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

POSTAL RATE AND FEE CHANGES, 2000	**Docket No. R2000-1**	

REBUTTAL TESTIMONY
OF
ROGER C. PRESCOTT

On Behalf Of
MAIL ORDER ASSOCIATION OF AMERICA
DIRECT MARKETING ASSOCIATION, INC.

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I. INTRODUCTION

My name is Roger C. Prescott. I am an economist and Executive Vice President of the economic consulting firm of L. E. Peabody & Associates, Inc. The firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, Virginia 22314. I am the same Roger C. Prescott who previously submitted Direct Testimony in this proceeding on May 22, 2000 on behalf of the Mail Order Association of America ("MOAA").[1/] My qualifications were attached as Appendix A to my Direct Testimony

In this current proceeding, Postal Rate Commission ("PRC") Docket No. R2000-1, Postal Rate and Fee Changes, 2000 ("R2000-1"), the United States Postal Service's ("USPS") Witness Sharon Daniel (USPS-T-28) submitted a study which examines the impact of changes in weight on changes in unit costs for Standard (A) mail. The results of Witness Daniel's study were used, in part, to support the USPS' proposed rate structure for Standard (A) mail which included a decrease in the pound portion of the piece/pound rate for mail weighing greater than 3.3 ounces (i.e., mail above the breakpoint). Specifically, in this proceeding the USPS is proposing to decrease the pound portion of the piece/pound rates as shown in Table 1 below.

1/ I also submitted Direct Testimony in this proceeding on behalf of E-Stamp Corporation.

Table 1
Summary of Current and USPS' Proposed
Pound Portion of the Rate for Mail Above the Breakpoint

Item	Per Pound Portion of Piece/Pound Rate[1/] Regular	ECR
(1)	(2)	(3)
1. Current	67.7¢	66.3¢
2. As Proposed by USPS[2/]	66.1¢	58.4¢
3. Difference (Line 2 - Line 1)	(-)1.6¢	(-)7.9¢

[1/] For mail weighing greater than 3.3 ounces per piece. Excludes discounts for destination entry.
[2/] Moeller (USPS-T-35), pages 8 and 19.

As shown on Line 3 of Table 1 above, the USPS is proposing to decrease the pound portion of the piece/pound rate by 1.6 cents per pound for Standard (A) Regular ("Regular") mail and 7.9 cents per pound for Standard (A) Enhanced Carrier Rate ("ECR") mail.

In addition to the above changes to the per pound portion of the Standard (A) rate structure, the USPS has also proposed continuation of the differences in the per piece rates for letter-shaped and flat-shaped ECR mail qualifying for the high density and saturation discounts. The USPS' proposed rate differential for letters and flats equals 0.2 cents per piece for high density mail and 0.5 cents per piece for saturation mail.[2/]

[2/] Moeller, page 28, (as summarized in Table 7 to this Rebuttal Testimony).

Finally, the USPS has presented rates that reflect a cost coverage ratio of 209 percent in its Test Year After Rates ("TYAR") analysis.[3/] This coverage ratio is 24 percent higher than the USPS' proposed coverage ratio of 168 percent for all mail and services.

3/ Mayes (USPS-T-32), Exhibit-32B.

II. PURPOSE OF TESTIMONY

I have been asked by MOAA and Direct Marketing Association, Inc. ("MOAA, et al.") to review the Direct Testimony, the responses to interrogatories and the underlying workpapers of Val-Pak Marketing Systems, Inc., Val-Pal Dealers' Association, Inc. and Carol Wright Promotions, Inc.'s (referred to collectively herein as "VP/CW") Witness John Haldi and Newspaper Association of America's ("NAA") Witness William B. Tye in order to evaluate their respective testimony related to the USPS' Witness Daniel's study of the changes in costs when weight changes. In order to address their criticisms, I have reviewed Witness Daniel's testimony (and supporting workpapers) in order to assess the validity of her conclusion regarding the existence of a relationship between changes in mail weight and changes in the unit costs for Regular and ECR mail. I have also been requested by MOAA to review VP/CW's Witness Haldi's assertion that within ECR mail, the USPS has systematically overstated the costs of letter-shaped mail while correspondingly understating the costs of flat-shaped mail. Finally, I have been asked by MOAA to review the testimony of American Bankers Association and National Association of Presort Mailers' (referred to collectively herein as "ABA/NAPM") Witness James A. Clifton regarding the fairness of the coverage ratio of Standard (A) mail versus First Class mail.

The results of my analyses are summarized under the following topics:

III. Summary and Conclusions

IV. USPS Studies of the Relationship of Costs and Weight

V. Revised Analysis of the Relationship of Costs and Weight

III. SUMMARY AND CONCLUSIONS

Based on my review and analysis of the testimony presented by Witnesses Haldi and Tye, I conclude that the per pound portion of the rates for Standard (A) Regular and ECR mail should be no higher than the rates proposed by the USPS. I also conclude that no basis exists to support Witness Haldi's contention that the cost differential between letter-shaped mail and flat-shaped mail developed by the USPS should be increased. Finally I conclude that the proposed coverage ratio for ECR mail is not improper when compared to First Class mail. My conclusions are based on the analyses presented in this Rebuttal Testimony and summarized as follows:

1. The PRC should accept the rates for Standard (A) Regular and ECR mail as presented by the USPS' Witness Moeller (USPS-T-35). As part of his rate structure, Witness Moeller proposed a pound rate for mail weighing more than 3.3 ounces of 66.1 cents per pound for Regular mail and 58.4 cents per pound for ECR mail.

2. Using the same base data as relied upon by Witness Daniel, an alternative simple linear regression demonstrates a strong relationship between changes in the cost per pound and changes in the number of pieces per pound. For Regular mail, my regression identifies a cost line equal to the sum of 11.1 cents per piece plus 52.5 cents per pound. For ECR mail, my regression identifies a cost line equal to the sum of 5.6 cents per piece plus 17.6 cents per pound. This analysis supports the conclusion that the per pound portion of the rates should be no greater than the rates proposed by the USPS.

3. Witness Haldi's and Witness Tye's criticism regarding the lack of support for a reduced pound rate for Standard (A) mail is misplaced. When their criticisms are viewed in light of my analysis, the per pound portion of the rates should be no higher than the USPS' proposed rates for Standard (A) mail.

4. Witness Haldi is incorrect in his claim that a mismatch occurs between the costs for ECR letters and ECR flats. Witness Haldi's cost calculations are based on improper procedures which do not measure the actual cost differences between letters and flats qualifying for the ECR high density or saturation rates. In addition, in the source data relied upon by Witness Haldi, the USPS has already corrected the data to consider any mismatch. When the data is properly analyzed, the USPS' calculation of a letter/flat differential of 0.2 cents per piece for high density mail and 0.5 cents per piece for saturation mail is valid.

5. Witness Clifton's assertion that ECR mail is receiving preferential treatment when compared to First Class mail is not valid. Much of the increase the coverage ratio for First Class mail is due to decreases in costs which the PRC has recognized as support for increasing the cost coverage. The contribution per piece for ECR mail has increased at the same approximate rate as First Class mail. In addition, average rates for ECR mail have increased almost twice as fast as First Class mail over the time period studied by Witness Clifton.

IV. USPS STUDIES OF THE RELATIONSHIP OF COSTS AND WEIGHT

In the past, the USPS has conducted numerous studies regarding the impact of changes in costs caused by changes in weight. These studies date as far back as Witness Madison's study in PRC Docket No. R84-1, Postal Rate and Fee Changes, 1983 ("Docket No. R84-1"). The USPS submitted a similar study in PRC Docket No. MC95-1, Mail Classification Schedule, 1995, Classification Reform I ("Docket No. MC95-1"). The most recent study submitted to the PRC prior to the present proceeding was by the USPS' Witness Michael R. McGrane in PRC Docket No. R97-1, Postal Rate and Fee Changes, 1997 ("R97-1"). Witness McGrane concluded that unit costs have an upward trending relationship with mail weight.[4/] The PRC, in its Docket No. R97-1 decision, criticized Witness McGrane's study for excluding a comprehensive analysis of cost-causing factors. Specifically, the PRC questioned Witness McGrane's assignment of non-In-Office Cost System ("IOCS") related costs to weight increments based upon various volumetric measures rather than using more appropriate weight-based metrics.[5/]

The USPS' current study of the impact of changes in costs due to changes in weight submitted by the USPS' Witness Daniel addressed Witness McGrane's non-IOCS cost assignment. In her analysis Witness Daniel allocated the elemental load portion of street delivery costs based on weight by shape instead of on pieces as was done by Witness McGrane in Docket No. R97-1.[6/] Witness Daniel also refined her study by improving the methodology utilized to distribute mail

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4/ Docket R97-1, McGrane, (USPS-ST-44) Exhibit USPS-44B, page 2.
5/ Docket R97-1 decision, page 401.
6/ Daniel, page 9.

processing volume variable costs to weight increments.[7/] In my opinion, Witness Daniel's new technique improves on the methodology employed by the USPS' Witness McGrane in PRC Docket No. R97-1, as well as the studies presented in Docket No. MC95-1 and Docket No. R84-1.

In response to interrogatories submitted by ADVO, Witness Daniel refined her model to an even greater extent. ADVO requested that Witness Daniel provide costs, mail volumes, and unit costs for ECR in total and ECR flats with adjustments to eliminate the cost savings associated with worksharing (i.e., the cost savings for destination entry and presortation).[8/] The results of ADVO's request is an analysis which provides more information about the causative factors of the cost-weight relationship than any previous USPS study.[9/]

7/ The details of Witness Daniel's study were presented in Library Reference USPS-LR-I-92 ("LR-92") and the responses to ADVO, Inc.'s ("ADVO") interrogatories.

8/ ADVO/USPS-T28-10 through ADVO/USPS-T28-11.

9/ As discussed below, I have not relied on the additional detailed information provided in response to ADVO's interrogatories to develop my restated regressions because my analysis shows a significantly high correlation of cost to weight utilizing all costs for each weight interval (including worksharing reductions). No further adjustment was necessary to show the validity of the USPS' proposed pound portion of the piece/pound rates.

V. REVISED ANALYSIS OF THE RELATIONSHIP OF COSTS AND WEIGHT

Witness Daniel's approach to analyzing changes in costs as weight changes produced results that were subject to criticisms raised by Witnesses Haldi and Tye. These are discussed in Section VI below to this Rebuttal Testimony. In summary, using a more appropriate approach to analyzing the relationship of cost and weight while still relying on Witness Daniel's base data demonstrates that the IOCS produces valid data which can be reliably used to show the effect of weight upon costs. This section of my Rebuttal Testimony presents my alternative approach and the results of my analysis under the following topics:

A. Revised Cost Study Approach

B. Statistical Reliability of Restated Regressions

C. Impact of Statistical Outliers

D. Summary

A. REVISED COST STUDY APPROACH

Witness Daniel implicitly utilized the cost relationship between five interacting elements to derive her unit costs for Regular and ECR mail. The relationship of changes in costs associated with changes in weight for Standard (A) mail can be viewed as the interaction of the following five key factors:

1. Volume;

2. Weight;

3. Aggregate costs;

4. Average Unit Cost Per Piece; and

5. Average Unit Cost Per Pound[10/]

Witness Daniel utilized the average weight per piece and average cost per piece as inputs into her regression model. [11/] In other words, she developed the average weight per piece (for each interval) by dividing total weight for that weight interval by total pieces for the weight interval. Next, she divided the aggregate costs for each weight interval by total pieces for the weight interval to develop average costs per piece. The cost per piece and average weight per piece utilized as the inputs for Witness Daniel's regression model for Regular mail are summarized in Column (5) and Column (6) of Exhibit MOAA, ET AL.-RT-1A to my Rebuttal Testimony. The inputs for Witness Daniel's regression model for ECR mail are summarized in Column (5) and Column (6) of Exhibit MOAA, ET AL.-RT-1B to my Rebuttal Testimony. Witness Daniel's approach results in statistical outliers as well as wide variances in weight and volume as pointed out by Witnesses Haldi and Tye.

Another approach to studying the cost-weight relationship, and one that I applied in my analysis, is to determine the average cost per <u>pound</u> rather than the average cost per <u>piece</u> as

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10/ From a mathematical perspective, the cost-weight relationship can be described by the following equation:

$$Y = a * x_1 + b * x_2$$

Where
- Y = Total cost within a weight interval
- X_1 = Total volume (pieces) within a weight interval
- X_2 = Total weight within a weight interval
- a = The average unit cost per piece
- b = The average unit cost per pound

11/ Algebraically, Witness Daniel divided the factors in the equation above by the total number of pieces. This process yields the following equation: $Y/X_t = a + b(X_2/X_1)$ which is equivalent to the regression lines in Witness Daniel's analysis in LR-92.

Witness Daniel has done in her model.[12/] Instead of dividing the equation by the total number of pieces, I divide by the total pounds. The inputs for my analysis utilize the average pieces per pound (16 ounces per pound ÷ the average weight per piece for each weight interval) and the average cost per pound (total cost per weight interval ÷ total pounds per weight interval).

Using the Regular mail data contained in Exhibit MOAA, ET AL.-RT-1A and the ECR mail data contained in Exhibit MOAA, ET AL.-RT-1B, I performed a simple least squares regression to determine the average cost per piece and average cost per pound for both Regular and ECR mail. For Regular mail, my regression utilizes the pieces per pound and the cost data shown in Column (7) and Column (8) of Exhibit MOAA, ET AL.-RT-1A. For ECR mail, my regression utilizes the pieces per pound and the cost data shown in Column (7) and Column (8) of Exhibit MOAA, ET AL.-RT-1B. The results of my regression analyses are shown in Table 2 below.

Table 2
Summary of Regression Results

Subclass	Cents Per Pound	Cents Per Piece	R Squared
(1)	(2)	(3)	(4)
1. Regular	52.5	11.1	0.959
2. ECR	17.6	5.6	0.965

Sources: Spreadsheet titled "Prescott workpapers for MOAA, ET AL-RT-1.xls" submitted with this testimony.

12/ My analysis derives the following equation: $Y/X_2 = b + a\ (X_1/X_2)$. Then using algebra, it is possible to convert the cost per pound equation to an equivalent cost per piece equation.

My regression analysis produces the following equations to calculate the cost per piece as weight changes for Regular and ECR mail:

Regular = 11.1 cents per piece + [52.5 cents per pound x (ounces per piece ÷ 16 ounces per pound)]

ECR = 5.6 cents per piece + [17.6 cents per pound x (ounces per piece ÷ 16 ounces per pound)]

Exhibit MOAA, ET AL.-RT-1C is a graphical comparison of the data points and my regression analyses for Regular and ECR mail.[13/] The results of my analysis above show that the cost per pound for Regular mail is much larger than the cost per pound for ECR mail. This is not unexpected and, in fact, was recognized by Witness Haldi. In his testimony, Witness Haldi noted that ECR mail cost less than Regular mail. [14/] In addition, the greater presortation and depth of dropshipping also contribute to reductions in weight related costs for ECR mail.

B. STATISTICAL RELIABILITY OF RESTATED REGRESSIONS

The reliability of the results of a regression analysis can be judged by various statistics. The key statistic in a regression analysis is the coefficient of determination, or more commonly known as the R-squared ("R^2") value. In my analysis, the R^2 value illustrates the proportion of the variability in the cost per pound which is explained by the relationship to the number of pieces per pound. In other words, how much of the change in the cost per pound is explained by the change in the number of pieces per pound.

13/ Page 1 of 2 of Exhibit MOAA, ET AL.-RT-1C graphically shows the data points and regression line for Regular mail. The data points and regression line for ECR mail are graphically depicted on Exhibit MOAA, ET AL.-RT-1C, page 2 of 2.

14/ Tr. 32/15759.

As shown in Table 2 above, my revised regression has an R^2 value of 95.9 percent for Regular mail and 96.5 percent for ECR mail. The regression in my analysis indicates that over 95 percent of the change in the cost per pound is explained by changes in the pieces per pound. This illustrates that there is a strong relationship between changes in unit costs and changes in weight.

C. IMPACT OF STATISTICAL OUTLIERS

As I discuss in Section VI. below, Witness Tye and Witness Haldi fault Witness Daniel for the extreme outlying values in her data and the measures she took to improve her analyses by combining weight intervals. Aggregating data, as Witness Daniel has done, minimizes the negative impact of the outlying data, but this aggregation also hides important explanatory information. A better methodology is to retain all the data, in as much detail as possible. My restated analysis presented here in my Rebuttal Testimony accomplishes this goal because the form of the data I have utilized (i.e., costs per pound and pieces per pound) maintains all of the weight intervals, but does not result in any outlying values.

I have created a graphical example to demonstrate this point. Exhibit MOAA, ET AL.-RT-1D represents the graph prepared by Witness Daniel illustrating the relationship she developed between ECR unit costs and weight per piece. Data Point A in Exhibit MOAA, ET AL.-RT-1D is the average cost per piece for mail within the 15-16 ounce weight interval. As Exhibit MOAA, ET AL.-RT-1D illustrates, Data Point A shows a wide variance from the other values in the set of data utilized by Witness Daniel.

In contrast to the data set used by Witness Daniel in her analysis, the data set I utilized contains no statistical outliers. Exhibit MOAA, ET AL.-RT-1C, page 2 of 2 is a scatter-plot diagram of the data range for ECR mail used in my revised analysis utilizing the same basic data from LR-92 (aggregate pieces, pounds and costs) that Witness Daniel utilized [15/]. Data Point A in Exhibit MOAA, ET AL.-RT-1C shows the average pieces per pound in the 15-16 ounce weight interval. This is the same weight interval which produced the statistical outlier in Witness Daniel's analysis. In my revised analysis the data for the 15-16 ounce weight interval is within the normative range of the entire data set. By examining the cost-weight relationship from this revised approach, I have retained the explanatory value of each outlying weight interval but eliminated the statistical abnormalities included in Witness Daniel's data set.

D. SUMMARY

My revised cost-weight study illustrates two points. First, the regression model in my analysis of the USPS' data shows a strong relationship exists between changes in costs and changes in weight for Standard (A) mail. As described above, 95.9 percent of the change in unit costs in Regular mail is explained by changes in the weight function. The results are equally significant for ECR mail with 96.5 percent of the change in unit costs explained by changes in the weight function.

Second, the practical implication of my revised analysis is an ability to generate, with statistical accuracy, the estimated unit costs for both Regular and ECR mail at key weight intervals. Table 3 below summarizes the cost line for Regular and ECR mail based on the results

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15/ The numeric values for the inputs are shown in Exhibit MOAA, ET AL.-RT-1B.

of my regression analysis for each 1 ounce increment and the rate breakpoint of 3.3 ounces. A graphical representations of these estimated unit costs are found in Exhibit MOAA, ET AL.-RT-1E and MOAA, ET AL.-RT-1F to my Rebuttal Testimony.

Table 3
Estimated Unit Costs for
Standard (A) Regular and Standard (A) ECR Mail
(cents per piece)

	Weight (ounces)	Regular[1/]	ECR[2/]
	(1)	(2)	(3)
1.	1	14.4	6.7
2.	2	17.7	7.8
3.	3	20.9	8.9
4.	3.3	21.9	9.2
5.	4	24.2	11.0
6.	5	27.5	11.1
7.	6	30.8	12.2
8.	7	34.1	13.3
9.	8	37.3	14.4
10.	9	40.6	15.5
11.	10	43.9	16.5
12.	11	47.2	17.6
13.	12	50.5	18.7
14.	13	53.7	19.8
15.	14	57.0	20.9
16.	15	60.3	22.0
17.	16	63.6	23.1

1/ 11.1 cents per piece + (52.5 cents per pound ÷ 16 ounces x weight per piece in ounces).
2/ 5.6 cents per piece + (17.6 cents per pound ÷ 16 ounces x weight per piece).

The USPS has proposed rates with the pound portion equaling 66.1 cents per pound for Regular mail and 58.4 cents per pound for ECR mail. My regression results in a pound component of the costs equaling 52.5 cents per pound for Regular mail and 17.6 cents per pound for ECR mail. My regression analysis demonstrates that the USPS' proposed pound portion of

the rates increases faster than the actual pound-related costs. My analysis supports the conclusion that the changes in the pound portion of the rates proposed by the USPS as shown in Table 1 above are justified and fair.

VI. WITNESS HALDI'S AND WITNESS TYE'S CRITIQUE OF USPS' STUDY

Both VP/CW's Witness Haldi and NAA's Witness Tye criticize the underlying data and results of Witness Daniel's study of the changes in costs with changes in weight. Many of Witnesses Tye and Haldi's criticisms are simply rhetoric and unfounded assertions. This does not mean that the way Witness Daniel presented her data and the results could not be improved (as I demonstrated above). Any perceived shortcomings in Witness Daniel's study can be overcome, as I have shown, by using simple statistical procedures.

In general, Witness Haldi rejects the USPS's study as a wholly inadequate tool for ratemaking purposes, stating:

> "...studies of the weight-cost relationship offered by the Postal Service in this docket must again be rejected as inadequate to demonstrate that the effect of weight on cost is overstated. They provide no basis for the commission to recommend a drastic reduction in the pound rate as requested by the Postal Service."[16/]

Witness Tye summarizes his criticism of Witness Daniel's weight-cost analysis, stating:

> "I find that the data gathered for this analysis are not reliable. I further find that the cost data are inconsistently applied to justify First Class and Standard (A) rate design proposals...Since the result of the distribution key analysis (weight-cost study) are "cherry picked", they form no reliable basis for changes in the ECR pound rate" [17/]

16/ Tr. 32/15772.
17/ Tr. 30/14692.

This section of my Rebuttal Testimony summarizes the criticisms raised by Witnesses Haldi and Tye and explains the reasons why I believe that their criticisms are not valid or that the effect of the criticism can be overcome by modifications to the statistical analysis of the data (as I have done). My review is discussed under the following topics:

A. Witness Daniel's Changes to the Methodology Used in R97-1

B. Witness Daniel Addressed Previous Criticisms

C. Differences Between Unreliable and Imprecise Data

D. Adjustments to Reflect Worksharing

E. Impact of Data for 15-16 Ounce Weight Interval

F. Impact of Weighted Data

G. Impact of Thin and Non-Mail Handling Tallies

H. Summary

A. WITNESS DANIEL'S CHANGES TO THE METHODOLOGY USED IN R97-1

Witness Tye claims that the study prepared and submitted by Witness Daniel is nearly identical to the study submitted by the USPS' Witness McGrane in Docket No. R97-1.[18/] However, Witness Daniel's study made two (2) significant changes to the procedures followed by Witness McGrane in Docket No. R97-1.

First, Witness Daniel changed the allocation basis for the elemental load portion of street delivery costs. In Docket No. R97-1, Witness McGrane allocated these portions of elemental load

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[18/] Tr. 30/14698.

costs on a piece basis (elemental load includes the time spent handling mail pieces at the point of delivery). [19] Studies have shown that shape is a key driver in elemental load costs.[20] Witness Daniel, therefore, concluded that shape is not the only force impacting elemental load cost, i.e., weight is also a pertinent factor of elemental load cost. [21]

Second, Witness Daniel modified the methodology to distribute weight-based costs when the actual weight may not be known. In the USPS' weight-cost study in R97-1,[22] the USPS used the average cost of mail for all subclasses to allocate unknown costs to each subclass. In her study, Witness Daniel adopted an alternative methodology utilizing the information where the weight is known within a specific cost pool, activity code or subclass to distribute cost information from tallies where the weight is unknown. This use of costs assigned to each subclass to allocate costs from tallies (for that specific subclass) with unknown weight provides a greater level of precision in the allocation of costs than was available in previous studies.[23]

B. WITNESS DANIEL ADDRESSED PREVIOUS CRITICISMS

Witness Tye claims that Witness Daniel's study fails to address the criticisms raised by the PRC in Docket No. R97-1.[24] He does this by selectively quoting portions of the PRC's decision in Docket No. R97-1 and by de-emphasizing the changes made by Witness Daniel in the study presented in this proceeding.

19/ Daniel, page 8.
20/ Daniel, page 8.
21/ Daniel, page 8.
22/ McGrane, USPS-ST-44.
23/ Costs within a specific cost pool, activity code or subclass provide a better proxy for allocating costs because they more accurately reflect the characteristics inherent in that group of costs.
24/ Tr. 30/14698.

Witness Tye quotes the PRC's decision in Docket No. R97-1 in an attempt to show the USPS had not responded to the PRC's criticisms of its previous study. [25] In the passages cited, Witness Tye omitted portions of the PRC's opinion which show that Witness Daniel did, in fact, address the PRC's criticisms of the Docket No. R97-1 study. Witness Tye's selective quote showed two criticisms which are, in fact, only one issue addressed by the PRC, namely the assignment of non-IOCS costs (i.e., delivery costs) on a volumetric or piece basis instead of a weight basis. Examination of the full text of the PRC's opinion shows that Witness Tye omitted the portions of the PRC's decision which are relevant to the evaluation of Witness Daniel's methodology. In the text of the PRC's opinion, Witness Tye did not include the underlined portions of the following quotes:

> "Another problem with the cost-weight study is that it contains no comprehensive study of cost-causing factors. The non-IOCS related costs are assigned to weight increment on the basis of various volumetric measures." [26]
>
> "The Postal Service sheds no light on the subject as it assumes that delivery costs are piece-related. Where the Service has failed to test these rationales or its own theories, there is no sound basis on the record for distributing carrier street costs to ounce increments. This is a serious shortcoming as elemental load time accounts for approximately one-half of carrier street attributable cost." [27] (emphasis added)

As shown above, Witness Daniel changed the method of allocating elemental delivery costs in her study in this proceeding to address the PRC's issue with the earlier study.

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[25] Tr. 30/14698.
[26] R97-1 decision, page 401.
[27] R97-1 decision, page 402.

Witness Haldi believes that the deficiencies in the IOCS data require that the USPS undertake an engineering study or a simulation analysis to gather the data necessary for an all encompassing analysis of the impact of weight on costs.[28/] Witness Tye also criticizes Witness Daniel's use of IOCS data.[29/] Both Witness Haldi and Witness Tye overlook the benefits of utilizing IOCS data and the shortcomings of that would be present in an empirical engineering study.

As Witness Daniel describes in her testimony, the IOCS supplied data provides an inherent advantage over other potential data sources because of the completeness of the data. She noted:

> "An IOCS-based analysis, however, is adopted here because the IOCS samples employees in all mail processing and carrier in-office operations around the clock, 24 hours per day, 7 days per week."[30/]

In other words, the data supplied by the IOCS provides a view of the entire USPS operation and not a limited subset of individual postal processes.

Furthermore, Witness Daniel points out that a study of limited scope may not provide a superior quality of data than that used in her analysis, noting:

> It is doubtful that a one-time field study could be superior to the data used in the weight studies described in my testimony, which are based on a national sample of all operations over the course of a year.[31/]

I agree with Witness Daniel that the use of the IOCS data represents the broad spectrum of the costs incurred by the USPS over an extended period and should be superior to the data that

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28/ Tr. 32/15848.
29/ Tr. 30/14700.
30/ Daniel, page 34.
31/ Tr. 4/1174.

would be potentially developed in an engineering study of the changes in costs associated with changes in weight. For purposes of this proceeding, the IOCS data is adequate for the analysis of changes in costs due to changes in weight as presented by Witness Daniel and me.

C. DIFFERENCES BETWEEN UNRELIABLE AND IMPRECISE DATA

Witness Tye asserts that Witness Daniel has discredited her own study, stating that "witness Daniel herself concedes that her data are so unreliable as to be useful only for a broad view."[32/] Witness Daniel only qualified her testimony in regard to the precision of her study and not the reliability of her analysis. Imprecision in the data does not mean that her study is unreliable.[33/]

Contrary to Witness Tye's testimony, Witness Daniel does not concede that her data is unreliable. Witness Daniel only stipulates that her data is not precise, and in this instance, exact precision is not necessary. In any analysis, the required precision of the data is a direct function of the data's end use. In other words, where less than exact data will suit the purpose of the researcher, then exact precision may not be necessary. Because the USPS has not used the study as the only criteria for its proposed rates, further precision is not needed.

As Witness Daniel points out, the USPS' pricing witnesses do not utilize the exact weight interval point estimates produced in her cost study for the USPS' rate proposal. Instead of using point estimates, the USPS uses the overall cost relationships in their price setting analyses.[34/] The

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32/ Tr. 30/14699.

33/ In any event, my restatement of the study of changes in costs with changes in weight shows that a valid relationship does exist and supports that the pound portion of the rate should be no higher than the rates proposed by the USPS.

34/ Tr. 4/1307.

overall conclusion of the regression analyses shows that the USPS' rate structure is supported, in total, by the results of the study of the changes in costs associated with changes in weight. Stated differently, the regression results are not used to set the pound portion of the proposed rates, however, the regression analysis show, with great statistical reliability, that costs are increasing much less rapidly than the USPS' proposed rates.

D. ADJUSTMENTS TO REFLECT WORKSHARING

Both Witness Haldi and Witness Tye criticize Witness Daniel for improperly accounting for worksharing. [35/] When Witness Daniel does adjust ECR flat data for worksharing, Witness Haldi misstates the results of her adjustment when he claims:

> "An effort is made to adjust for destination entry which increases the weight related cost over the initial effort." (emphasis added) [36/]

Witness Haldi's conclusion is wrong. The exclusion of costs related to worksharing decreases the weight-related cost. Based on the data utilized by Witness Daniel, Table 4 below compares the estimated cost per ounce for mailing ECR flats before and after adjustments to reflect worksharing. In all cases, the estimated weight-related cost per ounce in Witness Daniel's analyses decreases when worksharing adjustments are made.

35/ Tr. 32/15827-15879 and Tr. 32/15838-15840.
36/ Tr. 32/15829.

Table 4
Impact of Worksharing Adjustment on Estimated Cost Per Ounce of ECR Flats

	Item	Cents Per Ounce: Unadjusted	Cents Per Ounce: Worksharing Adjusted[3/]	Cents Per Ounce: Difference [4/]
	(1)	(2)	(3)	(4)
1.	Utilizing Witness Daniel's Detailed Weight Increments	1.55¢ [1/]	1.42 ¢	0.13¢
2.	Utilizing Witness Daniel's Combined Weight Increments	1.37 [2/]	1.24	0.13

[1/] LR-92, Worksheet LR92bECR.xls, sheet ECR Flats (detailed).
[2/] LR-92, Worksheet LR92bECR.xls, sheet ECR Flats (combined).
[3/] ADVO/USPS-T28-10 (Tr. 4/1210-1211).
[4/] Column (2) minus Column (3).

In Witness Daniel's data, worksharing reduces the cost per ounce by 0.13 cents per ounce. This contradicts Witness Haldi's assertion that worksharing increases weight-related costs.

E. IMPACT OF DATA FOR 15-16 OUNCE WEIGHT INTERVAL

Witness Tye critiques the statistical validity of Witness Daniel's cost data for the highest weight interval (15-16 ounces) in all classes of Standard (A) mail.[37/] Witness Tye hypothesizes that high unit costs within the 15-16 ounce weight interval are the result of more tallies recorded at this level than at the other heavy weight intervals.[38/] Therefore, Witness Tye concludes that the cost figures in the 15-16 ounce weight interval for all Standard (A) mail have greater support than those of the other heavy weight increments in Witness Daniel's study.

[37/] Tr. 30/14700.
[38/] Tr. 30/14701.

Whether or not the high unit costs in the 15-16 ounce weight interval are the result of more tallies or another factor is irrelevant. The issue is whether or not the costs contained in the 15-16 ounce weight interval of Witness Daniel's study have a negative effect on her regression (i.e., reduces the statistical correlation). To test whether the 15-16 ounce interval is a statistical outlier and significantly impacts the results of Witness Daniel's analysis, I removed the data in her analysis and recalculated the ECR regression model for all shapes contained in LR-92. [39/] The results obtained by removing the 15-16 ounce weight interval data confirm that the data in the 15-16 weight interval negatively impacts her cost study. A comparison of the results of the two regressions is shown in Table 5 below.

Table 5
Weight-Cost Relationship for ECR All Shapes Data--
Comparison of Alternative Regression Models

		Cents Per Pound				Cents Per Piece			
	Regression	Lower	Coefficient	Upper	Variation[1/]	Lower	Coefficient	Upper	Variation[2/]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	USPS Daniel - All Data	18.4¢	30.7¢	43.0¢	**12.3¢**	-5.3¢	1.3¢	7.8¢	**6.5¢**
2.	USPS Daniel - 15-16 oz. Weight Interval Omitted	15.7	20.1	24.5	**4.4**	1.9	4.0	6.2	**2.2**

Sources: USPS-LR-1-92 Excel sheet: ECR All (detailed).
[1/] Column (4) minus Column (3).
[2/] Column (7) minus Column (6).

Line 1 of Table 5 shows the upper-bound, lower-bound and regression coefficient of ECR mail cost on a per pound and cost per piece basis with the 15-16 ounce weight interval included

[39/] From a statistical standpoint, any data point which lies more than four standard deviations away from a regression line created by regressing the data range without the suspect data can be considered an outlier.

as a data point.[40] Line 2 of Table 5 shows the same test results with the data for the 15-16 ounce weight interval omitted from the regression. By omitting the 15-16 ounce weight interval, the variation per pound is reduced from 12.3 cents per pound to 4.4 cents per pound (Table 5, Column (5)). Similarly, when the data for the 15-16 ounce weight interval is eliminated, the variation per piece decreases from 6.5 cents per piece to 2.2 cents per piece (Table 5, Column (9)).

Witness Daniel attempts to temper the impact of these outlying points on all Standard (A) mail costs by combining the 15-16 ounce weight interval with other heavyweight intervals in her data set (i.e., 13-14 ounce and 14-15 ounce intervals).[41] Combining the heaviest weight-intervals as Witness Daniel has done may reduce the impact of the outlying data point but this adjustment may also obscure significant information that the 15-16 ounce weight interval may contain. In my opinion, when the data is properly analyzed (as I have done in Section V above) no reason exists to exclude (or otherwise aggregate) the data for the 15-16 ounce weight interval.

F. IMPACT OF WEIGHTED DATA

Witness Tye points out that Witness Daniel's study provides equal statistical weight to each weight increment while ignoring the varying volumes and weights in those increments. For example, Exhibit MOAA, ET AL.-RT-1B included in this testimony shows volumes for ECR mail range from 13 million pieces in the 15 to 16 ounce weight interval up to 6.56 billion pieces in the 0 to 0.5 ounce weight interval. This reflects a volume multiple of 502 (6.5 billion ÷ 0.13 billion).

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[40] A regression analysis provides statistically probable estimates for a value based on a specific confidence interval. In this instance, I use a 95% confidence interval for estimates. The practical implications of the regression are that in this instance, I can say with 95% confidence that the estimated cost of each variable (i.e., weight and volume) lies between the upper-bound and the lower-bound and that the regression coefficient is the most likely value.

[41] Tr. 4/1343.

Such a wide variance in a key variable (i.e., volume) will, in almost all cases, impact the results of a regression analysis.

To test whether the variances in weight and volume between the different weight intervals affected ECR mail unit costs, I applied weighted regressions to Witness Daniel's data adjusting for variances in weights and in volumes. [42/] The results of Witness Daniel's regressions and regressions weighted on pieces or pounds are shown in Table 6 below.

Table 6
Comparison of Alternative Regression Models--ECR

Regression	Cost Per Pound (cents)
(1)	(2)
1. USPS Daniel - All Data	30.7¢
2. USPS Daniel Interval 15-16 oz. Omitted	20.1
3. Weighted Regressions	
a. Weighted on Pieces	11.0
b. Weighted on Pounds	17.9

Sources:
Lines 1 and 2: USPS-LR-I-92 Excel sheet: ECR All (detailed).
Lines 3: "Prescott Workpapers for MOAA, ET AL-RT-1.xls" submitted in support of this testimony.

The weighted regression adjusted for mail volume (Table 6, Line 3a) produces an estimated cost of 11.0 cents per pound which is 64.2 percent lower than the Witness Daniel's estimate of 30.7 cents per pound (Table 6, Line 1) and 45.2 percent per pound less than the results of utilizing Witness Daniel's data with the 15-16 ounce weight interval omitted of 20.1 cents per pound (Table 6, Line 2). The weighted regression adjusted for total pounds produces an estimated cost per

[42/] Weighted regression is a statistical procedure whereby data points are given statistical weights based upon a causative factor. The effect is to apply greater value to those data points which have the greater influence.

pound of 17.9 cents per pound (Table 6, Line 3b) which is 41.7 percent less than Witness Daniel's original estimate and 10.9 percent less than Witness Daniel's estimate with the 15-16 ounce weight interval omitted.

In my revised analysis, the implicit statistical weighting is based on pounds within a weight interval versus the volume within a weight interval utilized by Witness Daniel. Exhibit MOAA, ET AL.-RT-1B shows that, for ECR mail the 4.0 - 5.0 ounce weight interval contains the most weight (848.9 million pounds) while the 15.0 - 16.0 ounce interval contains the least weight (12.8 million pounds). Thus, the relationship of the largest data to smallest is a multiple of 66.3 (848.9 million ÷ 12.8 million). The results of this reduction of the multiplier from 502 to 66.3 produces a regression that is much closer to having equal statistical weights amongst the weight intervals.[43/]

G. IMPACT OF THIN AND NON-MAIL HANDLING TALLIES

Witness Tye criticizes Witness Daniel for utilizing data with a limited number of tallies for a weight interval (i.e., "thin" tallies). Witness Haldi also criticizes Witness Daniel for the methodology she used to assign costs related to non-mail handling tallies to weight increments. As I will discuss, both sets of criticisms are misplaced.

Witness Daniel's methodology for estimating the unit costs divides total costs for a subclass of mail by the total number of pieces for that subclass. To arrive at total cost for each subclass, Witness Daniel summed the aggregate cost for each weight-interval within that subclass. Summing data across all weight intervals implicitly assigns equal statistical weight to each weight-interval

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43/ A similar multiple also applies to Regular mail.

even though the number of tallies within the weight intervals may be dramatically different. In other words, a weight interval which is based on a few tallies is assumed to be as equally important as a weight interval based on a large number of tallies.

The data utilized in my restated regression analysis however eliminates the reliance on those weight intervals with tallies that have less observations through statistical grouping.[44/] As shown in Exhibit MOAA, ET AL.-RT-1D, the majority of the data points are grouped near the origin. Included in this grouping are the data from the weight intervals with the lowest number of tallies (i.e., weight intervals greater than 5 ounces). Statistically grouping the weight intervals with the lowest number of tallies with those with largest number of tallies overcomes the impact on the overall analysis from those weight intervals which have fairly thin tallies.

In contrast to Witness Daniel's model, the weight interval in my analysis that is the furthest from the origin is the 0 - 0.5 ounce weight interval which is shown as Data Point B in Exhibit MOAA, ET AL.-RT-1D. As Witness Daniel's supporting documentation shows, the 0 - 1.0 ounce weight interval has the largest number of tallies and the greatest aggregate costs.[45/] By developing the data as shown in my analysis, the data with the fewest tallies are grouped closely together. This eliminates the concern raised by Witness Tye and Witness Haldi regarding thinness of tallies and creates a more explanatory result.

[44/] There is a key distinction between grouping data as I do here and combining data as witness Daniel did in her study. Witness Daniel combined and therefore lessened the number of data points (groups) in her study which dropped the explanatory value of the data. My statistical grouping of the data did not eliminate or reduce the number of weight intervals studied.

[45/] Tr. 4/1344.

Witness Haldi asserts that the USPS' allocation of costs from non-mail handling tallies systematically understates weight-related costs. Witness Haldi states:

> 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.[46/]

He bases his assertion on two underlying and unstated assumptions:

1. That USPS equipment and personnel are always at full utilization and have no excess capacity; and,
2. All non-mail handling associated costs are driven by weight.

I discuss below why each of Witness Haldi's assumptions are erroneous and why the USPS' allocation of non-handling tallies is correct.

Witness Haldi first assumes that all USPS equipment and personnel have no excess or idle capacity. In the hypothetical example he provides in his testimony, Witness Haldi asserts that as the weight of mail increases, the amount of equipment required to handle that mail increases and in turn, the cost of moving that equipment (both empty and loaded) also increases.[47/] Witness Haldi's assumption only holds true if all assets, including personnel, are at full capacity. If the assets are not at full capacity, then a larger amount of work may be performed without incurring additional costs.

[46/] Tr. 32/15833.
[47/] Tr. 32/15832.

A simple example will illustrate this point. Assume that one USPS employee within a processing center was assigned to collect empty mail hampers and that the employee, when fully utilized, could move one hundred (100) empty hampers per hour.[48/] If the processing center was processing twenty-five (25) empty hampers per hour, the one employee assigned to move empty hampers would be 25 percent utilized (25 empty hampers ÷ 100 hamper capacity). Next, assume that the USPS receives an additional batch of 2 ounce flats that produce fifty (50) empty hampers per hour. In total, the plant would now produce seventy-five (75) empty hampers per hour (25 for the first batch and 50 for the second batch). However, the plant would still need only the one employee to move empty hampers because he is only utilizing 75 percent of his capacity (75 empty hampers ÷ 100 hamper capacity).

Witness Haldi's theory assumes that the plant would incur a threefold increase in non-mail handling associated costs when the output for the empty hamper increased from 25 to 75. However, as the example shows, because the plant was not fully utilized, it could absorb the extra output without incurring additional costs. Therefore, no additional non-mail handling costs are incurred.

Witness Haldi next assumes that all non-mail handling costs are driven by weight. This is not true as shown by the USPS' Witness Van-Ty-Smith. In her testimony, Witness Van-Ty-Smith describes some examples where a non-mail handling tally can occur:

48/ For this example, I utilize an employee moving empty hampers for the reason that if he were tallied, he would be recorded in a non-mail handling activity.

> When not handling mail, the employee may be observed to be between handlings at the instant of observation, monitoring the operation of the equipment, on the way to obtain empty equipment, on break, or performing incidental administrative duties, to cite a few examples.[49/]

Obviously many, if not all, of the instances cited by Witness Van-Ty-Smith are not affected by the weight of a piece of mail (e.g., break time) thus not all non-mail handling costs are driven by mail weight. Given that mail weight is not the driving cost factor as Witness Haldi asserts, the issue becomes the determination of the appropriate basis to distribute non-mail handling tallies to weight intervals for which no weight information is contained. In my opinion, the USPS addresses this issue correctly when it distributes the cost for non-mail handling tallies based on the distribution of mail handling tallies.

H. SUMMARY

In summary, the criticisms raised by Witnesses Tye and Haldi related to the underlying data used in Witness Daniel's study of the impact on costs due to changes in weight (i.e., LR-92) have been addressed in this proceeding. In my opinion, the underlying cost and weight data in LR-92 are reliable for use in evaluating if the USPS' proposed rate structure, including the proposed per pound portion of the rates for mail above the breakpoint.

49/ Van-Ty-Smith, page 13.

VII. COST DIFFERENTIAL FOR LETTERS AND FLATS

The USPS' rate proposal for ECR mail includes a rate differential between piece-rated [50] letters and flats prepared at the high density or saturation level. To support the rate differential, the USPS developed the mail processing and delivery costs associated with each type of mail and preparation level.[51] Table 7 below compares the proposed rate differential between letters and flats with the cost differential calculated by the USPS:

Table 7
Comparison of USPS Proposed Rate and Cost Differential for Letters and Flats--ECR

Item	Cents Per Piece: Letters	Flat	Difference[1]
(1)	(3)	(4)	(5)
1. Mail Processing and Delivery Costs [2]			
a. High Density	5.693	5.973	0.280
b. Saturation	4.781	5.259	0.478
2. USPS Rate Proposal[3]			
a. High Density	15.2	15.4	0.2
b. Saturation	14.3	14.8	0.5

[1] Daniel, page 29.
[2] Daneil, page 29.
[3] Moeller, page 28. Excludes destination entry discounts.

As shown in Table 7 above, the USPS calculated a cost differential between letters and flats of 0.280 cents per piece for high density mail and 0.478 cents per piece for saturation mail (Table 7, Line 1). In its rate proposal, the USPS proposed a rate differential between letters and flats of

[50] This reflects ECR mail that weighs less than 3.3 ounces, i.e., mail below the breakpoint.
[51] The USPS' unit costs for delivery were developed in USPS LR-I-95 ("LR-95") and the unit costs for mail processing were developed in USPS LR-I-96 ("LR-96").

0.2 cents per piece for high density mail and 0.5 cents per piece for saturation mail (Table 7, Line 2).

Witness Haldi asserts that within ECR mail, the USPS "data systems systematically overstate the cost of letters while the cost of flats is correspondingly understated."[52] He bases his testimony on his belief that there exists a mismatch between:

(i) the way the USPS' Revenue, Pieces and Weight ("RPW") system records revenue, volume and weight; and,

(ii) the way that the IOCS develops mail processing and city carrier in-office costs.

According to Witness Haldi, this mismatch causes the IOCS to misclassify "heavy" letters (i.e., letter-shaped pieces that weigh in excess of 3.3 ounces) as nonletters for cost purposes and causes the IOCS to misclassify letter-shaped pieces with detached address labels ("DAL") as letters instead of flats. Witness Haldi asserts that this "mismatch biases the letter/nonletter cost differentials used for ratemaking within all four Standard (A) subclasses."[53] When he adjusts his costs for ECR mail for the claimed errors related to heavy weight letters, Witness Haldi calculates an additional cost differential between letters and flats of $0.291 cents per piece related to "heavy" letters. Witness Haldi's adjustment for DAL letters increases his calculation of the letter/flat differential by 0.175 cents per piece. His total cost adjustment equals 0.466 cents per piece.[54] He then proposes to increase the letter/flat differential by his claimed cost differential of 0.466 cents

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[52] Tr. 32/15765.
[53] Tr. 32/15765.
[54] Tr. 32/15818.

per piece resulting in a letter/flat differential in rates of 0.7 cents per piece for high density mail and 0.9 cents per piece for saturation mail [55/].

My analysis of Witness Haldi's adjustment to the USPS' letter/flat differential is discussed under the following topics:

A. Withdrawal of the DAL Adjustment

B. Witness Haldi's Methodology for Heavy Letters

C. USPS' Use of Correct Data

D. Summary

A. WITHDRAWAL OF THE DAL ADJUSTMENT

At the time of the oral presentation of his testimony, Witness Haldi revised his calculations to withdraw his endorsement of the letter/flat differential associated with DAL letters, i.e., 0.175 cents per piece of the total differential that he calculated of 0.466 cents per piece.[56/] To reflect this change, Witness Haldi made two errors. First, Witness Haldi stated only that Table 7 of his testimony be corrected.[58/] He should have corrected the rates and percentages in Table 2 and Table 3 of his testimony which are also affected by his withdrawn testimony.[57/] Second, in revising his proposed rates located in Table 7 of his testimony, Witness Haldi indicated that the piece rates for flat high density and saturation mail should be reduced by 0.1 cent.[58/] However, in adjusting the high-density and saturation ECR rates for flats without making an adjustment to any of the

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55/ Tr. 32/15772 and Tr. 32/15781. The saturation mail adjustment equals 0.9 cents per piece instead of 1.0 cents per piece due to rounding.
56/ Tr. 32/15854.
57/ Tr. 32/15781 and Tr. 32/15782.
58/ Tr. 32/15855.

other rates, Witness Haldi's rate structure is no longer revenue neutral. Stated differently, Witness Haldi's revised proposal will recover less in revenues than under his original proposal.

B. WITNESS HALDI'S METHODOLOGY FOR HEAVY LETTERS

In order to correct for the assumed mismatch between the USPS' RPW and IOCS recording of mail volumes and costs, Witness Haldi proposes an adjustment methodology which redistributes costs between shape-based categories.[59/] However, Witness Haldi's methodology does not follow the USPS' procedure to identify shape based differences and contains a conceptual error. These shortcomings in his methodology produce inaccurate results and fail to correct the problem that he is addressing.

1. Comparison with USPS' Procedure

The USPS identified the cost differences between letters and flats based on an analysis of delivery costs as shown in LR-95 and mail processing costs as shown in LR-96. Witness Haldi's analysis relies on Witness Daniel's base data from the cost-weight study included in LR-92.[60/] From the base data in LR-92, Witness Haldi concludes that the overall letter/flat differential, before any adjustment for all ECR mail, equals 0.542 cents per piece.[61/] Several problems exist with the starting point in Witness Haldi's methodology.

First, the data in LR-92 includes more than mail processing and delivery costs (e.g., transportation costs). Therefore, the letter/flat cost differential in Witness Haldi's analysis reflects

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59/ Tr. 32/15815.
60/ Tr. 32/15815.
61/ Tr. 32/15818.

cost components not considered in the USPS' analysis or rate proposal. Second, the LR-92 data was intended to show cost differences by weight interval.

The data in LR-92 does not contain any of the mismatch that Witness Haldi's claims because the detailed data for letter-shaped mail identifies both the costs and volumes for heavy letters.[62/] Witness Haldi's assumes that 2.6 percent of the costs for all letters is applicable to his "heavy" letter adjustment. Then, he shifts this average costs to letters, but does not shift the corresponding volumes for "heavy" letters that is also shown in LR-92. This procedure is, therefore, inaccurate.

Third, Witness Haldi's base cost differential (before he begins his adjustments) for all mail equals 0.542 cents per piece [63/] which is larger the cost differential calculated by the USPS for either high density or saturation mail (see Line 1 of Table 7 above). Because Witness Haldi has utilized average costs for letter and flat mail (at all weight intervals), his base starting point reflects the cost differences associated with mail other than high density and saturation mail, e.g., cost differences due to the different mix of dropshipping The USPS' analysis in LR-95 and LR96 specifically isolated the difference to only shape-related cost differences. For example, Witness Daniel recognized that the cost difference caused by dropshipping had to be eliminated "so that the effect of finer depth of sort can be calculated in the absence of dropshipping"[64/]. Witness Haldi has made no such adjustment and, therefore, his cost difference between letters and flats includes the average cost difference due to dropshipping.

[62/] Based on the improper comparison of the letter volume data utilized by Witness Daniel and the USPS' Witness Moeller, Witness Haldi implies that the percentage of letters above the breakpoint might be as high as 17.7 percent (Tr. 32/15814). Based on the LR-92 data, only 0.9 percent of the mail falls into the 3.5 ounce to 16.0 ounce range.

[63/] Tr. 32/15818, Line 3 of Table A-2.

[64/] Daniel, page 28.

In summary, Witness Haldi's basic unit costs for his analysis are flawed. The starting point for Witness Haldi's analysis has not followed the USPS' procedure. The basic cost differential he develops of 0.542 cents per piece do not reflect the differences solely related to shape and, therefore, any adjustments he makes to the unit costs are invalid.

2. Conceptual Error

The purpose of examining the difference in costs between letters and flats is to determine if, all other components are held constant, the shape of a piece of mail causes a difference in its cost.[65/] Witness Haldi's methodology utilizes the USPS' volumes, but shifts his calculation of costs for "heavy" letters from letters to flats. As shown below, his procedure is conceptually incorrect and creates further misstatement of costs. If a mismatch in volume and cost data does occur, the proper adjustment for purposes of determining the impact of shape on costs is to reclassify the piece count to match the correct shape-based costs. A simple hypothetical example of two mailings shown in Table 8 below demonstrates the impact from reclassifying costs rather than reclassifying piece count. For this example, assume a mailing consists of letter-shaped mail with 1,000 pieces weighing less than 3.3 ounces and 200 pieces of "heavy" letters that weigh more than 3.3 ounces (see Line 1a of Table 8 below). Next, assume a second mailing of the same number of pieces, consisting entirely of flat-shaped mail which has the same number of pieces and weight (Line 1b of Table 8 below). Further assume that the costs for the letter and flat mail are the same. Except for the fact that one mailing is letter-shaped and the other is flat-shaped, the mailings are identical

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65/ As shown above, Witness Haldi's analysis accounts for cost differences from more than shape.

in every manner including the average cost per piece (10 cents per piece for both letters and flats as shown in Column (6) of Table 8).

Table 8
Hypothetical Example of Letter Flat Mismatch
Two Mailings with Identical Volumes and Costs

	Description	Less Than 3.3 Ounces Pieces[1]	Less Than 3.3 Ounces Costs[2]	Greater Than 3.3 Ounces Pieces[1]	Greater Than 3.3 Ounces Costs[2]	Average Cost Per Piece[3]
	(1)	(2)	(3)	(4)	(5)	(6)
1.	Assumed Mailing (Correct Data)					
	a. Letters-Shaped Mail	1000	$90	200	$30	$0.100
	b. Flat-Shaped Mail	1000	$90	200	$30	$0.100
	c. Difference (L1a - L1b)	xxx	xxx	xxx	xxx	$0.000
2.	Assumed USPS Method of Recording Mailings (Without Correction)					
	a. Letter-Shaped Mail	1000	$90	0	$30	$0.120
	b. Flat-Shaped Mail	1000	$90	400	$30	$0.086
	c. Difference (L2a - L2b)	xxx	xxx	xxx	xxx	$(0.034)
3.	Haldi Adjustment to Correct Mismatch Issue					
	a. Letter-Shaped Mail	1000	$90	0	$0	$0.090
	b. Flat-Shaped Mail	1000	$90	400	$60	$0.107
	c. Difference (L3a - L3b)	xxx	xxx	xxx	xxx	$0.017

[1] As recorded in RPW.
[2] As recorded in IOCS.
[3] [Column (3) + Column (5)] ÷ [Column (2) + Column (4)].

Line 2 of Table 8 illustrates the mismatch assumed by Witness Haldi without any correction to classify the pieces for the two mailings.[66] Line 2 of Table 8 assumes that the USPS' RPW

[66] Witness Daniel's analysis of the cost difference between the mail processing and delivery costs of letters and flats was constructed in a way that effectively reflects the unit costs on Line 1 of Table 8.

system categorizes letter-shaped pieces over 3.3 ounces as flats (Table 8, Column (4), Line 2b). Line 2, Column (5) of Table 8 assumes that the IOCS recognizes the distinction between "heavy" letters and flats by placing the costs into two separate categories. Because the two reporting systems theoretically handle this heavy letter mail in a different manner, there is, according to Haldi, a mismatch in piece count and cost. The alleged mismatch, under Witness Haldi's theory, produces an overstatement in the cost per piece for letters and an understatement in the cost per piece for flats. The total difference in this example equals 3.4 cents per piece (Column (6), Line 2c).

Witness Haldi's proposed methodology for adjusting the USPS classification problem is to move the shape-based costs that are mismatched and leave the piece count in its misclassified position. [67/] Therefore, as shown in Line 3 of Table 8 above, Witness Haldi would reclassify the costs for all letter-shaped pieces over 3.3 ounces to the flat-shaped cost category (shifting the $30 in costs from Line 2a to Line 3b).[68/] Witness Haldi's methodology results in an overstatement of the average cost of the flat-shaped pieces and an understatement in the average cost of the letter-shaped pieces (Column (6), Line 3). Thus, Witness Haldi's approach does not result in the correct answer (i.e., no difference in the average cost per piece for the two sample mailings), but in fact, now leads to an overstatement of flat-shaped average cost and an understatement for the letter-shaped mail. In other words, his adjustment has compensated for his perceived error (which in

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67/ As discussed above, the data relied upon by Witness Haldi did identify the letter volumes for the claimed "heavy" letters so he could have moved the volumes for "heavy" letters.

68/ Witness Haldi did not know the actual costs for these pieces but rather imputed the average costs of all letters to the "heavy" letters (Tr. 32/15818).

actuality does not exist in the USPS' methodology) in such a way as to cause the opposite effect on the USPS' data.

C. USPS' USE OF CORRECT DATA

Witness Haldi asserts that this mismatch was reflected in the data in LR-92 utilized by Witness Daniel. Even if Witness Daniel had relied on LR-92 to calculate the cost differential between letters and flats, the data in LR-92 is not based on the RPW system as claimed by Witness Haldi. In other words, the data source that Witness Haldi claims reflects the mismatch was not used by the USPS.

As Witness Daniel explained in her response to interrogatory ADVO/USPS-T28-1, she did not rely on RPW volumes for the analysis in LR-92, but utilized PERMIT volume information. Witness Daniel states:

> The letter and nonletter volumes in USPS-LR-I-92 are derived in USPS LR-I-102. These volumes are based on the processing category recorded in PERMIT, which should correspond to the DMM definition of shape.[69/]

In response to a question posed by the Office of the Consumer Advocate ("OCA") during oral cross examination on April 12, 2000, USPS' Witness Mark E. Ramage confirms that the mismatch hypothesized by Witness Haldi related to LR-92 has been corrected in the USPS data:

> This question is directed towards exploring the feasibility of adjusting IOCS data so that it is consistent with shape definition used for volume data for Standard A letters. An alternative approach would be to produce volume estimates for Standard A letters that are consistent with the IOCS shape definitions. My

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69/ Tr. 4/1202.

> understanding is that witness Daniel employed this latter approach to ensure consistency between the costs and volumes. See Tr. 4/1202. Since witness Daniel relies on PERMIT volumes corresponding to the Domestic Mail Manual ("DMM") shape definitions, she uses consistent shape definitions for her volume and cost estimates. The IOCS shape definitions and the DMM shape definitions both define letter shape according to the same physical dimensions of the piece. See F-45, page 12-8, and C050.2.0 of the DMM 55.[70/] (emphasis added)

Witness Ramage's statement shows that any mismatch that had existed was corrected by the USPS. Even if LR-92 was to be utilized to calculate the letter/flat cost differential (which it was not), no adjustment is required.

D. SUMMARY

Witness Haldi claims that the USPS overstates the cost of letters while understating the cost of flats. His revised cost difference between letters and flats equals 0.297 cents per piece. Witness Haldi has relied on the wrong base data and, furthermore, his methodology contain a conceptual error. These flaws demonstrate that his analysis is not valid. Therefore, the USPS' results are correct.

70/ Response of the United States Postal Service Witness Ramage to question of the Office of the Consumer Advocate During Cross-Examination filed 04/18/2000.

VIII. COST COVERAGE FOR STANDARD (A) AND FIRST CLASS MAIL

Witness Clifton proposes to reduce the cost coverage ratios of First Class and First Class Presort mail by 1.3 percentage points and 7.0 percentage points respectively.[71/] To balance his proposed reductions in the First Class and First Class Presort cost coverage ratios, Witness Clifton proposes to increase the cost coverage ratio for Standard (A) Regular mail by 9.3 percentage points (from the USPS' proposed coverage 132.9 percent to 142.2 percent) and the ratio for Standard (A) ECR mail by 5.6 percentage points (from the USPS' proposed coverage ratio of 208.8 percent to 214.4 percent). Witness Clifton bases his changes in cost coverage on his assertion that the cost coverage for First Class mail has become highly discriminatory relative to Standard (A) mail.[72/]

This section of my testimony discusses Witness Clifton's justification of his changes to the cost coverages for First Class and Standard (A) mail and explains why his proposal is not supported by the data in this proceeding or by PRC precedent.

My review is discussed under the following topics:

A. Changes in First Class Presort Cost Coverage

B. Changes in ECR Cost Coverage

C. Contribution to Institutional Costs

D. Summary

71/ Tr. 26/12457.
72/ Tr. 26/12463.

A. CHANGES IN FIRST CLASS PRESORT COST COVERAGE

Witness Clifton asserts that First Class Presort mail is being unfairly burdened in its allocation of institutional costs.[73] In his testimony, Witness Clifton states:

> While First Class workshared mail is supposed to be part of a single First Class letters subclass, it does appear unmistakably that in the growing disparate trends between cost coverages for single piece versus workshared mail in the allocation of institutional costs, workshared mail is being singled out in an arbitrary and almost punitive way.[74]

In support of his assertion, Witness Clifton provides a comparison of implicit cost coverage ratios for First Class and Standard (A) mail for the years 1994-1999.[75] While it is clear that the cost coverage for First Class Presort mail has increased in the last five years, Witness Clifton's comparison does not demonstrate the cause of the increase in the coverage ratios.

By definition, cost coverage for a given subclass of mail is the ratio of revenues to volume variable costs for that subclass of mail. Increases in cost coverages, therefore, can occur either through an increase in revenues, a decrease in costs, or a combination of both. Table 9 below summarizes, for 1994 and the Test Year After Rates ("TYAR") analysis presented by the USPS in this proceeding, the average revenue, costs and cost coverage ratio for First Class Presort mail.[76]

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[73] Tr. 26/12460.
[74] Tr. 26/12460.
[75] Tr. 26/12459.
[76] I am aware of the USPS' supplemental testimony regarding the update of costs to reflect 1999 base year data. For comparability with Witness Clifton, I have continued to utilize the same data as presented by Witness Clifton.

Table 9
Comparison of Changes in
Mail Revenues and Volume Variable Costs Per Piece --First Class Presort

	Item	1994 [1/]	TYAR [2/]	Percent Change[3/]
	(1)	(2)	(3)	(4)
1.	Revenue--Cents Per Piece	26.1	28.15	7.9%
2.	Volume Variable Costs--Cents Per Piece	11.7	10.68	-8.7%
3.	Contribution -Cents Per Piece	14.4	17.47	21.3%
4.	Cost Coverage Ratio (L1 ÷ L2)	223%	264%	18.4%

[1/] Fiscal Year 1994 Cost and Revenue Analysis
[2/] USPS-T-32, Exhibit USPS-32B, pages 1-2.
[3/] [Column (3) / Column (2)] - 1.

Between 1994 and the TYAR, the cost coverage ratio for First Class Presort mail rose 18.4 percent from 223 percent [77/] to 264 percent (Table 9, Line 4). While revenue per piece increased by 7.9 percent during the study period (Line 1, Column (4)), the volume variable costs decreased at a rate of 8.7 percent (Line 2, Column (4)). In other words, approximately 50 percent of the increase in the cost coverage for First Class Presort mail is due to decreased costs.

The PRC has stated in previous decisions that increases in cost coverage due to decreases in costs are not a sign of an unjust burden placed on a particular subclass of mail. In Docket No. MC95-1, the PRC stated:

[77/] The data in Table 9 for 1994 is based on the USPS' CRA. Witness Clifton's Table 12 shows a coverage ratio of 219 percent.

> "...in every situation in which some mail allows the Postal Service to avoid costs, the implicit cost coverage for that mail will be higher than the implicit coverage for otherwise similar mail. The Commission believes that this is just."[78/]

The logic of the PRC's decision in Docket No. MC95-1 applies in this proceeding. The increase in First Class Presort mail cost coverage has come about in large part, due to the lower costs. Therefore, because the cost coverage has increased for First Class Presort mail, this does not mean, in light of the PRC decision in Docket No. MC95-1, that this particular subclass of mail is being singled out for discriminatory rate increases.

B. CHANGES IN ECR COST COVERAGE

Witness Clifton portrays the USPS' proposed changes in rates as unfairly placing a greater burden on First Class mailers who have invested heavily in technology to reduce cost:

> This (disparate trends between cost coverages for single piece versus workshared mail) is unfair, inequitable, and discriminatory treatment towards the mailers whose substantial investments and ongoing dedication now move 45 billion pieces of First Class Mail through automated processing technology annually.[79/]

An examination of data for another subclass of mail (i.e., ECR mail) that relies heavily on technology reveals that the contributions from First Class Presort mail are not excessive.

Table 10 below, which follows the same format as Table 9, summarizes the average revenue per piece, costs per piece and contribution per piece for ECR mail for 1994 and TYAR.

78/ Docket No. MC95-1 decision, pages III-28.
79/ Tr. 26/12460.

Table 10
Comparison of Mail Revenues and Volume Variable Cost Per Piece --ECR

	Item	1994 [1]	TYAR [2]	Percent Change [3]
	(1)	(2)	(3)	(4)
1.	Revenue--Cents Per Piece	13.2	15.72	19.1%
2.	Volume Variable Costs--Cents Per Piece	6.3	7.53	19.5%
3.	Contribution -Cents Per Piece	6.9	8.2	18.8%
4.	Cost Coverage Ratio (L1 ÷ L2)	210%	209%	(-)1%

[1] Fiscal Year 1994 Cost and Revenue Analysis
[2] USPS-T-32, Exhibit USPS-32B; USPS-LR-I-166, WP 1, page 24.
[3] [Column (3) / Column (2)] - 1.

A comparison of Table 9 and Table 10 illustrates two key points. Because the revenues and costs changed at approximately the same level, the coverage ratio for ECR mail decreased 1 percent between 1994 and TYAR. However, ECR mail has a much larger increase in revenues than that borne by First Class Presort mail. ECR revenue per piece equaled 13.2 cents per piece in 1994 (Table 10, Line 1). Under the USPS proposed rate structure, ECR revenue per piece increases to 15.7 cents per piece for TYAR (Table 10, Column (3), Line 1), an increase of 19.1 percent (Table 10, Column (4), Line 1). In contrast to the 19.1 percent increase for ECR mail, First Class Presort mail revenue per piece increased 7.9 percent over the same time period (Table 9, Column (4), Line 1), a difference of 11.2 percent.

Second, the unit contribution for ECR mail increased by 18.8 percent, over the 1994 to TYAR time period (Table 10, Column (4)). As Table 9 shows, the unit contribution for First Class Presort mail increased 21.3 percent between 1994 and TYAR (Table 9, Column (4), Line 3).

Therefore, the change in the contribution is approximately the same for First Class and ECR mail. The fact that ECR mail will maintain a percentage change in unit contribution essentially equal to that of First Class Presort mail while also seeing a substantial increase in unit revenue compared to First Class Presort mail is a clear indication that the First Class Presort mail is not receiving discriminatory treatment when compared to ECR mail. [80/]

C. CONTRIBUTION TO INSTITUTIONAL COSTS

Witness Clifton asserts that the cost coverage ratios for First Class mail and Standard (A) mail should be adjusted because First Class mailers contribute an excessive portion to the USPS institutional costs. He states:

> There is an additional reason why the Commission should adjust the cost coverages along the lines I suggest. The contribution the First Class letter mail subclass makes to USPS institutional costs has simply gotten out of hand over the 1990s.[81/]

Although First Class mail has seen an increase in contribution, Standard (A) Regular mail has seen an even greater increase to contribution. Table 11 below, which is based Table 13 of Witness Clifton compares the absolute and relative change in contributions to institutional costs from First Class letter mail and Standard (A) Regular mail for the time period 1994 to 1999[82/]. The First Class letter mail subclass has shown a greater absolute change in contribution over this time period than has Standard (A) Regular mail. This absolute change is to be expected given the greater

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80/ Witness Tye also asserts that the proposed change in rates unfairly places a greater burden on First Class mailers (Tr. 30/14731). Like Witness Clifton, Witness Tye does not look at the relative change in unit contribution and therefore does not recognize that ECR and First Class mail have received an essentially equal relative increase in unit contribution.

81/ Tr. 26/12460.

82/ This is the same period Witness Clifton utilizes in Table 13 of his testimony.

volume in First Class mail as well as Standard (A) mailers greater use of destination entry discounts which lower overall revenue and costs.

Table 11
Comparison of Contribution to Institutional Costs As Shown by Clifton

	Mail Class	Contribution (000)[1/] 1994	Contribution (000)[1/] 1999	% Change 1994-1999[2/]
	(1)	(2)	(3)	(4)
1.	First Class Letter	$11,410	$16,640	45.8%
2.	Standard (A) Regular	1,211	2,084	72.1
3.	Total Mail Service	17,284	24,265	40.4

[1/] Clifton, Table 13 (Tr. 26/12461).
[2/] [Column (3) ÷ Column (2)] - 1.

As shown in Table 11 above, First Class letter mail has seen a 45.8 percent (Table 11, Column (4), Line 1) increase in its contribution to institutional costs for the 1994-1999 time period. This is close to the USPS overall 40.4 percent change (Column (4), Line 3) for the same time span. In contrast, Standard (A) Regular has seen a 72.1 percent increase in its contribution (Table 11, Column (4), Line 2), well above the overall USPS average. To assert that First Class letter mailers have seen discriminatory increases in relative contribution over the 1994-1999 time period disregards the large increase incurred by Standard (A) Regular mailers.

D. SUMMARY

Witness Clifton infers throughout his testimony that First Class mail carries too much of an institutional cost burden and, therefore, cost coverages should be adjusted. He recommends that

First Class single piece and First Class Presort mail cost coverages should be lowered and Standard (A) Regular and ECR mail coverages be raised. An examination of the arguments he uses to support his proposed changes reveals that he has disregarded past PRC decisions and utilized data which ignores increases in revenue and contribution for Standard (A) mail. Based on previous PRC decisions and data for Standard (A) mail for the same time period as utilized by Witness Clifton, no basis exists to increase the coverage ratio for Standard (A) mail above the USPS' proposed level.

USPS' Costs and Volumes by Weight Increments -- Regular

					Inputs used by Ms. Daniel		Inputs for Revised Regression	
	Weight Increments (ounces) (1)	Number of Pieces per Increment 1/ (2)	Weight (Pounds) 1/ (3)	Total Cost (1,000's) 1/ (4)	Average Weight Per Piece (ounces) 2/ (5)	Average Cost Per Piece 3/ (6)	Average Pieces Per Pound 4/ (7)	Average Cost Per Pound 5/ (8)
1.	0.0 to 0.5	8,747,091,966	184,280,580	$1,081,748	0.34	$0.124	47.47	$5.870
2.	0.5 to 1.0	11,404,201,293	519,125,736	$1,455,419	0.73	$0.128	21.97	$2.804
3.	1.0 to 1.5	4,792,879,103	367,132,978	$731,699	1.23	$0.153	13.05	$1.993
4.	1.5 to 2.0	2,988,638,371	322,254,136	$554,328	1.73	$0.185	9.27	$1.720
5.	2.0 to 2.5	2,103,443,012	295,055,711	$403,113	2.24	$0.192	7.13	$1.366
6.	2.5 to 3.0	2,549,930,575	441,438,182	$438,169	2.77	$0.172	5.78	$0.993
7.	3.0 to 3.5	2,498,208,591	502,568,111	$428,771	3.22	$0.172	4.97	$0.853
8.	3.5 to 4.0	1,523,657,694	356,425,916	$492,101	3.74	$0.323	4.27	$1.381
9.	4.0 to 5.0	2,192,214,612	608,987,097	$346,338	4.44	$0.158	3.60	$0.569
10.	5.0 to 6.0	1,253,983,750	426,670,168	$244,717	5.44	$0.195	2.94	$0.574
11.	6.0 to 7.0	722,093,403	291,671,566	$170,430	6.46	$0.236	2.48	$0.584
12.	7.0 to 8.0	486,188,828	226,985,241	$184,911	7.47	$0.380	2.14	$0.815
13.	8.0 to 9.0	333,826,177	176,730,047	$99,212	8.47	$0.297	1.89	$0.561
14.	9.0 to 10.0	244,795,395	145,275,303	$109,578	9.50	$0.448	1.69	$0.754
15.	10.0 to 11.0	246,682,929	162,410,751	$100,045	10.53	$0.406	1.52	$0.616
16.	11.0 to 12.0	202,579,432	145,515,879	$100,442	11.49	$0.496	1.39	$0.690
17.	12.0 to 13.0	216,130,522	169,177,817	$103,269	12.52	$0.478	1.28	$0.610
18.	13.0 to 14.0	133,968,247	112,813,257	$81,984	13.47	$0.612	1.19	$0.727
19.	14 .0to 15.0	85,577,382	77,255,918	$60,035	14.44	$0.702	1.11	$0.777
20.	15.0 to 16.0	57,681,913	55,765,086	$75,061	15.47	$1.301	1.03	$1.346

1/ USPS-LR-I-92 sheet Regular all (detailed)

2/ Column (3) ÷ Column (2) x 16 ounces

3/ (Column (4) x 1,000) ÷ Column (2)

4/ Column (2) ÷ Column (3)

5/ (Column (4) x 1,000) ÷ Column (3)

USPS' Costs and Volumes by Weight Increments -- ECR

					Inputs used by Ms. Daniel		Inputs for Revised Regression	
	Weight Increments (ounces)	Number of Pieces per Increment 1/	Weight (Pounds) 1/	Total Cost (1,000's) 1/	Average Weight Per Piece (ounces) 2/	Average Cost Per Piece 3/	Average Pieces Per Pound 4/	Average Cost Per Pound 5/
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	0.0 to 0.5	6,567,978,563	135,341,727	$384,125	0.33	$0.058	48.53	$2.838
2.	0.5 to 1.0	5,568,422,818	255,493,988	$398,526	0.73	$0.072	21.79	$1.560
3.	1.0 to 1.5	2,790,971,660	222,825,324	$212,642	1.28	$0.076	12.53	$0.954
4.	1.5 to 2.0	2,901,427,528	323,500,191	$196,100	1.78	$0.068	8.97	$0.606
5.	2.0 to 2.5	3,548,811,635	509,565,386	$218,277	2.30	$0.062	6.96	$0.428
6.	2.5 to 3.0	2,960,135,421	519,324,061	$204,524	2.81	$0.069	5.70	$0.394
7.	3.0 to 3.5	1,875,267,345	385,734,533	$157,908	3.29	$0.084	4.86	$0.409
8.	3.5 to 4.0	1,549,324,284	372,534,646	$158,875	3.85	$0.103	4.16	$0.426
9.	4.0 to 5.0	2,977,269,831	848,935,134	$213,855	4.56	$0.072	3.51	$0.252
10.	5.0 to 6.0	1,342,660,886	464,229,728	$114,417	5.53	$0.085	2.89	$0.246
11.	6.0 to 7.0	699,669,330	288,375,650	$65,932	6.59	$0.094	2.43	$0.229
12.	7.0 to 8.0	371,958,415	176,937,461	$42,400	7.61	$0.114	2.10	$0.240
13.	8.0 to 9.0	201,513,104	109,179,206	$26,672	8.67	$0.132	1.85	$0.244
14.	9.0 to 10.0	78,920,017	47,711,180	$15,622	9.67	$0.198	1.65	$0.327
15.	10.0 to 11.0	74,474,482	49,701,200	$10,533	10.68	$0.141	1.50	$0.212
16.	11.0 to 12.0	33,831,994	24,918,961	$8,264	11.78	$0.244	1.36	$0.332
17.	12.0 to 13.0	32,205,634	25,756,359	$5,828	12.80	$0.181	1.25	$0.226
18.	13.0 to 14.0	25,434,174	21,883,581	$5,093	13.77	$0.200	1.16	$0.233
19.	14 .0to 15.0	17,179,749	16,012,076	$4,460	14.91	$0.260	1.07	$0.279
20.	15.0 to 16.0	13,060,565	12,809,676	$7,852	15.69	$0.601	1.02	$0.613

1/ USPS-LR-I-92 sheet ECR all (detailed)

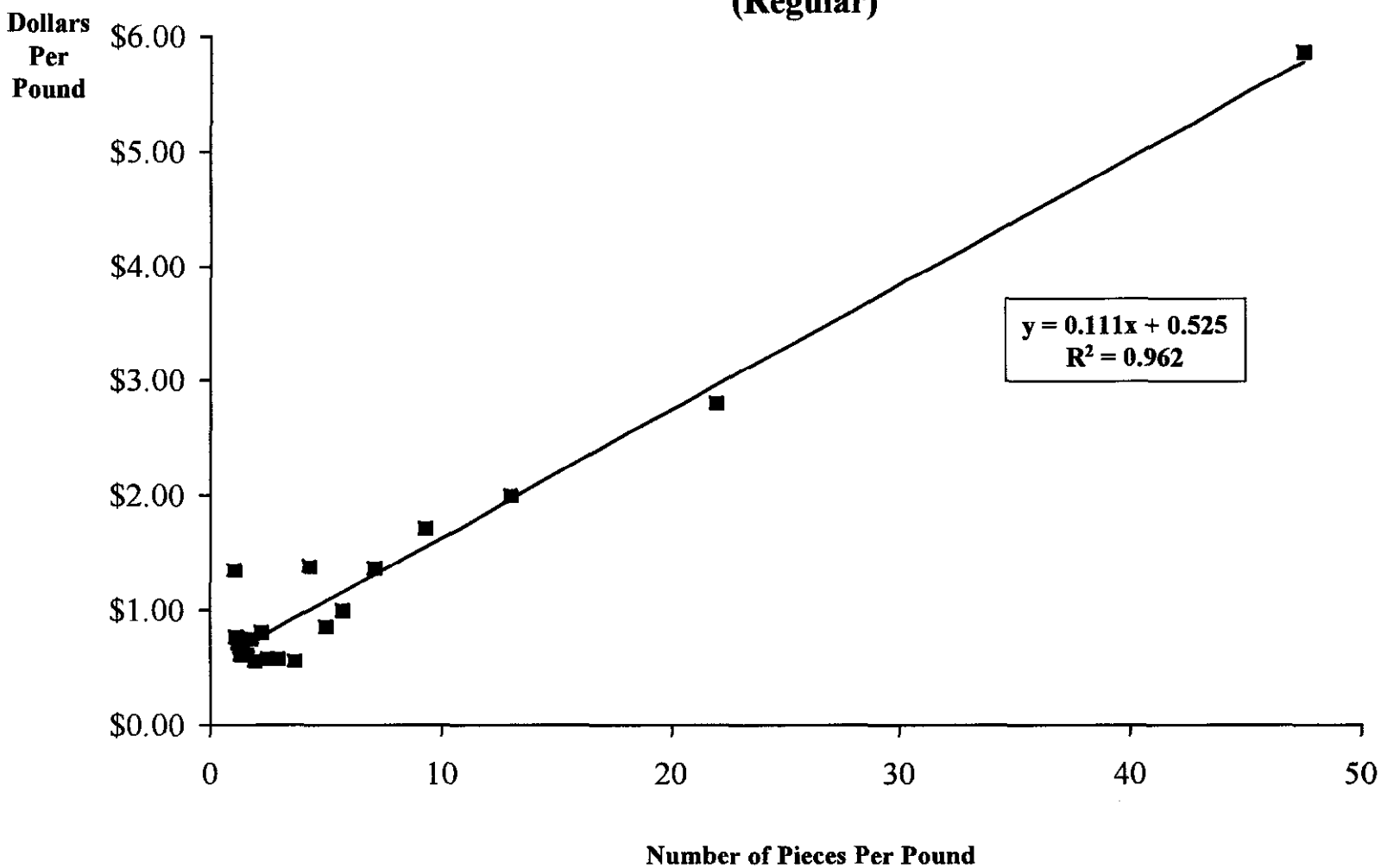
2/ Column (3) ÷ Column (2) x 16 ounces

3/ (Column (4) x 1,000) ÷ Column (2)

4/ Column (2) ÷ Column (3)

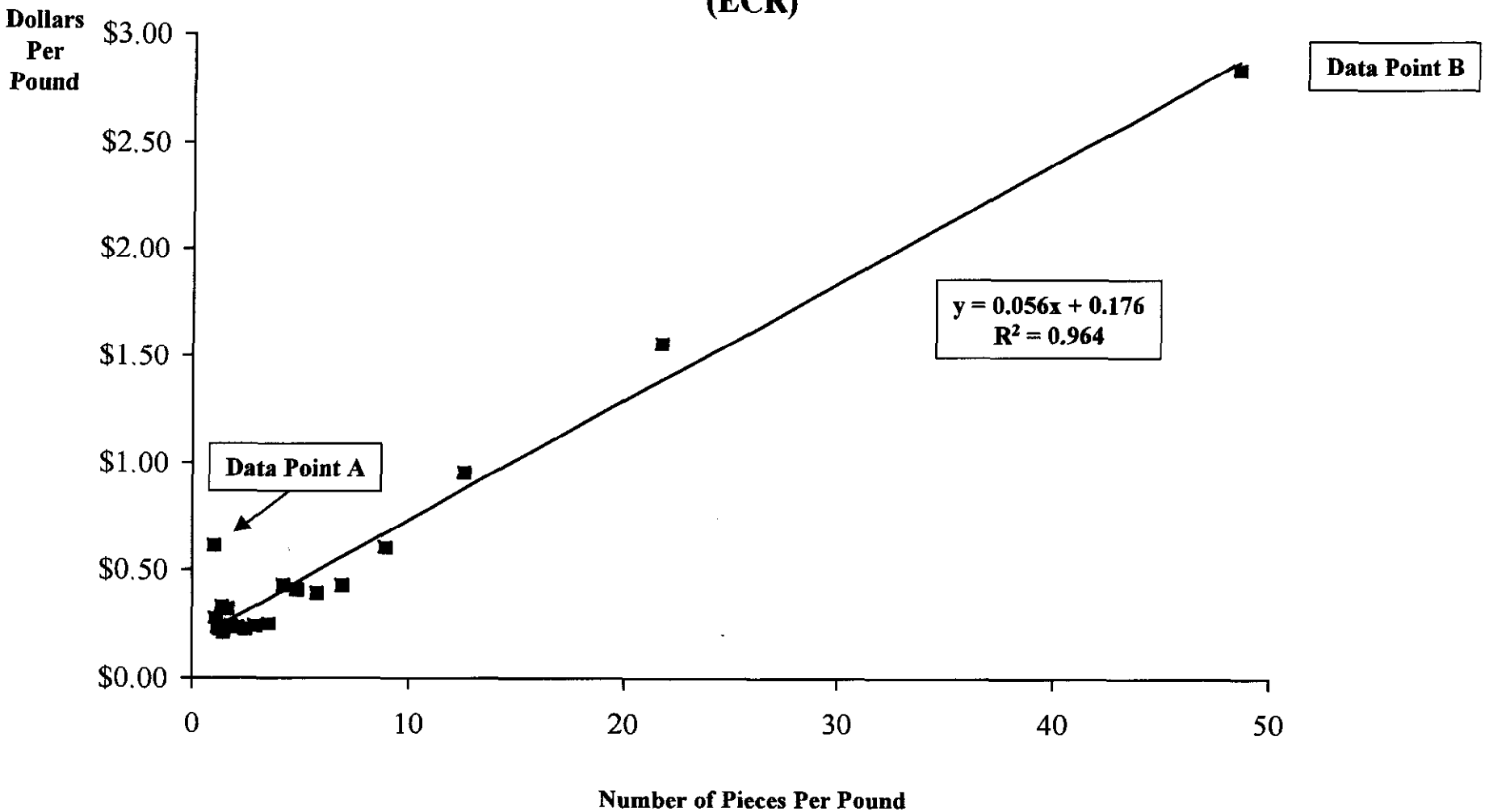
5/ (Column (4) x 1,000) ÷ Column (3)

Restated Regression Utilizing
Cost Per Pound and Pieces Per Pound
(Regular)



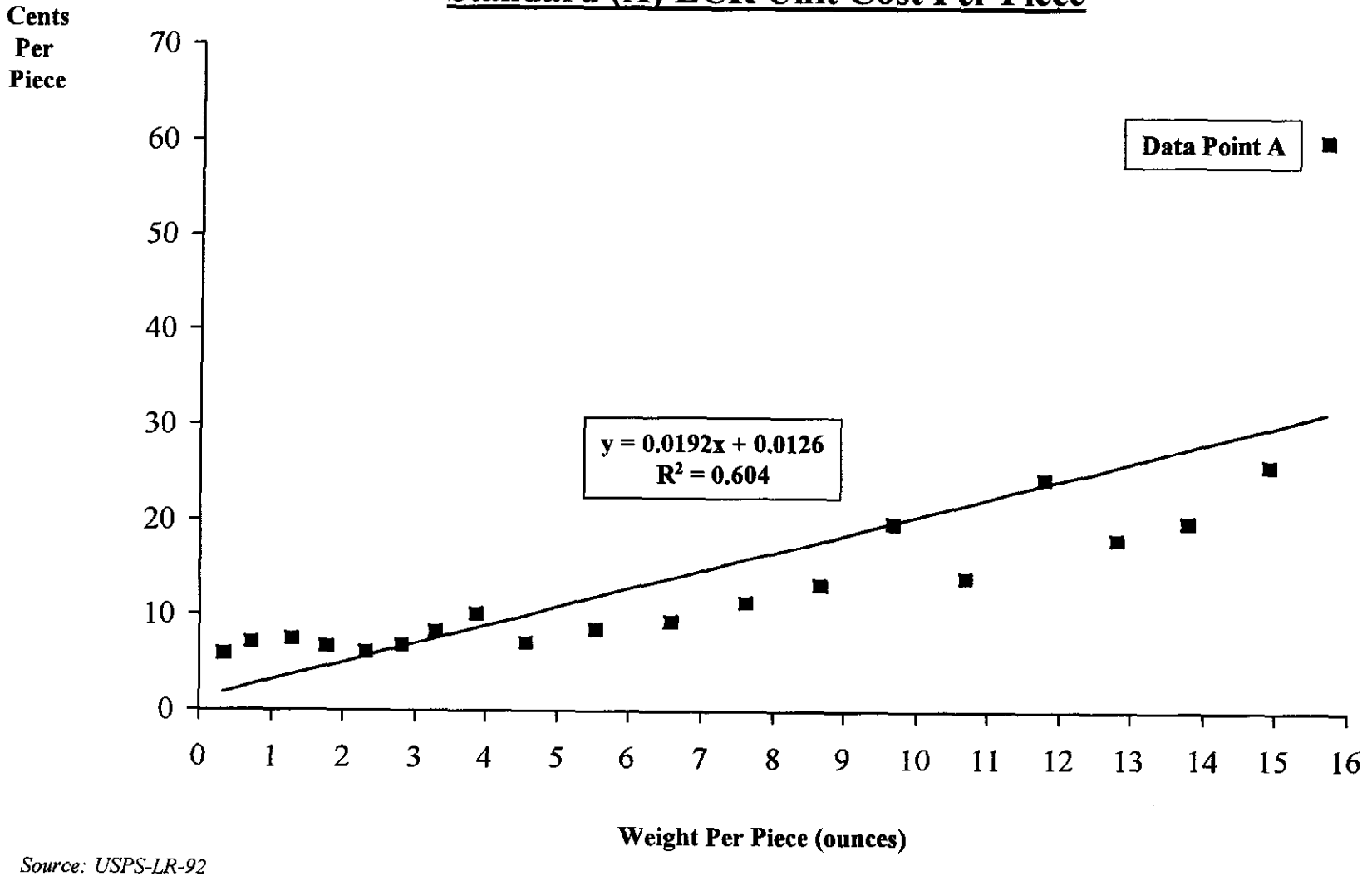
Source: MOAA, et al-RT-1.xls

Restated Regression Utilizing
Cost Per Pound and Pieces Per Pound
(ECR)



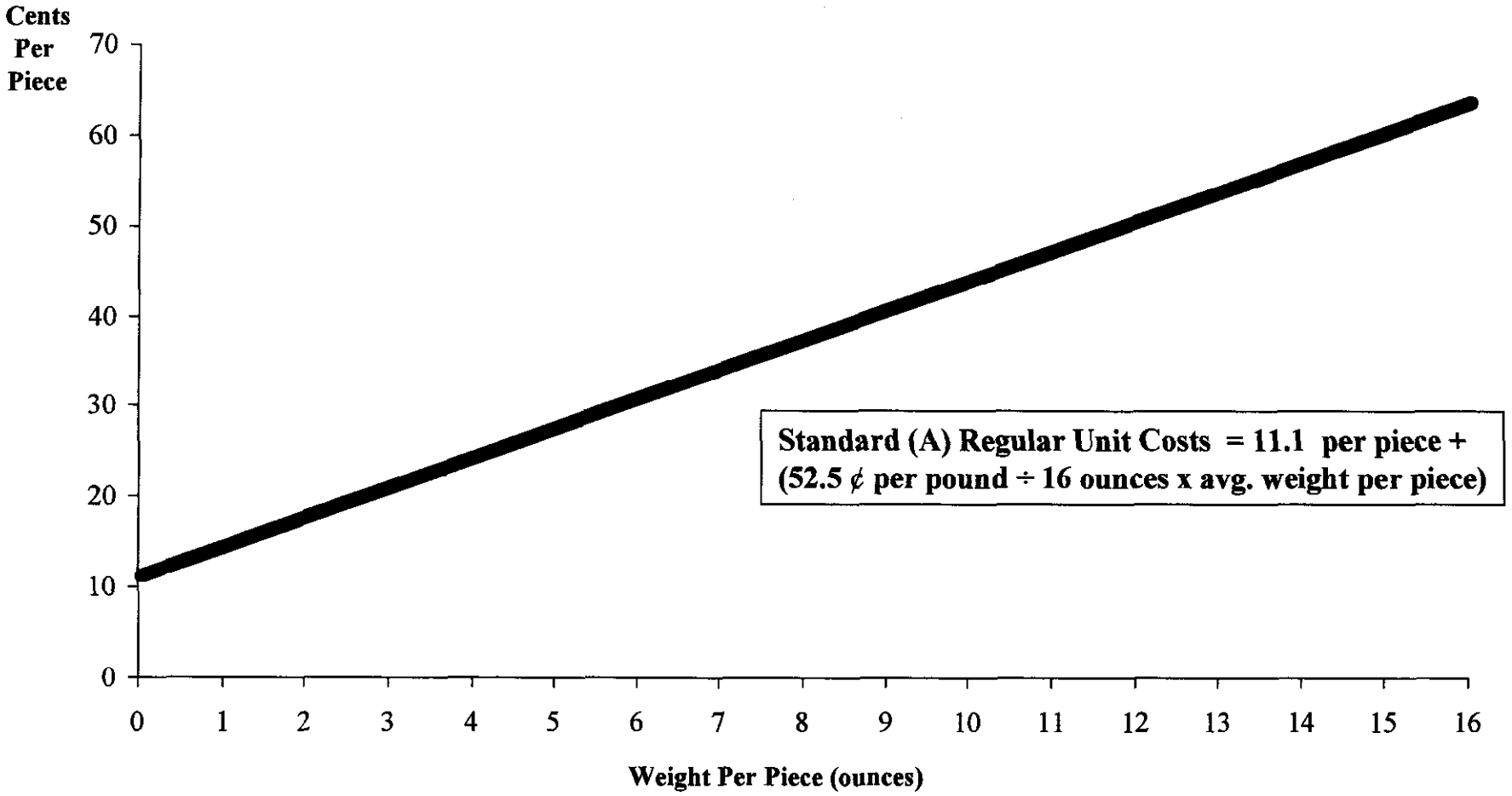
Source: MOAA, et al-RT-1.xls

USPS Witness Daniel's Estimated
Standard (A) ECR Unit Cost Per Piece



Source: USPS-LR-92

Unit Cost Line Based on Restated Regression -- Regular



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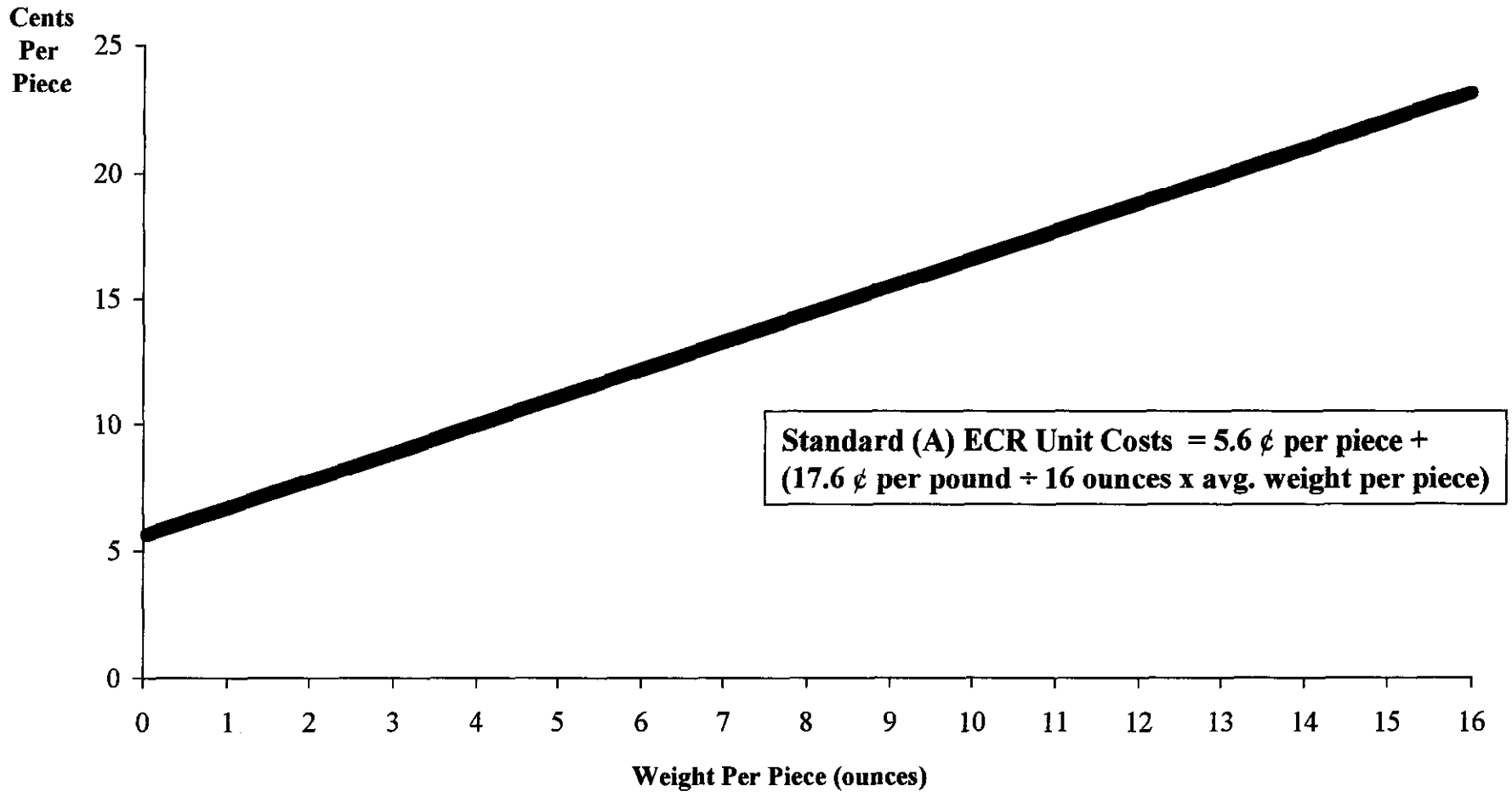
Unit Cost Line Based on Restated Regression -- ECR



Source: MOAA, et al-RT-1.xls