

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 POSTAL SERVICE WITNESS THRESS
TO INTERROGATORIES OF GCA (GCA/USPS-T7-12 - 15)
(June 24, 2005)

The United States Postal Service hereby provides the responses of witness
Thress to the following interrogatory of GCA, filed on June 10, 2005: GCA/USPS-T7-12
- 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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GCA/USPS-T7-12.

Please refer to your response to interrogatory GCA/USPS-T-7-11(a) and Exhibit A which was provided in that interrogatory. In your response you stated that “removing those rate changes which took place prior..., there appears to me to be no evidence of any discernable trend...”

- a) Please confirm that on Exhibit A there is a “discernable” pattern in elasticities for Single-Piece and Workshare, between the R97-1 and R2005-1 rate cases.
- b) Do the new variables such as employment, declining employment time trend, and Internet experience variables, explain why the elasticity for Single-Piece has drastically dropped since R2001-1 and for workshared has risen significantly? If your answer is “yes”, please fully explain why. If your answer is “no”, please explain in detail what factor(s) are causing these shifts and increasing divergence between the two FCLM mailstreams.
- c) Please refer to the Exhibit A. While you as a USPS witness on demand equation estimations “...have never provided any testimony regarding price elasticity,...” please explain what factor(s) may have caused over the R76-1 to R2005-1 rate cases a “discernable” downward trend in FCLM in USPS-sponsored rate case elasticity research.

RESPONSE:

- a. Not to be argumentative, but I really don't see it.
- b. Yes. Please see my response to ABA&NAPM/USPS-T7-2.
- c. The First-Class letters demand equation used by the Postal Service in R76-1 is beyond the scope of my testimony. My testimony did not consider the demand for First-Class letters prior to 1983.

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GCA/USPS-T7-13.

Please refer to the table for the unit root tests you provided in your response to GCA/USPS-T7-3.d.

- a) Please confirm that for Single-Piece and workshared FCLM, there is unquestionable evidence of non-stationarity under all three unit root tests, “Constant and Trend,” “Constant and no Trend,” and “no Constant no Trend.”
- b) Please confirm whether your non-stationary dependent variable (volume for single-piece or volume for workshared) and a time trend variable you have included for employment would lead to spurious results. If confirmed, explain how this might have affected your results with respect to (i) the R-squared; (ii) the estimated coefficients; (iii) the coefficients’ standard error of estimates; (iv) the t-tests. If not confirmed, please explain why.
- c) Please confirm whether your non-stationary dependent variable (volume for single-piece or volume for workshared) and the employment variable would lead to spurious results. If confirmed, explain how this might have affected the results with respect to (i) the R-squared; (ii) the estimated coefficients; (iii) the coefficients’ standard error of estimates; (iv) the t-tests. If not confirmed, please explain why.

RESPONSE:

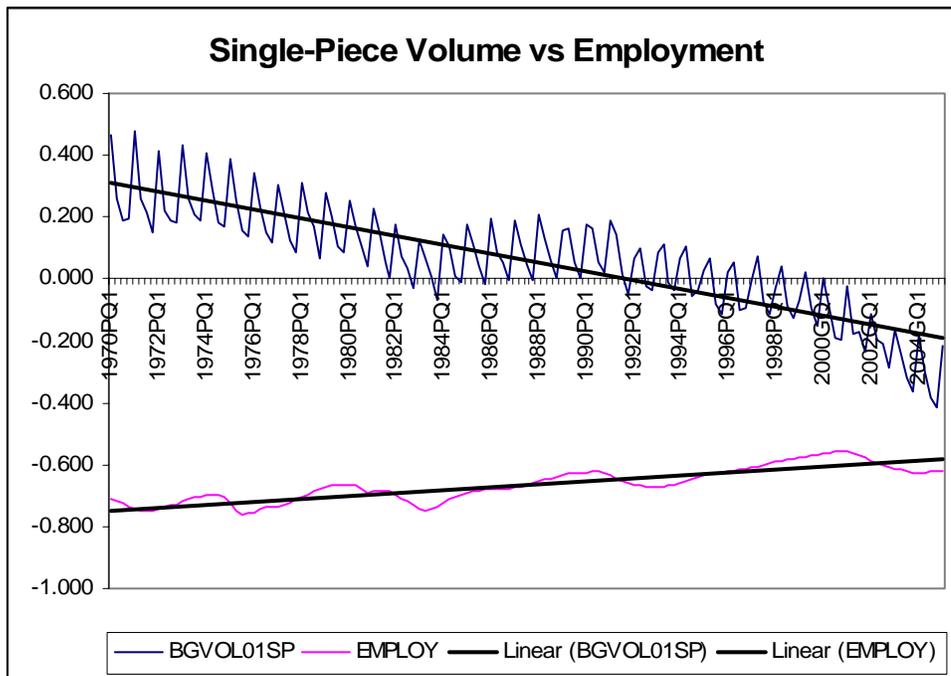
- a. Not confirmed. The null hypothesis of the Dickey-Fuller tests which were provided in response to GCA/USPS-T7-3(d) is the presence of unit roots (i.e., that the data are not stationary). In the cases of First-Class single-piece and workshared letters, the test statistics exceeded the critical values for all six tests presented. In each of these cases, this means that the null hypothesis – i.e., the existence of unit roots– can be rejected with 95 percent confidence. That is, the Dickey-Fuller tests presented in response to GCA/USPS-T7-3(d) provide evidence that these mail volumes are stationary.
- b. Not confirmed. As explained in my response to part a. above, First-Class letters volumes are stationary.
- c. Not confirmed. See my responses to parts a. and b.

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GCA/USPS-T7-14.

Please refer to your LR-K-64, file R2005data.xls worksheet Eviews.

- a) Please confirm that this worksheet provides all the data that was used in your estimation after all adjustments and log transformations.
- b) Please confirm that using data in this worksheet and calculating the correlation between single piece volume (BGVOL01SP) and employment variable (EMPLOY) yields a value of 0.676. If not confirmed, please provide the correct correlation for these two variables.
- c) Please confirm that the correlation value given in part (b) is high enough to infer it is due to trends in these two variables that it should be a concern with respect to spurious results in the econometric estimation of the model. If not confirmed, please explain the theoretical and empirical rationale that this is not a spurious result.
- d) Please confirm that the following graph based on your own data from the Eviews worksheet referenced above is correct.



- e) Given the information in parts (b) - (d), can you still confirm that including the employment variable in your model would not result in spurious results. If confirmed, please provide textbook evidence to prove that it is not spurious (academic citations, mathematical prove, econometric, numerical, or any other proves). If not confirmed, please explain whether your estimation results for demand elasticities, in light of the apparent spurious nature of some of your

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variables and your response to GCA/USPS-T7-3.c, would make sense and are econometrically correct.

RESPONSE:

a. Confirmed.

b. By my calculation, the simple correlation between BGVOL01SP and EMPLOY using all of the data presented in R2005Data.xls is -0.676. However, the First-Class single-piece letters demand equation presented in my testimony uses a sample period of 1983Q1 – 2005Q1 and models First-Class single-piece letters volume as a function of employment lagged one quarter. The simple correlation between BGVOL01SP and EMPLOY, lagged one quarter, from 1983Q1 through 2005Q1 is -0.497.

c. Not confirmed. It is certainly true that mis-specifying a demand equation can lead to spurious results and this problem can be particularly true when an explanatory variable shares a common trend with the dependent variable of interest despite a lack of a theoretical basis for viewing this relationship as causal. This is not true, however, in this case.

First, the theoretical basis for expecting a causal relationship between the United States economy and First-Class Mail volume is quite strong and should be obvious. The specific use of total private employment as the variable which is used to measure this relationship in the single-piece First-Class letters equation was discussed in my testimony at page 22, line 21, through page 23, line 7, which was quoted and expanded upon in my response to your earlier interrogatory, GCA/USPS-T7-1.

Second, as is made quite obvious in the graph which you helpfully provide here, the “common” trend in single-piece First-Class letters volume and total private employment (both per adult) is clearly negative. Hence, to the extent that this common trend could lead to “spurious” results, it seems clear to me that one would expect such a “spurious”

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elasticity estimate to be negative. But, of course, the observed coefficient in this case is positive (0.673 with a t-statistic of 5.794).

Finally, then, following up on my second point, the significant positive coefficient on employment in the single-piece First-Class letters equation presented in my testimony is, in fact, clear and compelling evidence that the relationship between single-piece First-Class letters volume and private employment goes well beyond them simply sharing a common trend. In fact, if one compares the change in single-piece First-Class letters volume and employment relative to the same period the previous year (that is, compared $BGVOL01SP - BGVOL01SP$, lagged four quarters, with $EMPLOY(-1) - EMPLOY(-1)$, lagged four quarters), one would find that (a) the correlation between these two variables is strong and positive (simple correlation coefficient of 0.435), and (b) neither of the resulting variables possesses an obvious trend.

Taking all of this evidence into account, therefore, I am quite confident that the observed relationship between single-piece First-Class letters volume and employment presented and discussed in my testimony is not “spurious.”

- d. I am willing to assume that this graph accurately portrays what it purports to portray.
- e. Confirmed. Please see my response to part c. above. I do not believe that any of my results could properly be characterized as “spurious.”

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GCA/USPS-T7-15.

Please refer to your response to GCA/USPS-T7-3.a. In your response, you have stated that, "It is sufficient condition, therefore, to have stationary dependent variables."

- a) Please confirm that your answer implies that only the dependent variable has to be stationary and that the independent variables do not necessarily have to be stationary. If confirmed, please provide citations from econometric texts to justify your answer. If not confirmed, please explain how you used "Generalized Least Squares."
- b) Please confirm that none of the variables you have used in your estimation are first-differenced or are de-trended.

RESPONSE:

a. Not confirmed. Actually, my response does not imply that the dependent variable "has to be stationary," only that it is a sufficient condition, although this may arguably be a bit of an over-statement. With respect to stationarity, Generalized Least Squares will produce the best, linear, unbiased coefficient estimates so long as the regression residuals are stationary. As I stated in my response to GCA/USPS-T7-3(e), Dickey-Fuller tests on the residuals from my regressions indicate the presence of no unit roots. Hence, the necessary stationary conditions for Generalized Least Squares are satisfied for every demand equation presented in my testimony.

b. Confirmed.

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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