DOCKET SECTION

RECEIVED
MAR 3 4 27 PM '98

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

POSTAL RATE AND FEE CHANGES, 1997	Docket No. R97-1

REBUTTAL TESTIMONY
OF
JOHN C. PANZAR
ON BEHALF OF
UNITED STATES POSTAL SERVICE

TABLE OF CONTENTS

1. QUALIFICATIONS

My name is John C. Panzar and I am the Louis W. Menk Professor of Economics at Northwestern University, where I hold appointments in the Economics Department and in the Transportation Center. I have testified on behalf of the United States Postal Service previously in this proceeding. My qualifications may be found in my direct testimony in this docket, USPS-T-11.

2. PURPOSE AND SCOPE OF TESTIMONY

I have two objectives for the present testimony. First, I want to explain why the "weighted attributable cost" (WAC) concept presented by Witness Chown should play no role in the postal rate-making process. It has no economic relevance and, as she herself admits, is not grounded upon cost causation. Its use is unnecessary and would only confuse matters. The reason is that cost measures can be relevant for rational rate-making only to the extent that they are causally related to the firm's decisions. Marginal costs play an important role in rate-setting because they reflect the costs that are *caused by* the (marginal) volume changes resulting from (marginal) rate changes. Incremental costs are important for both equity and efficiency because they measure the costs that are *caused by* the provision (of all units) of some service. The WAC concept proposed by Witness Chown reflects neither notion of causality. On a per unit basis, WAC for a subclass may be greater than, equal to, or less than the marginal cost of that subclass or the average incremental cost of that subclass. In sum, Witness Chown's attempts to assign responsibility for certain institutional costs to particular classes of mail, while

having some superficial appeal, is in actuality an arbitrary allocation of the unallocable. Her "metric," in essence, is a somewhat flexible variant of a fully distributed costing scheme.

The second set of issues addressed in this testimony are Dr. Henderson's "practical" reasons for using Postal Service estimates of average incremental cost in developing his pricing recommendation instead of the unit volume variable cost estimates dictated by economic theory. First, he argues that marking-up average incremental costs for rate-making purposes is desirable because it provides a "margin for error" when evaluating rates for cross-subsidization. I explain why such a margin for error is not necessarily desirable and, even if it were, would provide no justification for using average incremental costs as the cost basis to which mark-ups should be applied. Next, he justifies marking-up average incremental costs because they are "longer run" costs than the unit volume variable costs obtained from the Postal Service's costing methodology. I explain that the incremental costs estimates provided by the Postal Service in this proceeding are calculated using the same basic methodology as its volume variable cost estimates. I also point out that the so-called "longer run" costs Dr. Henderson wants to attribute *and* mark-up, should not form part of the cost basis to which mark-ups are applied precisely because they do not vary with volume, even though they may be variable during the relevant time period.

3. WITNESS CHOWN'S "WEIGHTED ATTRIBUTABLE COSTS" (WAC) HAVE NO ECONOMIC SIGNIFICANCE.

As I explained in my Direct Testimony, there are two economic concepts of cost causality that are important for postal rate-making: marginal costs and incremental costs. The former measure the costs caused when an additional unit of subclass volume is provided and the latter measures all the costs incurred as a result of the entire mail volume of a subclass. (Equivalently, the incremental costs of a subclass are the Postal Service costs that would be *avoided* if the subclass in question were no longer provided by the Postal Service.) As I also explained in my Direct Testimony, each cost concept has its unique role to play in an economically efficient rate-making process. Marginal cost, as measured by unit volume variable cost, is the appropriate starting point to which mark-ups should be applied. Incremental cost is the standard to which subclass revenues must be compared in order to determine that the subclass is not receiving a subsidy.

The WAC proposed by Witness Chown involve combining marginal and incremental costs in such a way that the usefulness of both concepts is destroyed. Unit WAC are not an appropriate basis for mark-ups, as they may be greater than or less than economic marginal costs. WAC also provide no useful information for subsidy analysis because they may be greater than or less than incremental cost. More importantly, the attempt to introduce cost measures not based upon cost causation into the rate-making process reveals a fundamental misunderstanding of the role of that important policy function. The purpose of rate-setting is to cover the costs of the enterprise. Any break-even set of rates will necessarily allocate total costs among the various subclasses, but the

objective must always be a "desirable" set of rates, however that term may be defined or interpreted. Concepts of "cost coverage" have economic (as opposed to statutory) significance because economically desirable rates generally must exceed marginal costs and revenues must be at least as large as incremental cost. This is why the ratio of subclass revenues to its volume variable costs is of general interest to economists. There is no similar reason why WAC should play any role in rate-setting. Put simply, the use of WAC is not called for in the statute, and it has no basis in economic theory.

3.1 Witness Chown's Weighting Scheme Obscures The Economic Usefulness Of Postal Service Cost Measures.

Witness Chown proposes that the volume variable costs attributed to each subclass from any cost component be weighted by a factor equal to that component's share of institutional costs divided by its share of total volume variable costs. These weighted values would then be summed over all cost components to determine the weighted attributable costs for each subclass. She then proposes that the Commission use its judgment to apply to these WAC whatever mark-ups it thinks are warranted by the statute. These mark-ups would then be added to *unweighted* unit volume variable costs to determine subclass rates. Unfortunately, by attempting to mix two economically valid cost measures, Witness Chown ends up creating a cost measure with no economic usefulness.

The shortcomings of Witness Chown's proposal can be explained in terms of her simplified example, first introduced on page 10 of her testimony. I begin by clarifying and extending the example in three ways. First, I assume that the institutional costs

associated with each Function (cost component) are component fixed costs. These costs must be incurred if the Function is provided at all, but do not vary with volume. This greatly simplifies the calculations without affecting my conclusions. Second, I assume that *one unit of volume* is provided for each Class of mail. It is impossible to analyze costs for rate-making purposes without specifying service quantities. Here, it simplifies the arithmetic and maximizes comparability with Witness Chown's discussion to assume unitary volumes for Classes A, B, and C. Finally, I assume that the (implicit) "cost drivers" for cost Function 1 and Function 2 are equal to the unweighted volumes of each mail Class. This is consistent with the example, and, again, simplifies the arithmetic.

Let me now restate the cost structure of the hypothetical postal network represented in the example. Three mail subclasses (Classes A, B, and C) utilize one or both of two cost components (Functions 1 and 2). Each unit of Class A requires one unit of service from Function 1 *and* one unit of service from Function 2. Each unit of Class B mail requires one unit of service from Function 1, but does not utilize Function 2 at all. Each unit of Class C mail requires one unit of service from Function 2, but does not utilize Function 1 at all. The (component) total costs for Function 1 are assumed to be given by

$$C_1 = \$30 + (\$75)(\text{Class A volume} + \text{Class B volume}).$$

Similarly, the (component) total costs for Function 2 are assumed to be given by

$$C_2 = \$120 + (\$50)(\text{Class A volume} + \text{Class C volume}).$$

As explained in my Direct Testimony, the costing methodology of the Postal Service would assign $75 of Function 1 costs as volume variable costs to each of Classes A and B, while assigning $50 of Function 2 costs as volume variable costs to each of Classes A and C. The total volume variable costs assigned to each mail subclass is just the (unweighted) sum of those assigned from Functions 1 and 2. Since I have assumed that all subclass volumes are equal to one, the per unit volume variable cost is equal to total volume variable costs. For Class A, these are both $125 = $75 + $50. Class B's unit (and total) volume variable cost is $75 and Class C's unit (and total) volume variable cost is $50. Now, let us use this example to verify the point made in my direct testimony: i.e., that unit volume variable costs are equal to marginal costs. Adding an additional unit of Class A service in this example requires increasing driver activity from two to three in both Functions 1 and 2. The Function 1 cost is $75, and the Function 2 cost is $50, so that the total marginal cost of an additional unit of Class A service is, indeed, equal to the (per unit and total) Class A volume variable cost of $125. Adding an additional unit of Class B service in this example requires increasing driver activity from two to three in Function 1 only. The cost of this would be $75, which equals the (per unit and total) Class B volume variable cost. Adding an additional unit of Class C service in this example requires increasing driver activity from two to three in Function 2 only. The cost of this would be $50, which equals the (per unit and total) Class C volume variable cost. In this example, the total volume variable costs assigned to the three subclasses are $250.

The above discussion is reflected by the numbers in the middle column of Table 4 in Witness Chown's direct testimony. Since total system costs are $400 = [$30 + (2)($75)] + [$120 + (2)($50)], this leaves institutional costs for the system of $150 which must be covered by marking-up rates above unit volume variable costs. (Of course, with the cost structure in this example, system institutional costs are just the sum of component fixed costs: $150 = $30 + $120.) The final column of Witness Chown's Table 4 is obtained by applying a break-even uniform mark-up to the volume variable costs calculated earlier.

Next, consider the subclass-level incremental costs which would be calculated by applying Postal Service methodology to this example. If Class A were eliminated, the system would save $75 of costs by reducing the level of driver activity in Function 1 from two units to one unit. Similarly, $50 would be saved by reducing the level of driver activity in Function 2 from two to one. The incremental costs of Class A in this example are thus $125 = $75 + $50; the costs that would be avoided if Class A mail service were no longer provided. Notice that the fixed costs associated with Functions 1 and 2 are not part of the incremental costs of Class A because those costs would continue to be incurred (to serve Classes B and C), even if Class A were eliminated. It is even simpler to calculate the incremental costs of Classes B and C. For Class B, these are just the $75 of costs saved by reducing the level of driver activity in Function 1 from two units to one unit. Class C incremental costs are just the $50 of costs saved by reducing the level of driver activity in Function 2 from two units to one unit. Again, the component fixed costs are not part of the incremental costs of Classes B or C because they would be

incurred to serve Class A, regardless. Because of the rather simple structure of the example, incremental costs and volume variable costs are equal for all three subclasses, taken individually.

	Weighted Attributable Cost	Incremental Cost	Volume Variable Cost	Marginal Cost
Class A	$125	$125	$125	$125
Class B	$25	$75	$75	$75
Class C	$100	$50	$50	$50

TABLE 1

For the example in question, Table 1 presents the values of the cost measures derived above as well as Witness Chown's Weighted Attributable Cost. It is easy to see the problems which can result from her attribution scheme. In this example, it turns out that WAC, Incremental Cost, and Volume Variable Cost are all equal for Class A. But, for Class C, WAC is twice the level of Volume Variable Cost and Incremental Cost. This is because Class C utilizes the high fixed cost component (Function 1), but not the low fixed cost component (Function 2). Witness Chown argues that this accurately reflects Class C's intensive use of components with large institutional costs. This may be so, but, as she admits, there is no cost causative content to that interpretation. The institutional costs are "identified" with particular subclasses of mail solely because Witness Chown has chosen to use a metric which arbitrarily implies responsibility for such costs without

establishing any causal nexus whatever. Precisely the opposite difficulty emerges in the case of Class B. Because it utilizes only the cost component with low fixed costs, its WAC of $25 is significantly lower than its marginal and incremental cost of $75. Under Witness Chown's metric, Class B is assigned relatively less responsibility for certain fixed costs, despite the fact that no single class, whether it be Class C, or Class A, or Class B, can be shown to have caused these costs to be incurred.

What is the significance of this exercise for rate-making purposes? None, that I can see. Witness Chown has cleverly constructed a cost measure that is a *weighted* sum of component volume variable costs. One could construct many other such weighted sums, which would be equally arbitrary . The WAC weights in Witness Chown's proposal reflect the relative level of institutional costs in the various components. These weights appear meaningful, until one recalls that, by definition, the institutional costs in question are *common costs,* which are not caused by any single subclass. Therefore, just because a subclass incurs most of its volume variable costs in a cost component that has large institutional costs does not mean it is any more or less "responsible" for those costs than any other *single* subclass.

Suppose Witness Chown had gone further, and proposed, for example, that institutional costs be distributed using a uniform mark-up over WAC. Then her scheme would have been recognized as a (somewhat complicated) form of Fully Distributed Cost rate-making, based on arbitrary allocations of costs common to two or more subclasses. She avoids that charge by recommending that the Commission use its judgment in setting

varying subclass mark-ups over WAC to cover institutional costs. However, the arbitrary allocation of common costs remains at the heart of the plan.

3.2 Unbundling, Incremental Costs, And Cross-Subsidy Tests

Despite the serious short comings of her WAC proposal, Witness Chown's testimony raises some important issues regarding the impact of unbundling on the analysis of cross-subsidization. Again, her simple example (as extended above) provides a useful framework in which to illustrate the issues. Table 2 presents figures for incremental costs, volume variable costs, and WAC for *groups* of services as well as individual services. The interesting feature to note is that the incremental costs of {A,B} and {A,C} are *greater* than the sum of the individual service incremental costs. With constant component marginal costs, this could not happen if all services utilized all cost components. Here, however, since Class C does not utilize Function 1, that component's fixed costs of $30 must be included in the incremental costs of service group {A,B}. Similarly, since Class B does not utilize Function 2, that component's fixed costs of $120 must be included in the incremental costs of service group {A,C}.

Service Group	Volume Variable Costs	Incremental Costs	WAC
Classes A and B	$200	$230	$150
Classes A and C	$125	$295	$225
Classes B and C	$125	$125	$125
Classes A, B, and C	$250	$400	$250

TABLE 2

The end result of these considerations is that a process of unbundling which results in a situation in which all subclasses do not utilize all cost components increases the importance of performing incremental cost tests on *groups* of service offerings as well as individual service offerings. In the present example, based on the individual incremental cost tests, any combinations of non negative mark-ups m_A, m_B, and m_C that summed to the total institutional costs of $150 would seem to result in a rate structure that was free of subsidy. However, additional constraints emerge from the joint incremental cost test. For the service group {A,B} to cover its incremental cost of $230, Class C must be charged no more than $170 = $400 - $230. In other words, $m_C \leq \$120 = \$170 - \$50$. Similarly, for the service group {A,C} to cover its incremental cost of $295, Class B must be charged no more than $105 = $400 - $295, which translates to $m_B \leq \$30 = \$105 - \$75$.

Thus, any subsidy-free rate structure must have mark-ups over volume variable costs such that $m_A + m_B + m_C = \$150$; $m_A \geq 0$; $0 \leq m_B \leq \$30$; and $0 \leq m_C \leq \$120$. Notice that even the constraints imposed by group incremental cost test leaves the Commission considerable freedom to pursue statutory considerations in setting cost coverages. The important point here is that Postal Service costing methodology provides the framework within which mark-ups may be determined and rates tested for cross-subsidization.

Now it possible to uncover why Witness Chown's argument strikes a chord of sympathy at first reading. Recall her description of the plight of Class B mailers under equal mark-ups without WAC:

> Class B, which uses only Function 1, is assigned $45 of institutional costs even though the institutional costs for Function 1 total only $30. Thus, in this example, Class B is assigned a share of the institutional costs of Function 2 although the class makes no use of this function.[1]

This may strike one as somehow "unfair." Whether or not this is the case, it is clear that it is, at the very least, economically inefficient. Consider the incremental costs in Table 2. Because the mark-up assigned to Class B in this situation is $45, and its price is $120, the revenue obtained from Classes A and C totals only $280 (= 400 - 120), less than the $295 incremental cost of the two classes considered as a group. Thus, applying equal

---

[1] Chown Direct Testimony, pages 10-11.

mark-ups to unweighted volume variable costs violates the incremental cost test for the {A,C} service group.[2] Thus Chown's dramatic example merely illustrates the need for careful incremental cost testing when unbundling occurs. It does not demonstrate any need for an arbitrary scheme for weighting volume variable costs. Nor is Witness Chown's proposal a substitute for subsidy analysis. Since the Commission would be free to select differing mark-ups for each subclass, basing those mark-ups on WAC rather than volume variable costs does nothing to ensure that subsidy free rates are established.

3.3 Unbundling And Work-Sharing Discounts

Unbundling also raises the issue of work-sharing discounts. Witness Chown's proposed WAC costing methodology complicates rather than clarifies the resulting rate-making problem. Again, her example can be used to illustrate the difficulties caused by her proposal. There, Class B can be viewed as a version of Class A in which Function 2 is provided by the mailer. Similarly, Class C can be viewed as a version of Class A in which Function 1 is provided by the mailer. A glance at Table 1 reveals that Postal Service costing methodology clearly reflects this fact. The (unit) volume variable costs of Class A ($125) exceeds the (unit) volume variable cost of Class B ($75) by $50, which

---

[2] Equivalently, one could say that the rate for Class B violates the *stand-alone* cost test because $120 > $30 (Function 1 Fixed Costs) + $75 (Class B Volume Variable Costs).

is precisely the cost of the unit of Function 2 driver activity saved by work-sharing each unit of Class B volume. Similarly, the (unit) volume variable costs of Class A ($125) exceeds the (unit) volume variable cost of Class C ($50) by $75, which is precisely the cost of the unit of Function 1 driver activity saved by work-sharing each unit of Class C volume.

There is considerable debate about the appropriate levels of work-sharing discounts in a multi-layered network such as that operated by the Postal Service. It is not my intention to take a position on that issue here. However, it is generally recognized that a pricing policy that employs discounts equal to unit costs saved is required to ensure that postal services are provided at minimum *social* cost. That is, only this policy will provide the incentive for those mailers (and *only* those mailers) who can provide a function more cheaply than the Postal Service to undertake that activity themselves. There may be good reasons to depart from this Efficient Discount Policy when setting rates. For example, as Witness Bernstein points out, Ramsey optimal prices may involve different discounts.[3] However, one result of a costing methodology should be to make it easy to determine the magnitude of unit cost savings.

---

[3] In other words, efficient "discounts" do not necessarily yield efficient "rates." Logically, this is not surprising, as the scope of the inquiry involved in exploring efficient discounts does not address the broader issue of the efficiency of the base rate to which the discount is applied.

As indicated above, the methodology presented by the Postal Service in this docket has the property that, when one mail subclass involves fewer cost components than another, the difference in unit attributable costs measures the component costs saved at the margin. All that is required to implement EDP is to set equal *absolute* mark-ups for the subclasses in question. (*Not* equal percentage mark-ups!) A glance at Witness Chown's Table 7 reveals that her proposed WAC methodology makes it very complicated to implement EDP. The WAC for Class A ($125) is $100 greater than that of Class B ($25), while the Function 2 costs saved are only $50. On the other hand, the WAC for Class A ($125) is only $25 more than that of Class C ($100), while the Function 1 costs saved are $75. Of course, since Witness Chown's proposal allows the Commission to set any mark-ups it deems reasonable, it is still possible to implement EDP. However, it would no longer be simple!

4. WITNESS HENDERSON'S PROPOSAL TO MARK-UP AVERAGE INCREMENTAL COSTS IS CONTRARY TO ACCEPTED ECONOMIC THEORY.

In his Direct Testimony, Dr. J. Stephen Henderson makes alternative pricing recommendations for Express Mail, Priority Mail, and Parcel Post. These recommendations are based upon applying existing mark-ups to the average incremental cost estimates developed by the Postal Service, rather than unit volume variable costs. In my Direct Testimony, I explained why unit volume variable costs correspond to economic marginal costs and that marginal costs are the economically correct starting point from which to apply mark-ups for rate-setting purposes. Rather than dispute the economic principles upon which my testimony is based, Dr. Henderson offers two

supposedly practical reasons for using average incremental costs as the basis for mark-ups: to guard against the effects of "measurement error" and because they are calculated on a "longer run" basis than unit volume variable costs. In my opinion, neither argument is correct.

4.1 Marking-Up Average Incremental Costs Is Not The Correct Way To Allow For A "Margin For Error" When Attempting To Prevent Cross-Subsidization.

On page 10 of his Direct Testimony, Dr. Henderson states: "Without some markup over incremental cost, measurement error could lead to prices for some services that are below their actual incremental costs." The situation he seems to have in mind is one in which the revenues from some subclass *exactly* covers its *measured* incremental cost. In the absence of systematic bias, measured incremental costs may be greater than or less than "true" incremental costs. Dr. Henderson points out that, if rates were set to cover measured incremental costs, but did not cover true incremental costs, entry into the market in question would be inefficiently deterred. That is the potential *efficiency cost* of an *underestimate* of the true incremental cost. Call this ECU. However, there are also costs associated with applying an incremental cost floor that is above true incremental costs. In that case, prices for some or all other subclasses may be increased above the (initially) desired levels, leading to a loss of consumers' surplus and the encouragement of inefficient entry into those markets. Such is the potential *efficiency cost* of an overestimate. Call this ECO. Which expected costs are greater, those of the ECU or those of the ECO? No general conclusion is possible without detailed analysis of the case

at hand. Most modeling approaches tend to lead to the result that the point estimate, or "best guess," be used to implement constraints such as an incremental cost pricing floor.

However, should detailed study result in the conclusion that, as a practical matter, subclass revenues should exceed subclass incremental costs by some "margin for error," that is no reason to use average incremental costs as the cost basis to which mark-ups are applied. The correct way to implement such a policy would be at the subsidy testing stage. That is, the Commission would determine rates based on marginal costs and statutory considerations and then test them for cross-subsidy by comparing the resulting revenues to estimated incremental costs plus any desired margin for error.

4.2 Postal Service Estimates Of Incremental Costs Are Developed Under The Same Assumptions As Those Used To Develop Volume Variable Costs. They Are Not "Longer Run" Costs.

On page 11 of his Direct Testimony, Dr. Henderson cites my Direct Testimony as authority for his conclusion that ". . the relevant cost basis for pricing decisions should correspond to the time period during which the rates will be in effect." I could not agree more. That is why the unit volume variable costs presented by the Postal Service are *not* designed to be estimates of short-run marginal costs that "change[s] frequently as a result of changes in volumes, usage mixes, overtime rates, input costs, organizational changes, productivity improvements, general inflation, and other factors."[4] Instead, they are

[4] Direct Testimony of J. Stephen Henderson, UPS-T-3, at page 11.

designed to measure those additional costs required to provide a unit increase in subclass volume which is expected to be sustained over a period of a few years.

There may be practical questions concerning exactly what productive inputs are and are not allowed to vary in the operation of the Postal Service's costing methodology. However, it must be pointed out that the incremental costing methodology presented in Witness Takis's Direct Testimony is based on precisely the same costing system that is used to develop Postal Service unit volume variable cost estimates. Incremental cost calculations require estimating the effects on component costs of removing entire subclass mail volumes, rather than one unit of subclass volume. Because of this, one might argue that incremental cost estimates involve necessarily less accurate extrapolations from current experience. But, though perhaps less precise, they are calculated using the same cost models used in the calculation of volume variable costs.

In his discussion, Dr. Henderson seems to confuse the issues of whether certain costs vary with volume with whether or not they are variable within a particular time frame. Costs which do not vary with volume are *fixed costs.* Those fixed costs which cannot be avoided during a particular time period are *sunk costs* with respect to that time frame. The Postal Service costing methodology presented in this proceeding does not include any component fixed costs or product specific fixed costs when developing marginal (unit volume variable) cost estimates. But this is because those costs do not vary with volume, not because the Postal Service has chosen to use short run costs instead of long run costs. Dr. Henderson's example of advertising costs is instructive. Advertising costs are not included in marginal cost calculations because they do not vary

with volume. However, they may or may not comprise part of subclass incremental costs depending upon the time frame of the analysis. One could imagine advertising contracts that irrevocably committed the Postal Service to a pattern of expenditures over the next decade. In that case, these costs would be sunk with respect to the time period relevant for rate-making and, therefore, would not be part of the incremental costs of any subclass. Alternatively, suppose the Postal Service committed its advertising expenditures on a monthly or annual basis. These costs would then clearly be incremental for rate-making purposes. However, in neither case would advertising costs be included in the calculation of marginal costs. This example illustrates precisely why average incremental costs should not form the cost basis to which mark-ups are applied: *they include costs that do not vary with volume.* To the extent possible, such costs should not be included in the rates that determine consumer purchases because they are *not* caused by provision of the marginal unit of service of the subclass in question.

One other point made by Dr. Henderson merits comment. During hearings on his testimony, Dr. Henderson observed that the Postal Service and the Commission have no choice but to rely upon available demand information (e.g., price elasticities) when setting rates, and further stated that a Ramsey analysis does provide useful information for consideration in a broader pricing process. Tr. 25/13669-70. Obviously, I agree. But Dr. Henderson appears to fail to appreciate fully the consequences of his statements. Specifically, if the mark-up process starts with incremental costs, it is impossible to engage in a Ramsey analysis, much less derive any useful information content. There are

no means by which to analyze economically efficient mark-ups for comparison purposes with other proposed mark-ups.[5]

That is why, as stated in my direct testimony, it is necessary to start the mark-up process with marginal (i.e., volume variable) costs. Using this approach, for each subclass, one can consider the minimum mark-up required over marginal costs to cover incremental costs, one can consider the Ramsey mark-up, and, of course, one can bring to bear all the other factors of the Act one wishes to rely upon in determining the actual mark-up proposed. In contrast, if one starts with incremental costs, you can still consider the other factors of the Act, but you have lost the ability to bring to bear information on the economically efficient mark-ups. And as even Dr. Henderson apparently agrees, you have therefore lost useful information.

5. SUMMARY AND CONCLUSIONS

My conclusions in this Rebuttal Testimony are easily summarized:

- The Weighted Attributable Cost concept proposed by Witness Chown is without economic foundation and should play no role in the rate-making process. Even

---

[5] I suppose that as a matter of semantics, one could argue that it is arithmetically possible to take marginal costs, calculate Ramsey rate levels, and convert the resulting rate levels into a mark-up over incremental cost for each subclass. While such an exercise could be conducted, I would not consider it one in which, in any meaningful sense, the true starting point has been incremental costs.

though it allows for substantial flexibility, it still unnecessarily introduces arbitrariness into the rate-making process.

- The "practical" reasons offered by Dr. Henderson for basing his pricing recommendations on mark-ups of average incremental costs rather than marginal costs are not well founded, and certainly do not overcome the theoretical superiority of the latter over the former as the proper basis for rate-making.

In this testimony, I have continued my efforts to emphasize that marginal costs are the relevant cost basis to which any mark-ups should be applied. The costing methodology used by the Postal Service is designed in such a way that unit volume variable costs correspond to economic marginal costs. Therefore, these costs should be used as the basis for mark-ups, even though the Postal Service has also reported estimates of incremental costs in this proceeding. The latter should be used only to evaluate rates for cross-subsidization. While incremental costs are, indeed, caused by the totality of the mail subclass in question, they include costs which are *not* caused by the marginal unit of subclass volume.