

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

RESPONSE OF POSTAL SERVICE WITNESS BRADLEY
TO INTERROGATORIES OF THE OCA (OCA/USPS-T14-26 - 27)
(June 15, 2005)

The United States Postal Service hereby provides the response of witness Bradley to the following interrogatories of the OCA, filed on June 1, 2005: OCA/USPS-T14-26 - 27.

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

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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June 15, 2005

Response of Postal Service Witness Michael D. Bradley
To Interrogatories Posed by the OCA

OCA/USPS-T14-26. Please refer to your testimony USPS-T-14. One of the variables you use is the number of delivery points.

- a. Is the number of the delivery points the potential number of delivery points? If your answer is affirmative, please furnish the number of actual delivery points by route day. If these data are not available, please explain.
- b. If your answer is that the delivery points are the number of actual delivery points, please furnish the number of potential delivery points by route day. If these data are not available, please explain.

OCA/USPS-T14-26 Response:

- a. The number of delivery points in the econometric regressions is possible or potential delivery points. Actual delivery points are defined as those possible delivery points which receive mail on a given day. It is very time consuming for city carriers to record which of their possible deliveries are actual deliveries, so during the CCSTS, data on actual deliveries were not collected.
- b. Please see my answer to a.

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OCA/USPS-T14-27. In your testimony, USPS-T-14, you present two versions of a quadratic function as well as consideration of the translog function. A variety of other flexible functions are available in the literature--e.g., Fourier Flexible Function, Generalized Leontief--as well as the nonflexible Cobb Douglas function.

- a. Did you consider these or any other alternative functional forms? Please explain your answer, indicating your reasons.
- b. If or as you considered alternative functional forms, would you have used any test statistics as an aid in choosing your functional form? Please explain.

OCA/USPS-T14-27 Response:

- a. I considered just the quadratic and translog functional forms presented in my testimony. I presented the reasons behind this choice on page 28 of my testimony, the two functional forms investigated are flexible and they have been successfully used in previous Postal Rate Commission and academic analyses of carrier street time:

If there is technological or other knowledge about the underlying cost generation process, this can be used to guide functional form selection. If not, there are advantages to selecting a flexible functional form in attempting to measure the responsiveness of cost to volume changes. Finally, one can review previous work to identify functional form selections for similar modeling efforts.

In the area of city carrier delivery, previous work has shown the quadratic functional form to be useful. It was specified by both the Postal Service and the Commission in estimating models for load time and access time. These two components make up the overwhelming majority of volume variable delivery time, so the application of a quadratic form would be appropriate for delivery time.

The quadratic functional form also has the advantage of being a flexible functional form in the sense that it plays no restrictions on the first and second order derivatives. Thus it is agnostic, *a priori*, about the absence or presence

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of scale or network economies that lead to variabilities being less than one hundred percent. The primary alternative flexible functional form is the translog.¹ (Footnote in original)

- b. The specifics would depend upon the functional forms being investigated, but there could be situations in which test statistics could be of aid in selecting a functional form.

¹ For an example of a translog model estimated for delivery, see Cazals, Catherine, Florens, Jean-Pierre, and Soteri, Soterios, "Delivery Costs for Postal Services in the UK: Some Results on Scale Economies with Panel Data," in Regulatory and Economic Challenges in the Postal and Delivery Sector, Michael Crew and Paul Kleindorfer (eds.), Kluwer, 2005. Cazals, Florens, and Soterios include aggregate volume, delivery points and the geographical area covered by delivery in their equation. Interestingly, they find an overall elasticity of delivery cost with respect to volume of 41.8 percent. The sum of the shape variabilities from the quadratic model estimated below is quite close to this result, at a value of 41.1 percent.

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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