USPS–RT–18

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

POSTAL RATE AND FEE CHANGES, 2000

Docket No. R2000–1

REBUTTAL TESTIMONY
OF
A. THOMAS BOZZO
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE
(CONCERNING ESTIMATES OF COST BY WEIGHT INCREMENT)

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Autobiographical Sketch

My name is A. Thomas Bozzo. I am a Senior Economist with Christensen Associates, an economic research and consulting firm located in Madison, Wisconsin. My education and experience are described in detail in my direct testimony, USPS–T–15.

I. Purpose and Scope of Testimony

The Postal Service's methodology for estimating volume-variable cost by weight category for First-Class Mail and Standard Mail (A) subclasses is given by witness Daniel (USPS–T–28). The purpose of this testimony is to rebut criticisms of this analysis by witnesses Clifton (ABA&NAPM–T–1), Haldi (VP/CW–T–1), Tye (NAA–T–1), and White (AAPS–T–1).

In Section II, I show that, given how the Postal Service pricing witnesses use the cost information provided by witness Daniel, witness Daniel's analysis is sufficient for the rate design for First-Class Mail additional ounces and for piece- and pound-rated Standard Mail (A). In Section III, I report correctly calculated standard errors to demonstrate that data "thinness" is not a problem for the disaggregated costs used by witnesses Fronk and Moeller in developing rates based on witness Daniel's cost estimates. In Section IV, I show that the estimated relationship between weight and volume-variable route and load costs for city carriers provided by witness Daniel falls within reasonable bounds, and that, for pound-rated ECR, her estimates approach the upper bound on the weight-cost relationship. In Section V, I show that witness Daniel provides cost data that are sufficient for the rate design for first ounce and additional ounce First-Class Mail and for piece- and pound-rated Standard Mail (A). The testimony is summarized in the last section.

Library Reference LR–I–456, which is incorporated by reference in this testimony, contains the background material for the analyses reported in this

testimony. The accompanying diskette contains electronic versions of the spreadsheets used for the analyses presented herein.

II. The analysis used by witness Daniel is sufficient for the rate design for First-Class Mail additional ounces and for piece- and pound-rated Standard Mail (A).

Drs. Haldi and Tye dispute the fact that the same method used to develop CRA cost by subclass can be used to analyze costs by weight increment within subclasses (Tr. 32/15833 and Tr. 30/14699). Each of their arguments will be addressed below.

Witness Haldi criticizes the use of "direct" piece handling tallies to distribute mixed mail tallies and not-handling tallies to weight increment.[1] He states that:

> [I]f direct piece handling tallies are used to distribute mixed mail tallies to weight increment, and if those direct piece-handling tallies show little relationship between weight and cost, their use will mask the underlying

[1] When an IOCS tally is taken, the activity performed by the sampled employee at a randomly selected point in time is recorded. The classification of the recorded tally depends on the observed activity of the sampled employee. As defined by the proposed Docket No. R2000-1 cost distribution methodology, a tally is classified as a direct tally if the employee is observed handling mail that may be attributed to a single class. This occurs when an employee is recorded handling a single piece of mail, an item or container with identical pieces of mail, or an item where the top piece rule has been applied. The top piece rule directs the tally taker to record the characteristics of the top piece from a bundle, letter tray, or flat tray containing non-identical mail. A direct tally also results from items, such as pallets, small parcel trays, and sacks, whose entire non-identical contents are counted by subclass and shape.

A mixed mail tally is recorded when an employee is observed handling mail which may not be attributed to a single class of mail. This includes items containing non-identical mail that is not counted. Containers containing non-identical mail are also classified as mixed mail. Employees handling empty items or containers are also recorded as mixed mail tallies because subclass or shape may be inferred from the item or container type (defined by the proposed Docket No. R2000-1 cost distribution methodology).

If a tally is classified as neither a direct or mixed mail tally, it is considered a not-handling tally. Not-handling tallies convey no shape or subclass information.

> causal relationship between weight, the number of containers that must be moved manually through the facility, and the additional cost of such movement that is caused by more weight and cube...the systematic bias is to understate the effect of weight on cost (Tr. 32/15836).

Witness Haldi further states that:

> It seems completely inappropriate to use direct tallies from individual piece-handling operations to distribute to weight increment the costs associated with some, if not all, of the not handling tallies. The effect of weight will be systematically understated (Tr. 32/15833).

Neither of these statements reflects a complete and accurate description of the Postal Service's mail processing cost distribution methodology.[2] Consequently, witness Haldi's conclusions are unfounded.

First, consider the IOCS sample design. At a basic level, IOCS provides estimates of the proportions of labor time by activity in the sampled crafts. So, for any two activities represented in the IOCS questionnaire, if activity A requires more labor time—and hence cost—than activity B, then there will be more tallies for activity A than for activity B, at least statistically. On the other hand, if activity A and activity B require the same labor time, the total tallies will not differ significantly. Now, to give a more concrete example, suppose activity A is handling tubs of piece-rated flats, and activity B is handling tubs of pound-rated flats. In general, these activities will be recorded as direct tallies in IOCS. From the preceding discussion, it follows immediately that to whatever extent heavier flats fill tubs faster than lighter flats, and hence require a disproportionate share

[2] I limit the discussion below to mail processing, since the city carrier in-office component consists largely of a single activity—manually casing non-DPS mail—so criticisms related to cross-activity cost distribution are inapplicable.

of the flat tub handlings, the relative tally proportions between the two activities will correspond.

If weight information were available for every handling tally, clearly there would be no difficulty in estimating cost by weight increment using IOCS. However, many of the handling mail observations are mixed-mail tallies in which detailed information on the mail is not available. In these cases, it is necessary to infer the likely contents of the mail being handled by subclass and other characteristics. The mixed-mail tallies contain ample information on shape and, in some cases, class of mail, to inform the mixed-mail distributions. To use this information appropriately, the Postal Service's methods, by design, do not distribute mixed-mail tallies from one type of handling activity on direct mail tallies from a completely different type of handling activity, contrary to Dr. Haldi's criticism quoted above. In the terminology of the distribution key analysis, the Postal Service's mixed-mail distributions are "stratified" by both the mail processing operation or "cost pool"[3] and the type of item or container being handled. Direct tallies representing single piece handlings would only appear in mixed-mail distribution keys for observations of loose mixed pieces of the same shape (as might be found in a hamper, for example). Mixed-mail tallies that represent what Dr. Haldi might consider weight-driven activities (e.g., handling trays or pallets) are distributed using direct tallies from the same type of handling

[3] The main exception is that mixed-mail observations in the MODS Platform cost pool are distributed using direct tallies of the same item or container type in all allied labor cost pools.

activity. Since the equipment being handled is usually associated with a shape, such as a letter or flat tray, and shape conveys information on weight, there is a reasonable basis for inferring the weight distribution of the mixed-mail observations. From the IOCS sample design, the weight-cost relationship for an activity will be reflected in the proportion of direct tallies by weight category for the activity. The Postal Service's mixed-mail distribution method ensures that the mixed-mail tallies have the same relationship.[4]

Witness Haldi's characterization of the implicit distribution of not-handling costs in witness Daniel's analysis simply ignores important features of the Postal Service's methodology as well as the justification of the methodology. First, the Postal Service's distribution method does not generally distribute the costs associated with not-handling tallies outside of the operational cost pool in which the tallies appear. Where mail handlings from sorting operations enter the distribution keys, most notably in allied labor cost pools, they do so in recognition of the relationship between allied labor cost pools and the distribution operations they support, a point on which there is agreement among multiple witnesses in this docket.[5] This method is further validated by the available econometric evidence (see response to MPA/USPS–T15-1 at Tr. 15/6251-6255). Witness

[4] Even though witness Haldi's criticisms hinge on the contention that tallies from "weight driven functions" are inappropriately distributed using tallies from supposedly non-weight related functions, he was unable to specify which cost pools represented such functions, or how the distribution methods for those cost pools relate to his criticisms (Tr. 32/15926).

[5] See Postal Service witness Degen (USPS–T–16 at 74) and Time Warner witness Stralberg (TW–T–1 at 30).

Haldi's examples of weight-related not-handling activities, such as disposing of pallet shrink-wrap (Tr. 32/15832), are obviously not significant contributors to mail processing costs (a few seconds of labor time being "shared" among hundreds or thousands of pieces).[6]

In short, witness Haldi has done nothing more than describe a variety of potential shortcomings of a mail processing cost distribution system—many of which, indeed, were present in the abandoned LIOCATT method—that have been overcome in the Postal Service's MODS-based cost distribution approach. Witness Haldi's arguments are not legitimate grounds for rejecting witness Daniel's distribution of mail processing costs to weight increment.

Witness Haldi's numerical analysis of the Standard Mail (A) ECR letter cost estimates at Tr. 32/15847 does not support his contention that "tallies from non-weight driven functions should not be used to distribute the costs of weight-driven functions" (Tr. 32/15846). In his computation of "link relatives" for ECR letters by one-ounce increment, the first "anomaly" occurs in the 4-to-5 ounce range (Tr. 32/15847). The fact that is evident in witness Haldi's table, but which he does not discuss, is that the zero-to-4 ounce increments contain 99.8 percent of the Test Year ECR letter piece volume, and 99.4 percent of the volume-variable costs (per witness Daniel's calculations; see USPS–LR–I–92). The problem is not with IOCS, *per se*, but slicing the data too thinly. That there

[6] Witness Haldi also cites activities such as obtaining and staging empty equipment (Tr. 32/15832). It should be noted that the associated tallies are treated as handlings in the Postal Service's cost distribution method, and thus receive the appropriate weight distribution for the equipment type.

should be a relatively high degree of sampling variation in the cost estimates for the remaining 0.2 percent slice of the ECR letter volume hardly indicts the Postal Service's cost systems as a whole. If anything, it simply highlights the undesirability of excessive reliance on those individual point estimates that are subject to relatively high sampling variation—which witnesses Fronk and Moeller have avoided by considering only trends and relationships among the data.[7]

Witness Tye miscomprehends witness Daniel's testimony as well. He incorrectly claims that witness Daniel's "current distribution is essentially the same as that rejected in Docket No. R97–1" (Tr.30/14698). To the contrary, the CRA-based method employed by witness Daniel constitutes a significant advance over witness McGrane's analysis from Docket No. R97–1,[8] precisely because it is the first weight distribution method to recognize the differences in the composition of handlings between direct and mixed mail tallies (USPS–T–28 at 4).

III. Relative standard errors show that data "thinness" is not an issue for the disaggregated costs used by witnesses Fronk and Moeller.

Witnesses Tye and Clifton contend that IOCS data "thinness" is a significant problem for estimates of clerk and mail handler and city carrier in-

[7] Alternatively, one could employ a technique such as regression to estimate the underlying cost relationship from the "noisy" detailed data.

[8] Witness McGrane applied the weight distribution of direct tallies (without adjustment for the composition of handlings between direct and mixed-mail tallies) to distribute subclass costs (see Docket No. R97–1, Exhibit USPS–ST-44 (USPS LR-H-182) at 3).

office volume-variable cost by subclass and weight increment.[9] Witness Tye states that "the number of tallies from which [the distribution key analysis] is derived are far too thin on which to base such a significant change in rate design" (Tr. 30/14700). Witness Clifton contends that:

> Witness Daniel's cost data for First Class presort is not statistically significant using reasonable tests and assumptions. Her IOCS tallies are too few and as a result much of her presort cost data is erroneous or statistically insignificant (Tr. 26/12395).

As I will demonstrate, relative standard errors show that the weight interval costs used by witnesses Fronk and Moeller are quite precise. Hence the arguments of witnesses Tye and Clifton should be rejected.

According to the design of IOCS, proportions of tallies reflect proportions of labor time spent on the underlying activities. Therefore, relatively small volume (and/or low-cost) mail categories should generate relatively few tallies given the overall sample size. For small mail categories, the data are appropriately thin—the few tallies correctly reflect the relatively small costs incurred by the associated mail category. Thus, the problem, if there even is one, would not be the data thinness, *per se*, but rather the effect it has on the relative standard errors of some narrowly-defined weight increments. The solution, when large increases in sample size are impractical (as is the case here), is to limit the reliance upon individual point estimates that are subject to large sampling variation. This is exactly what witnesses Fronk and Moeller do by

[9] In contrast, witness Haldi states that "the issue of small sample size is something of a red herring" (Tr. 32/15844).

using relatively large aggregates over weight increments.[10] The corresponding cost estimates are, therefore, not subject to tally "thinness" and unusually large sampling variation.

Since the data thinness "problem" manifests itself in relatively high standard errors of the cost estimates, criticisms pertaining to it are appropriately resolved by calculating coefficients of variation (CVs, or relative standard errors) of the relevant cost estimates. None of the intervenor witnesses correctly computes coefficients of variation for the cost estimates actually employed by Fronk and Moeller.[11] For the IOCS-based cost estimates used by witnesses Fronk and Moeller, there are two available methods for computing standard errors, the bootstrap and the generalized variance function (GVF).[12] The method I employ to estimate CVs for the cost estimates used by witnesses Fronk and Moeller is the GVF, which is also employed by witness Ramage in his response to ANM/USPS–T2–13 (Tr. 4/1116). Estimated costs and CVs for the First-Class Mail and Standard Mail (A) weight increments for which witnesses Fronk and Moeller develop proposed rates are presented in Tables 1 and 2, below.

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[10] The weight groupings of mail for which witnesses Fronk and Moeller develop rates are relatively large.

[11] Witness Clifton attempts to do so for some First-Class Mail groupings, but commits a serious error by misinterpreting measures of the variation in cost from one weight increment to another as measures of the IOCS sampling variation in the cost estimates for First-Class Mail above one ounce (see Clifton Workpaper 3, ABA&NAPM–LR–1).

[12] Both techniques represent approaches for computing standard errors when the sample design and/or the mathematical form of the estimators are too complicated to permit the use of closed-form variance formulas. As was the case for witness Ramage, the bootstrap is too time- and computation-intensive to be employed here (See Response to ANM/USPS–T2–13 at Tr. 4/1116).

Table 1.
BY98 IOCS-Based Cost and CV Estimates for First-Class Letters and Sealed Parcels Subclass

	Weight Increment	
	0-1 oz.	1+ oz.
Estimated cost ($000)	10,222,417	3,113,956
Estimated CV	0.4%	0.7%

Source: Response to ANM/USPS–T2–13 (Tr. 4/1116-1117)

Table 2.
BY98 IOCS-Based Cost and CV Estimates for Standard Mail (A)

		Weight Increment	
		0-3 oz.	3+ oz.
ECR	Estimated cost ($000)	439,038	154,973
	Estimated CV	1.7%	2.8%
Regular	Estimated cost ($000)	1,818,698	842,700
	Estimated CV	0.9%	1.3%
Nonprofit ECR	Estimated cost ($000)	58,957	8,309
	Estimated CV	4.5%	11.3%
Nonprofit	Estimated cost ($000)	470,992	71,739
	Estimated CV	1.7%	4.1%

Sources: GVF, Response to ANM/USPS–T2–13 (Tr. 4/1116-1117). Costs, USPS–LR–I–99 and USPS–LR–I–100, total of mail processing and window service components and city carrier in-office components, respectively.

The estimated CVs for the IOCS-based cost estimates used by witnesses Fronk and Moeller are generally small, consistent with the relatively large costs of the rate categories and weight increments at issue. Only one category, Nonprofit ECR weighing more than three ounces, has an estimated coefficient of variation (11.3 percent) exceeding 10 percent. The remaining coefficients of variation range from less than one percent to less than 5 percent, indicating relatively low

sampling error for the cost estimates due to IOCS. As an indication of the magnitude of the error in the computations presented in witness Clifton's Workpaper 3, consider the CV for First-Class Presort above one ounce (as reported here, using the correct application of the GVF). It is 1.8 percent, which is approximately 1/35 of the 63 percent CV implied by the results reported by witness Clifton in his Table 5.

Correct calculation of the coefficient of variation shows that data "thinness" is not a concern for the First-Class and Standard Mail (A) rate designs.

IV. The available data do not permit empirical estimates of the relationship between weight and volume-variable city carrier route and load costs, but it is straightforward to place bounds on the relationship.

In contrast to the IOCS data used to develop clerk and mail handler and city carrier in-office costs, the data systems used to develop volume-variable city carrier street costs[13] (cost segment 7) provide no information with which to directly estimate subclass cost by weight increment. In response to criticisms of past Postal Service methods to disaggregate street costs by weight increment, witness Daniel introduces a method using RPW weight by subclass and shape to distribute subclass load costs from the CRA to weight increment. Witness Daniel's analysis employs distribution keys based on RPW pieces by subclass and weight increment to distribute route and access costs. As discussed below, the intervenors' criticisms of witness Daniel's approach do not withstand scrutiny.

[13] Street costs are composed of route costs (costs associated with walking the route without making stops), access costs (costs associated with making the stop excluding load costs), and load costs (costs of loading the box).

Witness Tye considers the new weight distribution keys for load costs to be an improvement over past practice, but states that by using piece-based distribution keys for route and access costs, witness Daniel did not go far enough (Tr. 30/14699). Witness White also criticizes the piece-based keys for route and access costs (Tr. 22/9960). Witness Haldi, in contrast, contends that witness Daniel's weight-based keys for load time are inconsistent with the CRA methods, and underscores the need for the Postal Service to develop data to estimate the effect of weight on city carrier street costs (Tr. 32/15849).

Witnesses Haldi's position that additional data are needed to completely resolve city carrier street costs by weight increment fails to acknowledge that the available data do provide useful cost information in the form of bounds on the street costs by weight increment. That is, using weight as a distribution key assumes unit costs are proportional to weight and provides an upper bound on the weight-cost relationship. In contrast, using pieces (by shape), as was done for the distribution key for segment 7 in Docket No. R97-1, assumes no relationship between weight and cost, and so the results provide a lower bound on the weight-cost relationship. While the assumptions may appear extreme, I show below that the range of uncertainty between the alternative weight distributions of street costs is comparable in magnitude to the sampling error of the unit cost estimates. The difference between the lower and upper unit cost bounds is small and often statistically insignificant for the cost estimates employed in the rate design presented by witnesses Fronk and Moeller.

I also demonstrate that because of the relative size of the pools of volume-variable route and load costs, witness Daniel's cost estimates for pound-rated Standard Mail (A) are nearly identical to the upper bound. Thus, to the extent the actual costs are lower than the upper bound and witness Daniel's estimates, the cost justification for a reduction in the pound rate would be strengthened.

A. Access cost distribution

Neither witness Haldi, witness Tye, nor witness White expressly criticize witness Daniel's distribution of access costs. Witness Daniel's access cost distribution is consistent with CRA methods and is appropriate. Conceptually, access costs are the street costs caused by actual stops or the deviation from the route to receptacles, as witness Daniel correctly states (USPS–T–28 at 8). Access costs, therefore, are volume-variable to the extent that additional volumes require additional stops to be accessed. The need to access the stop is a function of the presence of the piece that causes the stop and is not affected by the weight of that piece. Nor does the time needed to access the stop vary materially with the weight of the piece that causes the stop—for instance, the time required for the carrier to access the stop is essentially the same whether the stop is caused by a one ounce or two ounce piece.

B. Route cost distribution

Witness Daniel's characterization of route costs as "the time spent by the carrier traversing the course of the route without deviating to make stops" (USPS–T–28 at 8) is substantially correct. Witness Daniel concludes that the

volume-variable portion of route cost should not vary significantly with weight, so she distributed route costs to weight increment using pieces. Witness White criticizes witness Daniel's approach as inconsistent with his experience in running a delivery business (Tr. 22/9960).[14]

Prior to Docket No. R97-1, route costs were treated as fully institutional. However, since the time spent by the carrier traversing the course of the route without deviating to make stops is not directly observable—instead, one observes the actual driving time when there is mail. Therefore, route time as measured includes a portion of driving time that is volume-variable to a small degree. Driving time varies somewhat with the number of dismount points required on park-and-loop routes. Since the required number of dismounts depends in part on the amount (specifically, the total weight) of mail to be delivered on a particular loop, route costs are partly volume-variable due to the volume-variability of the dismounts (see Docket No. R97-1, USPS-T-10). Nevertheless, the vast majority of route costs are simply non-volume-variable. It is my understanding that the Postal Service is presenting evidence that route costs are properly treated as fully institutional.

[14] Witness White also provides an example showing how a 6-2/3 percent increase in weight caused his carriers to walk an additional 50 miles over a one year period (Tr. 22/9960), though the example omits the critical detail of what percentage increase in walking distance the 50 miles represents.

C. Load cost distribution

For load costs, witness Daniel specifies the weight distribution by subclass and shape to disaggregate the load time costs. Witness Daniel suggests that the weight distribution key may overstate the cost-weight relationship for load costs, but that its use would offset the use of pieces as the route and access distribution keys (USPS–T–28 at 8). Witness Haldi compares the CRA methodology to witness Daniel's weight distribution key and argues that her approach is not valid (Tr. 32/15849). The purpose for which witness Daniel used the weight distribution key, however, was to disaggregate subclass cost by weight increment, thereby illustrating the upper bound of the weight-cost relationship for the pound rate pricing exercise. Thus, by using weight as a distribution key, witness Daniel adopted a conservative assumption with respect to the proposal to lower the ECR pound rate.

D. Witness Daniel's cost estimates are much closer to the upper bound method for carrier street costs than the lower bound method.

In using pieces as the distribution key for route costs and weight as the distribution key for load costs, witness Daniel employs the lower bound on the cost-weight relationship for the route costs and the upper bound for the load costs. Bounds on the cost estimates used by witnesses Fronk and Moeller can be computed simply by specifying the lower- or upper-bound distribution method for both cost components. In Tables 3 and 4 below, I present the bounds on the Test Year cost estimates provided by witness Daniel to Fronk and Moeller, as well as those employed by witness Tye for pound-rated mail (Tr. 30/14709). The

supporting calculations, which are derived from material presented in USPS–LR–I–91 and USPS–LR–I–92, are provided in USPS–LR–I–456.

To the extent load costs vary with weight to a lesser degree than that assumed by witness Daniel, as witness Haldi's testimony seems to imply, the "true" costs would be closer to the *lower* bound than the upper bound. In that case, the implicit Standard Mail (A) cost coverages reported by witnesses Moeller and Tye for pound rated mail would be *over*stated, particularly for ECR. Substituting the lower bound costs into witness Moeller's after rates implicit cost coverage calculations increases the implicit cost coverage for pound rated ECR considerably, to nearly 250 percent. See Table 5. Since witness Daniel's cost estimates approach those produced with the upper bound method, the likely direction of any error would, if anything, strengthen the cost-based justification for reducing the ECR pound rate.

Table 3.
Test Year Unit Volume-Variable Cost (cents),
First-Class Letters and Sealed Parcels Above One Ounce

	Lower Bound	Daniel	Upper Bound
First-Class Letters & Sealed Parcels	46.5	47.5	47.6
Single Piece	50.0	50.9	51.0
Presort	31.5	33.0	33.1

Source: Daniel, LR–I–91. Lower and Upper Bounds, LR–I–456.

Table 4.
Test Year Unit Volume-Variable Cost (cents),
Pound-Rated Standard Mail (A)

	Lower Bound	Daniel	Upper Bound
Based on costs for pieces above 3 ounces			
ECR	7.83	9.01	9.22
Regular	24.76	25.5	25.7
Nonprofit ECR	10.42	12.05	12.26
Nonprofit	27.22	28.63	28.93
Based on costs for pieces above 3.5 ounces			
ECR	7.79	9.16	9.41
Regular	27.31	28.16	28.44
Nonprofit ECR	10.95	12.86	13.1
Nonprofit	30.5	32.21	32.55

Source: Daniel, LR–I–92. Lower and Upper Bounds, LR–I–456.

Table 5.
Implicit Cost Coverage for Pound-Rated ECR
Using Lower Bound Costs

	After Rates Revenue	Cost (lower bound method)	Implicit Cost Coverage	Implicit Cost Coverage (Moeller)
3.0-oz dividing line	0.19472	0.0783	248%	216%
3.5-oz dividing line	0.19472	0.0779	250%	213%

Source: Cost, Table 4. Revenue and Moeller Cost Coverage, USPS–T–35 at 24.

V. Witness Daniel provides cost data that are sufficient for the rate design for first ounce and additional ounce First-Class Mail and for piece- and pound-rated Standard Mail (A).

From the great effort that witnesses Clifton, Haldi, and Tye expend on criticism of some of the finely disaggregated cost data presented in witness Daniel's supporting documentation, one could lose sight of the fact that neither witness Fronk nor witness Moeller relies upon the detailed costs by weight increment. Calculation of proposed rates does not require determination of the effect of every factor that might impact the cost of that mail category. In the case of the data witness Daniel supplies to witnesses Fronk and Moeller, it is true, but irrelevant, that witness Daniel's data do not clearly identify the precise effect of mailpiece weight on cost in isolation from other factors. She needed only determine the cost of the mail subject to the First-Class additional ounce rate and Standard Mail (A) piece and pound rates in the aggregate. For this purpose, the available cost data are sufficient, for all the reasons I describe above.

The adequacy of the cost data and the goals of the rate design are linked. The criticisms of the Postal Service's data on cost by weight increment in witness Haldi's testimony and in the Data Quality Study (which witness Haldi cites) suppose the need for data measuring the effect of mailpiece weight on cost *in isolation from other factors*. However, neither witness Haldi nor the authors of the Data Quality Study ever establish the need (in the ratemaking context) for data measuring the isolated effect of mailpiece weight on cost. In the case of the First-Class additional ounce rate, witness Fronk makes clear that the additional ounce rate is not designed to reflect cost differences based solely on weight and

it would not necessarily be desirable to do so (USPS–T–33 at 25–26). In the case of Standard Mail (A), the rate design does not distinguish potential cost differences due to factors such as origin-destination pairs (due to length of haul, processing patterns, etc.) and takes limited account of shape and even weight itself. Furthermore, even witness Haldi indicates that he is "not sure what purpose is achieved by costing separately letter-shaped pieces above the breakpoint" (see response to USPS/VP–CW–T1–20(a) at Tr. 32/15932)—that is, controlling for DMM shape. As a result, the cost data needed to support the additional ounce and pound rates need not satisfy the excessively stringent requirements suggested by witness Haldi.

VI. Summary

As I have clearly demonstrated, the criticisms of witness Daniel's weight-cost analysis put forth by witnesses Haldi, Clifton, Tye, and White discussed in this testimony do not withstand scrutiny. Data "thinness" is not an issue for the disaggregated costs used by witnesses Fronk and Moeller—the relative standard errors show that weight interval costs are quite precise. Witness Daniel's city carrier street cost distribution yields costs that fall within reasonable bounds of the weight-cost relationship. I have demonstrated that witness Daniel provides cost data that are sufficient for the computation of proposed rates for first ounce and additional ounce First-Class Mail and for piece- and pound-rated Standard Mail (A).