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

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POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97–1

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
(USPS-T-14) TO INTERROGATORIES OF UNITED PARCEL SERVICE
(UPS/USPS-T14-41-43, 44(c), AND 45-46)

The United States Postal Service hereby provides responses of witness

Bradley (USPS-T-14) to the following interrogatories of United Parcel Service:

UPS/USPS-T14-41-43, 44(c) and 45-46, filed on September 11, 1997. Interrogatory

UPS/USPS-T14-44(a) was redirected to witness Moden and interrogatory

UPS/USPS-T14-44(b) was redirected to the Postal Service.
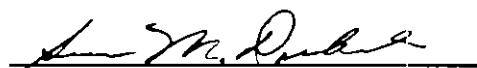
Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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September 25, 1997

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UPS/USPS-T14-41. Please refer to page 2 of 3 of your response to DMA/USPS-T-14-22. You there state: "When volume changes, however, Postal Service wage rates do not respond to those changes in volume. Because wages do not change in response to variations in volume, they are not part of the variation in cost associated with variations in volume."

a. Please reconcile this statement with the fact that during peak volume periods, Postal Service employees are paid overtime wages to accommodate increases in volume.

b. Please confirm that your model does not account for overtime wages. If confirmed, please discuss any investigation performed into the bias this omission introduces into your results. If not confirmed, explain.

UPS/USPS-T14-41 Response:

a. My statement was in the context of a discussion of volume variability. Volume variability measures the response in cost to a sustained increase in volume. Your statement, on the other hand, refers to daily or temporary variations in volume. Volume variability holds things like the seasonal pattern of mail volume and the daily peaks and troughs constant. Because the pattern of peaks and troughs is not a function of small sustained increases in volume, Postal Service wage rates are not a function of small sustained increases in volume.

b. Not confirmed. By using hours instead of total cost, the model controls for short-term variations in overtime wages not associated with the response to a sustained increase in volume. Therefore, the results are not biased. Just the opposite. If variations in

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wages not caused by sustained increase in volume were included in the model, they

would bias the variability estimate. A measurement of volume variability should thus

control for daily or monthly variations in wage rates that are not caused by sustained

increases or decreases in volume.

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UPS/USPS-T14-42. Please refer to page 1 of 1 of your response to DMA/USPS-T14-29. You there state:

> It is true, of course, that separate slope coefficients could be estimated for each site, but those many estimated coefficients would have to be combined in some way. There is no single correct way to combine these coefficients and the estimation of a single slope coefficient directly brings all of the data to bear on the estimation of the system-wide response to changes in volume.

a. Given the possibility that site specific slopes may vary, please explain why you chose the model you did as opposed to other possible models.
b. If slopes vary across facilities, is a less aggregated model preferable to one that combines the slopes of different facilities into a system-wide response? Please explain.
c. If slopes vary across facilities, is it valid to combine the slopes of different facilities into a system-wide response? Please explain.
d. Please discuss your rational for a model that allows for only one system-wide response (per activity) to volume variability.

UPS/USPS-T14-42 Response:

a. There are several reasons for directly estimating the variability with a single equation:

 1. There is no behavioral or technological basis for grouping offices into subsets of the data with which individual equations could be estimated. Given that there is no justification for differences in estimated variabilities across offices, any differences in estimated variabilities could be the result of statistical variation, not genuine differences.

 2. Estimation of equations for individual offices would be based upon equations derived from relatively small pools of data. By combining the data into a panel,

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controlling for site-specific characteristics through a fixed-effects model and directly estimating a variability, the efficiency of the estimation is increased. In this way, the estimated variability is based upon data which both varies across sites and through time.

3.   In an econometric analysis of this complexity, there is a practical difficulty associated with estimating site-specific variabilites. To be done accurately, each of the site-specific equations would have to be reviewed for validity and a determination would have to be made if it should be kept in the analysis. I have already presented 25 different econometric equations. Estimating site-specific variabilities would require review of hundreds of equations for each the MODS activities and about 20 equations for each of the BMC equations. In addition, there is the issue of the right level of aggregation. Should a single equation be estimated for each facility? Or, should facilities be grouped into groups of, say, five, and then an equation estimated on the group? Without a behavioral or technological basis, there is no adequate guideline for grouping sites.

4.   In the final analysis, a single variability for each cost pool is required. What is ultimately required is the response in national Postal Service cost to changes in

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national Postal Service volume. If an equation is estimated for each site, calculation of Postal Service volume variability requires specifying how an increase in national volume will be spread to the individual facilities. This is sure to be a controversial calculation. Direct estimation of the variability from a single system-wide equation obviates the need for this calculation.

b. It depends. Even if slopes vary across individual sites, they must still be combined into a single system-wide response. If there is a solid technological or behavioral basis for different individual facility variabilities, then the additional complexity of combining the site-specific variabilities into a single overall variability may be justified. However, the existence of statistically different slopes in and of itself does not justify a disaggregated approach. Please see my answer to part a. above for further discussion.

c. Yes. In fact, the facility-specific variabilities would have to be combined in some way.

d. I think that your question is asking for a rationale for a model of system-wide response to volume (not volume variability). For that rationale please see my answer to part a. above.

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UPS/USPS-T14-43. Please refer to pages 1 and 2 of your response to OCA/USPS-T4-8, redirected from witness Moden. You there state: "The factors determining volume variability may well be the same across facilities of different sizes, although the exact values for those factors will not. In fact, the exact values for the factors will not be identical in facilities of similar sizes." Please confirm that your model does not account for variations in volume variability based on facility size. If confirmed, please discuss why facility size was not taken into account and what consideration, if any, was given to its inclusion. If not confirmed, please identify the portions of testimony and programming that allow elasticities to vary by facility size.

UPS/USPS-T14-43 Response:

Not confirmed. From my experience, the size of a facility can be defined by the volume that it handles or by some physical measure like square feet or number of floors. Let's consider the volume measure first. Please recall that my analysis is at the level of the mail processing activity. Consequently, the volume measure of facility size relevant for my analysis is the volume in the activity. As shown on page 36 of my testimony, my econometric equations include piece handlings as a measure of volume and thus size.

The second approach to measuring facility size would be to use an indicator like square feet or number of floors. If one thought that this type of facility size affects hours, one would have to control for it in the econometric equation. One approach to controlling for facility size measured in this way would be to estimate a pooled model and include a variable, like square feet, for facility size. However, this approach would require being

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sure that square footage was the correct "size" variable (at the activity level) and would

require collecting accurate data on facility size for hundreds of facilities through time. A

preferred approach is to use a panel data estimator, as explained on page 40 of my

testimony. As explained there, this approach controls for a variety of facility-specific non-

volume effects like facility size.

The programming methods and code for the panel data estimator are included in my

workpapers WP-1 through WP-4.

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UPS/USPS-T14-44.

a. Please discuss the use of overtime wages to accommodate peak volume periods in MODS, non-MODS, and PIRS facilities versus the use of part time or casual workers.

b. Please provide: (1) mail processing overtime wages paid, (2) total mail volume, and (3) volume by shape and/or class of mail, by accounting period for FY 1988-1996 (accounting periods 1 though 13).

c. Please explain how your model of volume variability captures an increase in the average wage rate.

UPS/USPS-T14-44 Response:

a. This part of the interrogatory has been redirected.

b. This part of the interrogatory has been redirected.

c. Because small sustained changes in volume do not affect the average wage rate, accurate measurement of volume variability requires controlling for variations in the average wage. With time series data, this could be done by "deflating" each period's labor cost for changes in the wage rates. If this deflation was not done, the increases in wages caused by collective bargaining might mistakenly be ascribed to increases (or decreases) in volume. Another method for controlling variations in average wage is to use hours. I followed this latter course. By using the "real" variable, I can control for variations in the average wage rate. Please note that changes in wages do show up in the volume variable costs. Wage rate effects are embodied in the cost pools formed by witness Degen.

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UPS/USPS-T14-45. Please discuss the direction of the bias in your results due to the impact of the difference between hours and labor cost during peak volume periods resulting from the use of overtime wages as compared to the use of part time or casual workers.

UPS/USPS-T14-45 Response:

As explained in my response to UPS/USPS-T-41b, there is no bias in my estimation of volume variability due to the existence of overtime wages. I would, however, draw your attention to the fact that I use accounting period data for my analysis. This means that the peak periods are defined by the peak accounting periods, which occur before Christmas (e.g. Accounting Periods 3 and 4). It is my understanding that during these accounting periods, the Postal Service makes more use of casual employees who earn a lower wage. Thus, it is quite possible that the average wage is lower during the peak periods. If so, the "wage" variability would be less than my volume variability based upon hours.

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UPS/USPS-T14-46.

a. Did you perform any sensitivity analyses that used total labor cost instead of hours as the dependent variable in your elasticity regressions? If so, please provide the results. If not, please provide the evidence that demonstrates that overtime wages are sufficiently insignificant as to not alter the results.

b. If no sensitivity analyses were performed on the question of the use of total labor cost as a dependent variable, please explain the basis for your claim that hours is a good proxy for total labor cost.

c. If it were shown that overtime is a significant contribution to costs and hours is not a good proxy for labor costs, please discuss the impact these factors would have on your results.

UPS/USPS-T14-46 Response:

a. No. Such a "sensitivity analysis" would require actual labor cost and wage data by activity, by accounting period, by site. Such data do not exist. However, please see my responses to UPS/USPS-T14-41 and UPS/USPS-T14-45 for an explanation of why any results that do not control for seasonal variations in wages would be biased.

b. Please see my responses to UPS/USPS-T14-41 and UPS/USPS-T14-45. Please keep in mind that my analysis measures the volume variability of labor cost, it does not measure total labor cost. Total labor costs would be measured by Witness Degen and it is my understanding that his cost pools include costs from overtime

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wages.

c. In some sense, it would provide a stronger justification for the use of hours. To the

extent there are seasonal variations in wages due to peaks and troughs in overtime,

that would have to be controlled for in an econometric model that used total labor

cost in an activity as the dependent variable. By using hours, I do not have to

control for this external effect.

DECLARATION

I, Michael D. Bradley, declare under penalty of perjury that the foregoing answers are true and correct, to the best of my knowledge, information, and belief.

Dated: Sept. 25, 1997

CERTIFICATE OF SERVICE

      I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

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September 25, 1997