

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

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

INTERROGATORIES OF THE UNITED STATES POSTAL SERVICE TO
GCA WITNESS CLIFTON
(USPS/GCA-T1-1-55)

Pursuant to Rules 25 and 26 of the Commission's Rules of Practice and Procedure, the United States Postal Service directs the following interrogatories to GCA witness Clifton: USPS/GCA-T1-1-55.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

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USPS/GCA-T1-1. On page 3 at line 6 of your testimony, you refer to witness Thress's estimate of the own-price elasticity of First-Class single-piece letters as "biased."

- a. Please define the term "biased" as it is used in formal statistical or econometric analysis.
- b. Was your use of the term "biased" on page 3, line 6, of your testimony consistent with the definition in a.?
- c. If your use of the term "biased" was consistent with the definition in a., please provide the mathematical and statistical evidence which you used to arrive at this conclusion.
- d. If your use of the term "biased" was not consistent with the definition in a., please define the term "biased" as you intended it to be understood on page 3 at line 6 of your testimony.

USPS/GCA-T1-2. Please define the "payments market" as you use the term on page 3 at line 20 of your testimony and elsewhere. Within your answer, please address whether the following payments would be part of the "payments market" as you use the term in your testimony.

- a. Payment for groceries at point of purchase
- b. Payment for clothing at point of purchase
- c. Payment for a newspaper subscription
- d. Payment to an employee
- e. Payment to mail a package
- f. Payment for theater tickets
- g. For the items listed in a – f., what is your best guess as to how such payments are made in 2006?
- h. For the items listed in a – f., what is your best guess as to how such payments were made in 1975?
- i. Do you believe that payment for any of the items listed in a – f would have ever been sent through the mail? If so, approximately what percentage of such payments would you estimate were sent through the mail at the peak of such usage? What percentage of such payments would you estimate are currently sent through the mail?
- j. If you contend that debit cards are currently used for any of the above transactions, or any point-of-sale transactions, how would such use of debit cards affect the volume of First-Class Mail? Please explain fully.

USPS/GCA-T1-3. Please define "pricing power" as you use the term on page 4, line 1, of your testimony.

- USPS/GCA-T1-4. a. Do you believe that a firm has "pricing power" if its share of a market exceeds 50 percent? Please explain.

- b. Do you believe that a firm lacks “pricing power” if its share of a market is less than 50 percent? Please explain.
- c. Are there any conditions under which a firm could lack “pricing power” despite having a market share in excess of 50 percent? If so, what are these conditions?
- d. Are there any conditions under which a firm could have “pricing power” despite having a market share that is less than 50 percent? If so, what are these conditions?

- USPS/GCA-T1-5. a. Please confirm that the use of electronic alternatives to mailed bills and statements requires Internet access by both the sender and recipient of electronic bills and statements.
- b. What percentage of First-Class workshared mail is sent to households?
 - c. Please confirm that, in order for a business to send an electronic bill or statement to a household, that household must have Internet access.
 - d. In light of your responses to parts a. – c. of this interrogatory, please explain your statement on page 6 of your testimony at lines 23 and 24, that “[t]he inclusion of a broadband variable for workshared letters makes no economic sense.”

USPS/GCA-T1-6. In his testimony at page 27, lines 10 – 23, witness Thress makes the following statement:

“I am not asserting here that the use of broadband Internet access leads directly to a proportional decrease in mail volume. Rather, I am suggesting that the historical pattern of the adoption of broadband Internet access has mirrored electronic substitution out of certain types of mail. In some cases, mail loss may be a direct result of the use of broadband. For example, higher-speed connections, which allow for faster downloads of graphical images, may make online magazines a more attractive alternative to Periodicals mail. In other cases, however, it may simply be the case that the adoption of these technologies is occurring along a similar time path. This similarity may be more than coincidental, of course, and may be the result of common technological advancements. Recent increases in electronic bill presentment may have aspects of both of these factors. That is, while higher-speed connections may make it more feasible to receive bills and statements online, it is also the case that the technology which allows for such things has also developed more or less over this same time period.”

Do you agree with Mr. Thress’s statement here? If not, why not? If so, why do you believe that “[t]he inclusion of a broadband variable for workshared letters makes no economic sense”?

- USPS/GCA-T1-7. a. What percentage of businesses currently has access to “high speed T1 technology”?

- b. What percentage of businesses had access to “high speed T1 technology” in 2001?
- c. What is the basis for your assertion at page 6, line 25, through page 7, line 1 that “any business that operates in a commercial office environment has had access to high speed T1 line technology for many, many years and certainly well before the rate increase in 2002”?
- d. What is the basis for your assertion at page 7, lines 1 – 3, that “[t]he broadband deepening that has gone on in recent years since 2000 is almost exclusively in the household or residential sector”?

- USPS/GCA-T1-8. a. Do you believe that there is an immediate and universal shift from mail to electronic alternatives for all households when they acquire Broadband Internet access? Please explain.
- b. Do you believe that the loss of mail due to electronic alternatives must be proportional to the overall level of Broadband usage in the United States? If so, please explain why you believe this to be the case. If not, please explain why you believe that the number of Broadband subscribers “should be included in the single piece equation”?

- USPS/GCA-T1-9. a. Please confirm that the demand equation which is used by you to produce your estimate of the own-price elasticity of First-Class single-piece letters of -0.456 does not include the number of Broadband subscribers as an explanatory variable.
- b. Please reconcile your decision to omit the number of Broadband subscribers within the demand equation for First-Class single-piece letters with your assertion on page 7 that “on economic grounds, it should be included in the single-piece equation.”

USPS/GCA-T1-10. Please explain in detail the “other problems” which are created “whenever a time trend dummy variable ... is re-introduced into a demand equation” to which you refer on page 7 of your testimony.

- USPS/GCA-T1-11. a. Please confirm that the demand equation which is used by you to produce your estimate of the own-price elasticity of First-Class single-piece letters of -0.456 includes an interaction between a linear time trend starting in 2002Q4 and consumption expenditures on Internet Service Providers.
- b. Would the inclusion of a linear time trend starting in 2002Q4 interacted with consumption expenditures on Internet Service Providers represent “a time trend dummy variable capturing everything and nothing”? If not, to what variable in witness Thress’s First-Class single-piece letters equation were you referring when you denigrated (page 7) his use of “a time trend dummy variable capturing everything and nothing”?
 - c. Given the inclusion of the linear time trend starting in 2002Q4 interacted with consumption expenditures on Internet Service Providers as an explanatory variable in your proposed demand equation for First-Class

single-piece letters, is your demand equation subject to the problems to which you refer on page 7 of your testimony at lines 19 – 21, which are created “whenever a time trend dummy variable ... is re-introduced into a demand equation”? If not, why not?

USPS/GCA-T1-12. Please refer to your testimony at page 9, lines 3-4.

a. Is it your testimony that the 2005 Household Diary Study indicates that of total First-Class Mail sent by households, only 13 percent constitute payments? If so, please show the full derivation of this percentage. If not, please explain fully, and provide the correct percentage of First-Class Mail sent by households that constitutes payments.

b. What percentage of First-Class single-piece letters are payments sent by households? Please explain fully.

USPS/GCA-T1-13. Do you understand witness Thress’s own-price elasticity estimate for First-Class single-piece letters to be an estimate of the “market own-price elasticity of demand” or an estimate of the “own-price elasticity of demand for [a] single competitor” as you use those terms on page 10, lines 17 – 19, of your testimony?

USPS/GCA-T1-14. Do you believe that witness Thress has ever asserted that the payments market is highly price inelastic? If so, please provide evidence of such an assertion.

USPS/GCA-T1-15. On page 14 of your testimony at lines 16 – 18, you hypothesize that “[p]ayments made by check are an excellent proxy for payments made by mail, because at the point of sale, checks are rarely used anymore, having been displaced by credit and debit cards.”

- a. Do you believe that “payments made by check are an excellent proxy for payments made by mail” in the year 2000? Please explain.
- b. Do you believe that “payments made by check are an excellent proxy for payments made by mail” in the year 1990? Please explain.
- c. If the percentage of checks which are mailed, as opposed to being used at the point of sale, has been increasing over time, could the number of checks which are mailed have increased even as the total number of checks has decreased? Please explain.
- d. Please confirm that Table 2 on page 15 of your testimony does not provide any direct evidence on the “USPS market share in the U.S. payments market.” If not confirmed, please explain.

USPS/GCA-T1-16. On page 17, at lines 18 – 20, you claim that “[a] direct estimate of that cross price elasticity, b_2 , would greatly sharpen the estimate for b, the own-price elasticity of demand for single piece payments mail.” Please explain in detail why you believe this to be the case.

USPS/GCA-T1-17. On page 17, at line 20 through page 18, line 2, you claim that “[o]ther things being equal, a further property of the demand specification in equation (2) is that when the cross price elasticity b_2 is high, the absolute value of the own price elasticity, b , will also tend to be high.”

- a. Please explain why you believe this to be true.
- b. What conditions are necessary for this expected relationship to hold true?
- c. If P and P_2 in equation (2) are uncorrelated, would you expect the own-price elasticity, b , to be dependent on the level of the cross-price elasticity b_2 ? If your answer is yes, please provide citations from mathematic or statistical sources that would support your answer.
- d. If the Postal Service “refuses to compete on price” with electronic alternatives, would you expect P and P_2 to be correlated? Please explain your answer.

USPS/GCA-T1-18. On page 17, line 6 of your testimony you present the following equation (1):

$$(1) \log(Q) = a - b \log(P) + Z(t)$$

On page 18, line 3 of your testimony you present the following equation (2):

$$(2) \log(Q) = a - b \log(P) + b_2 \log(P_2)$$

- a. Please confirm that equation (1) is mathematically identical to equation (2) if $Z(t) = b_2 \log(P_2)$. If not confirmed, please explain.
- b. Please confirm that the estimated value of b will be identical in equations (1) and (2) if $Z(t)$ is perfectly correlated with $b_2 \log(P_2)$. If not confirmed, please explain.

USPS/GCA-T1-19. Please refer to your testimony at page 9, lines 5 to 9, where you refer to the response to GCA/USPS-T8-1.c and you state that “Postal Service witness Peter Bernstein notes that an alternative approach to elasticity measurement is to ‘decompose First-Class Mail individual mail and make a segment-by-segment projection of diversion.’”

- a. By “elasticity” are you referring to the change in First-Class Mail volume in response to a change in First-Class Mail price? If not, what do you mean by the term “elasticity” in your statement?
- b. Please confirm that witness Bernstein in his response to GCA/USPS-T8-1.c was not referring to an alternative approach to measuring the price elasticity of First-Class Mail, but rather, as requested in the question, to an alternative approach to measuring the level of electronic diversion of First-Class Mail. If you cannot confirm, please explain fully.

c. Please confirm that witness Bernstein in his response to GCA/USPS-T8-1.c stated that his belief that this alternative segment-by-segment approach to estimating the level of electronic diversion was inferior to the econometric approach employed by witness Thress to estimate the level of electronic diversion. If you cannot confirm, please explain fully.

USPS/GCA-T1-20. Please refer to the first sentence of page 57 of your testimony.

a. If you truly believe that single piece First-Class Mail is “clearly” more elastic in demand than Standard Regular Mail, doesn’t that suggest that what you refer to as “the statutory monopoly” can no longer provide any valid justification for mitigating the institutional cost share of First-Class single piece mail “in today’s competitive market environment,” at least relative to Standard Regular Mail? If not, why not?

b. Please confirm that the Private Express Statutes (what you refer to as “the statutory monopoly”) are not specific to any mail class, and to the extent that they apply, they apply as equally to letters carried as Standard Mail as to letters carried as First-Class Mail. If not confirmed, please explain fully.

USPS/GCA-T1-21. Please refer to the first paragraph of page 57 of your testimony. Please assume for purposes of this question that the Commission does not adopt your view that single piece First-Class Mail is “clearly” more elastic than Standard Regular, and instead relies upon relative elasticities more in accord with those employed by the Commission historically (such as the elasticities estimated by witness Thress). Under this hypothetical, would your conclusion be that the single piece First-Class Mail should “be looked at first as a source of extra revenue when there is a general revenue deficiency in postal finances”? If not, why not? Specifically, do you agree that the appropriate role of relative elasticities of demand in the pricing process should not depend on which particular categories of mail get favored or disfavored by this measure in a particular case? If not, why not?

USPS/GCA-T1-22. On page 21 at lines 10 – 11, you state that the BEA deflator in the GDP accounts for computers and peripheral prices “performed appreciably better” than the BLS series for computer prices.

- a. What do you mean when you say it “performed appreciably better”? Please provide all of the statistical evidence which was used in making this claim.
- b. Did you perform any studies, statistical or otherwise, to assess whether “the BEA deflator in the GDP accounts for computers and peripheral prices” was a suitable proxy for the price of electronic payment instruments? If so, please provide all such studies.

USPS/GCA-T1-23. On page 23 of your testimony at lines 18 – 20, you state, “Statements mail exceeding one ounce has fallen because of electronic alternatives to checks and because broadband more recently has made on-line banking an attractive alternative to paying by check.”

- a. Are you aware that many banks do not return cancelled checks to their customers within their monthly bank statements?
- b. If banks no longer return cancelled checks to their customers, could statements mail exceeding one ounce fall, even if the number of checks remained constant or grew?
- c. Have you performed any studies, statistical or otherwise, to support the causal relationship hypothesized above?

USPS/GCA-T1-24. With respect to your equation which models commercial check volume as a function of the First-Class additional-ounce rate,

- a. Why was the additional-ounce rate not deflated prior to its inclusion in this equation?
- b. Were any other explanatory variables investigated as possible explanatory variables, such as the price and availability of alternatives to checks (e.g., credit cards, debit cards) or any measures of on-line banking?
- c. Did you conduct any analyses, statistical or otherwise, which attempted to explain the number of First-Class additional ounces as a function of the First-Class additional-ounce rate?
- d. Did you conduct any analyses, statistical or otherwise, which attempted to relate the number of commercial checks and the number of First-Class additional ounces?
- e. If your answers to any of b., c., or d. were affirmative, please provide details of all such analysis. If your answers to any of b., c., or d. were negative, please explain fully why you failed to perform such analyses.

USPS/GCA-T1-25. On page 27 of your testimony at lines 12 -14, you state the following, “In general one expects that the own-price elasticity of a demand curve for a market is less elastic than the own-price elasticity faced by an individual competitor. The reverse appears to be the case here.”

- a. What is your best estimate for the own-price elasticity for the “payments market” as you have defined it?
- b. Please explain how you arrived at your answer.
- c. Please provide all evidence, statistical or otherwise, in support of your assertion that “[t]he reverse appears to be the case here.”

USPS/GCA-T1-26. On page 27, starting at line 17, you make the following statement:

“When an estimate of the own price elasticity for single piece mail is made, because the USPS chooses not to compete on price, little correlation is found between variations (i.e. declines) in single piece volumes and variations in single piece prices. However, the market demand curve, which is the aggregation of all individual demand curves, is not single piece mail. It is single piece mail plus all competing substitutes. The own-price elasticity that single piece mail faces in its problematic areas such as payments mail, statements mail and on-line banking derives from conditions in those markets.”

- a. Please define the “own-price elasticity that single piece mail faces” as you use that term here.
- b. What do you believe witness Thress’s estimate of the own-price elasticity for First-Class single-piece letters of -0.184 is intended to measure?
- c. What is your best estimate of the “own-price elasticity that single piece mail faces”?
- d. What “demand” do you believe witness Thress is estimating with his First-Class single-piece letters demand equation?

USPS/GCA-T1-27. Please define to whom you are referring when you use the term “firm” on page 28 at line 23.

- USPS/GCA-T1-28.
- a. Please confirm that witness Thress uses the real price of First-Class single-piece letters to calculate his estimated own-price elasticity for First-Class single-piece letters.
 - b. Please confirm that the real price of First-Class single-piece letters has declined on numerous occasions over the time period over which witness Thress estimates the own-price elasticity for First-Class single-piece letters.
 - c. Please confirm that witness Thress’s First-Class single-piece letters demand equation in this case therefore represents “statistical data that would allow one to calculate an own-price elasticity for single piece mail when prices are cut.”

USPS/GCA-T1-29 a. Please confirm that each of the demand equations estimated by witness Thress in past rate cases, outlined in Table 5 on page 31 of your testimony could, in fact, be summarized by equation (1) on page 17 of your testimony:

$$(1) \log (Q) = a - b \log (P) + Z(t)$$

- b. Please confirm that equation (1) is mathematically identical to equation (2) on page 18, line 3 of your testimony:

$$(2) \log (Q) = a - b \log (P) + b_2 \log (P_2)$$

- if $Z(t) = b_2 \log (P_2)$. If not confirmed, please explain.
- c. Please confirm that the experiments outlined in Table 5 on page 31 could therefore be viewed as attempts by witness Thress to model the price of competing alternatives to First-Class single-piece mail. If not confirmed, please explain.

- USPS/GCA-T1-30. a. Please confirm that the number of Broadband subscribers, as presented by witness Thress in his testimony (Table IV-17, page 354) was equal to 1.165 million in 1999Q3. If not confirmed, please explain.
- b. Please confirm that the number of Broadband subscribers, as presented by witness Thress in his testimony (Table IV-17, page 354) was equal to 15.654 million in 2002Q3. If not confirmed, please explain.
- c. Please confirm that the number of Broadband subscribers grew by 1,243.7% over the three years from 1999Q3 through 2002Q3. If not confirmed, please explain.
- d. Please confirm that the number of Broadband subscribers, as presented by witness Thress in his testimony (Table IV-17, page 354) was equal to 40.211 million in 2005Q3. If not confirmed, please explain.
- e. Please confirm that the number of Broadband subscribers grew by 156.9% over the three years from 2002Q3 through 2005Q3. If not confirmed, please explain.
- f. Please explain why you believe it is appropriate to focus uniquely upon the “post-2002 period during which broadband has become more widely used” in light of the numbers presented in a. – e. above.

USPS/GCA-T1-31. Please define the term “empirically significant” as you use it at line 10 of page 30 of your testimony.

USPS/GCA-T1-32. Please define the term “arbitrary” as you use it at line 9 of page 32 of your testimony.

- USPS/GCA-T1-33 .a. Please confirm that witness Thress’s specification of ISP consumption, ISP^λ , does not preclude the possibility of entering ISP consumption directly into the First-Class single-piece letters demand equation. That is, please confirm that using witness Thress’s specification with $\lambda = 1$ is identical to simply entering ISP consumption directly into the First-Class single-piece letters demand equation. If not confirmed, please explain.

- b. Please confirm that the value for λ is estimated mathematically by witness Thress and is not simply chosen arbitrarily. If not confirmed, please explain.
- c. Please confirm that the value for λ which is estimated mathematically by witness Thress is significantly different from 1. If not confirmed, please explain.
- d. Please provide all evidence, statistical and otherwise, which would suggest to you that the value for λ as used by witness Thress should be equal to 1.
- e. Please confirm that if one constrains the value of one coefficient within an econometric equation to an incorrect value that this may bias the estimated coefficients on the other variables within that equation. If not confirmed, please explain.
- f. Please confirm that your constraint of the value of λ to be equal to 1 in your demand equations for First-Class single-piece letters has biased your estimates of the own-price elasticity for First-Class single-piece letters. If you cannot confirm, please provide all evidence, statistical and otherwise, upon which you relied to reach your conclusion that your own-price elasticity estimates are not biased.

- USPS/GCA-T1-34. a. Please confirm that the Internet variable(s) used by witness Thress were different in R2001-1, R2005-1, and R2006-1. If not confirmed, please explain.
- b. Please confirm that a coherent discussion of an alleged "trend" in the coefficient estimates of a variable requires the definition of the variable to be consistent for each coefficient estimate under discussion. If not confirmed, please explain.

USPS/GCA-T1-35. On lines 16 and 17 of page 33, you indirectly assert that "Mr. Thress' choice criterion 'could very well lead to an incorrect model.'"

- a. Please provide all evidence, statistical or otherwise, that Mr. Thress's choice criterion did, in fact, lead to an incorrect model.
- b. Please confirm that the demand equation which you present in your testimony uses the same explanatory variables as the model presented by Mr. Thress in his testimony.
- c. Based on the selection criteria of your choosing, which of the First-Class single-piece letters models presented by witness Thress in LR-L-65 would you choose?
- d. If your choice is different from the model used by witness Thress in this case, please explain the basis for your choice and describe the ways in which your chosen model is superior to the model used by witness Thress.
- e. If your choice is different from the model used by witness Thress in this case, please explain why you did not use that model as the starting point in developing your estimate of the own-price elasticity for First-Class single-piece letters.

USPS/GCA-T1-36. To what specifically are you referring when you claim that “Mr. Thress’ model ... includes prolonged periods in the 1970s” at line 4 on page 35 of your testimony.

- USPS/GCA-T1-37. a. Please define the term “long run own-price elasticities” as you use in at line 9 on page 35 of your testimony.
- b. Please explain your understanding of witness Thress’s use of the term “long-run price elasticities” as you quote him at lines 7-8 on page 34 of your testimony.

USPS/GCA-T1-38. At page 36 of your testimony, you make the following claim:

“One interpretation of witness Thress’ models over the span of several rate cases is that demand is not simply inelastic for the FCLM subclass, but becoming increasingly price inelastic over time.”

- a. Please confirm that witness Thress has never himself made this particular interpretation of his work. If not confirmed, please explain.
- b. Please confirm that witness Thress, in fact, explicitly rejected this particular interpretation of his work under oral cross-examination from the GCA (Tr. 6/1325, l. 16 – p. 1326, l.2). If not confirmed, please explain.

USPS/GCA-T1-39. At page 36 of your testimony you claim that witness Thress “defends” the interpretation that “demand is not simply inelastic for the FCLM subclass, but becoming increasingly price inelastic over time” by “claiming that customers who stop using single piece mail are at any point in time the marginal customers, the ones whose own individual price elasticities are higher, on average, than those of the customers who continue to use the mail.”

- a. Please confirm that you are referring here to Thress’s response to GCA/USPS-T7-8(e) where he says “the introduction of a new product may induce more price-elastic consumers to stop using the old product, leaving the average own-price elasticity of the product’s remaining customers lower than before the introduction of the new product, even when one accounts for the increasing own-price elasticity of these individual consumers relative to their own individual elasticities prior to the introduction of the new product.” If you cannot confirm, please provide an exact citation to the statement by witness Thress to which you were referring.
- b. Please confirm that GCA/USPS-T7-8, the interrogatory to which Mr. Thress was responding when he made the statement to which you refer on page 36 of your testimony, made no reference to First-Class Mail.
- c. Please confirm that Mr. Thress’s hypothesis that “the introduction of a new product may induce more price-elastic consumers to stop using the old product, leaving the average own-price elasticity of the product’s

- remaining customers lower than before the introduction of the new product” (emphasis added) was purely hypothetical and made no specific reference to any category or user of mail. If not confirmed, please explain.
- d. Please confirm that Mr. Thress, in his response to GCA/USPS-T7-8, explicitly stated that “[t]he extent to which two goods are substitutes and the extent to which consumers would be expected to substitute between two goods because of changes in the relative price of the goods is ultimately an empirical question that can not be answered generally, but can best be answered in a specific case via rigorous econometric investigation.” If not confirmed, please explain.

USPS/GCA-T1-40. In footnote 25 at the bottom of page 37 of your testimony you make the following assertion:

“If [the hypothesis that the own-price elasticity of First-Class Mail were declining over time] were true, there is no reason why the real prices of stamps should not also be increasing over time. The fact that they have not been – in the presence of competing substitutes due to Internet diversion and electronic payments substitutes for the mail – demonstrates that the own (real) price elasticity of single piece mail is higher than what witness Thress has calculated over recent rate cases.”

- a. What are the factors which you believe determine the real price of stamps?
- b. If the Postal Service does not go to the Postal Rate Commission and seek an increase in the real price of stamps, is there any mechanism by which stamp prices will increase? Please explain.
- c. If mail volume declines as a result of an increasing “presence of competing substitutes due to Internet diversion and electronic payments substitutes for the mail” when nominal stamp prices remain unchanged, what do you believe this indicates about the own-price elasticity for First-Class Mail? Please explain why you believe this.

USPS/GCA-T1-41. Your footnote 27 on page 41 says the following, “In the experiments we conducted, the exponential specification of the elasticity and functional form of the equations produced the wrong sign associated with the high absolute value. This circumstance does not alter the conceptual merit of the critique, however.”

- a. Are you saying here that the experimental own-price elasticities which you found necessary to “bring the forecasted volume curve to the actual volume curve” had values which were greater than zero? If not, please explain what you meant here.
- b. If your answer to a. was affirmative, please confirm that own-price elasticities greater than zero are theoretically untenable. If not confirmed, please explain.

- c. If your answer to a. was affirmative, please confirm that if the experimental elasticities necessary to “bring the forecasted volume curve to the actual volume curve” had values greater than zero, this indicates that the own-price elasticities estimated by witness Thress in recent cases were not too close to zero. If not confirmed, please explain.

USPS/GCA-T1-42. At page 43, lines 20-21, you say that “it made no sense to introduce any other non-linear specification of the Internet variable.”

- a. Do you believe that it would make sense to introduce a non-linear specification for a variable if there was strong statistical evidence that the variable was related to mail volume in a non-linear fashion? If not, why not?
- b. Did you investigate any evidence, statistical or otherwise, with regard to whether the relationship between First-Class single-piece letters volume and the Internet was linear or non-linear? If so, please describe all such evidence. If not, why not?

USPS/GCA-T1-43. On page 47 of your testimony you state that a linear demand function “accommodates our expectation of varying elasticities due both to the changing level of postal rates and the changing availability and strength of competing substitutes.”

- a. What is your expectation of how elasticities will vary due to the changing availability and strength of competing substitutes?
- b. What is the precise mathematical relationship between the own-price elasticity and the “availability and strength of competing substitutes” in your demand equation?

USPS/GCA-T1-44. Please refer to Table A-8 on page 9 of Appendix A of your testimony.

- a. Please confirm that the volume of First-Class single-piece letters lagged two quarters is included as an explanatory variable in the demand equation presented in Table A-8.
- b. You state at the top of Table A-8 that the volume of First-Class single-piece letters lagged two quarters is included as an explanatory variable “to correct for autocorrelation.” Please provide a citation to an econometric textbook or other econometric literature that suggests that merely adding the lagged dependent variable as an explanatory variable is an appropriate means of correcting for autocorrelation.

USPS/GCA-T1-45. Please provide a 95% confidence interval for the own-price elasticity value of -0.456 which you present in your testimony at page 3, line 6, and elsewhere.

USPS/GCA-T1-46. On page 38 of your testimony, at lines 13 – 15, you make the following statement:

“To imply that major structural changes in market conditions faced by single piece mail have not changed the elasticity of single piece mail at all is ... incredible”

- a. Please confirm that your estimate of the own-price elasticity for First-Class single-piece letters in 1983 as shown in Table A-8 on page 9 of Appendix A is -0.428.
- b. Please confirm that your estimate of the own-price elasticity for First-Class single-piece letters in 1995 as shown in Table A-8 on page 9 of Appendix A is -0.425.
- c. Do you believe that the availability and strength of competing substitutes for First-Class single-piece mail was greater in 1995 than in 1983? Please explain fully.
- d. Do you believe that your own-price elasticity estimates for 1983 and 1995 are credible, in light of your statement on page 38 quoted above? Please explain fully.

USPS/GCA-T1-47. Please refer to page 24 of your testimony, line 3. Please explain the distinction between “commercial checks” as you use that term, and any other types of checks.

USPS/GCA-T1-48. On page 39 of USPS-T-7, lines 5 – 8, witness Thress testified as follows:

“Given the current level of real First-Class letters prices and the price elasticities presented in Tables 13 and 16 below, a 10 percent increase in the price of First-Class single-piece letters, holding the price of First-Class workshared letters constant, will lead to a 5.9 percent reduction in First-Class single-piece letters volume”

The derivation of this 5.9 percent figure is as follows:

- (i) For GFY 2005, the nominal price of First-Class single-piece letters, as shown in LR-L-63 at page 27, Table 63-5, was \$0.453295. For GFY 2005, the average value of the price deflator used by witness Thress in this case had a value of 1.104693 (LR-L-63, Table 63-16, page 65). Dividing the nominal price by the price deflator produces a real price of First-Class single-piece letters for GFY 2005 of \$0.410336.

(ii) A 10 percent increase in the price of First-Class single-piece letters would lead to a price for First-Class single-piece letters of \$0.451369, which is equal to $\$0.410336 * 1.10$.

(iii) The sum of the coefficients on the current and lagged price of First-Class single-piece letters in witness Thress's equation (called the "long-run own-price elasticity" by witness Thress) is equal to -0.183741.

(iv) Given the functional form of witness Thress's demand equation, the impact of a 10 percent increase in the price of First-Class single-piece letters would be equal to the following:

$$\text{Percent change in volume} = (\$0.451369 / \$0.410336)^{-0.183741} - 1 = -1.736\%$$

(v) The nominal value for the average First-Class worksharing discount for GFY 2005 is equal to \$0.079713 (LR-L-63, Table 63-8, page 41). Dividing by the price deflator (1.104693) produces a real discount for GFY 2005 of \$0.072158.

(vi) An increase in the average price of First-Class single-piece letters of \$0.041034 ($\$0.451369 - \0.410336), holding the price of First-Class workshared letters constant, will increase the average worksharing discount from \$0.072158 to \$0.113192 ($\$0.072158 + \0.041034).

(vii) The coefficient on the average worksharing discount in witness Thress's First-Class single-piece letters equation is -0.095656.

(viii) Given the functional form of witness Thress's demand equation, the impact of a change in the average worksharing discount from \$0.072158 to \$0.113192 would be equal to the following:

$$\text{Percent change in volume} = (\$0.113192 / \$0.072158)^{-0.095656} - 1 = -4.215\%$$

(ix) Combining the impacts shown in steps (iv) and (viii) above, the full impact of a 10 percent increase in the price of First-Class single-piece letters, holding the price of First-Class workshared letters constant, will be equal to the following:

$$[1 + (-1.736\%)] * [1 + (-4.215\%)] - 1 = -5.9\%$$

- a. Please confirm that steps (i) – (ix) presented above are mathematically correct, and correctly reproduce the result (i.e., the 5.9 percent reduction) described by witness Thress. If you cannot confirm, please explain fully.

- b. Turning to your analysis, please confirm that the demand equation which you present in Table A-8 on page 9 of Appendix A of your testimony is the demand equation for First-Class single-piece letters which you are proposing be adopted in this case. If you cannot confirm, please explain fully.
- c. Please confirm that the sum of the coefficients on the current and lagged price of First-Class single-piece letters in your equation, which you present in Table A-8 on page 9 of Appendix A of your testimony, is equal to -1.0552 (-0.9076 plus -0.1476). If you cannot confirm, please explain fully.
- d. Please confirm that, given the functional form of your equation, the impact of a 10 percent increase in the price of First-Class single-piece letters would be equal to the following:

$$\text{Change in volume (pieces per adult per day)} = (\$0.451369 - \$0.410336)*(-1.0552) = -0.0433$$

If you cannot confirm, please explain fully.

- e. Please confirm that the coefficient on the average worksharing discount in your equation is identified as C(31) in Table A-8 on page 9 of Appendix A of your testimony and has a value of 1.268284. If you cannot confirm, please explain fully.
- f. Please re-confirm from step (vi) above that an increase in the average price of First-Class single-piece letters of \$0.041034 (\$0.451369 - \$0.410336), holding the price of First-Class workshared letters constant, will increase the average worksharing discount from \$0.072158 to \$0.113192 (\$0.072158 + \$0.041034). If you cannot confirm, please explain fully.
- g. Please confirm that, given the functional form of your equation, the impact of a change in the average worksharing discount from \$0.072158 to \$0.113192 would be equal to the following:

$$\text{Change in volume (pieces per adult per day)} = (\$0.113192 - \$0.072158)*(1.2683) = +0.0520$$

If you cannot confirm, please explain fully.

- h. Please confirm that, combining the impacts shown in d. and g. above, the total change in the volume of First-Class single-piece letters (pieces per adult per day) predicted by your model, given a 10 percent increase in the price of First-Class single-piece letters, holding the price of First-Class

workshared letters constant, will be equal to an increase of 0.0087 (minus 0.0433 plus 0.0520). If you cannot confirm, please explain fully.

- i. Please confirm that the calculations presented above show that your demand equation would predict that an increase in the price of First-Class single-piece letters, holding the price of First-Class workshared letters and everything else constant, would be expected to lead to an increase in the volume of First-Class single-piece letters. If you cannot confirm, please explain fully.
- j. Please confirm that the result postulated in part h. – that your model suggests that an increase in the price of First-Class single-piece letters would lead to an increase in the volume of First-Class single-piece letters – would be true for any change in the price of First-Class single-piece letters which leads to an equal change in the average First-Class worksharing discount. If you cannot confirm, please explain fully.
- k. Please confirm that your model would predict that a reduction in the price of First-Class single-piece letters, coupled with an equal reduction in the average First-Class worksharing discount, would predict a reduction in the volume of First-Class single-piece letters. If you cannot confirm, please explain fully.
- l. Please confirm that the results identified in parts h. – k. of this question are at odds with basic economic theory. If you cannot confirm, please explain fully.

USPS/GCA-T1-49. Please refer to Table 3 on page 20 of your testimony.

- a. Please confirm that the years 2000 - 2003 identified in Table 3 refer to calendar years 2000 – 2003. That is, please confirm that “2000” refers to the time period from January 1, 2000 through December 31, 2000. If you cannot confirm, please identify what time period is covered by the year identified as “2000” in Table 3.
- c. What is the source of the data identified as “Commercial checks”?
- d. Why are “Bill Payments by SP Mail” only provided for the years 2002 and 2003?
- e. Please provide an updated version of Table 3 which includes “Bill Payments by SP Mail” data for 2000 and 2001.
- f. Are data available for any of the payment instruments presented in Table 3 for any years more recent than 2003? If so, please provide all such data.
- g. You cite “Thress R2005-1” as the source for the “SP Volume” and “SP Prices” data in this Table. Why did you not use data from the current rate case?

- h. You state in a note that “USPS quarterly SP volume & price are converted to regular annual data to correspond to other annual data given in above table.” Please provide a step-by-step example of how these data were converted to “regular annual data.”
- i. Are you aware that the Fiscal Years for which Household Diary Studies report data are Postal Fiscal Years? That is, the 2004 Household Diary Study reports data for the time period from October 1, 2003 through September 30, 2004. Did you convert this data to “regular annual data” in the same way as was done for “USPS quarterly SP volume & price” data? If not, why not? If not, please produce, if feasible, an updated version of Table 3 which uses volume, price, and Household Diary Study data from consistent time periods.
- j. Please confirm that First-Class Mail volumes and price data are available through 2005.
- k. Please confirm that Household Diary Study data are available through 2005.
- l. Please provide an updated version of Table 3 which includes data through 2005 wherever such data are available.

USPS/GCA-T1-50. At page 18, line 15, you describe the elasticity estimates presented in Table 3 on page 20 of your testimony thusly, “This estimation assumes short run economic conditions, where ceteris paribus conditions are presumed to hold for all other factors affecting the demand for electronic payments other than their own prices and postal prices.”

- a. Please confirm that the numbers presented in Table 3 under the columns identified as “Cross Price Elasticities” attribute all of the change in the number of payments to the real price of First-Class single-piece letters. Specifically, please confirm that these “Cross Price Elasticity” estimates assume that changes in the price of the electronic payments themselves have no effect on the volume of electronic payments. If not confirmed, please explain fully.
- b. Please confirm that the numbers presented in Table 3 under the columns identified as “Own Price Elasticities” attribute all of the change in the number of payments to the price of electronic payments, as measured by the implicit GDP price deflator for computers. If not confirmed, please explain fully.
- c. In light of your answers to a. and b. above, please confirm that the “Cross Price Elasticities” and “Own Price Elasticities” presented in Table 3 are not consistent. That is, please confirm that, for example, if the own-price elasticity for general purpose credit cards is equal to -0.62, then the cross-price elasticity for general purpose credit cards with respect to postage prices is not equal to 4.63. If not confirmed, please explain fully.
- d. Please confirm that, based on how the numbers in your Table 3 were calculated, if the own-price elasticity for general purpose credit cards is

- equal to -0.62, then the cross-price elasticity with respect to the price of First-Class single-piece letters is equal to zero. If not confirmed, please explain fully.
- e. Please confirm that, based on how the numbers in your Table 3 were calculated, that if the own-price elasticities for electronic payment instruments were all equal to the numbers shown in Table 3, then the cross-price elasticity with respect to the price of First-Class single-piece letters would be equal to zero for all of the electronic payment instruments presented in Table 3. If not confirmed, please explain fully.
 - f. Did you make any attempts to estimate own- and cross-price elasticities jointly for any of the payment instruments shown in Table 3? If so, please provide the results of such experiments. If not, why not?

USPS/GCA-T1-51. Please refer to Table 3 on page 20 of your testimony. Please calculate price elasticities with respect to the GDP Computer Price Deflator for Checks, Commercial Checks, Bill Payments by SP Mail, Bill Payments per Household per Week, Statements per Household per Week, SP Volume / Pop / Days, and WS Volume / Pop / Days.

USPS/GCA-T1-52. Please refer to Table 3 on page 20 of your testimony. You calculate a price elasticity of Statements per Household per Week with respect to the First-Class single-piece letters price.

- a. What percentage of statements sent to households are sent as First-Class single-piece letters?
- b. If most statements sent to households are sent as First-Class workshared letters, wouldn't it make more sense to estimate the price elasticity of statements with respect to the price of First-Class workshared letters? In not, why not?

USPS/GCA-T1-53. Please refer to Table 3 on page 20 of your testimony. Why did you calculate an elasticity for First-Class workshared letters volume (WS Volume / Pop / Days) with respect to the price of First-Class single-piece letters? What was your expectation with respect to the magnitude and sign of this elasticity? Why?

USPS/GCA-T1-54. At page 18, line 15, you state the following, with respect to the elasticity estimates presented in Table 3 on page 20 of your testimony, "This estimation assumes short run economic conditions, where ceteris paribus conditions are presumed to hold for all other factors affecting the demand for electronic payments other than their own prices and postal prices."

- a. Please confirm that the National Bureau of Economic Research has stated that the United States economy was in recession from March, 2001, through November, 2001.

- b. Please confirm that total private employment in the United States was lower at the end of 2003 than it was at the end of 2000.
- c. Isn't it true that the facts confirmed in a. and b. indicate that your assumption of "ceteris paribus conditions" was not correct.
- d. If you attempted to control for changes in economic conditions from 2000 to 2003, how do you think this would have affected the elasticities presented in Table 3 of your testimony? Specifically, what effect do you think controlling for changes in economic conditions would have on your estimates of the elasticity of bills, statements, and total First-Class Mail volume with respect to the price of First-Class single-piece letters?

USPS/GCA-T1-55. At page 18, line 15, you state the following, with respect to the elasticity estimates presented in Table 3 on page 20 of your testimony, "This estimation assumes short run economic conditions, where ceteris paribus conditions are presumed to hold for all other factors affecting the demand for electronic payments other than their own prices and postal prices."

- a. Please confirm that the price elasticities associated with checks, bills, statements, and First-Class mail volume, presented in Table 3, attribute all of the change in these volumes to the real price of First-Class single-piece letters. Specifically, please confirm that these elasticity estimates assume that changes in the price of electronic payments have no effect on these volumes.
- b. Do you believe that the volume of bill and statement mail is affected by the availability and strength of competing substitutes? Specifically, do you believe that the volume of bill and statement mail would be affected by the availability and price of electronic payments even if the real price of First-Class Mail remained constant?
- c. If you attempted to control for changes in the availability and strength of electronic payment alternatives to the mail from 2000 to 2003, how do you think this would have affected the elasticities presented in Table 3 of your testimony? Specifically, what effect do you think controlling for changes in the availability and strength of electronic payment alternatives would have on your estimates of the elasticity of bills, statements, and total First-Class Mail volume with respect to the price of First-Class single-piece letters?

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.

Eric P. Koetting

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