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

POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97–1

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY TO INTERROGATORIES OF UNITED PARCEL SERVICE (UPS/USPS-T14-23-34)

The United States Postal Service hereby provides responses of witness Bradley to the following interrogatories of United Parcel Service:

UPS/USPS-T14-23-34, filed on August 29, 1997.

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 12, 1997

Response of United States Postal Service Witness Bradley
to
Interrogatories of UPS

UPS/USPS-T14-23. Please refer to Workpaper WP-1, and to the program SPBSP.TXT in LR-H-149. At the bottom of page 1 of SPBSP, the data set OPSTAGE is read in and a variable is set: "HRS=HSPPRIO." In Workpaper WP-1, the output (LOG file) of program SPBSP is listed on page WP1-2. However, line 66 of the LOG file references the same data step and sets: "HRS=HSPBPRIO." Thus, these two lines, one from the SAS file and one from the LOG file, are inconsistent. The SAS program contained in the library reference thus does not appear to be the program that created the LOG file in the workpaper. Please explain the discrepancy and identify which program created the results contained in Bradley T-14.

UPS/USPS-T14-23 Response:

The programs that estimate the equations for the MODS direct activites are identical save for the two lines that define hours (HRS) and piece handlings (TPH). On the Postal Service mainframe computer, the individual equations are estimated by simply changing these lines of code to the appropriate definitions and running the program. I thus could have downloaded a single set of SAS code and instructed the potential user how to make this basic change. However, to facilitate access for potential users, I created multiple versions of the program, one for each of the MODS direct activities. Please note that the expression "HSPPRIO" is quite similar to the expression "HSPBPRIO." In fact, they differ only by a missing "B" in the former expression. Apparently, I made a typographical error by inadvertently omitting the "B" in creating the ASCII version on floppy disk. If you insert the missing "B" between the two "P"s and run the program, the SAS code in Library Reference H-149 generates the listing in Workpaper WP-1 to accompany USPS-T-14.

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UPS/USPS-T14-24. Please confirm that the LOG files and related documents in all other workpapers are consistent with the SAS files contained in LR-H-148 and LR-H-149. If this is not the case, please provide the consistent pairs of SAS and LOG files that were used in the results contained in Bradley T-14.

UPS/USPS-T14-24:

I confirm that the SAS logs and listing in my Workpapers to accompany USPS-T-14 are consistent with the SAS programs contained in Library Reference H-149. I cannot speak for any other witnesses' workpapers.

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UPS/USPS-T14-25. Please provide the SAS LOG for programs VVMALLSC.TXT, VVMBMCSC.TXT, VVMDIRSC.TXT and VVMREGSC.TXT, and confirm the following:

a. VVMDIRSC.TXT is the SAS program that "scrubs" the MODS direct activities data.
b. Data set VVDA1.DAT is read in to VVMDIRSC.TXT.
c. VVMALLSC.TXT is the SAS program that "scrubs" the MODS allied activities data.
d. Data sets VVDA2.DAT and VVDA1.DAT are read in to VVMALLSC.TXT.
e. VVBMCSC.TXT is the SAS program that "scrubs" the BMC allied and direct data.
f. Data set BMC.DAT is read in to VVBMCSC.TXT
g. VVMREGSC.TXT is the SAS program that "scrubs" the registry (and remote encoding) data.
h. Data set RGDATA.DAT is read in to program VVMREGSC.TXT.

If you cannot confirm, please provide explicit references to the SAS programs and the particular data scrubbed as well as the data sets that are read in by each of the above referenced programs.

UPS/USPS-T14-25 Response:

The requested SAS logs are being filed in Library Reference H-259, "SAS Logs Provided

in Response to UPS/USPS-T14-25."

a. Confirmed. Please see page H148-2 of Library Reference H148 where it states:

> A "scrub" program, described and documented below, was run on these input data sets to prepare the analysis data sets. They are called VVMPO.DATA for the direct operations and VVMPN.DATA for the allied operations.

Also, please see page H148-9 of Library Reference H-148 where it states:

> The program which create[s] VVMPO.DATA is called VVMDIRSC.CNTL. A hardcopy is included in this Library Reference and an electronic version is include[d] on diskette as VVMDIRSC.TXT.

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b. Confirmed.

c. Confirmed. Please see page H148-2 of Library Reference H148 where it states:

> A "scrub" program, described and documented below, was run on these input data sets to prepare the analysis data sets. They are called VVMPO.DATA for the direct operations and VVMPN.DATA for the allied operations.

Also, please see page H148-11 of Library Reference H-148 where it states:

> The program which creates VVMPN.DATA is called VVMALLSC.CNTL. A hardcopy is included in this Library Reference and an electronic version is included on diskette as VVMALLSC.TXT.

d. Confirmed.

e. Confirmed. Please see page H148-12 in Library Reference H148 where it states:

> A "scrub" program, described and documented below, was run on these input data sets to prepare the analysis data set. It is called SCRUBMCB.DATA.

Also, please see page H148-15 of Library Reference H148 where it states:

> The program that creates SCRUBMCB.DATA is called VVMBMCSC.CNTL. A hardcopy is included in this Library Reference and an electronic version is included on diskette as VVMBMCSC.TXT.

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f. Confirmed.

g. Not confirmed. The program VVMREGSC.CNTL "scrubs" the registry data. It does not "scrub" the remote encoding data.

h. Confirmed.

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UPS/USPS-T14-26. Please refer to page 3 of VVMDIRSC.TXT. In the comment section, threshold levels of TPH per site are set. Please confirm that TPH thresholds vary by activity only, not by site or time period. If confirmed, please discuss:

a. how the particular thresholds were chosen;

b. any consideration given to thresholds that varied across sites (i.e., was site size considered in establishing thresholds, or was percentage of site capacity considered as a threshold measure?).

UPS/USPS-T14-26 Response:

Confirmed.

a. The thresholds were set through discussion with operations experts to determine the minimum level of piece-handlings that represent a normal level of activity.

b. No. The thresholds were defined relative to the activity. The econometric analysis is done at the activity level, not the site level. Consequently, the key issue was whether volume in the activity reached a threshold to be consider regular, whether that activity was in a large facility or a small facility.

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to
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UPS/USPS-T14-27. Please refer to VVMDIRSC.TXT, and to the data scrub process in general.

a. Beginning with Part III on page 4 of VVMDIRSC.TXT, please confirm that a continuity scrub is performed first, followed by the one percent tails scrub, and then another continuity scrub.

b. If confirmed, discuss to what extent the data are affected by performing the first continuity scrub prior to the one percent tail scrub (i.e., consider, for example, an "outlier" that is eliminated from the data due to the continuity scrub; the distribution of the remaining data may be affected. When the subsequent one percent scrub is performed, data points that were not outliers prior to the continuity scrub might become outliers due to the change in data distribution and could be eliminated, thereby leaving gaps in previously continuous strings of data such that a site could be completely eliminated due to the order of scrubbing.).

UPS/USPS-T14-27 Response:

a. Confirmed. Please see page 32 of my testimony where it states:

> For the direct operations, this scrub works through the following steps:
>
> Step 1. For each activity, the procedure calculates the ratio of hours to piece handlings for each site/accounting period observation. Note that this calculation is made on the data after they have been scrubbed for missing data or start-up periods.
>
> Step 2: Next, the procedure forms the distribution of productivities, on an activity basis, from lowest to highest. It then finds the observations that constitute the one percent tails of the density on both ends of the distribution.

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Step 3: The procedure then eliminates those observations that fall in the one percent tails by replacing the value of the observation with a missing data indicator.

Step 4: This elimination may, in some cases, cause a previously continuous series to become discontinuous. The procedure must then rerun the continuity scrub on the data after it has been put through the productivity scrub.

It may seem unusual that the data are scrubbed twice for continuity. However, the definition of "high" and "low" observations is influenced by the data set on which the standards are imposed. By first running an initial continuity scrub, the procedure establishes the right context for identifying productivity outliers. In addition, despite imposition of these relatively severe data scrubs, a large amount of "clean" data is left for estimating the econometric equations.

The effect of the multistage scrubbing routine is a large but clean data set. As your question indicates, this three step process is more rigorous than a simpler two-step process that scrubs for outliers and then continuity. However, given the operational nature of MODS data, I thought it prudent to perform first continuity scrub to define the frame of reference for outlier investigation.

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UPS/USPS-T14-28. Please refer to pages 3 and 7 of VVMREGSC.TXT.

a. Please confirm that the continuity scrub checks for 104 consecutive observations.

b. Please confirm that LR-H-148, REGVOL.DAT, the registry activity data, contains just 32 observations, and if so, confirm that all 32 observations are used in estimation of volume variability and explain the use of the SAS program VVMREGSC.TXT.

UPS/USPS-T14-28 Response:

a. Confirmed

a. Confirmed. REGVOL.DAT contains the registry volume data which is a single national value with a quarterly frequency. 32 observations thus represents 8 years. (8 x 4 = 32). The registry hours data are from MODS. Because the hours are summed to a single national hours (to match the volume), consistency required the hours data set to contain data from each site in each period. For data that are at the AP frequency, 104 observations represents 8 years (8 x 13 = 104). As stated on page H148-16 of Library Reference H148:

> The MODS registry hours were extracted from the MODS file on the corporate data base. They are scrubbed for missing data and continuity and are cumulated to a single national quarterly value.

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UPS/USPS-T14-29. Please confirm that VVMBMCSC.TXT indicates that BMC activities are checked for continuity of 26 consecutive observations per site, and similarly for VVMALLSC.TXT. Please indicate the section of T-14 that discusses the choice of 26, instead of 39, consecutive data points for each of these activities. If you cannot indicate a section in your testimony, please explain the inconsistency between your testimony and back-up (SAS code).

UPS/USPS-T14-29 Response:

There is no inconsistency between my testimony and the SAS code. On page 33 of my testimony I state:

> Like the MOD system the PIR system is an operational data system. I therefore "scrubbed" the PIRS data in a manner similar to the scrub of the MODS data described above. The details of the scrubbing procedure are given in Library Reference H-148.

Page H148-12 of Library Reference H148 starts a section entitled, "Creation of the Analysis Data Set for Mail Processing Activities at Bulk Mail Centers." On that page, it states:

> The analysis data set for the BMC activities is created by the same methods used for creating an analysis data set for the MODS activities. Those methods are slightly modified to account for the differences in BMC data.
>
> The continuity scrub is set at 26 observations rather than 39 observations. A lower scrub level was set because of the smaller amount of BMC data.

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UPS/USPS-T14-30. Please refer to VVMALLSC.TXT.

a. Please discuss the omission of a scrub for the one percent tails that is performed in each of the other data scrub programs.

b. Please indicate the section of T-14 that discusses why scrubs for outliers are not necessary or not performed for these activities. If you cannot indicate a section in your testimony, please explain the inconsistency or provide a corrected version of VVMALLSC.TXT.

UPS/USPS-T14-30 Response:

a. Section I.C., entitled, "Constructing the Analysis Data Set for MODS Allied Activities" appears on page H148-9 of Library Reference H-148. On that page it states:

> The productivity outlier scrub is not run during the creation of the allied data, however. As explained in USPS-T-14, the allied activities do not have a direct measure of workload. Instead, the cost drivers are the piece handlings in the various direct operations. Consequently the outlier scrubs are done separately, in the subsequent econometric programs for each activity. The outlier scrub is thus documented in those programs. (Emphasis added.)

b. Not applicable. As explained in my testimony, scrubs are performed for these activities.

Response of United States Postal Service Witness Bradley
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UPS/USPS-T14-31. Please refer to Table 7, at page 54 of your testimony, and confirm:

a. Line 15, SPBS Priority, should read 0.2009 (T-14, WP-1, VVMPL.SPBSP.LISTING, page 9), rather than 0.2001. If not confirmed, please explain in full.

b. Line 17, SPBS Non-Priority, should read 4,659 (T-14, WP-1 VVML.SPBSNP.LISTING, page 9), rather than 4,569. If not confirmed, please explain in full.

UPS/USPS-T14-31 Response:

a. Confirmed.

b. Confirmed.

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UPS/USPS-T14-32. Please confirm that the Errata you filed concerning Table 10, at page 67 of your testimony, is intended to correct the Line 10 result from -0.0154 to -0.0138, rather than from -0.1054 to -0.1038 as indicated in the Errata. If not confirmed, please explain in full.

UPS/USPS-T14-32 Response:

Confirmed. Please note the correct value appears in the revised page 67.

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UPS/USPS-T14-33. Please refer to Table 8, at page 63 of your testimony, and confirm:

a Lines 29 and 30, Pouching, should read 14,691, and 168, respectively (T-14, WP-2, VVML.POUCH.LISTING, page 13) . If not confirmed, please explain in full.

b. Line 28, Platform, should read 0.9792 (T-14, WP-2, VVMPL.PLAT.LISTING, page 10). If not confirmed, please explain in full.

UPS/USPS-T14-33 Response:

a. Confirmed.

b. Confirmed. The R^2 for the platform equation is 0.9791595 which rounds up to 0.9792 as you suggest rather than the 0.9791 that appears in Table 8.

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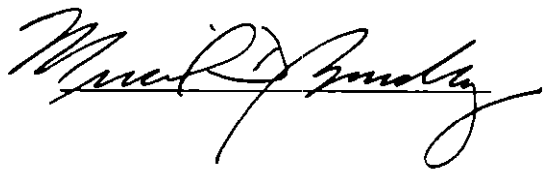
UPS/USPS-T14-34. Please refer to page 6, lines 14-15, and page 12, line 14 through page 13, line 4, of your testimony, where labor cost is alluded to as a possible left hand side variable and rejected in favor of hours recorded by MODS or PIRS. Please provide the data on labor cost by site ID number, accounting period, and activity, for all activities and for all years in the panel (1988-1996), as if it had been used as the dependent variable.

UPS/USPS-T14-34 Response:

Such data do not exist. As I explain on page 13 of my testimony, the wage paid to the workers in each activity at each site in each accounting period is not known or recorded. This precludes construction of the cost data that you request.

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. 12, 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 12, 1997