO.

6.6 Cross-Subsidies Between Classes of Mail Do Not Exist

The Postal Reorganization Act specifies that each class of mail must cover its attributable cost.²⁸ The intent of this clause generally is acknowledged to be a prohibition against cross-subsidy as *between* the various classes of mail, some of which are subject to the statutory monopoly and some of which always have been open to competition. In particular, this provision of the law was intended to prevent the USPS

²⁷ See, for example, Crew and Kleindorfer (2002), and the references cited therein. Crew and Kleindorfer assume open competition for delivery, but that assumption is not applicable here; see footnote 2, *supra*.

²⁸ 39 U.S.C. Section 3622(b)(3).

from abusing and exploiting its monopoly on First-Class Mail to cross-subsidize the competitive classes of mail (parcels and periodicals).

Cross-subsidization *within* classes, described in Sections 2-5 of this paper, is not explicitly proscribed by the Postal Reorganization Act. As discussed in the introduction, though, competition within the postal arena has evolved by liberalizing the upstream activities that now are workshared, not by having new competition for delivery of targeted products on selected routes or in selected geographic locales (a practice sometimes described as “cherry picking”).²⁹ The PRC does recognize rate differentials, typically in the form of discounts, that determine access prices. However, the PRC has not yet compared separately the cost of providing upstream services with the implicit revenues derived from those services, as this paper does; *i.e.*, it does not view the upstream services of the USPS as being “unbundled” and priced separately.³⁰ Instead, for mail that utilizes some of the USPS’s upstream services, it uses what might be described as “bundled” rates. The net result is that *within* classes the PRC can recommend rates which incorporate heavy cross-subsidy of upstream activities (and, possibly, a vertical price squeeze on private sector competitors), while maintaining that

²⁹ The emergence of competition focused on upstream activities was not foreseen by the Postal Reorganization Act.

³⁰ Stated differently, the PRC does not treat external access prices as internal transfer prices (see Section 6.7, *infra*, for more discussion). The PRC has tended to view attributable cost as a proxy for incremental cost, and it has held that cross-subsidy exists only when the “bundled” rate for a product (including delivery) falls below its attributable (incremental) cost; see PRC (1998) ¶¶ 4001-26.

no class of mail is subsidized. In this manner, rates and fees are viewed as complying with the letter of the law.³¹

6.7 Charging Unbundled Rates for Upstream Services Would Help Expose Cross-Subsidies, Price Discrimination, and Poor Business Practices

The worksharing revenues cited in this paper are computed by assuming that comparable pieces of mail within a class are charged the same rate for delivery. Thus, as between comparable pieces of mail (*e.g.*, advertising catalogs of the same size and weight), if piece A requires delivery only, and piece B requires substantial upstream services, it is assumed that the rate charged for delivery of both pieces is equal and non-discriminatory. In other words, the delivery portion of the postal network is assumed to charge piece B an internal transfer price equal to the access price for piece A, and all revenue derived from this price is reserved to cover the cost of delivery, the USO, and general institutional overhead. This assumption amounts to an implicit unbundling of the higher rates charged for non-workshared mail. All revenue in excess of the presorted DDU-entry rate is considered to be for upstream services. So long as the USPS retains its existing monopoly on delivery, this assumption seems reasonable.³² The cross-subsidies identified here can be seen most clearly after

³¹ Because the postal regulator retains the authority to recommend rates in a manner that cross-subsidizes upstream activities, it should expect to be the recipient of requests for such cross-subsidies. Since cross-subsidies cannot be justified on grounds of economic efficiency, the regulator can expect that any number of non-economic policy reasons will be proffered to support the request for subsidy. Any cross-subsidy will, of course, promote economic inefficiency.

³² See Crew and Kleindorfer (2002) for discussion of access pricing under
(continued...)

making this assumption regarding an absence of discrimination if rates are treated as unbundled.

Other assumptions with respect to unbundling of the higher rates for non-workshared mail are possible. For such mail, the alleged subsidy of upstream services could be eliminated by arbitrarily assigning to upstream services whatever portion of the rate that is necessary to compensate for the cost incurred. The residual portion of the rate then would be treated as the implicit charge for delivery.³³ An alternative assumption such as this raises an important issue, however. Namely, two different rates would be charged to deliver comparable pieces of mail.³⁴ Quoting separate, unbundled rates would make explicit such differential pricing. Further, giving a discounted rate on delivery only to those customers who use more of the USPS's array of services might be viewed as undue or unreasonable price discrimination.

The dilemma, in other words, is that if the access price for piece A is equal to the internal transfer price for piece B, then the implicit price for the intermediate upstream services is unambiguously non-compensatory. Alternatively, if the access price for piece A exceeds the internal transfer price for piece B, then the lower-cost workshared

³²(...continued)
conditions where the incumbent postal administration has a USO but no monopoly over any portion of the postal network, including delivery.

³³ This implicit charge can be thought of as the internal transfer price for delivery. The ECPR states that the internal transfer price should equal the external access price; see Baumol, *et al.* (1994) and Panzar (2002).

³⁴ Valletti and Estache (1998) note that in order to discourage entry incumbents can be expected (by regulators) to charge very high access prices that do not impute to their own divisions the same access price required of the entrant. They point out that such pricing behavior can be detected "by looking at the separate accounts of the upstream and downstream activities of the incumbent" (p. 26).

mail is revealed to be the victim of price discrimination that may be judged undue or unreasonable. Unbundled pricing would make the issue explicit. Today's bundled pricing, by not quoting separate explicit rates for delivery and upstream services, avoids a head-on confrontation with the issue of discrimination.

For a concrete yet hypothetical illustration, suppose that comparable pieces A and B referred to above each costs 5 cents to deliver. For piece A, which is presorted and DDU-entered, the rate is 15 cents. The 10-cent difference is an operating profit that goes to cover institutional costs. For piece B, which requires the incurrence of an additional 8 cents for processing and transportation, or a total cost of 13 cents, the rate is set at 20 cents.

One way to unbundle the 20-cent rate for piece B is to assume that the internal transfer price for delivery is 15 cents, the same as the access rate for piece A. The remaining 5 cents then becomes the implicit rate for mail processing and transportation, which costs 8 cents. This approach to unbundling the 20-cent rate reveals the cross-subsidy of 3 cents for mail processing and transportation. An alternative way to unbundle the 20-cent rate is to assign 8 cents to cover the upstream costs (*i.e.*, the upstream operation just breaks even), and the internal transfer price for delivery then is the remaining 12 cents, which is 3 cents less than the access price charged to piece A. This alternative reveals the discrimination.

No matter how the 20-cent rate for piece B is unbundled, the operating profit, or contribution to institutional costs, is of course 7 cents; *i.e.*, 20 cents less the total cost of

13 cents. Thus piece B nets 7 cents, while requiring resources that cost 15 cents.³⁵ Piece A, by contrast, requires resources that cost only 5 cents and earns an operating profit of 10 cents.³⁶ With piece B, any postal administration would be in the position of spending somewhat more in order to earn less. In general, that is not an economic way to operate, even within a statutory mandate that is only to break even rather than earn a positive profit.³⁷ Nor would it be indifferent with respect to whether it got an incremental volume of workshared versus non-workshared mail. Such pricing practices, along with the implicit cross-subsidies, overly promote the least profitable products, at the expense of the most profitable products. In a competitive environment, such practices rarely provide the basis for a sound business plan. They are an invitation for profit-oriented competitors to cherry-pick and erode the most profitable business.

6.8 Compensatory Rate Differentials Would Represent a Natural Evolution to Full Competition in Mail Processing and Transportation

The gradual approach to de-averaging has stretched out the evolution to fully cost-based rates. Such rates would be expected to prevail if the upstream mail processing and transportation portion of the postal network were operated as a separate

³⁵ Non-workshared piece B does make a positive contribution to overhead. Hence, from a “bundled” perspective, it cannot be said to be cross-subsidized by other products. As noted above, however, it can be said to make a lower contribution than other comparable products (e.g., piece A), and it also can be said to pay a substantially lower implicit rate for delivery than pieces that are workshared but otherwise comparable.

³⁶ If the extra 8 cents spent to sort and transport piece B causes the USPS to incur additional off-balance-sheet liabilities (e.g., for retiree health benefits), the comparison is even more extreme than it appears here.

³⁷ In order to justify such pricing on economic grounds, the elasticity of demand for B would need to be extremely high in relation to the elasticity of demand for A.

free-standing entity that was required to be self-supporting in a competitive market. Yet actual divestiture and physical separation may not be necessary to achieve such a competitive outcome. Merely seeing that potential as a “virtual reality” is sufficient to pose the question: “*When should the upstream portion of the USPS be subject to the same laws of competition that apply to the private sector?*” For example, at what point in the evolution toward full competition should the USPS be subject to enforcement actions or private causes of action under the Sherman and Clayton Antitrust Acts and other statutory limitations imposed on private firms?

The *Transformation Plan* of the Postal Service (2002) states that the USPS wants to become less of a bureaucratic government agency and evolve toward a Competitive Government Enterprise model. Two important moves in that direction would be (1) to subject the USPS to the rules of competition imposed on other industries, and (2) for the USPS on its own initiative to set rates and rate differentials in ways that accord with the rules of competition in effect for other industries. These would be logical outcomes of the liberalization process begun in 1976; until this occurs, that process should not be judged complete.

6.9 Liberalization May Not Be Synonymous with Unbundling and Full Competition

A vertically integrated postal administration may opt to liberalize downstream access to its network. To a substantial degree, the USPS has done just this. Obviously, though, liberalization is not the same thing as — or synonymous with — unbundling. The USPS clearly has neither been unbundled, nor even restructured along those lines.

Further, although access prices have been established, neither the USPS nor the PRC have resolved to unbundle rates and establish non-discriminatory internal transfer prices that can be compared with the external access prices.

As noted above, the USPS wants to evolve toward a Competitive Government Enterprise, yet it insists on retention of the existing monopoly. In order to achieve its desired transformation, the USPS may need to develop a new outlook on the way it sets prices. That is, it, as well as any other postal administration going down the same path, may need to focus more on what it costs to process each distinguishable category of mail in the upstream portion of the network, and less on what it saves from mail that accesses only the downstream portion of the network. If the upstream portion of the network is to be opened fully to competition, the USPS will need to re-examine its pricing policies from the ground up. Specifically, it must cease pricing major upstream services like “loss leaders” and making up the difference through exploitation of its monopoly over delivery.

References

- Baumol, William J. and Gregory Sidak. 1994. "The Pricing of Inputs Sold to Competitors." *Yale Journal on Regulation*, Vol. 11, No. 1 (Winter, 1994), pp. 171-202.
- Cohen, Robert H., William W. Ferguson, John D. Waller and Spyros S. Xenakis. 2001. "The Impact of Using Worksharing to Liberalize a Postal Market," PRC. Washington, D.C. mimeo, paper presented at 6th Koenigswinter Seminar on Postal Economics "Liberalization of Postal Markets" (February 19–21, 2001).
- Crew, Michael A. and Paul Kleindorfer. 1995. "Pricing in USPS under Competitive Entry." In *Commercialization of Postal and Delivery Services: National and International Perspectives*, edited by Michael A. Crew and Paul A. Kleindorfer. Boston, Mass.: Kluwer Academic Publishers.
- Crew, Michael A. and Paul Kleindorfer. 2002. "Balancing Access Pricing With the Universal Service Obligation." In *Postal and Delivery Services: Delivering on Competition*, edited by Michael A. Crew and Paul A. Kleindorfer. Boston, Mass.: Kluwer Academic Publishers.
- Elcano, Mary S., R. Andrew German and John T. Pickett. 2000. "Hiding in Plain Sight: The Quiet Liberalization of the United States Postal System." In *Current Directions in Postal Reform*, edited by Michael A. Crew and Paul A. Kleindorfer. Boston, Mass.: Kluwer Academic Publishers.
- Gillotte, Jay. 2002. Surrebuttal Testimony on Behalf of National Association of Presort Mailers. February 20, 2002. PRC, Docket No. R2001-1.
- General Accounting Office. 1997. *U. S. Postal Service: Information About Restrictions on Mailbox Access*. GAO/GGD-97-85 (May, 1997).
- Haldi, John and William J. Olson. 2003a. Postal Revenues Earned from Upstream Activities. (mimeo)
- Haldi, John and William J. Olson. 2003b. USPS Costs of Upstream Activities. (mimeo)
- Panzar, John C. 2002. "Reconciling Competition, Downstream Access, and Universal Service in Postal Markets." In *Postal and Delivery Economics: Delivering on Competition*, edited by Michael A. Crew and Paul A. Kleindorfer. Boston, Mass.: Kluwer Academic Publishers.
- Postal Service. 2002. *Transformation Plan* (April, 2002).
- Postal Rate Commission. 1996. *Opinion and Recommended Decision*, Docket No. MC95-1 (January 26, 1996). PRC. Washington, D.C.

Postal Rate Commission. 1998. *Opinion and Recommended Decision*, Docket No. R97-1 (May 11, 1998). PRC. Washington, D.C.

Postal Rate Commission. 2000. *Opinion and Recommended Decision*, Docket No. R2000-1 (November 13, 2000). PRC. Washington, D.C.

Valletti, Tommaso M. and Antonio Estache. 1998. "The Theory of Access Pricing: An Overview for Infrastructure Regulators." (March, 1998.) The World Bank Institute. Washington, D.C. and European Center for Applied Research in Economics. Brussels.

Appendix

This Appendix provides detail on upstream costs and revenues for individual classes of mail. For details below this level, see Haldi, *et al.* (2003a and 2003b).

A.1 Upstream Volume Variable Costs and Revenues for the Major Classes of Mail

For FY 2000, Table A-1 compares the revenues derived from prices charged for mail processing and transportation with the **volume variable** costs of those services for (i) First-Class Mail, (ii) Expedited Services (Express Mail and Priority Mail), (iii) Periodicals, (iv) Standard Mail, (v) Package Services, and (vi) other.³⁸ These are costs that vary, either directly or indirectly, with increases or decreases in the volume of mail. The cost data in Table A-1 are from the USPS version of the Cost and Revenue Analysis.

For each group of products, revenue derived from the rate differentials charged by the USPS for mail processing and transportation is shown in Table 2, column 1. The sum of total volume variable mail processing cost (including piggybacked indirect costs) and volume variable purchased transportation cost is shown in column 2.³⁹ Revenues minus volume variable costs is shown in column 3, and upstream revenue as a percent of volume variable cost is shown in column 4.

For all major classes of mail, with the exception of those subclasses considered Expedited Services, worksharing revenue failed to cover volume variable cost. Expedited Services differ from the other classes of mail in this respect because of the manner in which the rate structures for Express and Priority Mail are developed. Neither Express Mail nor Priority Mail offers discounts for presortation or destination entry. Furthermore, as explained in *Haldi, et al.* (2003a), the procedure used to develop rates for these two subclasses differs materially from the procedure used for the other classes.

³⁸ The “other” category consists of (i) Free and USPS Mail (*i.e.*, USPS-originated mail), (ii) International Mail, and (iii) Special Services.

³⁹ The piggyback factors used here account for approximately 93.66 percent of all indirect volume variable costs; see *Haldi, et al.* (2003b). Proportionally distributing the indirect volume variable costs not distributed by piggybacks would increase the total costs in column 2 by 1.9 percent, or \$446 million.

Table A-1

**Upstream Revenues Compared with Volume Variable Cost
FY 2000**
(\$, millions)

	(1)	(2)	(3)	(4)
	Up- stream Revenues	Piggybacked Volume Variable Upstream Cost	Revenues minus Volume Variable Cost	Revenues as % of Volume Variable Cost
First-Class Mail	9,824.0	11,158.9	(1,335.1)	88.0%
Expedited Services	3,122.9	2,906.1	216.8	107.5
Periodicals	718.2	1,506.4	(788.1)	47.7
Standard Mail	4,958.1	5,126.0	(167.9)	96.7
Package Services	1,121.4	1,295.3	(173.9)	86.6
Other ¹	<u>2,028.8</u>	<u>1,616.2</u>	<u>412.6</u>	125.5
TOTAL	21,773.5	23,609.1	(1,835.6)	92.2

Source: Haldi, *et al.* (2003a and 2003b).

¹ "Other" includes (i) Free and USPS Mail (*i.e.*, USPS-originated mail), (ii) International Mail, and (iii) Special Services.

For Express and Priority Mail, a unit cost for every rate cell is first estimated. All rate cells contain some amount of transportation cost, and as the weight and zone (in Priority Mail) increases, the proportion of transportation cost in each rate cell increases quite considerably. The unit cost estimates for each cell then become the basis to which a percentage markup is applied in order to obtain the desired total revenue. Consequently, for Express and Priority Mail, assigning a markup to transportation and mail processing costs creates a substantial profit from these upstream activities; it also increases the differential between rate cells.³⁷

The procedure for developing rates in other classes differs substantially from the procedure used for Expedited Services. If rates for the other classes were developed using a similar procedure, they too would have differentials between rate cells much greater than the existing “discounts.” If rate differentials in other classes reflected the class percentage markup over costs, as they do in Expedited Services, then revenues from upstream activities in other classes likely would equal or exceed their volume variable costs.

The Periodicals class also merits special attention. Although the rate structure for the Periodicals class contains discounts for both destination entry and presortation, it also has a flat rate for all editorial matter, continuing a practice that began long before passage of the Postal Reorganization Act. In other words, by deliberate intent, the Periodicals class incorporates in the rate design a considerable amount of cross-subsidy for upstream services. Consequently, and as might be expected, periodicals is the class in which the revenues derived from mail processing and transportation failed to cover their volume variable costs by the widest margin; those revenues were only 48.6 percent of their volume variable costs.

³⁷ The high percentage markup on transportation costs in the Priority Mail subclass creates an incentive to (i) avoid use of Priority Mail by dropshipping via private carriers and effect final delivery with the USPS using another subclass with lower rates (Airborne is one private carrier known to offer such a service), and (ii) use Priority Mail, but zone skip.

A.2 Upstream Attributable Costs and Revenues for Major Classes of Mail

Table A-2 is similar to Table A-1, except that it compares the attributable (rather than volume variable) costs of mail processing and transportation with the revenues derived from those services for the same categories. As noted in the body of the paper, attributable costs include virtually all volume variable costs. However, some attributed product-specific costs, such as advertising, have not been attributable to the worksharing activities of mail processing and transportation. The cost data in Table A-2 are from the PRC version of the Cost and Revenue Analysis.

Revenues derived from the rate differentials charged by the USPS for mail processing and transportation are shown in Table A-2, column 1 (these are identical to the revenues shown in Table A-1). For each group of products, the sum of attributable mail processing cost (including piggybacked indirect costs) and attributable purchased transportation cost is shown in column 2.³⁸ Revenue minus attributable cost is shown in column 3, and revenue as a percent of attributable cost is shown in column 4.

In each major class of mail total attributable costs are at least equal to, and generally are greater than, total volume variable costs. Consequently, in Table A-2 costs have gone up (in comparison to volume variable costs), while revenues remain unchanged. The cost-revenue comparison in column 4 of Table A-2 thus reflects a greater percentage deficit than in Table A-1. With respect to First-Class Mail, for instance, revenues from upstream activities constituted 88.0 percent of *volume variable* costs, but they amount to only 79.3 percent of *attributable* costs. In order to eliminate this deficit, the USPS would need to increase considerably the worksharing rate differentials within First-Class Mail; *i.e.*, charge higher implicit fees for the upstream services that it provides.

In the Periodicals class, as was the case with *volume variable* costs, the flat rate for editorial matter causes revenues derived from mail processing and transportation to fail to cover *attributable* costs by the widest margin; these revenues were only 43.6 percent of *attributable* costs.

³⁸ The piggyback factors used here account for approximately 92.4 percent of all indirect attributable costs; see *Haldi, et al.* (2003b). Proportionally distributing the indirect volume variable costs not distributed by piggybacks would increase the total costs in column 2 by 2.4 percent, or \$621 million.

Table A-2

**Upstream Revenues Compared with Attributable Cost
FY 2000**
(\$, millions)

	(1) Up- stream Revenues	(2) Piggybacked Attribu- table Upstream Cost	(3) Revenue minus Attribu- table Cost	(4) Revenue as % of Attribu- table Cost
First-Class Mail	9,824.0	12,383.2	(2,559.2)	79.3%
Expedited Services	3,122.9	3,487.4	(364.5)	89.5
Periodicals	718.2	1,646.2	(927.9)	43.6
Standard Mail	4,958.1	5,642.8	(684.7)	87.9
Package Services	1,121.4	1,312.1	(190.7)	85.5
Other ¹	<u>2,028.8</u>	<u>1,775.4</u>	<u>253.5</u>	114.3
TOTAL	21,773.5	26,247.1	(4,473.6)	83.0

Source: Haldi, *et al.* (2003a and 2003b).

¹ Other includes (i) Free and USPS Mail (*i.e.*, USPS-originated mail), (ii) International Mail, and (iii) Special Services.

A.3 Revenues Compared with Incremental Costs

For a postal product such as Priority Mail, *incremental* cost measures the total cost caused by providing that product. And for a postal service such as mail processing, incremental cost measures the total cost caused by providing that service. For this reason, incremental cost is the appropriate cost measure to (i) ensure that the revenue from a product or service covers the total cost of providing it, and (ii) test for cross-subsidy. *Haldi, et al.* (2003b) estimate that the USPS's total incremental costs for mail processing and transportation exceeded their attributable costs by at least \$2.0 billion in FY 2000. In terms of the attributable costs of \$26.2 billion, the \$2.0 billion of incremental cost adds an additional 7.6 percent. Although this percentage is not high, it nevertheless needs to be taken into account when assessing adequacy of prices charged for upstream services.

Incremental cost is defined here as attributable cost plus those non-attributed institutional costs that would cease to exist if the USPS no longer engaged in those activities; *i.e.*, as would occur if the private sector processed and transported all mail directly to destination delivery units, presorted to carrier route. Alternatively, if the USPS were to be unbundled, with mail processing and transportation spun off into a separate independent organization, incremental cost would be all those costs (attributable, non-attributable and institutional) that would be necessary to operate independently, and that no longer would be part of delivery service.³⁸ It should be noted, however, that the cost allocation model used to estimate incremental cost in this study does not allocate to mail processing and operation of the transportation network any USPS institutional cost for general administration and overhead. In that respect, this estimate of incremental cost is considered to be conservative because the stand-alone cost for any such independent organization, encompassing several hundred thousand employees, would surely include at least a modicum of general overhead expense.

Only those institutional or fixed costs that are specific to either mail processing or transportation are considered to be incremental to the provision of each respective service. At the same time, incremental fixed costs that are specific to mail processing or transportation may be common to some or even all of the individual classes of mail. Any such commonality of costs would preclude them from being considered attributable or incremental to a specific class of mail, and the keys used to distribute *attributable* costs

³⁸ It could be a mental stretch to think of the USPS, or any other postal administration for that matter, as neither a processor nor a transporter of mail. Under this alternative hypothetical, one could imagine splitting, or unbundling, the USPS (as occurred with AT&T) whereby it would be separated into one organization that would provide mail processing and transportation to destination facilities, and another organization that would be responsible for all other functions; *e.g.*, collecting and delivering mail, operating post offices, maintaining address correction services, etc. The first organization would function like a giant nationwide presorter. The stand-alone cost of operating the first organization, including all of its administrative and overhead costs, would include and exceed the incremental cost of mail processing and transportation.

to the classes of mail do not represent an objective method for distributing those fixed costs that are *incremental* to mail processing and transportation.

Further, no other “objective” key exists for distributing such common costs to individual classes of mail. At the same time, these fixed overhead costs are incremental to the mail processing and transportation services that have been liberalized by the USPS, and they should be recouped in the fees charged for those upstream services — *i.e.*, from larger rate differentials (deeper discounts or higher surcharges). Thus, when deciding which rate differentials to increase in order to recoup the \$2.0 billion in excess of attributable costs, it would be necessary to resort to noncost criteria set out in the Postal Reorganization Act³⁹ (*e.g.*, some or all of the criteria that are used for the markups on the different classes of mail or, perhaps, Ramsey Pricing).

³⁹ 39 U.S.C. Section 3622(b)(1)-(2), (4)-(9).