UPS-RT-1

BEFORE THE
POSTAL RATE COMMISSION

POSTAL RATE AND FEE CHANGES, 2000	:	DOCKET NO. R2000-1

REBUTTAL TESTIMONY
OF
KEVIN NEELS
ON BEHALF OF
UNITED PARCEL SERVICE

TABLE OF CONTENTS

BIOGRAPHICAL STATEMENT

My name is Kevin Neels. I have previously submitted testimony in this proceeding on the volume variability of mail processing labor costs (UPS-T-1) and on purchased transportation costing (UPS-T-3). My biography is set forth in that testimony. See Tr. 27/12773-74.

SCOPE AND PURPOSE OF TESTIMONY

I have been asked to review and comment on the testimony of Michael A. Nelson regarding the revenue requirement associated with certain categories of transportation costs, and on the variability of purchased highway transportation costs (MPA-T-3).

Mr. Nelson's revenue requirement testimony is flawed. He argues for reductions in the revenue requirement to reflect certain potential cost savings. I will show that the cost savings he asserts the Postal Service can achieve are speculative at best, that he has failed to analyze the feasibility of the changes in operations which he suggests, and that he offers no credible evidence that these savings can be realized in the test year.

There are also serious flaws in Mr. Nelson's alternative econometric model of purchased highway transportation cost variability. For example, he has used inappropriate estimation techniques, and he has failed to carry out elementary statistical tests of his model. I will show that these tests demonstrate decisively that his model should be rejected.

DISCUSSION

The Assertions Regarding the Revenue Requirement Are Speculative and Unsupported.

1. The Assertions

Mr. Nelson offers a number of comments on the revenue requirement associated with certain categories of purchased transportation costs. His opinions are contained in discussions of four "Roll-Forward Issues":[1]

- **Highway Contract Renewal Process.** Mr. Nelson asserts that the rates paid by the Postal Service when highway contracts are renewed are materially higher than those paid when a new contract is issued through a competitive bidding process.[2] He then argues that the Postal Service could realize substantial savings by tightening administrative requirements for these contracts, and he recommends that Test Year costs be reduced accordingly.[3]

- **Highway Contract Obsolescence.** He also asserts that because of changes in market conditions and service requirements, a substantial number of highway contracts provide service that, by the end of the contract period, is no longer needed.[4] He argues that the Postal Service could realize

1. Tr. 28/13416-21. In addition, he discusses a number of other issues affecting the revenue requirement for which, he says, data are not yet available.
2. Tr. 28/13416.
3. Tr. 28/13417.
4. Tr. 28/13418.

substantial savings by renegotiating these contracts in a more timely manner, and he recommends that Test Years costs be reduced accordingly.[5]

- **Amtrak Premium and Terms.** Mr. Nelson asserts that a substantial portion of the mail carried on Amtrak could be moved on the highway network at a lower cost.[6] He then argues that the Postal Service could realize substantial savings either by negotiating more aggressively with Amtrak, or by diverting mail to the highway system. He recommends that Test Year costs be reduced to reflect these potential savings.[7]

- **Freight Rail Rates.** Mr. Nelson notes an interrogatory response by the Postal Service indicating that there are no volume incentive or discount rates in any of its contracts for rail transportation services.[8] He attributes the absence of such rates in part to the fact that Conrail, the primary provider of freight rail service, enjoyed a near absence of intramodal competition in much of its service territory.[9] He predicts that the breakup of Conrail will enable the Postal Service to achieve reductions in the rates it pays, and he urges that Test Year costs be reduced to reflect his estimated savings.[10]

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5. Tr. 28/13418.
6. Tr. 28/13419.
7. Tr. 28/13420.
8. Tr. 28/13420.
9. Tr. 28/13421.
10. Tr. 28/13421.

2. Analysis

A number of common themes appear in Mr. Nelson's revenue requirement testimony and in his testimony regarding the volume variability of purchased highway transportation costs. For this reason, it is useful to consider them together.

For example, Mr. Nelson generally begins with an assertion that the Postal Service is operating inefficiently. In some cases -- specifically, in his highway contract obsolescence, contract renewal, and Amtrak arguments -- these assertions are clear and direct.[11] In the case of freight rail rates, he lays a portion of the blame on the doorstep of Conrail, although he also asserts that "the Postal Service should be able to obtain volume discounts from at least some of the other railroads from which it purchases transportation services."[12] Purchased highway transportation is the only area in which he does not explicitly accuse the Postal Service of inefficiency, apparently because the econometric models of Dr. Bradley draw most of his fire.[13]

In most cases, Mr. Nelson presents little or no evidence documenting that the efficiency gains he discusses are in fact achievable. For example, he asserts that increasing vehicle size would allow the Postal Service to expand highway capacity at a relatively low incremental cost.[14] While this is not an implausible assertion, he presents no data to back it up. In other instances, his assertions are less plausible but just as undocumented. The only basis we have for believing that the Postal Service could

11. Tr. 28/13416-21.
12. Tr. 28/13421.
13. Tr. 28/13411.
14. Tr. 28/13411-12.

renegotiate "obsolete" contracts, for example, or negotiate lower Amtrak or freight rail rates, are his assertions that this is so. Even there he hedges his statements, using phrases like "should be" rather than "will be."[15]

In all cases, Mr. Nelson disregards the effects his recommendations might have on other categories of Postal Service costs. This is apparent in his treatment of purchased highway transportation.

He notes that in many instances the vehicles used by highway contractors are smaller than the largest vehicles generally in use: "[T]he Postal Service procures transportation using vehicles with a wide range of capacities. These vehicles are typically not the largest capacity vehicles (vans or trailers) that are available."[16] He then asserts that the Postal Service has "considerable latitude to alter the sizes of vehicles used" throughout its network.[17] Citing the testimony of Postal Service witness Young in Docket No. R97-1, he argues that it is much less costly to increase the size of the vehicles used on a route than to increase the number of trips made.[18] From these two assertions, he reasons that it should be possible to expand capacity at a low incremental cost.[19]

However, he provides no evidence that this is how the Postal Service actually expands capacity. Increases in capacity can be achieved by using larger vehicles,

15. Tr. 28/13418.
16. Tr. 28/13409.
17. Tr. 28/13409.
18. Tr. 28/13409.
19. Tr. 28/13411.

lengthening routes, increasing the number of runs, adding new contracts, or taking any of an infinite number of combinations of these actions. In such a complex environment, it is unlikely that a single mode of capacity expansion will or should universally dominate. Mr. Nelson's only basis for arguing that changes in vehicle size will or should be the primary mode of capacity expansion is his assertion that this is the cost-minimizing thing to do.

Mr. Nelson concedes that increasing vehicle size is not always an option.[20] Even in such instances, however, he asserts that it will often be possible for the Postal Service to reorganize its network to provide less circuitous, and hence less costly, service. He concludes that "there is an elasticity of gross CFM [cubic foot miles] with respect to net CFM that is less than 1.0, and that causes the Postal Service highway transportation models to overstate the true variability of cost with respect to the volume of mail being moved . . . ."[21]

Concentrating mail in a small number of very large vehicles may economize on transportation costs, but it could also exacerbate the peaking of activity and staffing requirements for platform activities at mail processing facilities. Mr. Nelson concedes that minimizing overall costs could lead to transportation costs higher than if transportation costs were minimized without regard to the impact of doing so on other operations.[22] Of course, costs should be minimized overall. Moreover, Mr. Nelson ignores the possible impact of his recommendation on the need to meet service

20. Tr. 28/13409.
21. Tr. 28/13410.
22. Tr. 28/13436.

standards. Nonetheless, he makes his recommendations without attempting to analyze their broader effects.

Mr. Nelson also fails to account for the direct costs associated with his recommendations. In the case of his highway contract renewal proposal, the clear implication of his testimony is that at the end of its term, every contract should be put out for competitive bid.[23] But this would create a substantial administrative burden, and undoubtedly would require the hiring of additional contracting personnel. He ignores the possibility that the Postal Service might have to compensate contractors to induce them to terminate contracts for services that are no longer needed. None of these costs, or similar costs associated with his other proposals, is factored into his assessment of the changes he suggests.

The most serious flaw in Mr. Nelson's approach is the extremely speculative nature of the cost savings he argues are possible. Mr. Nelson does not assert unequivocally that these savings will be realized. He merely states that "It is my expert opinion that the savings of this type that I estimate can be achieved in the test year. It is up to the Postal Service to determine whether it will take the actions needed for these savings to be realized in the test year."[24] He adds, however: "It is my understanding, from MPA witness Cohen, that the Postal Service is assessing the merits of taking steps

23. See Tr. 28/13417-18. He is somewhat equivocal on this point, talking only about "Tightening administrative requirements to ensure competitive terms." Tr. 28/13417. However, he provides no indication as to what action might achieve this result other than putting each contract out for competitive bid.

24. Tr. 28/13442.

to achieve these savings in the test year."[25] Thus, all we know is that the Postal Service is considering his suggestions. We do not know that they will be adopted, nor when the promised savings can be expected to materialize.

Mr. Nelson's testimony provides a shaky and unreliable basis for making substantial changes to Test Year costs. His estimates of savings reflect simple calculations from scanty data. In addition, he has failed to consider at all the costs of implementing his recommendations, or the impact that they would have on other aspects of postal operations (including the need to meet service standards). Thus, we cannot tell whether they would survive serious consideration and evaluation. Even if the measures he advocates were to proceed, unanswered questions would still remain about when the implementation process would start, how long it would take, and whether they would effectively realize all of the alleged savings.

Mr. Nelson's Analysis of the Volume Variability of Purchased Highway Transportation Costs Is Unreliable and Should Be Ignored.

Mr. Nelson has argued that the study of purchased highway transportation cost variability first introduced by Postal Service witness Bradley in Docket No. R87-1 as refined in subsequent cases (including this proceeding) presents biased results. In particular, he asserts that Dr. Bradley's econometric models overstate the volume variability of costs because they ignore the efficiencies associated with the use of larger vehicles[26] -- a contention discussed above. Using a combination of a priori argument

25. Tr. 28/13442.

26. Tr. 28/13410.

and results derived from an alternative econometric analysis, Mr. Nelson concludes that the volume variability of purchased highway transportation costs is much lower than the Postal Service has estimated.[27] He presents a set of alternative volume variabilities that have the effect of transferring a large body of costs from the attributable category to the institutional category.[28]

One of the most prominent features of this new approach, according to Mr. Nelson, is a stratification of the estimation sample between contracts that rely upon the largest available vehicles and those in which smaller vehicles are used.[29] In the case of the former contracts, he argues, the only way to increase the amount of capacity provided is to increase the number of trips made.[30] Accordingly, he treats the costs associated with these contracts as 100 percent volume variable.[31] These contracts do not enter into his econometric analysis. Rather, data for his regression analysis come solely from the contracts in which smaller vehicles are used.[32]

1. Differences between Mr. Nelson's Approach and Dr. Bradley's Approach

Although his testimony emphasizes his stratification of the contract sample, Mr. Nelson's analytical approach differs in a number of other important respects from that of Dr. Bradley. To clarify the record, I summarize those differences below:

27. Tr. 28/13411.
28. Tr. 28/13424 (Table 1).
29. See Tr. 28/13411-12.
30. Tr. 28/13412.
31. Tr. 28/13412.
32. Tr. 28/13412.

(a) Differences in Sample Selection

Mr. Nelson's sample selection procedures differ from those of Dr. Bradley. Mr. Nelson excludes observations corresponding to "power only" contracts.[33] In contrast, Dr. Bradley associates a standard trailer size with each of these observations.[34] Mr. Nelson also asserts (without providing evidence to support this assertion) that Dr. Bradley's sample selection criteria "appear in some instances to exclude good data."[35] He thus applies different selection criteria that yield a somewhat different sample.[36] Finally, as I stated earlier, he limits his sample to contracts with less than full size trucks.

(b) Differences in Model Specification

While Mr. Nelson bases his econometric analysis on Dr. Bradley's data, the mathematical form of his model differs substantially. Dr. Bradley's model uses a generalized mathematical form; Mr. Nelson's is more restricted, and is in a sense a special case of Dr. Bradley's model. The difference between the two approaches is most clear when they are expressed in mathematical form.

Dr. Bradley's model, shown at page 21 of USPS-T-18, has the following form:

$$\ln Cost_j = \alpha + \sum_{i=1}^{n} \delta_i D_i + \beta_1 \ln\left(\frac{CFM_j}{\overline{CFM}}\right) + \beta_2 \left(\ln\frac{CFM_j}{\overline{CFM}}\right)^2 + \beta_3 \ln\left(\frac{RL_j}{\overline{RL}}\right) \quad (1)$$

33. Nelson Workpaper WP-4, page 1.
34. USPS-T-18, page 24.
35. Tr. 28/13411.
36. Nelson Workpaper WP-4, page 1.

$$+ \beta_4 \ln\left(\frac{RL_j}{\overline{RL}}\right)^2 + \beta_5\left(\ln\frac{CFM_j}{\overline{CFM}}\right)\left(\ln\frac{RL_j}{\overline{RL}}\right)$$

where $Cost_j$ is the cost associated with contract j. CFM_j and RL_j represent total cubic foot miles and run length, respectively. The subscripted terms represent the values for a specific contract. The barred terms represent averages computed across all contracts. The summation term contains a set of region-specific dummy variables. α, β and δ represent estimated parameters. In similar notation, Nelson's model can be written as:

$$\ln\left(\frac{Cost_j}{Runs_j}\right) = \alpha + \sum_i \delta_i D_i + \beta_1 \ln\left(\frac{CFM_j}{Runs_j}\right) + \beta_2 \ln RL_j \qquad (2)$$

where $Runs_j$ is the number of trips taken under contract j.[37]

With a little effort, the relationship between these models can be made clear. First, to simplify notation, I will ignore the summation term that is common to both models. One can view this as "folding" the summation term into the constant α. Second, I remove the mean-centering from Dr. Bradley's equation to arrive at the following somewhat simpler form:

$$\ln Cost_j = \alpha + \beta_1 \ln CFM_j + \beta_2 \ln(CFM_j)^2 + \beta_3 \ln RL_j + \beta_4 \ln(RL_j)^2 \qquad (3)$$

$$+ \beta_5 \ln CFM_i \ln RL_j$$

37. Nelson Workpaper WP-4, page 3.

In Dr. Bradley's analysis, mean-centering is a computational convenience that "allows the relevant elasticity to be derived easily from the estimated equation."[38] It has no substantive effect on his results.[39]

I note that by definition:

$$CFM_j = RL_j \cdot Runs_j \cdot VC_j \quad (4)$$

where $Runs_j$ is the number of trips, or runs, provided for under contract j, and VC_j is the average capacity in cubic feet of the vehicles used in contract j. Insertion of equation (4) into equation (3) suggests the following fully generalized translog model that includes both Dr. Bradley's model and Mr. Nelson's model as special cases:

$$\ln Cost_j = \alpha + \eta_1 \ln RL_j + \eta_2 \ln Runs_j + \eta_3 \ln VC_j + \eta_4 (\ln RL_j)^2 \quad (5)$$

$$+ \eta_5 (\ln Runs_j)^2 + \eta_6 (\ln VC_j)^2 + \eta_7 \ln RL_j \ln Runs_j$$

$$+ \eta_8 \ln RL_j \ln VC_j + \eta_9 \ln Runs_j \ln VC_j$$

The coefficients in equations (5) and (3) are related as follows:

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38. USPS-T-18, page 21.

39. The coefficients derived from Dr. Bradley's mean-centered data will be slightly different from the coefficients that would be produced by equation (3). This slight difference results from the way in which Dr. Bradley carries out his mean-centering. He first mean-centers the underlying *CFM* and *RL* variables and then forms the squared and cross-product term. This introduces some slight nonlinearity into the model and causes the mean-centered results to differ slightly from those produced when natural units are used. If Dr. Bradley had instead first formed the square and cross-product terms and then mean-centered the data, the two approaches would yield strictly identical results.

$$\eta_1 = \beta_1 + \beta_3 \qquad (6)$$

$$\eta_2 = \beta_1$$

$$\eta_3 = \beta_1$$

$$\eta_4 = \beta_2 + \beta_4 + \beta_5$$

$$\eta_5 = \beta_2$$

$$\eta_6 = \beta_2$$

$$\eta_7 = 2\beta_2 + \beta_5$$

$$\eta_8 = 2\beta_2 + \beta_5$$

$$\eta_9 = 2\beta_2$$

Thus, equation (5) can be transformed into Dr. Bradley's model by imposing the appropriate set of linear restrictions on the coefficient values.

In a similar way, one can demonstrate the relationship between equations (2) and (5):

$$\eta_1 = \beta_1 + \beta_2 \qquad (7)$$

$$\eta_2 = 1$$

$$\eta_3 = \beta_1$$

$\eta_4 = 0$

$\eta_5 = 0$

$\eta_6 = 0$

$\eta_7 = 0$

$\eta_8 = 0$

$\eta_9 = 0$

In short, Mr. Nelson's cost equation falls within the same general class of models as Dr. Bradley's. Mr. Nelson's, however, is far less general.

(c) Differences in Estimation Technique

Mr. Nelson and Dr. Bradley rely on different econometric techniques to estimate the coefficients of their models. Mr. Nelson weights each observation according to the number of trips, or "runs," that it represents.[40] He presents no econometric or statistical justification for this weighting scheme, justifying it instead by a desire to guarantee that "observations no longer differ with respect to the number of runs they represent . . . ."[41]

40. Tr. 28/13412.

41. Tr. 28/13412.

2. Flaws in Mr. Nelson's Econometric Work

Mr. Nelson has failed to follow appropriate and generally accepted procedures for carrying out econometric studies of the type he has introduced. After making what is essentially an operational argument about how the Postal Service does (or rather should) increase the amount of highway capacity it purchases, Mr. Nelson makes a number of modifications to Dr. Bradley's econometric analysis that are of dubious relevance to his operational arguments. These modifications yield substantially lower volume variabilities. He proffers these results as superior to those of Dr. Bradley. However, he has failed to carry out even the most elementary statistical tests to determine whether the data support his approach or his claims regarding its superiority.

(a) Failure to Test Model Restrictions

Mr. Nelson's model (and, for that matter, Dr. Bradley's model as well) can be regarded as a member of the generalized class of models depicted in equation (5). To arrive at Mr. Nelson's model, one must impose a priori restrictions on a large number of model parameters. Since Dr. Bradley has already introduced and defended a more general translog cost function, good practice demands that Mr. Nelson test whether or not the restrictions he imposes are consistent with his data. It is a simple matter to use a standard F statistic to test the null hypothesis that his coefficient restrictions hold against the alternative hypothesis that the true values of the coefficients are inconsistent with his assumptions. However, he has not conducted any such tests.[42]

42. Tr. 28/13438.

One can readily postulate a number of more general versions of Mr. Nelson's model that would appear to represent reasonable alternatives. For example, Mr. Nelson normalizes cost and *CFM* by the number of runs specified in the contract. An obvious generalization of his model would be:

$$\ln Cost_j = \alpha + \beta_1 \ln CFM_j + \beta_2 \ln RL_j + \beta_3 \ln Runs_j \qquad (8)$$

Mr. Nelson's specification corresponds to a version of equation (8) in which $\beta_3 = 1 - \beta_1$.

One could also test Mr. Nelson's specification against the fully generalized translog shown in equation (5).

In the context of a debate about how to measure the volume variability of purchased highway transportation costs, these alternatives are (or should be) obvious to anyone wishing to move the debate constructively forward. The econometric analysis sponsored by Dr. Bradley has been the accepted standard for a number of years. If Mr. Nelson wants to urge rejection of Dr. Bradley's model in favor of an alternative approach, the burden of making this case falls on him. The Commission, the Postal Service, and other intervenors deserve evidence that the model Mr. Nelson is putting forward is superior to the accepted alternative, or at least that it is equally consistent with the data. He has failed to provide this.

(b) Inappropriate Use of Weighted Regression Analysis

Mr. Nelson's rationale for weighting by the number of runs in each contract is inconsistent with generally accepted criteria for the use of this technique. The estimator he uses -- weighted least squares -- is an appropriate response to the problem of

heteroscedasticity, a condition in which the requirement that the error term for a regression have an equal variance for all observations is violated. In the presence of heteroscedasticity, efficient estimation involves giving relatively more weight to observations with a low error variance, and relatively less weight to observations with a high error variance. Nowhere in Mr. Nelson's testimony, however, is this issue of error variance mentioned. No relevant calculations are contained in his testimony or workpapers. He provides no quantitative support for the use of this estimator, or for the specific weighting scheme he employs.

Mr. Nelson does not set forth explicitly or clearly his reasons for using weighted regression analysis. The fact that he has used this procedure is contained in a footnote to a statement about how his normalization of cost and CFM by numbers of runs guarantees that observations "no longer differ with respect to the number of runs they represent."[43] I infer from the context that he apparently believes that by normalizing his data and weighting by number of runs, he is somehow able to treat each run as a separate observation. This, of course, is nonsense. A contract is still only one contract, regardless of how many runs it covers. A single contract for 500 runs is likely to look dramatically different from 50 contracts for 10 runs each, or 500 contracts for one run each. A large contract does not provide any more information about how cost varies with output than does a smaller contract. Each still represents only one observation.

43. Tr. 28/13412.

(c) Statistical Tests of the Nelson Specification

I have used Mr. Nelson's less-than-full-size intra-P&DC van and trailer samples to estimate coefficients for the model specifications shown in equations (2), (8), and (5). All of these models (including Mr. Nelson's own model) suffer from an extremely high degree of multicollinearity among their right-hand side variables. To improve the precision and reliability of the regression estimates, I employed a multicollinearity correction procedure that uses an auxiliary regression to break the collinearity. For equations (2) and (8), this regression takes the following form:

$$\ln RL_j = \gamma_0 + \gamma_1 \ln(VC_j \cdot RL_j) + \varepsilon_j \quad (9)$$

In place of the log of run length variable, I use the residual term ε_j from equation (9). Since this substitution represents a linear transformation of the X matrix for the regression, mathematically it has no effect on any of the overall regression statistics of interest. However, it produces a cross-products matrix that is less nearly singular and that, as a result, can be more accurately inverted.

For equation (5), my auxiliary regression has the following form:

$$\ln Runs_j = \gamma_0 + \gamma_1 \ln(VC_j \cdot RL_j) + \gamma_2 \ln RL_j + \varepsilon_j^* \quad (10)$$

I then substituted the residual term ε_j^* from equation (10) for the variable representing log of number of runs.

Finally, because I see no substantive justification for Mr. Nelson's use of a weighted regression, I have estimated these regressions using ordinary least squares.

From these results, one can perform a number of specification tests. One can test whether the data support the decision to normalize by number of runs; one can also test both the Nelson specification and the unnormalized version of his model against the generalized translog that includes Dr. Bradley's model as a special case. The F statistics corresponding to the null hypotheses that the simpler models are correct are shown below in Table 1.

TABLE 1

Alternatives to Nelson Model for Estimating Volume Variabilities: Intra-P&DC Vans and Trailers – Less than Full Sized Trucks; Variables Adjusted for Multicollinearity

Vans

Model Comparison	F Statistic	F Statistic Critical Value (99% Level)
Nelson vs. Unnormalized Nelson	256.37	6.64
Nelson vs. General Translog	93.95	2.64
Unnormalized Nelson vs. General Translog	63.73	2.80

Trailers

Model Comparison	F Statistic	F Statistic Critical Value (99% Level)
Nelson vs. Unnormalized Nelson	70.30	6.64
Nelson vs. General Translog	48.11	2.64
Unnormalized Nelson vs. General Translog	40.41	2.80

For every comparison presented in Table 1, the simpler and more restricted model is rejected by a decisive margin. Both for vans and for trailers, the data are strongly inconsistent with Mr. Nelson's decision to normalize by number of runs. The unnormalized regressions are clearly preferred. In addition, the data strongly support selection of the generalized translog over either of the other two forms. In short, within

this contract segment the data provide no empirical support for Mr. Nelson's model form.

Although strictly speaking one cannot extrapolate these findings for Intra-P&DC vans and trailers to other contract segments, I know of no reason to expect analyses of other contract types to yield different results. These results do, however, clearly underscore the importance of conducting such statistical testing and demonstrate that Mr. Nelson has failed to provide elementary and important information critical for the proper evaluation of his testimony.

* * *

In the end, Mr. Nelson's econometric analyses are largely irrelevant to the principal thrust of his arguments regarding purchased highway transportation cost variability. He asserts that it is less costly to expand output by increasing vehicle capacity than by expanding the number of runs. If that is in fact the case, there is no reason why an appropriately specified general cost model like the translog model cannot document that fact. Mr. Nelson's highly restricted models are far more likely to present a biased picture of the cost structure of purchased highway transportation than those that have been offered by Dr. Bradley and previously accepted by the Commission.

RECOMMENDATIONS AND CONCLUSION

In his testimony, Mr. Nelson identifies a number of ways in which he believes it is possible for the Postal Service to improve the efficiency of its transportation activities. For the most part, these ideas are plausible on their face. However, the evidence

presented is far too limited to permit their thorough evaluation. We cannot conclude that they would prove to be feasible, or that, if implemented, they would not compromise service standards or yield savings of the magnitude claimed. Even if they were to prove to be every bit as promising as Mr. Nelson suggests, it would still be necessary to implement them fully before those efficiency gains could be realized. That process has not even begun. Hence, it would be foolish and unwarranted to adjust Test Year cost estimates as Mr. Nelson recommends.

The econometric studies of purchased highway transportation cost variability sponsored by Mr. Nelson should also be disregarded. The conceptual model he presents has little or no connection to his empirical work. His econometric analysis is methodologically flawed and is not supported by the data in the record. He has failed to conduct the most elementary statistical tests of the validity of his approach. The analysis that I have been able to conduct indicates strongly that if he had conducted such tests, he would have been compelled to reject his own models.