



**VP/PB-T1-1.** Please refer to your testimony, PB-T-1, p. 28, l. 21 to p. 29, l. 2, where you say: “It is my understanding that the current practice of the Postal Rate Commission is to base the calculation of avoided costs on attributable costs. Below, I explain why this is the theoretically correct approach.” The purpose of this interrogatory is to clarify various costing concepts, particularly as they relate to your testimony.

Consider a postal administration producing product A (*e.g.*, letters), among others, which is being considered for one worksharing discount, for a category defined in terms of downstream entry. Assume that the volume of product A is a continuous flow, period after period, with unchanged characteristics, and that it is partitioned into  $n$  cells. Each cell contains the same number of pieces, a number that is not small. All pieces in a given cell have the same marginal cost. The marginal cost of the pieces in a cell is the additional cost divided by the number of additional pieces, under a small reduction in the rate applicable to the pieces in the cell, *ceteris paribus*, consistent with the notion of a rate-induced volume change. Assume that each cell has the same price elasticity of demand. The cells are aligned and numbered according to the postal administration’s marginal cost of handling the pieces in the cell, so that the marginal cost of the pieces in cell 0 is  $5\text{¢}$ , in cell 1 is just under  $5\text{¢}$ , in cell  $f$  is  $4\text{¢}$ , in cell  $k$  is  $3\text{¢}$ , and in cell  $n$  is  $2\text{¢}$ . The cost information for these cells is shown in the graph in the Attachment to this interrogatory. These costs are upstream costs only; they do not include any costs for the downstream-entered product being considered. For convenience, it is assumed that  $f = 1/3n$  and  $k = 2/3n$ , and that the cost curve is linear.

As described, when handling all pieces in all  $n$  cells, the postal administration’s average volume variable cost is  $3.5\text{¢}$ , which is the marginal cost for additional volume of the same mix as in cells 0 to  $n$ ; *i.e.*, a weighted average of the marginal costs of the pieces in all  $n$  cells. Thus, if a

small rate decrease were applicable to all pieces in all cells, the additional cost divided by the additional volume is 3.5¢. The volume variable cost is the average marginal cost (over all cells) multiplied by the total volume in all n cells. The average volume variable cost is the volume variable cost divided by the total volume, which also equals the average marginal cost. The order in which these values are developed is immaterial. The volume variable cost is attributed.

- a. Within the framework of this example and the assumptions made, is this description of marginal cost, average marginal cost, average volume variable cost, volume variable cost, and attributable cost consistent with your understanding of the postal administration's costs and with how you use these terms in your testimony? If it is not, please explain, in terms of this example and the graph in the Attachment, what the postal administration's costs represent and how you use the terms in your testimony.
- b. Based on the information provided, as displayed in the graph in the Attachment, can you provide any guidance on what the appropriate discount should be for mail that will bypass the upstream operations and become a downstream-entered product? If you can, please provide that guidance. If you cannot, please explain why not, identifying any information about the postal administration that is missing.

Figure 1: Upstream Costs of Postal Service Product A

## RESPONSE

- a. Most of my testimony, including the portion cited above, focused on the case in which the Postal Service's unit avoided costs of the workshared activity were the same for all workshared mail. Only in Section VI.B.2 did I address issues relating to the heterogeneous avoided costs.
- b. Again, I did not focus on this situation in my testimony. Nevertheless, it is clear that the question cannot be answered without further information regarding the upstream cost curves of *competitors*.

**VP/PB-T1-2.** Please assume the initial situation described in VP/PB-T1-1, shown in the graph in the Attachment thereto, and add the assumptions that (i) the ordering and the numbering of the volume cells is also aligned with the propensity of volume in the cells to be of interest to potential competitors and, further, that (ii) the costs of all potential competitors are the same as the postal administration's costs. That is, if an interested competitor processes and downstream-enters the pieces *in cell k*, his cost for doing so is 3 cents.

Based on the above information, can you provide any guidance on what the appropriate discount should be for the downstream-entered product? If you can, please provide that guidance. If you cannot, please explain why not, identifying any information about the postal administration or the potential competitors that is missing.

## **RESPONSE**

I am not sure what is meant by the "propensity of volume in the cells to be of interest to potential competitors." Nevertheless, if potential competitors are no more efficient or less efficient than the postal administration for *any* type of mail it makes no difference what discount is set. The particular level of discount will have no impact on total postal sector costs.

**VP/PB-T1-3.** Please assume the situation described in VP/PB-T1-2, with its added assumptions, except that a 3¢ discount has been allowed for downstream entry, after which all of the volume in cells k+1 through n left the postal administration to become handled by competitors and downstream-entered. In this situation, suppose consideration is being given to whether 3¢ is the correct discount.

- a. Would you agree that the unit attributable cost avoided when the pieces in cells k+1 through n leave the postal administration is 2.5¢? If not, please explain.
- b. When viewed as a “make or buy” decision, which you discuss on p. 16 of your testimony, would you agree in this situation that competitors are being paid 3¢ to supply services that the postal administration could supply for an average of 2.5¢? If you agree, please discuss the advocacy of this outcome. If you do not, please explain.
- c. Would you agree that the average volume variable cost (= unit attributable cost = average marginal cost) of the pieces in cells 0 through k, which are still being processed by the postal administration, is now 4¢? If you do not agree, please explain.
- d. Would it be your view that in this situation the postal administration’s costing systems would give an estimated average volume variable cost of 4¢? If you believe the postal administration’s costing systems would provide an estimate of some other cost, please explain, in terms of the graph, what that cost would be.
- e. In connection with the situation described here, please explain what you recommend as “the theoretically correct approach” to setting the discount. That is, what is the correct discount level and why is it correct?

- f. Please assume that the discount is increased from 3¢ to a new level of 4¢, and that all pieces in cells f + 1 through k leave the postal administration. Do you agree that the new level of average marginal cost of the postal administration would be 4.5¢? Please explain any disagreement.
- g. In your analysis, which underlies your recommendations, have you made any assumptions about the actual shape of the postal administration's cost curve (shown in the attachment to VP/PB-T1-1 to be a continuous straight line [a straight line being a curve with an infinite radius])? If so, please explain what those assumptions are.
- h. In your analysis, which underlies your recommendations, have you made any assumptions about the actual shape of the potential competitors' cost curves? If so, please explain what those assumptions are. In discussing any cost curve for potential competitors, maintain the assumption that the cells are lined up in the order of their potential interest to competitors and allow the curve to be above or below that of the postal administration.

**RESPONSE**

- a. Agreed.
- b. The position advocated in the cited portion of my testimony referred to the case in which the upstream costs of the postal administration are constant.
- c. Agreed.
- d. In the context of this hypothetical, I would agree.

- e. As indicated above, it makes no difference what discount is selected under the posited circumstances.
- f. In the context of this hypothetical, I would agree.
- g. Again, most of my testimony, including the portion cited above, focused on the case in which the Postal Service's unit avoided costs of the workshared activity were the same for all workshared mail. Only in Section VI.B.2 did I address issues relating to the heterogeneous avoided costs. Thus most of my testimony assumed that the straight line in question is horizontal.
- h. No, I made no explicit assumptions about competitors *cost* curves. My testimony often assumed that the aggregate *market supply* curves of all competitors is upward sloping: i.e., competitors as a group would supply more upstream services the greater the discount offered them.

**VP/PB-T1-4.** Please assume that the cells shown in the Attachment to VP/PB-T1-1 and explained in VP/PB-T1-1 are aligned both with the marginal cost levels of the postal administration and, at the same time, with the propensity of the pieces in the cells to be of interest to potential competitors, but assume in addition that the costs of all potential competitors (i) differ from those of the postal administration, and (ii) when displayed on the graph in the Attachment form a straight line that is 1¢ below the cost curve of the postal administration.

- a. If the discount is set at 3¢ under these conditions, would you agree that:
  - (i) All volume in cells  $f + 1$  through  $n$  would leave the postal administration;
  - (ii) the unit incremental cost avoided for pieces that leave would be 3¢; and
  - (iii) the average marginal cost of pieces that remain in the postal administration would be 4.5¢? If you disagree with any of the above, please explain.
- b. In this situation, please explain what you would recommend as the theoretically correct discount level.

## **RESPONSE**

- a. (i) Agreed. (ii) Agreed. (iii) Agreed.
- b. In this situation, it would be efficient for competitors to capture *all* of the upstream activity. Any discount greater than or equal to 5 cents would accomplish this.

**VP/PB-T1-5.** Within the framework of the situation explained in VP/PB-T1-1 and as shown in the Attachment thereto, please maintain the alignment of the cells according to the costs of the postal administration and the linear cost curve of the postal administration, but assume nothing is known about the costs of potential competitors or which pieces are of the most interest to potential competitors. Please assume also that the discount is set at 3¢.

- a. In this situation, would you agree that it is not possible to predict which volume cells might be taken by a competitor? Please explain any disagreement.
- b. Would you agree that, if some volume in cells k through n is taken by a competitor, it is possible for the competitor to be spending 2.8¢ to handle some mail that the postal administration could handle for under 2.8¢? If you do not agree, please explain.
- c. Would you agree that, if some volume in cells f through k is taken by a competitor, it is possible that the competitor will be spending 3¢ or less to handle mail that would cost the postal administration between 3¢ and 4¢ to handle? If you do not agree, please explain.
- d. Do you agree that if all volume in cells k+1 through n [average variable cost = 2 to 3 cents] and some of the volume in cells f through k [average variable cost = 3 to 4 cents] leave the postal administration, the average marginal costs for pieces that remain in the postal administration will be above 4¢? If you do not agree, please explain.
- e. If consideration is being given to changing the discount under these conditions, what discount would you recommend and why?

- f. Please discuss any and all reasons you can provide for expecting that potential competitors might be able to process the volume in some cells at a lower cost than the postal administration, but not the volume in other cells.

**RESPONSE**

- a. Agreed.
- b. Agreed.
- c. Agreed.
- d. Agreed.
- e. There is not enough information to make a recommendation.
- f. The hypothetical is too abstract to form such expectations.

**VP/PB-T1-6.** Please refer to your testimony, PB-T-1, page 45, where you discuss rate differences between the categories of letters and flats within a given subclass, and page 47, where you discuss reasons for emphasizing ECPR considerations within subclasses instead of Ramsey considerations. If it makes a difference, the letters and flats at issue in this question are those in the subclasses of Commercial Regular, Nonprofit Regular, Commercial ECR, and Nonprofit ECR, all bulk categories used primarily by business and nonprofit organizations.

- a. Please explain further the differences you see in the cost information required for Ramsey instead of ECPR in terms of (i) whether one is a cost difference and the other is not (PB-T-1, p. 49, l. 7), (ii) whether one is at a margin and the other is not (PB-T-1, p. 49, l. 8), and (iii) if at a margin, how that margin is defined and described.
- b. If a cost difference for ECPR purposes is taken as the difference between a cost for one category and a cost for the other, please explain any and all ways in which you see a difference in the cost information required for the two approaches.
- c. You suggest (PB-T-1, p. 49, ll. 8-10) that ECPR can be followed “using only the costing systems of the Postal Service” and, presumably, that following Ramsey requires some different information which might not be available. Please explain specifically any cost information needed for Ramsey that is not available from the “costing systems of the Postal Service.”
- d. (i) Do you agree that on a regular basis the Postal Service has developed estimates of subclass-level elasticities? Please explain any extent to which you disagree.  
(ii) Absent information that the elasticities of any included categories, such as letters and flats, are different from the elasticity of the subclass, please explain

any reasons you believe exist for not setting rates as though the category elasticities were the same as the subclass elasticity.

- e. Do you agree that if letters and flats were split into two subclasses, their elasticities then would become particularly relevant under the factors of section 3622(b) of the Act? Please explain any extent to which you disagree. Note: being relevant should not be taken to mean that they are the only consideration.
- f. (i) Suppose letters and flats are kept in the same subclass and there is no reason to believe that their elasticities differ. If there is an interest in setting rates based on notions of economic efficiency, please explain the role that the cross elasticity should play in deciding on the level of the passthrough (*i.e.*, whether it should be above or below 100 percent and whether it should be above or below the cost coverage of the subclass).  
  
(ii) If it were believed to be the case that the cross elasticity between letters and flats is not high, would this cause you to back away from your recommendation of 100 percent passthrough and move toward a passthrough above 100 percent and maybe toward one approaching the cost coverage of the subclass? If not, please explain.
- g. Assume that a subclass has a cost coverage of 170 percent. Recognizing that if ECPR were used, a lower-cost, workshared category within the subclass would have a coverage higher than 170 percent, as you discuss at PB-T-1, p. 48, l. 16:  
  
(i) Do you agree that ECPR will always yield a coverage on the nonworkshared category that is lower than 170 percent? If you do not agree, please explain.

(ii) Under ECPR, do you see a significant risk that the workshared category will be cross subsidizing the non-workshared category, as you discuss could occur, PB-T-1, p. 49, ll. 11-17? If so, please explain the level of that risk and the factors associated with it. If not, please explain.

(iii) Do you agree that if the passthrough of the cost difference between the two categories were 170 percent, the risk of a cross subsidy existing would be minimized? If you do not agree, please explain.

## **RESPONSE**

- a. (i and ii) As I explain in my testimony, ECPR requires only information about cost differences at the margin while Ramsey pricing requires information about marginal costs *and* total costs, as well as own price and cross price elasticities for all services.
- (iii) The margin for Ramsey pricing is the marginal cost. The cost differences for ECPR are differences in marginal cost.
- b. By the two approaches I presume you refer to ECPR and Ramsey pricing. My understanding is that USPS cost systems would provide the required *marginal* cost information for both approaches. Again, the total cost information required for the determination of the Ramsey pricing break-even constraint is not required for ECPR analysis.
- c. In principle, the USPS cost systems produce costs that could be used in Ramsey pricing. They do not produce own price and cross price demand elasticities.

- d. (i) In rate cases, it is my understanding that the Service produces own price and cross price elasticities at the sub-class level, but not at the rate category or rate element level.
- (ii) As I explain in my testimony on pages 47 to 49, I advocate the use of ECPR for pricing work shared products. In ECPR pricing, markups are at the subclass level (or implicitly at the rate category level) and elasticity enters into only one of the factors used in selecting the markup.
- e. I agree given your note.
- f. (i) I do not deal with the details of Ramsey pricing formulae in my testimony. This question calls for a detailed analysis of a particular case (i.e., equal own-price elasticities with non zero cross elasticity) that I have not analyzed. Nor do I know of a paper in the literature where this case is explicitly discussed.
- (ii) The discussion in my testimony regarding “letters and flats” deals with the advantages of basing rate differences on cost differences within a subclass. The term “100 pass through” does not apply.
- g. (i) Yes.
- (ii) Without more information, I have no way of knowing whether the “risk” is “significant” or not. As I explained in my testimony, the first step in a cross-subsidy analysis under ECPR would be to check that the rate of the unworkshared category covers its incremental costs.
- (iii) I am not sure what is meant by “minimized” in this context. Again, as I explained in my testimony, if the unworkedshared mail covers its incremental

costs, the use of ECPR will typically ensure that the other categories will also cover their incremental costs.

**VP/PB-T1-7.** Please refer to your statement, PB-T-1, p. 50, ll. 2-3, that “ECPR facilitates the application of non-cost factors on a subclass by subclass basis while maintaining incentives for efficient worksharing within a subclass.”

- a. Please explain any and all ways using ECPR to set rate differences between categories within a subclass “facilitates the application of non-cost factors” to establishing cost coverages across subclasses (*i.e.*, for the various subclasses).
- b. Should your testimony be taken to mean that the non-cost factors should or could be applied to the passthrough between categories within subclasses, and therefore be a basis for moving the passthrough above or below 100 percent? If yes, please explain which factors might suggest such a movement, and explain why 100 percent is the ideal reference point for such consideration, instead of some other passthrough, such as the subclass cost coverage. If no, please explain your position.
- c. Please explain whether your advocacy of 100 percent passthroughs between categories within a subclass should be taken to mean that the non-cost factors in the Act are not particularly relevant to such rate differences.

## **RESPONSE**

- a. It is my understanding that the non-cost factors of the Act are generally applied at the class and subclass levels to determine the cost coverage of a class or subclass. Once the cost coverage is determined, ECPR can be used within the subclass for discounts.

- b. No, my testimony does not suggest that non-cost factors should be applied below the class and sub-class level.
- c. It is my understanding that the non-cost factors of the Act are generally applied at the class and sub-class level.

**VP/PB-T1-8.** Please refer to your statement, PB-T-1, p. 50, ll. 4-7, that “the use of ECPR is much better suited to a constantly changing and evolving postal industry. In particular, it allows relatively straightforward adjustments to reflect changing worksharing technology without the need to obtain information on changing demand elasticities.”

- a. Is it your position that if demand elasticities are believed to be changing, it is better to select a technique that neglects them than to approach the question of how much they are changing or which direction they are changing? If not, please explain.
- b. Please consider a subclass with a coverage of 170 percent, which has two categories, and focus on two alternative situations: (i) the passthrough between the two categories of the cost difference into rates is 100 percent, and (ii) the passthrough between two categories of the cost difference into rates is 170 percent. If, due to technology, the cost difference (however measured) between the two categories declines, please explain why it is easier to adjust in situation (i) than (ii). If that is not your position, please explain.
- c. Suppose, using the best information available on costs, elasticities, and other factors, the passthrough of a cost difference into a rate difference, between two categories within the subclass, is set initially at 140 percent. If a few years later, it becomes known that the cost difference is lower, due to technology, but it is not known whether the elasticity relationships have changed, please explain: (i) any reservations you would have about the advocacy of setting the new rates at a passthrough of 140 percent of the new cost difference, and (ii) whether you believe that, in anticipation of this problem of not knowing how the elasticity

relationships might change, it would be better to set the passthrough at 100 percent in the initial ratesetting exercise.

## **RESPONSE**

- a. I advocate the use of ECPR for pricing workshared products.
- b. It is not a question of whether it is easier or harder to adjust depending on the passthrough, The issue is that a 100 percent passthrough promotes productive efficiency and Ramsey pricing does not.
- c. I would set the original rate at a passthrough of 100 percent. If costs changed, whether or not elasticities changed, I would advocate new rates with a passthrough of 100 percent. Please see a and b above.

**VP/PB-T1-9.** At page 48, lines 8-10, of your testimony, please refer to your reference to a “belief a service highly valued by its customers can and should bear a greater percentage markup of price over marginal cost.”

- a. Please explain the preference in this belief for a “percentage mark up” instead of some other markup, such as an absolute amount per piece.
- b. Please explain how it can (or should) be determined whether a product or service is “highly valued.”

## **RESPONSE**

- a. The preference for percentage markups stem for the fact that Ramsey markups are most easily expressed as percentage markups over marginal cost. If absolute markups were used, they would depend on the marginal cost of the service. Thus, Ramsey absolute markups for products with the same elasticity but with different marginal costs would be different, but the percentage markups for these products would be the same.
- b. From an economist’s perspective, elasticity of demand is a measure of the value of the service.

**VP/PB-T1-10.** Please refer to your testimony PB-T-1 at pp. 16-26, where you discuss the Efficient Component Pricing Rule, discounts that promote efficiency, and preservation of contribution to overhead costs.

- a. Within a subclass such as Standard Regular, please assume that (i) a 1.0 ounce letter — that is presorted to 5-digits has a barcode, is fully automatable, and is entered at a DSCF — has a total unit attributable cost of 10 cents, (ii) a 15 ounce parcel-shaped piece — that is minimally presorted, does not have a barcode, and is entered at an origin facility — has a total unit attributable cost of \$1.10 (*i.e.*, the cost difference between the letter and parcel is \$1.00), and (iii) the average unit contribution desired from the subclass (based on application of all the non-cost criteria in 3622(b), when divided by total volume of the subclass, is \$0.15. In your recommendation that intra-subclass pricing should reflect 100 percent of attributable cost differences, would it be correct to infer that your recommended rates for the letter and the parcel, respectively, would be \$0.25 and \$1.25? If this is not a correct interpretation of your analysis, please explain.
- b. Within a subclass such as parcel post, please assume that (i) the total unit attributable cost of a 1-pound machinable parcel, entered in its destination office, is \$1.50, (ii) the total unit attributable cost of a 69-pound non-machinable parcel for delivery to zone 8 is \$50.00, and (iii) the average unit contribution desired from the subclass (based on an application of all the non-cost criteria in 3622(b)) is \$2.00. In your recommendation that intra-subclass pricing should reflect 100 percent of the difference in attributable cost, would it be correct to infer that your recommended rate for the 1-pound machinable parcel entered in its destination

office should be \$3.50, and the rate for the 69-pound machinable parcels to zone 8 should be \$52.00 (*i.e.*, the difference in rates, \$48.50, is equal to the difference in attributable cost)? If this is not a correct interpretation of your analysis, please explain.

**RESPONSE**

- a. Yes.
- b. Yes.

**VP/PB-T1-11.** Please refer to your testimony PB-T-1 at p. 20, ll. 6-14 and p. 23, ll. 3-12.

In your discussion, upstream costs are classified as either fixed (FU) or volume variable (cU).

Suppose that a small (1 percent) decline in volume results in a unit reduction in cost of 5.0 cents (*i.e.*, the marginal cost of small changes in volume is 5.0 cents). Further, suppose that some costs are “lumpy” — that is, they are not fixed costs of operating the network for all levels of volume — and if volume declines by some larger amount, say 5 to 6 percent, the average unit avoided cost is 7.0 cents. Finally, assume that the Commission is considering a discount increase that is forecast to result in an increase in workshared volume of 6 to 7 percent and a corresponding reduction in the volume that would need upstream processing.

- a. Under these circumstances, would you define the marginal cost as 5.0 cents (*i.e.*, the change in average unit cost that results from a small change in workshared volume), as 7.0 cents (*i.e.*, the change in average unit cost expected to result from the projected rate-induced change in workshared volume), or as some other amount? Please explain your answer.
- b. Under the above-described circumstances, should the 2.0 cent difference in unit avoided cost that results from workshared volume changes larger than 1.0 to 2.0 percent be included in marginal cost, or be excluded from the computation of marginal cost but be included in incremental cost? Please explain your answer.
- c. If “lumpy” (*i.e.*, discontinuous) cost changes are excluded from marginal costs, but are included as incremental costs, under these circumstances please explain why the appropriate measure of per unit avoided cost is marginal cost, not average incremental cost, as discussed in your testimony at p. 29.

## **RESPONSE**

- a. The correct answer could be 5.0 cents, 7.0 cents, or any number in between, depending on the details of the example.
- b. Marginal costs are evaluated at a particular level of output, thus “jumps” or “kinks” in the cost curve at other output levels are irrelevant to their determination. The calculation of incremental costs would typically reflect such “jumps” or “kinks.”
- c. As explained in my testimony, productive efficiency requires that the marginal costs of an activity be equated between active providers. With a competitive upstream sector, this is accomplished by setting worksharing discounts equal to the marginal avoided cost of the Postal Service at the forecasted activity level.