

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES
PURSUANT TO PUBLIC LAW 108-18

Docket No. R2005-1

RESPONSES OF THE UNITED STATES POSTAL SERVICE
TO INTERROGATORIES OF VALPAK (VP/USPS-T2-2.c-e, 3, 10-11,15),
REDIRECTED FROM WITNESS SHAW
(April 29, 2005)

The United States Postal Service hereby provides its responses to the following interrogatories of ValPak, filed on April 15, 2005, and redirected from witness Shaw:

VP/USPS-T2-2.c-e, 3, 10, 11, 15.

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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April 29, 2005

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VP/USPS-T2-2.

Your testimony, at Section V, pages 4-5, discusses how IOCS sample data are used to produce estimates of costs by function for each craft group, with the cost-weighted IOCS data file then used to produce the mail processing cost estimates for the classes and subclasses of mail shown in your Table 1 and estimates of in-office city carrier costs in your Table 2 (along with coefficients of variation ("CVs") for each estimate).

- a. Are the cost estimates in Tables 1 and 2 based solely on tallies taken when employees were handling mail? Alternatively, do those cost estimates somehow reflect and include other tallies where no mail was being handled, such as moving empty equipment? If the latter is the case, please explain how all tallies, where no single class or subclass of mail is identified, are incorporated into the final cost estimates for Segments 3.1 and 6.1, mail processing and inoffice carrier costs, respectively.
- b. Please explain how all tallies that indicate "handling mixed mail" are incorporated into the cost estimates shown in your Tables 1 and 2.
- c. Are each of the cost estimates shown in Tables 1 and 2 unbiased estimates?
- d. If your answer to preceding part c is affirmative, please explain all assumptions or conditions that must be satisfied in order to conclude that these cost estimates are unbiased. In your response, please address specifically what assumptions about the distribution of costs from tallies, where no specific class or subclass of mail was being handled, are necessary in order for the resulting cost estimates to be unbiased.
- e. Unless your answer to preceding part c is an unqualified affirmative, please explain the nature and source of any biases, either known or suspected, to exist in the cost estimates shown in Tables 1 and 2.

Response:

c.-e. The Postal Service's BY 2004 costing methods, including those used in the generation of the cost estimates in witness Shaw's Tables 1 and 2, are intended to produce base year volume-variable costs that accurately reflect actual operating conditions in the base year. For a review of assumptions underlying the Postal Service and Commission mail processing cost methodologies, how those assumptions mitigate costing biases, and some discussion of biases in the pre-Docket No. R97-1 LIOCATT mail processing

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method, see PRC Op., Docket No. R97-1, at 130-140. For cost segment
6.1, please see LR-K-1 at 6-2 to 6-3.

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VP/USPS-T2-3.

Please refer to the Segment 3.1 mail processing costs and Segment 6.1 city carrier costs shown, respectively, in Tables 1 and 2 that accompany your testimony.

- a. Would dividing the estimated costs shown for each class of mail in the first column of each table by the respective volumes for each class result in the estimated unit cost for Cost Segments 3.1 and 6.1? If any adjustment would be necessary in order to develop the correct unit cost for these two segments, please indicate what those adjustments would be.
- b. If estimated unit costs were developed for each class and subclass of mail, as described in preceding part a (including any necessary adjustments which you may indicate in your response), would you consider those unit costs for each subclass to be the marginal cost of mail processing (Segment 3.1) and city carrier in-office work (Segment 6.1)? Please explain your answer.
- c. For unit cost estimates generated by the IOCS, what assumptions and conditions are necessary and sufficient in order for those estimates to be used as a proxy for marginal cost?

Response.

- a. Yes, in part. The costs reported in witness Shaw's Tables 1 and 2 represent the outputs of, respectively, witness Van-Ty-Smith's mail processing cost distribution programs (see USPS-LR-K-55, part II) and the Carrier Mixed Mail (CARMM) processing described in USPS-LR-K-9, section VII, part G. (This is a convenient stage in the cost processing for calculating CVs for the costs' sampling variation due to IOCS.) The CARMM costs are also the segment 6.1 costs reported in witness Meehan's Exhibit USPS-9A. The mail processing costs reported in Table 1 are subjected to further adjustments in the CRA model, and it would be appropriate to use witness Meehan's reported segment 3.1 costs from Exhibit USPS-9A. For

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TY 2006, costs should be obtained from the segment 3.1 and 6.1 subclass costs reported in witness Waterbury's Exhibit USPS-10D.

b.-c. Subclass-level unit volume-variable costs may be interpreted as economic marginal costs. For discussion and derivation of the result, please see USPS-LR-K-1, Appendix H.

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VP/USPS-T2-10.

- a. Please state whether you would characterize the kind of costing described in your testimony and shown in your Tables 1 and 2 as (i) short run costing, or (ii) longer run costing, and explain the basis for your answer.
- b. Please explain whether you view the Postal Rate Commission as supporting short run or longer run costing.

Response.

Please note that the mail processing cost methodology underlying witness Shaw's Table 1 is described in the testimonies of witness Bozzo (USPS-T-12) and Van-Ty-Smith (USPS-T-11); see also the response to VP/USPS-T2-2(c)-(e).

- a. The Postal Service's costing methods employ base year volume-variable costs intended to reflect actual operating conditions in the base year, and test year volume-variable cost estimates that reflect the actual costs that will prevail given (among other things) anticipated operational changes and cost reduction programs implemented over the "rate cycle." In this sense, they are neither "short run" nor "long run" costing. They are designed to be consistent with the Commission's requirements for volume variable cost as they were stated by the Commission in its Opinion and Recommended Decision in Docket No. R97-1
- b. The Commission has stated its requirements for the volume-variable costs that it relies upon:¹

The Commission's requirement for volume-variable costs does not coincide precisely with the standard economic definitions of either short-run variable costs or long-run

¹ See, PRC Op., Docket No. R87-1, Vol. 1, at 206.

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variable costs. Instead, the Commission applies a definition of variable costs described in R87-1 as "longer" run and encompassing responses of costs to volumes that might require as long to occur as a complete rate case cycle lasting approximately three to four years. PRC Op. R87-1, paras. 3527-3531.

Moreover, the Commission explained its basis for this determination:²

The Commission's understanding of the time period that is appropriate for volume-variable cost analyses is that the volume-variability of costs should reflect the length of time that the Commission's recommended rates would be expected to be in effect. This position is consistent with the testimony of Postal Service witnesses Baumol and Panzar in Docket Nos. R87-1 and R90-1. See Response of witness Bradley to POIR No. 4, Question 1. The Commission was advised to adopt the position that marginal costs should be "actual" marginal costs as they arise over the span of time in which a set of rates are in force. This span of time is the length of a rate cycle, which historically has been approximately three years. Witness Bradley is correct when he asserts that this position corresponds to the economic definition of "short run" rather than "long run" cost. The usual economic definition of long run costs is that they are the costs that arise when all inputs are variable. If some inputs are variable, but others are not, then costs are short run. However, there are many flavors of short run depending upon what inputs can be varied over the length of time considered. Witness Bradley's operational definition given in his response to P.O. Information Request No. 4 is consistent with the Commission's view of the correct time period for postal cost studies. "One should attempt to base prices on the marginal costs that will actually be incurred by the firm to serve a sustained increase in volume over the time period during which the prices will be in effect." Tr. 11/5417-18.

² See, PRC Op., Docket No. R97-1, Vol. 1, at 79-80.

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VP/USPS-T2-11.

- a. Do you believe costing of the kind described in your testimony is consistent with past testimony before the Postal Rate Commission by Postal Service witnesses such as Baumol, Panzar, Ordover, Bradley, and Vickery [sic]?
- b. If your answer to preceding part a is affirmative, please provide quotations from the testimony of these witnesses that supports the kind of costing you present in your testimony.

Response.

- a. Yes, assuming "costing" refers to the cost methods underlying the estimates reported in witness Shaw's Tables 1 and 2.
- b. The entire testimonies of the economists you list are consistent with and supportive of the Postal Service's cost methodology. These witnesses have testified on a wide range of issues that are incorporated into the Postal Service's analyses. Since the question does not raise any specific costing issue, here is a sample of statements from the witnesses mentioned.

Prof. Baumol's Docket No. R87-1 testimony concludes:

The public welfare requires rates to be based on marginal (variable) costs and demand considerations. (Docket No. R87-1, USPS-T-3 at 50.)

The costs directly pertinent to decisions in reality, that is, the actual consequences of those decisions, are, consequently, the costs somewhat misleadingly referred to as "short run..." The pertinent variable (marginal) costs do not incorporate all the costs of the enterprise, either in the short run or the long, and their response to output changes can only be evaluated by painstaking [sic] econometric analysis, either cross sectional or time series in character. (*Id.?*)

See also Docket No. R87-1, USPS-T-3 at 25-27 for a fuller discussion on the reasons for basing prices on marginal costs.

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Prof. Panzar:

The starting point for any pricing analysis is the (vector of) marginal costs of the enterprise's services. The crucial role of marginal costs in rate-making has long been emphasized in testimony before this Commission and I will not repeat those arguments in detail here. However, the detailed costing procedures of the Postal Service are based on the concept of volume variable costs, not the marginal costs of economic theory. Thus one important goal of my testimony is to explain the linkage between the service specific volume variable costs produced by the Postal Service's system of cost accounts and economic marginal costs. (Docket No. R97-1, USPS-T-11 at 5.)

However, the marginal costs of the various services are essential information for the implementation of any rational pricing policy. This is a logical consequence of the break-even requirement. Whatever goals the rate-maker wishes to pursue via the prices of various subclasses of mail, they can be pursued effectively only by taking cognizance of the marginal costs of expanding or contracting the relevant mail volumes. (*Id.* at 7.)

The benchmark cost concept used in postal rate cases is unit volume variable cost. The purpose of this section is to explain why the unit volume variable cost values produced by the Postal Service cost measurement system are valid estimates of mail service marginal costs. (*Id.* at 21.)

Prof. Panzar explains the general calculation of volume variable costs and shows the equality of unit volume variable costs to marginal costs and the assumptions necessary for this. Prof. Panzar concludes:

That is, the per unit volume variable costs of mail service *j* are precisely equal to the marginal costs of that service derived from the Postal Service operating plan I have described! (*Id.* at 23.)

Prof. Ordover:

Prof. Ordover's R84-1 rebuttal testimony concerned the proper pricing approach for the recovery of "fixed costs." He describes the use of incremental and stand-alone costs to check for cross subsidy.

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Prof. Bradley:

He explains the fundamental costing methodology employed by the Postal Service, describes what it measures, and demonstrates the equivalence with marginal costs (Docket No. R2000-1, USPS-T-18 at 44):

The fundamental goal of the costing algorithm is to calculate volume variable (attributable) cost by class of mail. The volume variable costs are defined by the product of the accrued cost in the cost component (C_j) and the volume variabilities of the classes handled in the component (ϵ_{ij}).

and:

Fortunately, volume variable costs can still be measured even when it is impractical to measure volume at the component level. If it is possible to measure a cost driver at the component level, then the cost driver approach can be used to calculate volume variable costs. This method, also known as the "volume variability/distribution key" method employs a costing algorithm in which the assignment of costs to products is broken into two steps. The first step identifies the pool of total volume variable costs and the second step distributes the volume variable costs to the individual products that caused them.

and:

It is easy to show that this assumption also ensures equivalence between unit volume variable costs, measured in this way, and marginal cost. Marginal cost is simply the derivative of cost with respect to the volume of the class being organized.

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Please see also the response to VP/USPS-T2-10(b) and Prof. Bradley's response to OCA/USPS-T14-2(b).

Prof. Vickrey:

The USPS costs have key features that are characteristic of properly defined marginal costs. They have some conceptual shortcomings as marginal costs, but these shortcomings may well be unimportant. Recognizing the practical problems involved in measuring marginal costs, I believe the USPS attributable costs can be used as suitable basis for ratemaking at this time. However, I think that there is a need for research and analysis to determine whether any of the conceptual weaknesses are important. (Docket No. R74-1, USPS-RT-3, Section IV.)

Prof. Vickrey argues against the use of long run marginal costs in his rebuttal testimony in R74-1, part IV under the heading "Appropriate Time Period for Costing" where he states:

In addition, I am unwilling to consider as part of the relevant marginal costs any changes in cost related to changes in volume or other cost factors that occur independently of the rate decision. In my view, the costs that are relevant for rate decisions are only the costs that can be affected, directly or indirectly by rate decisions. (*Id.*)

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VP/USPS-T2-15.

- a. For the circumstances described by the hypotheticals in VP/USPS-T2-10 and 11 [sic], please (i) identify and briefly describe any theory in the economics literature, as well as (ii) specific references to such literature that espouse or support the kind of IOCS costing described in your testimony.
- b. The economics literature contains and describes many different ways to classify costs; e.g., fixed cost, sunk cost, variable cost, marginal cost, avoidable cost, etc. Please indicate which classification best describes the costs generated by the IOCS.

Response:

- a. The cost methods described in USPS-LR-K-1, Appendix H, are consistent with general treatments of multi-product cost and production theory; see, e.g., Robert G. Chambers, *Applied Production Analysis* (Cambridge University Press, 1989), pp. 250-301. See also the testimony of witness Christensen, Docket No. R97-1, Tr. 34/18217-18227.

In contrast to the circumstances of the hypotheticals in VP/USPS-T2-12 and 13, Postal Service costing methods do not presuppose persistent processing capacity constraints.

- b. Please see the response to VP/USPS-T2-3(b)-(c).

CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing document in accordance with Section 12 of the Rules of Practice and Procedure.

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