Postal Rate Commission
Submitted 5/3/2006 1:53 pm
Filing ID: 48668
Accepted 5/3/2006

USPS-T-14

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON DC 20268-0001

POSTAL RATE AND FEE CHANGES, 2006	Docket No. R2006-1

TESTIMONY OF
MICHAEL D. BRADLEY
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

TABLE OF CONTENTS

AUTOBIOGRAPHICAL SKETCH……i

PURPOSE AND SCOPE……...iii

ASSOCIATED LIBRARY REFERENCES……...iv

I. COSTING GENERATING CHARACTERISTICS OF POSTAL SERVICE AIR TRANSPORTATION NETWORKS. 1

II. THE "VOLUME VARIABILITY" OF A POSTAL SERVICE AIR TRANSPORTATION NETWORK CAN VARY WIDELY DEPENDING UPON THE OPERATIONAL STRUCTURE OF THE NETWORK 2

III. IF THE AIR NETWORK IS CONSTRUCTED USING DEDICATED EQUIPMENT IT MAY GENERATE A PREMIUM COST 4

IV. A NETWORK COULD BE DEDICATED TO THE TRANSPORTATION OF ONE PRODUCT OR A GROUP OF PRODUCTS 6

V. THE POSTAL SERVICE SIMPLY DID NOT HAVE TIME TO RESPOND TO COMMISSION CONCERNS AND REFINE ITS STUDY OF CITY CARRIER STREET TIME 8

AUTOBIOGRAPHCIAL SKETCH

My name is Michael D. Bradley and I am Professor of Economics at George Washington University. I have been teaching economics there since 1982 and I have published many articles using both economic theory and econometrics. Postal economics is one of my major areas of research and my work on postal economics has been cited by researchers around the world. I have presented my research at professional conferences and I have given invited lectures at universities and government agencies.

Beyond my academic work, I have extensive experience investigating real-world economic problems, as I have served as a consultant to financial and manufacturing corporations, trade associations, and government agencies.

I received a B.S. in economics with honors from the University of Delaware and as an undergraduate was awarded Phi Beta Kappa, Phi Kappa Phi and Omicron Delta Epsilon for academic achievement in the field of economics. I earned a Ph.D. in economics from the University of North Carolina and as a graduate student I was an Alumni Graduate Fellow. While being a professor, I have won both academic and nonacademic awards, including the Richard D. Irwin Distinguished Paper Award, the American Gear Manufacturers ADEC Award, a Banneker Award and the Tractenberg Prize.

I have been studying postal economics for over twenty years, and I have participated in many Postal Rate Commission proceedings. In Docket No. R84-1, I helped in the preparation of testimony about purchased transportation and in

Docket No. R87-1, I testified on behalf of the Postal Service concerning the costs of purchased transportation. In Docket No. R90-1, I presented rebuttal testimony in the area of city carrier load time costs. In the Docket No. R90-1 remand, I presented testimony concerning the methods of city carrier costing.

I returned to transportation costing in Docket No. MC91-3. There, I presented testimony on the existence of a distance taper in postal transportation costs. In Docket No. R94-1, I presented both direct and rebuttal testimony on an econometric model of access costs. More recently, in Docket R97-1, I presented three pieces of testimony. I presented both direct and rebuttal testimony in the area of mail processing costs. I also presented direct testimony on the costs of purchased highway transportation. In Docket No. R2000-1, I again presented three pieces of testimony. I presented direct testimony on the theory and methods of calculating incremental cost, and I presented direct and rebuttal testimony on the econometric estimation of purchased highway transportation variabilities. In Docket No. R2001-1, I presented testimony on city carrier costs. Finally, in Docket No. R2005-1, I presented three pieces of testimony. I presented direct and rebuttal testimony in the area of city carrier costs, and I presented direct testimony that covered the analytical foundations of the attribution of both purchased transportation costs and window service costs

Beside my work with the U.S. Postal Service, I have served as an expert on postal economics to postal administrations in North America, Europe, and Asia. For example, I currently serve as External Methodology Advisor to Canada Post.

PURPOSE AND SCOPE

The first purpose of the testimony is to present and review the costing issues associated with calculating product costs in the Postal Service's air transportation networks. In addition, I provide the reason the Postal Service could not revise its treatment of city carrier costs for this docket.

ASSOCIATED LIBRARY REFERENCES

I am not sponsoring any Library References which are associated with this testimony.

I. COSTING GENERATING CHARACTERISTICS OF POSTAL SERVICE AIR TRANSPORTATION NETWORKS.

There are three important cost generating characteristics of Postal Service air transportation networks that should be considered in determining the appropriate product cost algorithm. In this section, I introduce the three characteristics, and then discuss the implications for product costing in the subsequent three sections.

The first characteristic is that the "volume variability" of a Postal Service air transportation network can vary widely depending upon the operational structure of the network. Under some circumstances the variability could be zero, while in others it could be one hundred percent. In addition, it could be a positive value between zero and one hundred percent.

The second characteristic arises from the fact that the air network may be constructed using dedicated equipment. If so, it is possible that the efficient minimum network size is larger than the capacity required to carry the relevant product. Under these conditions, the Postal Service air transportation network may generate a premium cost.

Finally, the third characteristic is that the network could be dedicated to the transportation of one product or a group of products. This characteristic influences the costing treatment of any premium cost or non volume variable cost.

II. THE "VOLUME VARIABILITY" OF A POSTAL SERVICE AIR TRANSPORTATION NETWORK CAN VARY WIDELY DEPENDING UPON THE OPERATIONAL STRUCTURE OF THE NETWORK.

The volume variability of a Postal Service air network can range from zero to one hundred percent depending upon the network's operational structure. In this section I demonstrate how the variability of a Postal Service network could be zero, one hundred percent, or somewhere in between.[1]

In the first instance, suppose that a network is of fixed sized. This could occur if the Postal Service were to acquire or lease aircraft solely for the purpose of providing the network transportation. Moreover, suppose that minimum efficient size for such a network necessitated acquiring lift capacity in excess of what is required to handle the particular product for which the network was designed.

When this happens, there is persistent excess capacity on the aircraft in the network. However, because this capacity is paid for, it make sense for the Postal Service to use it, so the Postal Service will fill the empty capacity with mail that would not otherwise need the expedited transportation. As a result, the planes are flying virtually full every day.

Now consider what happens when there is a national volume increase or decrease. Depending upon which products have the volume change, the mix of products on the network might change, but the Postal Service will continue to fly

---

[1] While it is theoretically possible for the Postal Service to have an air network with a variability greater than one hundred percent, such a condition does not have practical relevance. In that condition, the Postal Service could lower its cost by splitting the existing network into two.

full planes. There is no change in cost associated with the change in volume, and the volume variability of this type of purchased air network is zero. It is my understanding that this was the situation for the Postal Service's old Eagle Network [2]

At the other extreme, if the network is constructed through contract and the contracted capacity is part of a larger air network, the volume variability could be 100 percent. This would occur when the contracted space for the Postal Service air network is not a sufficiently large part of the overall air network so as to generate any unit cost reductions from economies of scale. When Postal Service requirement is sufficiently small, the contractor will offer capacity to the Postal Service at a fixed rate for the entire amount of capacity it needs. In addition, the Postal Service will be able tender any realistic changes in volume and acquire the additional air transportation capacity at that fixed rate. Therefore, any change in the volume that the Postal Service puts on this type of network will lead to a proportional response in cost. Here, the volume variability is 100 percent. It is my understanding that this is the situation for the Postal Service's "night turn" network which is contracted with FedEx.

The fact that the Postal Service air transportation network is constructed through contracted use of space on planes does not, by itself, ensure that the

[2] A variability equal to zero for the network does not mean the products carried on the network have a variability of zero, however. An increase in the product's volume can cause additional volume to be carried by other means (e.g. commercial air) and the Postal Service's total cost can rise. For example, if the amount of Express Mail were to have increased, then some non-Express mail would have been moved from Eagle network to commercial air. The additional cost of the commercial air would lead to variability greater than zero.

variability is equal to one hundred percent. If the contracted network capacity is sufficiently large so as to allow the provider to take advantage of the natural economies of scale in network transportation, then the volume variability would be less than one hundred percent. If the provider's cost rises less than proportionately with the increase in air capacity, then the provider will provide pricing that reflects this cost advantage. For example, the existence of declining block rates in air transportation network contract (which are a consequence of the natural economies of scale) will lead to a volume variability which is less than 100 percent. It is my understanding that this is the situation for the Postal Service's "day turn" network which is contracted with FedEx.[3]

III. IF THE AIR NETWORK IS CONSTRUCTED USING DEDICATED EQUIPMENT IT MAY GENERATE A PREMIUM COST.

It is my understanding that when the Postal Service established the "Eagle Network," it did so through obtaining dedicated aircraft and operating the network itself. In addition, the size of a national network required to provide efficient service for Express Mail was larger than the volume of Express Mail to be transported.

This situation created the existence of ongoing "excess capacity" which the Postal Service wisely used to transport other classes of mail. At that time the cost of transporting those other classes was greater on the Eagle network than it was on the next best alternative, commercial air.

---

[3] See Direct Testimony of Michael D. Bradley on Behalf of the United States Postal Service, Docket No. R2005-1, USPS-T-31 at 15 for the mathematical basis for calculating the variability in this circumstance.

The combination of excess capacity and the fact that there was a cheaper alternative available created a “premium” cost in which the higher transportation cost for other classes was caused by the need for expedited transportation of Express Mail. This premium cost was caused by Express Mail, not the other classes, and thus was attributed to Express Mail as part of its incremental cost.

Note that the premium did not enter the marginal cost for Express Mail. When additional Express Mail was put on the Eagle network it “bumped” other mail onto commercial air. Thus, the marginal cost of the additional Express Mail was the cost of putting the equivalent amount of other mail on commercial air.

There are two essential requirements for a premium cost to arise. First, the minimum size network must be larger than the capacity required to carry the mail for which the network was designed. Only then would there be available capacity on otherwise part-empty airplanes; capacity that the Postal Service was paying for whether or not it was used. Without this extra capacity, there is no premium cost for transporting “other” mail. Second, the cost of transporting that mail must be more expensive on the air transportation network than on the alternative. If there is no cheaper alternative available, then there is no premium cost associated with transporting “other” mail on the air transportation network.

It is my understanding that there is no extra capacity on either the FedEx day turn or the FedEx night turn. Both are contracted networks that do not require dedicated aircraft. This means that they are not subject to the classic minimum efficient size network constraint. However, a premium could still arise in a contracted network if the contract specified a minimum amount of capacity

that the Postal Service would have to purchase and that capacity was routinely greater than the capacity needed to move the mail that had to fly on the network for service and security reasons.[4]

It is my understanding that this condition does not arise on either of the FedEx networks. I am told that the minimum on the FedEx night turn is below the amount required for the expedited products (Express Mail, Express Mail International, and Global Priority Mail) that must fly on it for service and security reasons and that the day network minimum is well below the amount of Priority Mail and First Class Mail that must fly on it for service and security reasons

If the conditions required for a premium do not hold for either the FedEx day turn network or the FedEx night turn network, then there is no premium cost to be attributed for either of the FedEx networks.

IV. A NETWORK COULD BE DEDICATED TO THE TRANSPORTATION OF ONE PRODUCT OR A GROUP OF PRODUCTS.

Even in the absence of a premium, there is still an important costing issue in attributing the costs of an air transportation network. If an air transportation network, like a mail processing operation, was created essentially for the transportation of one product or a group of products and would not otherwise exist, then cost attribution should reflect this causal factor.

For example, if an air transportation network was constructed primarily for one product, then any non-volume variable cost of the network should be

[4] For a premium to arise, this condition would have to be accompanied by the further condition that the cost of flying “other” mail was more expensive on the network than on another feasible alternative.

included in the incremental cost for that product. The volume variable costs of all products (including the dedicated product) handled on the network would be computed in the traditional way, with total volume variable costs being distributed to produces by use of a distribution key. The remaining costs, traditionally called institutional costs, would be included in the incremental cost of the dedicated product.

When the network is created for a group of products, the process is similar. Once again, the volume variable costs for all products would be computed in the traditional way. Now, however, the “institutional” cost should not be included in the incremental cost of any one, product but rather included in the incremental cost of the group of products that cause the network to be constructed.

I am told that the FedEx day turn network was constructed for the group of products comprised of First Class Mail and Priority Mail. Consequently, the non-volume variable cost for that network should be included in the incremental cost for that group of products.

V. THE POSTAL SERVICE SIMPLY DID NOT HAVE TIME TO RESPOND TO COMMISSION CONCERNS AND REFINE ITS STUDY OF CITY CARRIER STREET TIME.

In Docket No. R2005-1 the Postal Service submitted a new study of city carrier street time costs. In its Opinion and Recommended Decision, dated November 1, 2005, the Commission stated:[5]

> We have also determined that special circumstances in this docket warrant our making an exception to the rule that precedent governs the selection of attributable cost principles where participants, by agreement, have not litigated issues of cost attribution. For the limited purpose of determining whether subclasses of mail meet the requirement of § 3622(b)(3), the Commission has determined that using the city delivery carrier street time cost analysis proposed by the Postal Service will yield the most accurate estimate of those costs

The Commission indicated that it made this decision in no small part because of the vintage of what it called the "legacy" data:[6]

> There is near unanimity on the part of the postal community that the established method is unlikely to capture current patterns of cost incurrence. USPS-T-30(Lewis) at 1-2; Advo Brief at 36-37; OCA Brief at 87. After nearly two decades, the Postal Service has submitted a new carrier street time study specifically designed to support econometric estimates of volume variable costs that are based on relatively current data, rather than the obsolete data on which the established carrier street time attribution principles are based. (For purposes of this discussion, these

---

[5] See, PRC Op., Docket No. R2005-1, at 44.

[6] Id., at 45.

> data will be referred to as "legacy" data.) The legacy data dates from the mid- to late-1980s and reflects the operational and economic conditions that prevailed at that time.

However, the Commission made clear that it had material concerns about the Postal Service study. Twenty pages of the Opinion and Recommended Decision were dedicated to a discussion of the study. Moreover it issued a 62 page appendix, much of which was devoted to a review of the data used in the carrier study:[7]

> The Commission makes use of the Bradley study estimates of attributable city delivery carrier costs despite substantial concerns about the quality of the data and its effect on econometric modeling. To help the Postal Service and the parties understand its concerns and to encourage progress in the analysis of delivery costs, a discussion of those issues is included in Appendix I.

In sum, the Commission provided over 80 pages of comments, concerns and suggestions for future refinement of the study:[8]

> The Commission is gratified that the Postal Service has reviewed its approach to carrier street time variability analysis from the "ground up" and collected new data on carrier street time activity that are designed to support improved econometric modeling of that variability. It urges the Postal Service to continue its analytical work to improve the quality of the data gathered, and to explore additional econometric models that will yield more robust results.

---

[7] Id., at 46.

[8] Id., at 74.

The Postal Service is very appreciative of the time the Commission took to analyze the study and for the extensive and detailed nature of the Commission's criticisms and suggestions for improvement. Unfortunately, the Commission's Opinion and Recommended Decision was issued just one week before the base year city carrier costs were due for constructing the product costs in the current docket. One week is not sufficient time just to review and comprehend over eighty pages of Commission comments and criticisms, let alone respond appropriately. There was simply insufficient time to refine the city carrier costing study along the lines indicated by the Commission. Because of this time limitation, Postal Service decided that the best available city carrier street time costing methodology was the one chosen by the Commission in Docket No. R2005-1.