

considerations. In sum, we do not believe that the productivity adjustment, as proposed in the NPR, destroys the incentive to improve productivity. The issue is discussed further in the context of partial or shared adjustment.

METHODOLOGICAL ISSUES

Shippers generally support the proposed (Reebie) methodology, although ASG submits its own proposal.³⁰ DOT supports implementation only after modification. Additionally, DOT believes that certain aspects of the methodology must be reviewed periodically and suitable modifications made if problems occur. AAR argues that the proposed methodology is so flawed that it cannot be adopted even if modified. AAR contends that the methodology does not correctly measure inputs or outputs and that it therefore incorrectly measures productivity. Furthermore, AAR alleges that, even if the methodology were accurate, random errors in the input data are likely to cause sizable errors in the productivity estimates. AAR also argues that the methodology's failure to distinguish between pure efficiency gains and other phenomena that affect output costs also renders it useless for the proposed purpose. These various methodological issues are discussed in greater detail below.

Agribusiness Proposed Methodology

The Agribusiness Shippers Group concurs in the Commission's proposal to compute an RCAF which reflects changes in output costs rather than input prices. However, ASG objects to the Reebie methodology because it entails two steps: (1) computation of the RCAF based on input prices; and (2) adjustment of that index by productivity to reflect output cost. It also believes the NPR's proposal relies on data which are unverifiable. ASG attempts to show that the Commission's proposed approach can be simplified. It proposes an alternate index which would purportedly allow the direct computation of an output cost RCAF which reflects productivity change. ASG has also provided, for the intended purpose of showing that the Commission's proposal can be simplified, another index which would produce a measure of productivity with which to adjust the current RCAF.

The first index suggested by ASG would have the Commission compute the allowable revenue increase (or RCAF) directly by measuring the change in total costs and relating it to (dividing it by) a measure of the

³⁰ Agribusiness prefers the Reebie methodology to a decision declining any adjustment.

change in total output. The result purportedly would yield an index of actual costs, related to actual output, adjusted for the effect of change in the composition of freight service. ASG asserts that the index could then be trended for forecasting purposes by regression analysis. In addition, the trend line could also be adjusted to reflect "nonmathematical" or historical data. This approach, it avers, is superior to the methodology proposed in the NPR because it is less complex and uses actual, rather than estimated, costs and output.

ASG would compute a productivity adjusted RCAF directly as follows: the adjusted index would be computed by comparing input costs between two periods and adjusting that result by an output measure. ASG's proposed output measure is the number of revenue ton-miles deflated by the change in revenue *per* ton-mile. These "Adjusted Revenue Ton Miles", in ASG's opinion, correct for the non-homogeneity of ton-miles (*i.e.*, they capture changes in the composition of freight service) and thus yield a measure of output which can be compared over time.

Concerned Shippers show that ASG's and the Commission's proposal are the same in principle. The only difference is whether the computations are viewed as adjusting the RCAF to arrive at an allowable rate increase, or calculating such an increase directly. There is no argument that the measure of railroad cost used by the Commission and that proposed by ASG for use in its first recommended index are different. Thus, Concerned Shippers state the real question is whether or not the ASG proposal really provides a valid simplification of the railroad output measure. Both Concerned Shippers and the AAR demonstrate it does not.

ASG's attempt to simplify the measure of railroad output is in error. Mathematical inconsistencies and flawed implementation contained in ASG's proposal are fatal. Examples provided by Concerned Shippers and AAR demonstrate mathematically the fallacious results which could be obtained from the application of ASG's proposed ton-mile index.

Specifically, ASG's failure to segment railroad ton miles into various categories as proposed by Reebie and Caves-Christensen leads to misstatement in the railroad output index. Two simple examples are provided by Concerned Shippers witnesses Caves and Christensen. In the first example, they show for a simple two commodity railroad that a rate increase with *no change in output* leads to a decline in the index of rail output. Using the same data, the second example assumes a change in the composition of traffic with an increase in ton miles for the lower revenue commodity and an offsetting decrease in ton miles for the higher revenue commodity. Again using the ASG approach Caves-Christensen show an increase rather than a decrease in the output index. Applying the Reebie methodology to the same data shows no change in output for the first

example and a decline in output in the second example. These examples clearly demonstrate that ASG's methodology is invalid.

In short, we do not believe that ASG accomplished what it set out to accomplish. The rail output measure cannot be simplified in the manner described. Caves-Christensen and Reebie have shown that a weighted output index is necessary to capture changes in the composition of various rail outputs.

Another approach proffered by ASG employs total freight revenues as the measure of output and total freight expenses, plus interest, less depreciation as a measure of inputs. The index proposed in this fashion is intended to be used as a productivity index and yields a comparison of year to year changes in revenues relative to year to year changes in costs. Total freight revenues are the product of output and the prices charged for that output. Total freight expenses are simply inputs multiplied by their unit costs. Given that productivity is defined as the change in output divided by a change in inputs, ASG's formulation will bias the productivity measurement due to the inclusion of input and output prices. Only if the changes in input and output prices are identical will the ASG methodology correctly measure productivity. AAR has related ASG's proposed productivity index to Caves-Christensen's equation which shows allowable revenue increases to be equal to the RCAF divided by a productivity index. AAR demonstrates adequately that when ASG's proposed productivity index is substituted into the Caves-Christensen equation, a clearly unacceptable answer would result.³¹ We agree with AAR that the results obtained from ASG's second approach is not the increase in costs contemplated by the RCAF. Consequently, we reject ASG's proposed approach (and its auxiliary example) in favor of a simplified rate adjustment mechanism reflecting productivity measurement.

Additionally, we observe that the ASG proposal goes far beyond the scope of the *November NPR*. ASG proposes not only a variation in the methodology for productivity measurement but a wholesale change in the way that the RCAF itself is calculated. Even if the ASG proposal were conceptually sound, adoption would require re-noticing and reopening of the *RCRP, supra*, proceeding concerning the RCAF indexing methodology. Consequently, we will focus our attention on the Reebie methodology and the reasons why we believe it to be sound.

³¹ In fact the ASG methodology computes the allowable revenue increase as the square root of the RCAF. This is clearly different than the result obtained from the Reebie methodology which computes the allowable revenue increase as the RCAF divided by a productivity index.

Construction of the Input Index

Productivity is defined in terms of the efficiency with which resources (inputs) are turned into products (outputs). Under the Reebie proposal, total freight expenses calculated using depreciation accounting, plus fixed charges are used as the measure of input consumption. AAR argues that there are a number of errors in this choice of measurement. It concludes that these errors understate recent rail inputs and result in overstated productivity. The alleged errors include failure to recognize the opportunity cost of capital, omission of certain tax expenses, and understatement of depreciation expense. Additionally, AAR contends that certain expenses which were accounted for as "below-the-line," *i.e.*, as non-operating expenses, should be included in total rail inputs.

DOT also believes that the proposed productivity adjustment is overstated because all relevant costs such as labor buyout expenses recorded below-the-line are not included. It argues that a properly constructed measure would count only the net savings produced by operational efficiencies. DOT believes that implementation should be delayed until these expenses are made part of the calculation.³²

Current or Book Depreciation. We find no basis to believe that the understatement of the index alleged by AAR precludes adoption of the Reebie methodology. To begin with, the basic undertaking we are engaged in is the measurement of change between periods rather than the estimation of the absolute size of any particular activity or account. If the description of the objects under measurement remains consistent over time, arguments about the method of description may be of little practical consequence.³³

Furthermore, attempts at introducing what may be seen as greater theoretical purity may only introduce greater uncertainty as to practical measurement. For example, AAR champions the use of current value

³² DOT also expressed other reservations which it did not believe serious enough to delay implementation of the adjustment. It observes that the Bureau of Labor Statistics is currently developing a multi-factor index which should be reviewed when it becomes available. Additionally, DOT suggests that we carefully monitor the reporting of contract traffic revenues in the ICC Waybill Sample and examine the use of alternative data if the divergence between reported and actual revenues grows too large. Both of these concerns will be considered in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment-Implementation*, served April 10, 1989. (Not printed) An Advance Notice of Proposed Rulemaking (ANPR) in that proceeding will be issued shortly.

³³ The shippers argue, correctly, that if the "economic" and the "accounting" costs change in the same proportion, there is no real significance to the AAR argument. There is no empirical evidence to suggest otherwise.

accounting for the measurement of depreciation rather than the use of historic values (book values) that are produced by reference to the Commission's Uniform System of Accounts. While we would not dispute the fact that the use of replacement values can be a superior method of estimating the real economic costs incurred in production, the problems in estimating the current replacement value of groups of assets are inherently so difficult that we have rejected it in other contexts, as has the Railroad Accounting Principles Board.³⁴

Because there are drawbacks to the measurement of the depletion of capital assets under either the book value or the replacement value methods, reliance on the standard accounting approach is fully justified. Furthermore, as cost saving technology is adopted both measurements of depreciation can be expected to decline as the level of inputs required to produce a given level of output is reduced. Since its inception in 1980 (and currently) the RCAF index has employed book values for depreciation in the measurement of the change in input prices. Apart from the fact that the methodology used may make little or no difference, it would make no sense to use book values for calculating the RCAF and replacement values for productivity measurement.

Taxes and the Opportunity Cost of Capital. Turning to the issue of the inclusion of several "below-the-line" items, AAR's contention is that costs that are not reported as operating expenses (but are accounted for after the statement of operating income, *i.e.* below-the-line) will not be reflected in the productivity adjustment. That is correct, though, to the extent certain of the items pointed to are correctly below-the-line items, they have also not been reflected in the RCAF index used for the past eight years. The principal costs that need consideration are the opportunity cost of capital and certain taxes.

According to AAR's witnesses Tretheway, et al, accounting conventions cause:

an asymmetric treatment of capital * * * Fixed charges are recognized as a cost of acquiring and using capital inputs, but the opportunity costs of capital supplied by *shareholders goes unrecognized.*

(Note) The situation is more complex. It is the opportunity costs of rail-owned capital supplied by the shareholders which are not recognized. There is an asymmetric and inconsistent treatment of the costs of capital in conventional accounting classifications.³⁵

³⁴ *Final Report* (1987), at 60. See *Standards for Railroad Revenue Adequacy*, 3 I.C.C.2d 261 (1986), at 11-17.

³⁵ V. S. of Michael W. Tretheway, W. Edwin Diewert, W. G. Waters, II (Dec. 1988) at 27.

From what little is said here it is difficult to assess the exact nature of the problem troubling the AAR witnesses. We can agree with the assertion that economists widely accept opportunity costs as true economic costs and that if they are not recognized some understatement may occur. But, if the understatement is consistent across periods, the impact on the measurement of productivity growth is not likely to be significant, and we do not understand the argument about symmetry to suggest inconsistent treatment across periods. Thus, we assume the argument about symmetry refers to our inclusion of debt but not equity in the productivity adjustment. But it is vital to maintain consistency between the RCAF and the productivity measure used to adjust it. Deflating input expenses by a productivity measure which includes cost categories not captured in the accounting expenses reported by the railroads yields an invalid result. Since economic costs are not included in the RCAF, they cannot be included in the productivity adjustment. Given the practical problems involved in the estimation of opportunity cost, reliance on conventional measurement is preferable.

AAR is no more convincing on the issues of taxes. Again citing to Tretheway, it is argued that:

* * * income taxes occur below the line and are excluded. However in comparing across industries, and from the viewpoint of investors who require a return on their investment, taxes are a cost of doing business. Corporate profit taxes are an additional expense incurred by suppliers of equity capital. By excluding these capital related expenses from the estimate of total rail costs, opportunity costs, hence total input use, are understated for the rail industry.³⁶

It is not questioned that the exclusion of tax on income and profit result in an understatement of the total costs of doing business. But that is not the same as saying that they should be included in the measurement of productivity. Increased taxes are not so much a change in the cost of producing a good, or service as they are a cost of having profited from so doing. The need for consistency between the RCAF and the productivity measure used to adjust it requires the exclusion of income taxes, which are a function of carrier and non-carrier profits, from the measurement of productivity. Since taxes are not included in railroads' operating expenses, they should not be included as an adjustment to these expenses.

Labor Buyouts. The argument raised by AAR regarding below-the-line expenses is excessively broad--claiming that, in general, there may be

³⁶ Tretheway, *supra*, at 28.

certain non-operating expenses which should be considered in the calculation of the input index. Rather, what AAR should be saying is that in 1986 a single railroad recorded a particular expense below the line which should properly have been recorded above-the-line and, therefore, included in total freight operating expense. During 1985 and 1986 (as well as in subsequent years), several roads have taken special restructuring charges which consisted primarily of labor buyout expenses and writedowns of the net investment in road and equipment. Except for the one case cited by AAR, these charges were recorded above-the-line as ordinary operating expenses. The one exception was granted upon request by the Commission's Accounting and Valuation Board on the condition that the amounts involved be separately disclosed to satisfy the Commission's need for the data. For our purposes in this proceeding, we have added the \$659.7 million in question to total freight operating expense for 1986. This permits consistent treatment of those special charges for all railroads. The effect of this adjustment is to reduce the five-year average productivity gain from 2.2% to 1.7%.³⁷ We will also include the handling of below-the-line charges as one of the items to be considered in Ex Parte No. 290 (Sub-No. 7) *supra*.³⁸

Direct Physical Measurements. Having raised what it believes are substantial objections to the input measurements proposed by the Commission,³⁹ AAR offers as an alternative the direct measurement of physical assets. The issue here is whether the use of expenses accumulated in accounting pools (and deflated across time periods to permit comparison) is acceptable when compared to the intuitively more appealing approach of actually measuring the amount of fuel, or labor hours, or track life expended during a given period. Adopting the latter approach would

³⁷ At oral argument counsel for the Concerned Shippers stated that the labor buyouts should be recorded above-the-line. Counsel noted that there was only one documented instance where this was not already the case, and that this one instance could be fixed so that the Commission could "consider them in the mix."

³⁸ Our general approach is to consider for productivity purpose only those accounting data that are considered in developing the RCAF itself. It is not feasible given the complexity of this matter to resolve the issue at this time. We will consider the question in Ex Parte No. 290 (Sub-No. 7), *supra*.

³⁹ AAR also asserts that the proposed productivity measure could be inaccurate because of random measurement errors in the input index series. This criticism fails to recognize that the input index is based on total reported expenses with some limited exclusions. Unlike the output index which is based on a sample, the input index is based on the total of the relevant expense accounts and is not subject to random sampling error. In addition, the reported expenses of the railroads are audited by this agency and have been found to be highly reliable. Consequently, we find the railroads' criticism to be unfounded.

require significant delay in the use of productivity adjustment, but AAR sees the increase in accuracy as worth the wait. We do not.

In the first place, the measurement of actual usage is not a straightforward undertaking. This much is apparently acknowledged by AAR's expert witnesses.⁴⁰ Second, it is not likely to produce substantially better results. In its argument, AAR points to work showing that the use of direct physical measurement would significantly lower estimated productivity, but the more recent work of their own witnesses produced productivity estimates nearly identical to those estimated by the Reebie methodology.⁴¹ If interested parties can demonstrate that measurement of actual usage is in fact superior and practicable,⁴² the Commission may consider modification of the adjustment methodology. For the present, we are satisfied with the accuracy of the deflated cost approach.

Construction of the Output Index

AAR notes that a valid output index must identify and measure the various railroad outputs and combine them with a consistent weighting scheme which reflects their relative importance. The Reebie methodology proposes to accomplish this by relying on an analysis of year-to-year changes in the traffic captured by the annual ICC Waybill Sample. To account for possible changes in the character of rail service, movements in the waybill sample are segregated by such characteristics as length of haul, shipment size, and car type. The year-to-year change in ton-miles for each service segment is computed, and a composite change is calculated as the weighted average of all the individual segments. Weights are based on each segment's share of revenue within the waybill sample. AAR objects to the use of revenues in the waybill sample as a weighting factor. AAR admits that use of revenue weights is a convenient approach, but believes that it is flawed both conceptually and as to data reliability.

As to the data, AAR argues that a growing trend toward the use of contract rates and the corresponding overstatement in the waybill sample of revenues attributed to contract traffic creates a bias. AAR argues that the revenues reported in the waybill are typically greater than the actual revenues generated by contract traffic. AAR concludes that the increasing trend toward use of contract carriage causes a corresponding overstatement

⁴⁰ See Tretheway, *supra*, at 33-37.

⁴¹ Tretheway, *supra*, Appendix 4, at 19.

⁴² We observe that, although AAR's witnesses engage in lengthy discussion, they draw no conclusion as to the relative merits of these approaches as compared with the methodology suggested by the NPR.

of productivity.⁴³ AAR also believes that the use of shipper supplied cars for contract movements creates a bias, because the waybill revenues will be overstated while, at the same time, the railroads will report fewer inputs.⁴⁴

In addition, AAR contends that the use of revenue weights is conceptually flawed because such weights are not an accurate indicator of the effect on input use of different traffic types. In its opinion, correct weighing must be based on marginal costs.

Concerned Shippers disagree with the AAR's arguments concerning contract rates. They note that not all contracts result in actual rates below the reported waybill revenues. As examples, they point to "take or pay minimum clauses"⁴⁵ which could result in higher actual rates. Thus, they believe that the presence of a bias and its direction are empirical issues and that AAR has not provided any data or analysis supporting its contention that there is a severe overstatement in revenues. In addition, the shippers assert that even if a bias exists, as the AAR contends, a vast overstatement would be required to cause a significant bias in the output index.

We are not persuaded by the AAR's criticisms of the output measures. Although the waybill does not always correctly record the actual level of contract rates, AAR has not demonstrated that this seriously biases the index of rail output over time. As the shippers point out, the question is an empirical one and the railroads have not provided data to support their allegations. If this matter is thought to have a significant impact, it may be raised again during the periodic review of the productivity adjustment ordered here.

We also do not find that the use of revenue weights invalidates the output index. AAR concedes that "there is a great deal of uncertainty in the theoretical literature as to what the conceptually correct set of weights and functional form for the output (or input) index should be."⁴⁶ Thus, there is no categorical "right choice." Furthermore, as a part of its work for the Commission, Reebie Associates tested both revenues and costs and

⁴³ Contract rates are generally lower than tariff rates. The revenues reported on the waybill sample may be different from what are actually collected. This occurs because there is no consistent reporting criteria for contract rate movements. Sometimes the tariff rate is reported while at other times it is the contract rate without discounts. Other times it may be the actual contract rate paid.

⁴⁴ The use of shipper owned cars for contract movements further complicates the revenue question because additional discounts may be offered for shipper owned cars.

⁴⁵ These types of contracts require the shipper to pay a set minimum fee based on a specified volume regardless of whether a service is used or not. If a minimum volume is not met the actual charge will exceed the amount reported on the waybill.

⁴⁶ Comments of the AAR, Railroad Cost Recovery Procedures-Productivity Adjustment, V. S. of Dr. Michael W. Trethewey *et al.*, (Dec. 1988) at 22.

found few material differences between the two approaches.⁴⁷ Furthermore, the AAR concedes that theory does not provide any guidance on this question.

Finally, AAR criticizes the proposed use of a chained Laspeyres⁴⁸ index formula which it believes overstates output. We do not find that the AAR has uncovered any flaw in our approach. The critical issue in indexing over extended periods during which weights change is to account for these changes in the indexing formula. Reebie has done so by using a "dynamic" chained index rather than a fixed weight index. While there may be some disagreement among experts on which dynamic index should be used, the Reebie method is clearly one acceptable choice.⁴⁹ Thus we would be remiss to reject it when there is no indisputably correct choice and when it is consistent with the method by which the RCAF is itself calculated. AAR has neither demonstrated that Reebie's output measure is flawed nor provided an alternative proposal which is shown to be superior. Therefore we accept the Reebie method as valid.

Business Cycle Duration

In the *November NPR* we proposed averaging over a full business cycle for smoothing out variations in the productivity trend. The Reebie study included a complete work-up on data for the five-year period 1982-1986,⁵⁰ and the *November NPR* asked for comment on whether this period was adequate. The business cycle may be defined as the period of time involving a complete rise and fall of economic activity. While parties disagree on the length of the business cycle for railroads, they do agree that the 1982-1986 period falls short of capturing the present business cycle.

AAR argues that the 1982-1986 five-year period is too short. Although it does not suggest an alternative period of time, it asserts that the

⁴⁷ Reebie concluded that: "Given the same average performance and the lack of a systematic difference between the two approaches on an annual basis, the revenue weighting system should be selected." Reebie Associates, *Final Report*, at 62.

⁴⁸ The Laspeyres index is an aggregate price index in which the prices are weighted by the quantities associated with a fixed historical base period. In a chained Laspeyres index the base period is changed from period to period so that the comparison is always between the current period and the period immediately preceding it.

⁴⁹ Concerned Shippers dismiss AAR's criticism of the chained Laspeyres indexing formula. First they point out that AAR's own economic witness has, in the past, supported the use of such an indexing formula. Additionally, they note that the RCAF itself is based on a chained Laspeyres index formula and thus the productivity measure is consistent with the RCAF.

⁵⁰ There are serious comparability problems with data available for periods before 1982.

productivity improvements measured by the proposed trend are not typical. It contends that the immediate post-Staggers regulatory reforms enabled the railroads to achieve unprecedented productivity gains that will not be matched in the future.⁵¹

Intermountain Power Agency favors a seven to 10-year period, noting that a five-year 1984-1988 average would not include the low traffic years of 1982 and 1983. It recommends lengthening the period as more depreciation accounting data become available. Similarly, DOT suggests that we carefully review the reasonableness of using a five-year period, contending that a longer time period to reflect the full length of the business cycle may be desirable.

Concerned Shippers argue that the length of time used for the average is unimportant since the average merely reflects an historic trend. They believe that the purpose of using a multi-year average is to produce a smooth trend and eliminate year-to-year distortions. They contend that use of a five-year average coupled with a two-year lag in implementation actually favors the railroads by allowing a full seven years before productivity gains are fully reflected. Concerned Shippers also argue that the railroad industry's contention that post-Staggers productivity growth was unique is wrong. They contend that there was little difference in the pre-Staggers and the post-Staggers rates of productivity growth.

We have concluded that a moving average, as proposed in the *November NPR*, is the proper method for calculating annual adjustments. Initially we will use the five-year average provided by the data developed by Reebie Associates. We believe that a longer period will be required and propose to lengthen the base as compatible data becomes available. We will continue to lengthen the time period used to calculate the trend as data becomes available. We will also include the time frame used to calculate the productivity trend as one of the items to be considered in Ex Parte No. 290 (Sub-No. 7), *supra*.

While we believe that the use of a longer period will add stability to the productivity calculation, we do not anticipate that initiating the adjustment with the existing data will materially affect its size or direction. If this should be shown not to be the case, corrective action can be taken. However, under our methodology, changes in productivity will be reflected on a delayed basis. Because the productivity adjustment is based on a

⁵¹ AAR's argument on this issue is substantially marred by a computational error in its trend. By assigning a positive value to the negative productivity growth in 1982, AAR perceived a startling trend that actual numbers did not support.

lagged trend, rail carriers will have temporary benefit of the full extent of their gains in productivity.

AAR's argument that the productivity growth captured by the Reebie study is the result of a post-Staggers surge is largely beside the point. The Reebie study also reviewed a number of prior productivity studies of the railroad industry. That review showed that since World War II long term annual productivity growth has been in the 1% to 2.5% range.⁵² Consequently, we are not convinced that using the period initially compiled by Reebie results in an arbitrary adjustment.

Definition of Productivity

AAR argues that the proposed productivity measure is invalid because it does not distinguish between pure efficiency gains and productivity from other sources. It contends that total factor productivity has to be partitioned into components. In its opinion, the effects of economies of scale, scope and density, capacity utilization due to the business cycle and changes in traffic mix should be separated from efficiency improvements due to technological change. To make this separation, the railroad witnesses describe an analytical technique that uses regression analysis which yields "an approximation to the net shift in the underlying cost function".⁵³ This shift purports to measure pure productivity.

Concerned Shippers object to the railroads' proposal to partition total factor productivity and only consider technological change for the purpose of adjusting the RCAF. The shippers contend that such a limited notion of productivity growth violates the cost recovery principle. If there are economies of scale, density and capacity utilization, then scale, density and capacity utilization affect railroad input requirements. But such changes do not affect unit revenues. Thus, productivity gains associated with the aforementioned factors change the ratio of revenues to costs. The productivity adjustment is in their view intended to restore the initial relationship.

We conclude that the productivity measure used to adjust the RCAF should not be limited to the narrow definition proposed by the railroads. As noted, by witnesses Caves and Christensen, while the exact cause of productivity growth may have intrinsic interest, it is not germane to the issue of cost recovery. To the extent that the RCAF index will now be used to reflect changes in output costs, total factor productivity is the relevant

⁵² Reebie Associates *Railroad Productivity Evaluation Final Report* (Oct. 1988), at 13.

⁵³ V. S., Tretheway, *supra*, page 59.

measure, since all forms of productivity growth tend to reduce cost. And, in any event, the railroads cannot claim to be disadvantaged by the use of total factor productivity, since it would appear that calculations limited to technological productivity would produce larger adjustments to the inflation index since other components of total factor productivity appear to have fallen during the period under consideration.⁵⁴

SHARED PRODUCTIVITY OR PARTIAL ADJUSTMENT

In the *November NPR* parties were asked to comment on the possibly that the RCAF index might not be adjusted for the full measure of achieved productivity gain. The principal reasons for consideration of a shared measure of productivity gains are twofold: (1) measured productivity change might exceed actual productivity change, resulting in an index that fails to cover real output costs; and (2) full pass through of gains in productivity might have a negative impact on the willingness of rail carriers to undertake productivity enhancing programs of investment or other cost-cutting. Comments filed on this issue do not warrant the adoption of any procedure for sharing or partial adjustment, and we have determined that the index should be adjusted for the full measure of achieved productivity as proposed in the notice.

In general, the railroad parties favoring sharing do so only as a fall back from their opposition to any adjustment, and they base their support for a partial adjustment on the belief that its impact on incentives and adequate earnings would be less than that of a full adjustment. We do not believe that the methodology proposed here will overstate productivity improvement, that adjusting the RCAF will significantly weaken the incentives for continued improvement, or that it has necessary consequences for financial performance, given the limited number of rates covered by the maximum index level and the existence of alternate means of revenue enhancement. These matters have been discussed above. While there is no experience with the use of an adjusted index at this point, the Commission can and will give careful consideration to the impact of the adjustment over time. Parties are free to petition, should facts arise that demonstrate the necessity for further consideration of these issues.

DISCOUNTING FOR A PROFIT ELEMENT

⁵⁴ See Exhibit 3, V. S. of Douglas W. Caves and Laurits R. Christensen, (Jan. 1989)

Originally the RCAF was calculated using an interim methodology which used the Producer Price Index rather than railroad-specific data to measure certain index components. Subsequently the methodology for the calculation of an "all-inclusive" index was adopted. That methodology was adopted through a rulemaking procedure in *Railroad Cost Recovery Procedures*, 1 I.C.C.2d 207, 225-26 (1985), and included more railroad-specific data. During the comment period several parties made various suggestions which did not involve the indexing methodology itself. One of those suggestions was to discount the RCAF for a profit element.

Subsequently the issue was transferred to this proceeding. Previously we had requested comments providing a specific justification for discounting the RCAF for a profit element. While methodological suggestions were offered, no party submitted any specific basis in fact for determining the amount, if any, of that discount.

In *RCRP, supra*, various parties argued for an RCAF that is discounted for profit. They contended that the RCAF is designed to cover only increased costs, argued that profits are the results of decisions which reflect factors other than cost, and concluded that discounting is in order.

Shipper parties were generally silent on this issue in their responses to our *November NPR*. One party, Intermountain, believes that the RCAF should be discounted for profit if the railroad industry's return on investment either closely approaches the revenue adequacy level or exceeds that level. It argues that the RCAF should be discounted by a percentage equal to the percentage by which the rate of return exceeds the cost of capital. Another party, the Motor Vehicle Manufacturers Association, opposes a discount believing that it would unnecessarily encumber the index.

AAR opposes discounting for profit. It argues that profits are part of the cost of capital that railroads pay to investors and, as such, are part of the cost of doing business. It also believes that profits, like other costs, are subject to inflation, arguing that failure to pay a sufficient return will result in the inability to retain adequate amounts of investment capital. Finally AAR argues that there is no statutory authority for discounting for profit.

We will not discount the RCAF for a profit element. Addition of a productivity adjustment recognizes the trend in efficiency gains and other productivity improvements made by the railroads. This action alone reduces the margin created by the RCAF itself. We also find nothing in the statute requiring or even discussing discounting for profit. Furthermore, profit (and loss) levels differ widely among different railroads and among various traffic items on a given railroad. In light of that wide variation we

do not believe that it is possible to implement a discount for profit as a practical matter.

IMPLEMENTATION

Restatement and Retroactivity

The *November NPR* proposed to apply the productivity adjustment on a prospective basis only. The *November NPR* emphasized the belief that prior policy was a valid exercise of discretion and that the Staggers Rail Act neither requires nor precludes a productivity adjustment. We concluded that a policy change was necessary to give assurance that future profit enhancement on captive traffic would not be immune from challenge. We made no findings, nor do we now, that existing rate levels are unlawful. Consequently, the rule proposed in the *November NPR* did not include any restatement of the existing index.

Some shipper parties such as Concerned Shippers, Southern Electric System and NITL argue for restatement, although they do not all propose the same starting point.⁵⁵ NITL favors a January 1, 1988 starting point with a bank of credits established to offset increases from that date to the actual date when an adjustment is finally implemented. It cites its pending petition for refund provisions filed on December 11, 1987. The American Paper Institute, in its reply, supports NITL's suggested starting date and banking proposal. Concerned Shippers contend that we are required by law to correct the RCAF, arguing that only the restatement of a productivity-adjusted RCAF from 1981 to date will satisfy the statute's requirement of an output index. NARUC, in its reply, supports Concerned Shippers.

Shipper support for restatement of the RCAF is not unanimous. Several shippers argue that the index should be restated and some appear to suggest that it might be applied retroactively. Intermountain, while favoring some form of recognition of prior productivity gains, believes that any such application would be followed by administrative concerns and probably by legal challenge. Intermountain argues that it would be better to implement a productivity adjustment now on a prospective basis and consider the issue of retroactivity later. Another shipper party, MVMA, supports retroactive application only if a productivity adjustment does not become effective by the third quarter of 1989. In that event it believes that retroactive application to the third quarter of 1989 is proper.

⁵⁵ Most of the shippers seek only "restatement" of the index, that is, recalculation of the current index level to reflect prior productivity.

DOT does not support retroactive application of a productivity adjustment or recalculation of prior values. Nonetheless, it notes that case law supports the view that we have the discretion to revise the RCAF if we find that a prior period's values had been miscalculated or that cost declines justify a roll back in rate levels.

Concerned Shippers argue that the *November NPR* assessed the law incorrectly. In their view, the Staggers Act requires a quarterly productivity adjustment and that they must be applied to each RCAF since 1981. Furthermore, they contend that a failure to restate the RCAF causes it to be inaccurate. They argue that a purely prospective application would cause future RCAF's to continue to be overstated by the accumulated past overstatements. They conclude that the RCAF will accurately measure railroad output costs as required by the statute only if all past values are restated. Thus, if the RCAF is recalculated, they estimate the fourth quarter 1988 adjusted RCAF index level to be 122.7 while if it is not recomputed it is 133.7. At the same time, Concerned Shippers recognize that a purely prospective application is independent of the RCAF level. Thus, their analysis shows that the rate of growth in the RCAF would be the same and re-statement would only affect the level of the RCAF and not its rate of change.

AAR and Conrail strenuously object to any retroactive application of a restated RCAF. Aside from the policy issue, AAR contends any such application is not lawful. It argues that 49 U.S.C. § 10707a does not authorize the Commission either to retroactively change the RCAF value it published for a prior quarter or to take any other action with the effect of rescinding any portion of the adjusted base rate protection applicable to prior freight movements. Thus, AAR concludes if a rate was reasonable when it was charged, the rate is immune from regulatory challenge thereafter. It cites 49 U.S.C. § 10707(a)(2)(A),(B) as the authority. As support for its argument, AAR also cites the Supreme Court decision in *Bowen v. Georgetown University Hosp.*, 109 S. Ct. 468, 477-78 (1988). This decision, it contends, shows that in a similar situation involving medicare, the court held that rates of payment could not be retroactively changed because (1) there was an absence of any express statutory authority for retroactive applications of changes in the index formula and (2) the existence of a legislative policy of permitting hospitals to "know in advance the limits to Government recognition of incurred costs that are not reimbursable (cite omitted)."

AAR also objects to future RCAF adjustments to "correct past understatements" through a re-statement of the index. Although this approach would not require each quarter's RCAF to be restated, AAR believes that adoption of such a proposal would reduce the 1988 fourth

quarter RCAF by over 8%. It concludes that the result of the correction process would be a substantial reduction in contract rates which are tied to the RCAF. Further, a large number of tariff rates would become subject to challenge. The financial impact of such restatement would thus be extremely difficult to absorb. AAR contends that the adoption of a productivity adjustment at this time would not require a correction of past RCAF levels. It explains that the RCAF measures relative changes in cost levels from one quarter to the next, not absolute cost changes, thus prior "errors" have no impact on future quarter to quarter relationships.

As stated in the *November NPR*, the decision to consider the adoption of a productivity adjustment to the RCAF is based on a change in policy, not the correction of an error in law or method. It is not necessary to restate the present index to any particular level to measure accurately changes in productivity or show correctly changes in the RCAF index under the Reebie methodology. Thus the issues regarding recalculation for past productivity are whether the statute compels restatement or, alternatively, whether the level of existing rates warrants a substantial lowering of their present level and whether a decision to cause this through restatement of the RCAF would be a lawful exercise of the Commission's discretion.⁵⁶

We do not believe that the statute compels restatement, and we have no record on which to conclude that existing rates are excessive. In these circumstances, it would be imprudent to order a restatement of the index when the impact on rail earnings is unknown and, at least in advance of taking such an action, unknowable but potentially substantial.⁵⁷ Furthermore, there are very serious methodological problems with restatement. While we are certain that restatement would cause a substantial drop in the existing index, the correct measure of the restated index -- whether for the present quarter or for all past quarters -- cannot be readily developed. The Reebie methodology is based on a five-year trend chosen largely because of data limitations for earlier periods.⁵⁸ Trended data are not available for earlier periods and the use of data for

⁵⁶ Because we decline to order restatement, we do not reach or consider the issue of whether so doing would be a sustainable exercise of the agency's authority over rates.

⁵⁷ Estimates in the record vary greatly. It is reasonable to conclude, however, that restatement would place the index substantially below its present level and the immediate impact of a roll-back under the *RCRP, supra*, procedures would be significant. It is also reasonable to question whether the railroads can make up the revenue losses associated with restatement through other tariff procedures, as we believe they can do with respect to quarter-to-quarter productivity adjustments.

⁵⁸ As described below (above), the Commission intends to extend the averaging period to encompass a full business cycle. The precise number of years is part of the subject matter of *ES File No. 26, Sub-No. 7, supra*.

individual years is subject to serious question. The approximations of the Reebie methodology offered by Concerned Shippers are based on data which required substantial restatement because of their inconsistency with those available for the current periods. These early data are subject to serious question on reliability grounds.

Given the real problems with ascertaining the "correct" restated levels and the absence of grounds for concern over the existing rate structure, restatement will not be undertaken. Rates in effect today have been set in reliance on rules that we do not believe have been shown to have been unlawful. Had the rules been different throughout the post-Staggers period, rail carriers could have availed themselves of alternatives -- the shippers have argued extensively in this docket that these alternatives represent effective means of raising rates. Under these circumstances, any Commission action permitting shippers to challenge, under a recalculated RCAF, past rates that did not exceed the cost index levels in effect when the rates were collected would be retroactive rulemaking. In effect, such a rulemaking would make carriers financially liable for rate actions that were protected when they were taken, a result that would be clearly improper under *Bowen, supra*.

Conversely, permitting shippers to use a restated RCAF to challenge, in the future, rate levels that enjoyed protected status in the past, would have the attributes of what the judiciary refers to as "secondary retroactivity."⁵⁹ This condition, even if insufficient to void our actions automatically and as a matter of law, gives this agency good cause to exercise its discretion with care. For this reason, and the others cited above, the Commission declines to restate the index for past productivity.

Calculation of the Current Index

Our proposal contemplates the use of two indices -- an index that reflects input prices, denominated RCAF (Unadjusted), and an index that reflects output (productivity-adjusted) costs, denominated RCAF (Adjusted). The use of two indices is designed to provide the Commission and the public with readily available information necessary to monitor the course and impact over time of the decisions taken here. It is our initial view that the AAR should file both such indices, although the numerical values for the productivity adjustment will need to be supplied by the

⁵⁹ See *Bowen, supra*, (concurring opinion of Justice Scalia, at 477.) "A rule that has unreasonable secondary retroactivity--for example, altering future regulation in a manner that makes worthless substantial past investment incurred in reliance upon the prior rule--may for that reason be arbitrary and capricious . . . and thus invalid."

agency until such time as the issues surrounding the business cycle are resolved.

We note that various parties have proposed different methods of relating the productivity adjustment to the RCAF, each of which they argue is necessary for the Commission to remain neutral on the issue of contract impact. (All sides agree that contracts frequently contain rate adjustment clauses based on the RCAF.) As we see it, rather than preserving our neutrality, each such proposal would inject us into the process of contract interpretation and dispute resolution. That is contrary to the Congressional design of the Staggers Act. Beyond limited review of contracts at the time of filing, the content of contracts and disputes over their interpretation are, according to Staggers, to be left to the parties and the courts. It is inconsistent with this statutory design for the Commission to shape its rules so as to affect the results of particular contract rate disputes. Consequently, we intend that the process for specification of the indices outlined here should be regarded as neutral with regard to the interpretation of contracts.

The *November NPR* proposed that the annual productivity growth be spread equally over four quarters of a given year. None of the parties disagreed with this concept nor suggested an alternate method. It is both logical and equitable to implement the adjustment this way. Various factors influencing productivity growth usually occur randomly, each affecting productivity at its own unique rate. The proposed methodology does not measure productivity growth at intervals shorter than a year -- nor is it practical to do so. Thus, it is not unreasonable to treat the annual changes in productivity as if they occurred in quarterly increments. Accordingly, the proposal to spread the annual growth evenly over four quarters will be adopted. The mechanics of computing the RCAF (Adjusted) are described in the following steps:

(1) Due to the compounding character of productivity growth, the quarterly productivity adjustment factor (PAF) is computed by taking the fourth root of one plus the multi-year average annual growth.

(2) The quarterly RCAF (Adjusted) is computed by dividing the quarterly RCAF (Unadjusted) by the cumulative quarterly PAF, compounded by quarter.

(3) If the RCAF (Adjusted) increases, the allowable percentage increase in maximum RCAF (Adjusted) rate levels for the current quarter will be the RCAF (Adjusted) for the current quarter divided by the RCAF (Adjusted) for the prior quarter, less 1.0 times 100.0.

(4) If the RCAF (Adjusted) decreases, any ordered decrease in maximum RCAF (Adjusted) rate levels for the current quarter will be to the level of the RCAF (Adjusted) for the current quarter.

Inasmuch as the revised rules from this decision are being implemented in the middle of an ongoing process and at a time other than the beginning of a calendar year, special treatment for the transitional

period is both appropriate and necessary. Accordingly, the following procedures will apply for the remaining quarters of 1989:

(1) The allowable increase in rates for the second quarter 1989 will be determined by comparing the RCAF (Adjusted) for the second quarter 1989 with the RCAF (Unadjusted) published for the first quarter 1989. Effective April 1, 1989, the ceiling for tariff increases taken under these procedures will be the RCAF (Adjusted).

(2) The annual percentage change in productivity will be calculated initially using the five-year trend data as modified herein. Commission staff will, as soon as possible, add year six (1987 waybill file and expenses) and recalculate the value for use in the remaining quarters of 1989. Year seven will be added for use in all four quarters of 1990. As each recalculation is completed, the parties will be notified of the new value and the quarters to which it applies.

Commencing with the third quarter of 1989 the Railroads' (AAR's) quarterly submissions of the all-inclusive index data must also show both RCAF (Unadjusted) and RCAF (Adjusted). Rates increased in RCCR tariffs may not exceed the level of the RCAF (Adjusted).

Rates increased in RCCR tariffs may not exceed the level of the RCAF (Adjusted). The regulations at 49 C.F.R. Part 1135 are amended as follows:

Authority: 49 U.S.C. 10321 and 10707a; 5 U.S.C. 553.

Section 1135.1 is amended to read as follows:

§ 1135.1 Quarterly Adjustment of Rates

(1) Section 1135.1 (b) is revised by adding the following language:

(b) * * * quarter. Additionally, AAR shall file an index adjusted for productivity changes. The adjustment will be made by applying the multi-year average annual growth in productivity spread evenly over four quarters, compounded each quarter. Productivity adjustments shall compound in the same manner as rate changes.

(2) Section 1135.1 (c) is amended to read as follows:

(c) The Association of American Railroads must file its calculations with the Commission on the fifth day of the last month of the prior quarter (or the closest business day if the fifth is a Saturday, Sunday or holiday). The calculations are to be for the mid-point of the next quarter.

ENVIRONMENTAL AND ENERGY CONSIDERATIONS

This decision will not significantly affect the quality of the human environment or the conservation of energy resources.

We certify that the inclusion of a productivity adjustment in the quarterly RCAF process will not have a significant adverse impact on a substantial number of small entities because only Class I railroads and the AAR, an industry trade association, participate in the construction of RCAF data.

VICE CHAIRMAN SIMMONS, commenting:

I believe there is some merit in the NITL proposal to establish a bank of productivity credits earned since January 1, 1988. Such a banking procedure was judicially affirmed in the RCAF context in *Alabama Power Co. v. ICC*, 852 F.2d 1361 (D.C. Cir. 1988), and in my view this action would not necessarily run afoul of the retroactivity considerations discussed in the decision. Unfortunately, there was insufficient support at the Commission for consideration of any banking provision. Given the importance of finally adopting a prospective productivity adjustment and of implementing this adjustment immediately, I have joined in issuance of today's decision. Nevertheless, I would have preferred to consider giving some recognition to prior productivity gains, in a manner which would avoid any unreasonable disruption in the rail industry.

COMMISSIONER PHILLIPS, concurring in part and dissenting in part:

I support the majority in adopting the productivity adjustment to the RCAF set forth in today's decision, as I believe that the costing techniques we impose on the industry should reflect reality to the greatest possible extent. Further, I believe that the methodology adopted here will not overstate productivity improvement, or that adjusting the RCAF will greatly weaken the industry's incentives for continued innovation.

Nonetheless, given our lack of experience with the new productivity adjustment, I believe that there remain conceptual and empirical questions regarding its effect. Therefore, unlike the majority, I would not rule out further consideration of a partial adjustment (*i.e.* a sharing of productivity gains between carriers and shippers) and I would have called for such consideration in our forthcoming Advance Notice of Proposed Rulemaking in Ex Parte No. 290 (Sub-No. 7).

The record in this proceeding indicates the need for further consideration of the concept of partial adjustment or sharing. The Railroad Accounting Principles Board has expressed concern over the possibility of inaccurate measurement and listed several procedures, including partial adjustment, as a potential means of relief. And the railroad parties have sought the use of a partial adjustment, arguing that the incentive to become productive is better preserved if some portion of the gain is not subject to mandatory pass through to customers under a full adjustment.

The railroads have also expressed concern that Commission procedures mandating rate roll backs when the RCAF declines could force them to lower their maximum protected rates if productivity should outstrip inflation during a given period. This concern and possible methods for

addressing it certainly warrant additional consideration. One such method, on which I would have requested comment in Ex Parte No. 290 (Sub-No. 7), would limit the adjustment for productivity (so as to recognize only inflation) in periods when the adjustment would otherwise have a negative numerical value.

COMMISSIONER LAMBOLEY, dissenting in part:

I am pleased to join my colleagues in adopting a productivity adjustment to the quarterly Rail Cost Adjustment Factor (RCAF). This outcome is long overdue⁶⁰ and I am on record as being a proponent of the adoption.⁶¹ I find the methodology here adopted to be appropriate. Further, I agree that the present determination should operate prospectively, and not be made to apply retroactively. However, I do part company with my colleagues' views over (1) the reasons for the adoption of the adjustment and (2) the failure to implement the adjustment by restating the current RCAF for prospective application.

The majority considers the adoption of the productivity adjustment as solely a matter of policy, within the Commission's discretion. As a statement of policy, the adjustment may be valid and appropriate. However, it is not, in my view, the compelling reason to adopt a productivity adjustment. For me, it is both a question of statutory interpretation as well as of equity and fairness.

My views are shaped by broad considerations of statutory policy and purpose. For me, the legislative history of the various Staggers Act provisions evidence a Congressional awareness and recognition of the need to alleviate regulatory impediments and enhance the opportunities for the financial recovery and sustenance of rail carriers. Congress addressed several revenue issues in passing the Staggers Act of 1980, and in doing so, set out various provisions related to rail carrier revenues and ratemaking.⁶²

For purposes of this case, certain statutory sections are particularly relevant as evidence of the fairly comprehensive Congressional remedial scheme envisioned by the Staggers Act. Section 201 authorizes rail carriers to establish any rates, subject to a test of reasonableness in instances of

⁶⁰ This proceeding began with an Advance Notice of Proposed Rulemaking issued July 26, 1982 and has been pending ever since.

⁶¹ Please see my separate expressions in Ex Parte No. 290 (Sub-No. 5) *Quarterly Rail Cost Adjustment Factor*, decisions served December 21, 1986, and March 31, 1988.

⁶² Apposite legislative history is extensively discussed by the Court in *Western Coal Traffic League v. United States*, 677 F.2d 915 (D.C. Cir. 1982) *cert. denied* 459 U.S. 1086 (1982) in reviewing the Commission's initial RCAF determination, and will not be reiterated here.

market dominance.⁶³ Provisions of Section 203 set out revenue methods by which rail carriers may raise rates to recapture costs as indexed⁶⁴, as well as achieve revenue enhancement through rate increases which fall within established percentages for varying times.⁶⁵ Additionally, Section 206 authorizes rate increases based upon a Commission prescribed percentage rate or rate index in order to compensate for inflationary cost increases.⁶⁶ Section 217 permits joint rate surcharges and cancellations.⁶⁷ Finally, among the other measures designed to benefit railroad transportation and financial capabilities, Congress expressly authorized rail transportation contracts⁶⁸ and overall, in seeking to protect existing rate structures and establish a basic rate reasonableness flooring for the future, Congress enacted a savings clause.⁶⁹

While as noted, the broad spectrum of revenue and ratemaking have influenced my views, what is at issue here are not rail revenues generally. Rather, the question is more narrowly focused on the meaning and content of the RCAF, and the composition of the quarterly index.

Section 203 provides, among other things, that the Commission must publish a quarterly RCAF by which to determine the permissible amount of the railroads' cost recovery rate increases necessary to recover the changing composition and level of railroad costs. Significantly, these rate increases, if they do not exceed the Commission established benchmark, are not subject to challenge by shippers, irrespective of competitive or non-competitive transportation environment. The statutory provision which allows immunity from legal challenge must be read within the narrow context and purpose which I believe Congress intended.

I conclude that the RCAF was not meant to be a mechanism for revenue enhancement. Congress provided other methods for that purpose, such as the zone of rate flexibility provision (where the issue of revenue adequacy is relevant) inflation based rates, or general rate increases. The purpose of the RCAF provision was simply to allow carriers to raise their rates to reflect current costs. This Congressional intent was emphasized by the Court in *Western Coal, supra*, at n.3.

⁶³ See 49 USC § 10701a; also Section 202, 49 USC § 10709(d)(1-4).

⁶⁴ See 49 USC § 10707a(a)(2)(B) provisions referring to Rail Cost Adjustment Factor (RCAF).

⁶⁵ See 49 USC § 10707a (b), (c) and (d) provisions referring to a Zone of Rate Flexibility (ZORF).

⁶⁶ See 49 USC § 10712 provisions for inflation-based rates.

⁶⁷ See 49 USC § 10705a.

⁶⁸ Staggers Act, Section 208; 49 USC § 10713.

⁶⁹ Staggers Act, Section 229.

The Commission recently considered the Congressional purpose of the cost recovery procedures, and declared they were "to permit prompt, risk free recovery of increased costs, and no more."⁷⁰

In order to accurately reflect the costs incurred, no more and no less, I believe a productivity adjustment is essential.⁷¹ Otherwise, RCAF rates may rise faster than the actual cost of providing service and shippers, especially those in captive markets, will have no recourse against such increases. Once a productivity adjustment method is found to be accurate and feasible, the Congressional purpose of § 10707a cannot be reasonably fulfilled until it is adopted.⁷²

The propriety and necessity of a productivity adjustment was recognized by the Congressionally created Railroad Accounting Principles Board (RAPB) when it adopted as one of its principles the need to incorporate changes in productivity, as well as changes in input prices, in the indices used for regulatory purposes, in order to ensure the accurate measurement of cost changes.⁷³ Congress has directed the Commission to promptly promulgate rules to implement the RAPB once established. I believe the Commission is certainly now obligated to act on the RAPB conclusions and to adopt a productivity adjustment to the RCAF.⁷⁴

In my view, the Commission's initial determination should have included a productivity adjustment to further the Congressional purposes of § 10707a. Presently, it has also become a matter of adherence to the mandated directive under § 11163. Moreover, the Commission has failed to monitor the RCAF as initially intended, and until now, has not acted upon available RCAF methodologies. The failure to incorporate productivity adjustment into the RCAF has resulted in years of profit enhancing rate increases, immune from challenge. And contrary to the Congressional intent of the RCAF provision, primarily undertaken at the expense of captive shippers.

Pleased that the Commission is finally adopting a productivity adjustment, I also believe it must act to restate the current RCAF index to correct its prior error and to adjust calculation inaccuracies of the past. Failure to do so will effectively perpetuate these faults in prospective applications, which for legal and equitable reasons I find unacceptable. Restatement of the current RCAF to offset past costing inaccuracies in the

⁷⁰ Ex Parte No. 290 (Sub-No. 2), *Railroad Cost Recovery Procedures*, 3 I.C.C. 2d 60, 65 (1986) *aff'd sub nom, Alabama Power Co. v. I.C.C.* 852 F.2d 1361 (D.C. Cir. 1988).

⁷¹ See *Western Coal, supra*, at 925.

⁷² *Id.* at 926.

⁷³ *RAPB Final Report*, Volume 1, at 23, and Volume 2, at 89-92 (September 1, 1987).

⁷⁴ 49 USC § 11163, see 49 USC § 11161-11168.

implementation base for future RCAF's - and application to future movements - is not contrary to law, unreasonable, arbitrary or capricious.⁷⁵ I disagree with the view that restatement would be imprudent. Nor do I find the issue of whether existing rates are excessive to be relevant. The reasonableness of RCAF rates is not at issue - but accuracy of the cost calculation is. I am not convinced that a correct measure of a restated index cannot be readily developed, if not for this quarter's index, then for the next.

Finally, as the Commission initially intended, I believe the RCAF should be continually monitored to ensure achievement of and consistency with Congressional intentions. For just as the RCAF will now include a productivity adjustment, common sense and fairness dictate that this decision and methodology should not become cast in concrete.

It is ordered:

1. Revised rules are adopted as set forth above.
2. The quarterly Rail Cost Adjustment Factor will be adjusted for productivity as described herein beginning with the second quarter of 1989.
3. This proceeding is discontinued.
4. This decision is effective April 1, 1989.

By the Commission, Chairman Gradison, Vice Chairman Simmons, Commissioners Andre, Lamboley, and Phillips. Vice Chairman Simmons commented with a separate expression. Commissioner Phillips concurred in part and dissented in part with a separate expression. Commissioner Lamboley dissented in part with a separate expression. Chairman Gradison recused herself from participation in this proceeding.

⁷⁵ See Justice Scalia concurring in *Bowen v. Georgetown University Hosp.* 109 S. Ct. 468, 477-478 (1988).

EX PARTE NO. 55 (SUB-NO. 66)

ICC FOIA PREDISCLASURE NOTIFICATION PROCEDURES
FOR CONFIDENTIAL COMMERCIAL INFORMATION
[49 C.F.R. PART 1001]

Decided April 17, 1989

AGENCY: Interstate Commerce Commission.

ACTION: Final Rule.

SUMMARY: The Commission adopts a final rule implementing Exec. Order No. 12,600, 52 Fed. Reg. 23,781 (1987), which requires the Commission to revise its Freedom of Information Act regulations by promulgating predisclasure notification procedures for confidential commercial information.

EFFECTIVE DATE: The rule is effective on May 24, 1989.

FOR FURTHER INFORMATION CONTACT:

S. Arnold Smith
(202) 275-7076

[TDD for hearing impaired: (202) 275-1721]

SUPPLEMENTARY INFORMATION:

The Commission in *Predisclasure Proc. for Confidential Commercial Info.* 4 I.C.C. 2d 354 (1988), published for public comment at 53 Fed. Reg. 6155 (1988), an interim rule revising its Freedom of Information Act (FOIA) regulations by promulgating predisclasure notification procedures for confidential commercial information, in accordance with Exec. Order No. 12,600 (EO), 52 Fed. Reg. 23,781 (1987).

Comments were received from the Association of American Railroads (AAR), The Reporters Committee for Freedom of the Press (Committee) and the Washington Legal Foundation (WLF). The Commission has carefully considered these submissions and has made several minor revisions to clarify and strengthen its rule.

First, AAR and WLF objected to the notice limitations contained in § 1001.5(c): ten years for records submitted prior to January 1, 1988; six years for records submitted thereafter. The Commission recognizes that in some cases the necessity for confidentiality could remain for longer periods. Therefore, it has changed this provision so that notice will be

INTERSTATE COMMERCE COMMISSION

Decision

Ex Parte No. 290 (Sub-No. 5) (93-4)

QUARTERLY RAIL COST ADJUSTMENT FACTOR

Decided: September 15, 1993

SERVICE DATE

SEP 20 1993

In Railroad Cost Recovery Procedures, 1 I.C.C.2d 207 (1984), 50 Fed. Reg. 87 (January 2, 1985), we outlined the procedures for calculation of the all-inclusive index of railroad input prices and the method for computation of the rail cost adjustment factor (RCAF). These procedures replaced an interim method which was used from 1981 to 1985. Under the revised procedures, the Association of American Railroads (AAR) is required to calculate the index on a quarterly basis and submit it on the fifth day of the last month of each calendar quarter. In Railroad Cost Recovery Procedures, 5 I.C.C.2d 434 (1989), aff'd sub nom. Edison Electric Institute, et al. v. ICC, 969 F.2d 1221 (D.C. Cir. 1992), the Commission adopted procedures which require the adjustment of the quarterly index for a measure of productivity. Consequently, two indices are now filed with the Commission--the RCAF (Unadjusted) and the RCAF (Adjusted). The latter is adjusted for average productivity improvements.

The indices and the RCAF for the fourth quarter 1993 are shown in Table A of the Appendix to this decision. Table B shows the second quarter 1993 index and the RCAF calculated on both an actual and a forecasted basis. The difference between the actual calculation and the forecasted calculation is the forecast error adjustment.

Rebenchmarking of wage and supplements rates used in the labor index and the recalculation of the weights of all index components are reflected in the fourth quarter of each year. Rebenchmarking is the use of prior calendar year wage and supplements data to calculate an hourly rate. Reweighting is done to reflect the changing mix of the index components. The weights are based on the distribution of railroad expenses from the prior calendar year. We have reviewed these calculations and they comply with our prescribed method.

The fuel index experiences the largest increase of any expense component, 7.5 percent. This is attributable to the inclusion of the 4.3 cents-per-gallon Federal excise tax on transportation fuels contained in the Omnibus Budget Reconciliation Act of 1993, effective October 1, 1993.

After examining the indices for compliance with our procedures, we find that the fourth quarter 1993 RCAF (Unadjusted) is 1.025. The fourth quarter 1993 RCAF (Adjusted) is 0.847, an increase of 0.1 percent from the third quarter 1993 RCAF (Adjusted) of 0.846. Maximum fourth quarter 1993 RCAF rate levels may not exceed 100.1 percent of the levels authorized in our decision served June 18, 1993.

Any master tariff that the railroads may file to reflect this or any other cost recovery change will continue to be subject to the condition that the rates therein be reduced to reflect future declines in the RCAF. Any cost recovery changes that are taken in or transferred to individual tariffs must be clearly identified as such and must be rolled back in the event of future declines in the RCAF. See Railroad Cost Recovery Procedures, 3 I.C.C.2d 60, 72-73 (1986), aff'd sub nom. Alabama Power Co. v. ICC, 852 F.2d 1361 (D.C. Cir. 1988).

Ex Parte No. 290 (Sub-No. 5) (93-4)

This decision will not significantly affect the quality of the human environment or the conservation of energy resources.

AUTHORITY: 49 U.S.C. 10321, 10707a, 5 U.S.C. 553.

It is ordered:

1. The Commission has approved the fourth quarter 1993 Rail Cost Adjustment Factor (Unadjusted) of 1.025 and RCAF (Adjusted) of 0.847.
2. Notice of this decision will be published in the Federal Register on September 22, 1993.
3. The effective date of this decision is October 1, 1993.
4. Service of this decision is September 20, 1993.

By the Commission, Chairman McDonald, Vice Chairman Simmons, Commissioners Phillips, Philbin and Walden.

Sidney L. Strickland, Jr.
Secretary

(SEAL)

APPENDIX

TABLE A
Ex Parte No. 290 (Sub-No. 5) (93-4)
All-Inclusive Index of Railroad Input Costs

Line No.	Index Component	1992	Third Quarter 1993	Fourth Quarter 1993
		Weights	Forecast	Forecast
1.	Labor	40.7%	198.9	204.4
2.	Fuel	7.1%	73.3	78.8
3.	Materials and Supplies	6.9%	139.8	142.1
4.	Equipment Rents	9.6%	162.4	162.1
5.	Depreciation	8.8%	138.5	139.0
6.	Interest	3.9%	145.7	135.3
7.	Other Items ¹	23.0%	147.5	146.5
8.	Weighted Average	100.0%	163.2	165.4
9.	Linked Index ²		158.6	160.7
10.	Preliminary Rail Cost Adjustment Factor ³ (10/1/93) = 1.0)		1.011	1.024
11.	Forecast Error Adjustment ⁴		.002	.001
12.	RCAF (Unadjusted) (L. 10 + L. 11)		1.013	1.025
13.	RCAF (Adjusted) ⁵		0.846	0.847

¹ Other items are a combination of Purchased Services, Casualties and Insurance, General and Administrative, Other Taxes, Loss and Damage, and Special Charges, all of which are measured by the Producer Price Index for Industrial Commodities Less Fuel and Related Products and Power.

² Linking is necessitated by a change to 1992 weights beginning with the fourth quarter 1993. The following formula was used for the fourth quarter 1993 index:

$$\frac{\text{4th. Qtr. 1993 Index (1992 Weights)}}{\text{3rd. Qtr. 1993 Index (1992 Weights)}} \times \text{3rd. Qtr. 1993 Index (Linked Index) (1980-1991 Weights)} = \text{Linked Index}$$

$$\frac{165.4}{163.2} \times 158.6 = 160.7$$

Or

³ The denominator of the third quarter 1993 RCAF was rebased at the October 1, 1993 level in accordance with the requirements of the Staggers Rail Act of 1980. (10/1/93 = 1.00)

⁴ The fourth quarter 1993 forecast error adjustment was calculated as follows:

- a. Second quarter 1993 RCAF calculated using forecasted data. 100.3
- b. Second quarter 1993 RCAF calculated using actual data. 100.4
- c. Difference (Line b minus Line a). Because the actual second quarter 1993 RCAF was greater than the forecast, the difference will be added to the preliminary fourth quarter 1993 RCAF. .001

⁵ Fourth quarter 1993 RCAF (Unadjusted) [1.025] divided by the quarterly productivity adjustment factor [1.2104] equals the fourth quarter 1993 RCAF (Adjusted) [0.847]. The fourth quarter 1993 productivity adjustment factor was calculated by multiplying the third quarter 1993 productivity adjustment factor [1.1975] by the fourth root [1.0108] of the multi-year average annual growth from the 1982-1989 eight-year productivity average of 1.044 percent.

APPENDIX

TABLE B
 Ex Parte No. 290 (Sub-No. 5) (93-4)
 Comparison of Second Quarter 1993 Index
 Calculated on Both a Forecasted and an Actual Basis

<u>Line No.</u>	<u>Index Component</u>	<u>1991 Weights</u>	<u>Second Quarter 1993 Forecast</u>	<u>Second Quarter 1993 Actual</u>
1.	Labor	36.9%	197.1	197.1
2.	Fuel	6.8%	77.6	77.7
3.	Materials and Supplies	6.1%	135.0	135.0
4.	Equipment Rents	8.3%	161.8	161.9
5.	Depreciation	8.6%	137.6	137.7
6.	Interest	4.0%	145.7	147.7
7.	Other Items	29.3%	145.7	145.6
8.	Weighted Average	100.0%	160.0	160.0
9.	Linked Index		157.3	157.5
10.	Rail Cost Adjustment Factor		100.3	100.4

SERVICE DATE

NOV 8 1993

The attached decision is subject to a formal correction before publication in the ICC 2d Series of Printed Reports. Please notify the Office of the Secretary, Commission Service Section, Room 2203, Washington, D.C. 20423-0001, (202) 927-5631 of any formal errors in order that corrections may be made.

ICC 516

INTERSTATE COMMERCE COMMISSION

EX PARTE NO. 290 (SUB-NO. 7)

PRODUCTIVITY ADJUSTMENT-IMPLEMENTATION

EX PARTE NO. 290 (SUB-NO. 7)
PRODUCTIVITY ADJUSTMENT-IMPLEMENTATION

Decided October 26, 1993

The Commission prescribes the use of a five-year moving average for measuring railroad productivity changes in calculating the RCAF. All railroad-related special charges will be included in the input index used to calculate the RCAF.

BY THE COMMISSION:

The Rail Cost Adjustment Factor (RCAF) is a quarterly index tracking changes in railroad costs. Rail rates subject to the RCAF process, which increase (and decrease) by the percentage change in the RCAF, are immune from challenge on the ground that they are unreasonably high.

Originally, the RCAF measured only the change in the prices of inputs, such as labor and fuel, used to produce railroad services. In *Railroad Cost Recovery Procedures-Productivity Adjustment*, 5 I.C.C.2d 434 (1989) (*Productivity Adjustment*), *aff'd sub nom. Edison Electric Institute v. ICC*, 969 F.2d 1221 (D.C. Cir. 1992) (*Edison Electric*), the RCAF calculation was modified so that changes in railroad costs would reflect changes in railroad productivity as well as changes in input prices.¹ Thus, the RCAF now measures changes in the cost of *producing* railroad services (output), rather

¹ Productivity is defined as aggregate output divided by aggregate input. The productivity index measures annual changes in productivity, and is calculated by dividing an index of aggregate output change by an index of aggregate input change. The output index is constructed using freight ton-miles for 189 defined segments of rail traffic, weighted by their respective shares of rail revenue. The input index is constructed using a measure of total input expenses (freight expenses plus contingent interest and fixed charges) divided by an aggregate input price index as an estimate of aggregate input quantity. Thus, input quantities are defined as input expenses expressed in constant dollars.

than simply changes in the cost of goods and services used to produce rail service.

The purpose of this proceeding is to refine the process by which the productivity adjustment is calculated. The productivity adjustment was adopted after extensive proceedings, with substantial input from carriers and shippers and the Commission's contractor.² As adopted, the method permits the Commission to measure average productivity over a period of years, and to use average changes in productivity as a basis for converting the input price index into an index measuring the cost of producing rail output. Although we found (and reaffirm here) that the approach initially adopted produces accurate results, we initiated this proceeding to address various technical issues affecting the computation process that we believed merited further exploration. Accordingly, in an Advance Notice of Proposed Rulemaking (ANPR) we requested comments on (1) the averaging period that should be used to measure productivity changes; (2) whether to include so-called "special charges" as carrier expenses in the formula; (3) whether the I.C.C. Waybill Sample is adequate for use in developing the output index; and (4) whether the input index should be based on direct measurement of "physical inputs" rather than railroad expenditures. Ex Parte No. 290 (Sub-No. 4), *Productivity Adjustment-Implementation* (not printed), served April 10, 1989 at 54 Fed. Reg. 14,369 (1989).

In a Notice of Proposed Rulemaking (NPR) served February 15, 1991 at 56 Fed. Reg. 6,680 (1991), we addressed two of those issues on the merits. First, we found that the Waybill Sample was adequate for developing the output index, a finding with which no commentor has taken issue. Second, we denied AAR's request that we calculate our input index directly by measuring physical units of input rather than by using expenses as a basis for determining inputs. Concluding that direct input measurement, in general, is more complex than totaling expenses, and that it has not been shown to be clearly superior, we decided to continue using our current approach to measuring productivity. We stated that we would

² The contractor, Reebie Associates, recommended that the Commission adopt a modified version of the method proposed by Dr. D. W. Caves and Dr. L. W. Christensen Associates, Inc.

review work on direct input measurement conducted by the Bureau of Labor Statistics (BLS) and would, if appropriate, revisit our method.³

The NPR sought further comments on the other two issues raised in the ANPR: the appropriate averaging period, and the treatment of special charges. We will now address those issues.⁴

A. *The Averaging Period.* Year-to-year productivity changes can vary significantly.⁵ Most of the commenters during the *Productivity Adjustment* proceeding recommended that the productivity calculation should be based on a multi-year average of annual productivity growth. The consensus, with which we agree, was that a multi-year average would stabilize the RCAF by smoothing the impact of year-to-year swings in productivity. See Appendix, Graph 2. The consensus was also that a multi-year average, if properly implemented, would produce reasonably current productivity data, which all commenters recognize is an objective of the exercise. Accommodating these two somewhat conflicting goals of stability and currency, the commenters generally acknowledged, was the ultimate objective of this proceeding.⁶

³ In our NPR we also asked whether we should continue averaging productivity for each year covered by the formula arithmetically, or whether instead we should use geometric (or some other form of) averaging. Although the differences between the two methods are not substantial, the commenters nearly unanimously favored geometric averaging, which we adopted in our decision in *Railroad Cost Recovery Procedures - Productivity Adjustment*, 8 I.C.C.2d 177 (1991). We have not been asked to "restate" the index, that is, amend it for the future to reflect the level at which it would have been set had geometric averaging been used from the start.

⁴ Comments were filed by the Agribusiness Shippers Group and the Florida Phosphate Council (ASG); the Association of American Railroads (AAR); the National Industrial Transportation League (NITL); the American Electric Power Company (AEP); and Concerned Shippers, a group of electric utilities and other large shippers.

⁵ The volatility in the productivity index is reflected in the range of values calculated between 1982 and 1991: for the years 1983, 1984, 1987, 1988, 1989, and 1990, productivity improved by 10.2%, 6.4%, 17.6%, 5%, 6%, and 5.6%, respectively. For the years 1982, 1985, 1986, and 1991, productivity dropped by 4%, 1.8%, 2.2%, and 8.8%, respectively. See Table 1 and Graph 1 in the Appendix.

⁶ Sometimes the commenters use the term "accuracy" along with, or in place of, the term "stability." By stating that a longer averaging period may enhance accuracy, the commenters do not mean to suggest that the results that the formula produces for any particular year are wrong. To the contrary, as long as the formula correctly measures the
(continued...)

Our initial determination was that the averaging period ideally should encompass an entire business cycle so that it would include both peaks and valleys in railroad productivity. Data limitations, however, necessitated beginning with a five-year (1981-1986) average (which the commentors seemed to agree may not have represented an entire business cycle) that was used to develop the second quarter 1989 RCAF.⁷ Since 1989 we have added additional years of data to the average while we have sought to determine whether the most recent business cycle has ended.⁸ In our NPR we sought comment on whether that approach was the best way to deal with the issue. We also asked for comments about the difference between the general business cycle and the rail business cycle, and for recommendations on which, if either, should be used to determine the productivity measurement period.

The commentors agree that the Commission should ultimately calculate the productivity adjustment using a "rolling average," under which a fixed period is set for determining productivity, and under which data for a new year, when they become available, are added to the index in place of the data for the oldest year, which are dropped.⁹ Where the commentors

⁶(...continued)

changes in input consumption and output production from one year to the next, then plainly it produces "accurate" results. The reason the reference to accuracy is sometimes tied to the goal of stability is because a more stable index tends to produce results that are closer to the *long-term* productivity trend.

⁷ There is generally a two-year lag in transporting productivity improvements into the RCAF, and because of shortcomings in the pre-1981 waybill sampling process, we decided to use only data beginning with the 1981-82 period.

⁸ The latest RCAF calculation has included eight years of annual productivity change data, ending with 1988-89. In all, 10 years of data are now available (through 1990-1991), but no commentor has attempted to show in any Commission proceeding whether an entire business cycle has in fact run its course during this period.

⁹ In their comments AAR's witnesses point out an alternative to use of a rolling average. They argue that once a business cycle has been captured the average productivity growth experienced during that just-completed cycle could be used to adjust the RCAF in each subsequent year, until the next complete cycle can be measured. At that time the average productivity of the newly completed cycle would be used to adjust the RCAF until the next cycle ends. AAR, however, recognizes that this approach is seriously flawed because it delays recognition of all productivity changes in one cycle until after the industry enters the next cycle, which may produce entirely different results. We agree that using data from the beginning of one cycle (which could be 10 to 20 years old) throughout the next cycle would not advance the goal of reflecting current productivity.

differ is in how that rolling average should be determined. Essentially, the railroads argue that the Commission must base its averaging period on a full business cycle, and preferably on a full rail business cycle. The shippers, by contrast, have maintained their view that determining a business cycle is not crucial, so long as the Commission develops a moving average that is sufficiently long to smooth out major peaks and valleys in productivity.

AAR's view is that the averaging period for the moving average should be based on the number of years in the most recent railroad business cycle.¹⁰ The number of years in the moving average would be revised at the completion of each business cycle.¹¹ According to AAR, if each averaging period is not based on a complete business cycle, then the productivity adjustment will be skewed from the outset to the extent that it will have been initially computed on the basis of either an "up" or a "down" portion of a cycle.

Throughout these proceedings, AAR has argued that we should not have adopted any productivity adjustment at all until we could pinpoint the completion of an entire cycle.¹² In its initial papers on the question, AAR alternatively argued that we should not add new years' data to the averaging period, but rather should keep the initial five-year average in effect until this proceeding was completed. See Ex Parte No. 290 (Sub-No. 4), *Railroad Cost Recovery Procedures - Productivity Adjustment* (not printed), served June 21, 1990. AAR now advances the view that, inasmuch as we did begin the process, we should continue lengthening the averaging period by adding each new year's data as they become available, until we determine that a rail business cycle has been completed. In the meantime,

¹⁰ The railroad business cycle, according to AAR, can be quite different from the general business cycle. To determine a rail business cycle, AAR suggests reviewing trends in the Commission's rail output index, considering only traffic declines that are "demand-driven" (i.e., caused by unanticipated shifts in demand), rather than "supply-driven" (e.g., caused by railroad decisions to abandon or transfer lines). AAR urges that a rail cycle must be used because it best reflects the experience of the rail industry.

¹¹ Thus, if one business cycle lasted 10 years and the next only four, the moving average would be comprised of 10 years' data until the four-year cycle ended. At the conclusion of the four-year cycle the moving average would be reduced to contain only four years' data. Four years (using data from the four most recent years) would then become the averaging period for reflecting productivity change in the subsequent cycle.

¹² That argument was rejected by the court in *Edison Electric*.

because of its view that the productivity adjustment has been too heavily weighted toward the more productive years of the (possibly) not-yet-completed business cycle, AAR renews its suggestion, which we rejected earlier, that we reduce each productivity calculation by 30% to 35%.

The shipper commentators uniformly are of the view that the search for the present business cycle is unnecessary, because a moving average of from five to seven years ought to accommodate the two goals of stability and timeliness.¹³ AEP and NITL suggest that the seven-year period may be a reasonable accommodation. Noting that the average business cycle since 1948 has covered five years and one month peak-to-peak and four years and ten months trough-to-trough, and ranged from one year and six months to nine years and nine months during the 1948-1989 period, Concerned Shippers prefer a five-year period. Concerned Shippers' witnesses (Drs. Caves and Christensen) argue that a period of seven years or more puts too much weight on the goal of stability at the expense of timeliness. They note that even under a five-year moving average, in light of the typical two-year data compilation lag, 1982 productivity improvements would not be fully reflected until 1989. This deferral of productivity recognition, in their opinion, stretches the limits of free market principles.¹⁴

Concerned Shippers also point out that because the length of actual business cycles has varied widely in the past, a floating averaging period tied to business cycles of varying length could over- or under-allocate productivity changes for particular years depending on the length of subsequent cycles. A fixed-length averaging period, by contrast, ensures that, over time, each year's productivity change will be fully reflected in the RCAF.

Discussion. We conclude that a fixed averaging period is preferable to one such as that suggested by AAR, in which the periods vary from business cycle to business cycle. Apart from the fact that it is very difficult

¹³ One shipper, ASG, recommends studying the correlation between rail carloadings and the general business cycle in an attempt to tie the averaging period to the rail business cycle. Ultimately, however, ASG is of the view that a five to seven-year averaging period should be adopted.

¹⁴ Citing testimony of AAR economic witnesses Drs. Baumol and Willig in a telecommunications context, Caves and Christensen argue that in a free market an industry retains the benefits of improved productivity for a short time, but not for periods approaching and even exceeding a decade, as would be the case under AAR's proposal.

to track and identify changes in the business cycle--particularly the rail business cycle as defined by AAR--under AAR's proposed method the productivity change in each year would not receive equal weight over an equal number of years. That is, the productivity experience for some years would not be fully reflected in the index, and the experience for other years would be given excessive weight. Use of a single fixed period, by contrast, ensures as a mathematical certainty that each period's change in rail productivity will be fully reflected in the RCAF, and that no particular period's change will be given too much weight.

We have decided to adopt the five-year period recommended by Concerned Shippers, effective with the issuance of the next quarterly RCAF decision. Throughout this proceeding we have sought to reach a reasonable balance between currency and stability. As Graph 2 in the Appendix shows, with the exception of the aberrational 1986-1987 period, when productivity change was 17.6%,¹⁵ the five-year average has been relatively smooth, and indeed the differences in volatility between the five, six, seven, and eight-year averages are not substantial.¹⁶ On the other hand, as Drs. Caves and Christensen note, even under a five-year average it is likely productivity gains would be passed through more slowly than they would be passed through in a free competitive market.¹⁷ AAR itself has recognized (comments at 9) that it is undesirable to "lengthen[] the averaging period [to the point where it] produc[es] stale results that no longer correspond to current productivity trends." On balance, we conclude that use of a five-year period will best meet both of the objectives--currency and stability--that we seek to achieve.

¹⁵ Another rather large change, which would be somewhat more gradual depending on the length of the averaging period used, can be expected when the 1987 productivity number (17.6%) is dropped.

¹⁶ For those years that 5, 6, 7 and 8-year moving averages are available (see Appendix, Table 1), the 5-year moving average demonstrates as much stability as the 6 and 8-year averages (varying only .015 over the period 1989-91) and more than the 7-year average (which varied .027 between 1989 and 1991). Further, the 5-year average produced only slightly different absolute numbers than the 8-year average (in 1989 these two averages differed by only .003, in 1990 by only .005, and in 1991 by .014).

¹⁷ We recognize that although the railroad industry is for the most part competitive, because the RCAF is not a rate cap the impact of the cost recovery process is felt principally on captive traffic. One objective of the productivity adjustment process is to simulate, for captive traffic, the effect that productivity would have in a competitive market.