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THE RAIL COST ADJUSTMENT FACTOR:
INFLATIONARY COST RECOVERY MECHANISM

Carol E. Lutz
Association of American Railroads
Washington, D.C. U.S.A.

ABSTRACT

This paper discusses the rail cost adjustment factor (RCAF)--a factor by which rail carriers may adjust their rates to recoup inflationary cost increases. It explains the rationale for the RCAF and the methodology for constructing the forecast of the Association of American Railroads' (AAR) price index, which is the basis for the Interstate Commerce Commission's (ICC or Commission) determination of the RCAF. It illustrates the results of the last four and one-half years of experience with the RCAF, and discusses outstanding issues, such as whether there should be a productivity adjustment to the index.

BACKGROUND

Prior to the Staggers Rail Act of 1980, general rate increases were the predominant mechanism by which the strictly regulated railroads were allowed to seek recovery of inflationary costs. These lengthy, expensive, and burdensome proceedings before the Commission prevented the railroads from fully recovering their increased costs, due to the requirement for submission of extensive historical cost evidence and the prolonged procedural periods for planning, submission, replies, and implementation of rate increase actions. During the decade of the 1970's, the railroads experienced low rates of return, deferred maintenance, poor service, declining traffic, and extensive financial failures.

By 1980, both the Congress and the ICC recognized the need to assure that rail rates could be responsive to market conditions and could keep pace with inflationary pressures. While Congress was debating the bill which was the forerunner of the Staggers Act, the ICC, in an Advance Notice of Proposed Rulemaking (ANPR) in Ex Parte No. 290 (Sub-No. 2), served April 28, 1980, announced its intention to replace existing procedures for the filing of railroad general rate increases. The ICC anticipated that the amount of the allowable increases would be determined through the use of an index of railroad costs, and that carriers would be permitted to file for rate increases commensurate with changes in the index to re-cover their increased costs automatically without regulatory intervention.

In response to the ANPR, the AAR proposed that an expanded and refined version of the price index produced since the 1930's be used for this purpose. The most comprehensive index published by the AAR at that time included wages and supplements, fuel, and other materials and supplies, which together accounted for about 70 percent of total operating expenses. The AAR proposed to add the remaining operating expenses plus interest to the index in order to cover total costs.

Section 203 of the Staggers Rail Act, which was passed in October 1980, directed the Commission to publish a rail cost adjustment factor (RCAF) which was to be used to adjust base rates in effect as of a certain date.[1/] This RCAF was to be a fraction, the numerator of which was the latest railroad cost index, and the

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1/ Section 203 states, "For the 24-month period beginning October 1, 1980 the base rate is the rate in effect on October 1, 1980; for the 24-month period beginning October 1, 1982, the rate in effect on October 1, 1982; and for the 5-year period beginning on October 1, 1984, and for each subsequent 5-year period, the rate in effect on the first day of the applicable 5-year period. (Section 203, codified at 40 U.S.C. §10707a (a)(1)(A).)

denominator of which was the same index in the base period. The cost index was to be compiled or verified by the Commission, and to be adjusted to account for the changing composition of railroad costs.[1/]

The ICC issued a decision regarding its implementation of Section 203 on April 19, 1981. For the required "Index of Railroad Costs" it decided to use an interim version of the AAR price index until such time as the AAR's all-inclusive index would be available for analysis. The AAR's first submission of the interim mid-quarter index (IMI), as it was called, was retroactive to the fourth quarter of 1980, the required starting date. The AAR submitted the details of its proposed all-inclusive index on January 29, 1982, but it was not until June 23, 1983 that the ICC issued a Notice of Proposed Rule-

1/ Section 203 states, "Commencing with the fourth quarter of 1980, the Commission shall, as often as practicable but in no event less often than quarterly, publish a rail cost adjustment factor which shall be a fraction, the numerator of which is the latest published Index of Railroad Costs (which index shall be compiled or verified by the Commission, with appropriate adjustments to reflect the changing composition of railroad costs, including the quality and mix of material and labor), and the denominator of which is the same index for the fourth quarter of 1980, or for the fourth quarter of 1982 or for the fourth quarter of every fifth year thereafter, as appropriate." (Section 203, codified at 40 U.S.C. §10707a(a)(2)(B).)

making (NPR) on the subject. The ICC took exception to some aspects of the AAR's proposed methodology in the NPR, and the AAR modified its original proposal in response to the ICC's concerns. Finally, on January 2, 1985, the ICC issued its decision directing the AAR to submit a further-modified version of the all-inclusive index as the basis for the ICC's determination of the RCAF.

METHODOLOGY

When the AAR first proposed that the Commission use the index which it had been calculating for decades--Railroad Material Prices, Wage Rates and Supplements Combined, Including Fuel--it also proposed to enlarge the scope of the index to become an "all-inclusive" index by including all other railroad expenses, such as depreciation, purchased services, equipment rents, interest, taxes other than income and payroll, and miscellaneous other expenses. However, the methodology for these six components had not been solidified at that time.

When the Commission issued its decision in April 1981 to utilize the AAR price index, it modified the index until such time as the AAR's all-inclusive index would be available. The ICC's modification consisted of using the Producer Price Index (PPI) for All Commodities, calculated and published by the U.S. Bureau of Labor Statistics, as a surrogate measure of inflation in the "other expenses" component of the index. This index was called the interim midquarter index (IMI), and it was to be a forecast of the next quarter's prices. It was to be filed 20 days before the end of each quarter, and in order to meet the requirement that it reflect the changing composition of railroad costs, the weights of the index components were to be updated annually.

Thus, until the March 5, 1985 (or second quarter 1985) filing, the AAR submitted the IMI on a quarterly basis. This index had four components--labor, which was 48.5 percent of the total index in 1983; fuel, 10.3 percent; materials and supplies, 7.2 percent; and other expenses, 34.0 percent. The same methodology is used in both the IMI and the all-inclusive index for the first three of these components.

The labor index measures the change in the price of labor per straight time hour, and is a composite of a wage index and a supplements (or fringes) index. The total price of labor consists of two components for the wage index--straight time pay and pay for time not worked (vacations, holidays, etc.), plus four components for the supplements index--railroad contributions for health and welfare, railroad retirement and medicare taxes, supplemental annuities, and unemployment insurance. To compute the labor index, the wages index and supplements index are weighted together using the respective amounts of wages and supplements charged to operating expense in the weighting year. In 1983, the weights were 77.2 percent wages and 22.8 percent supplements.

The fuel index is calculated by weighting together average mid-month fuel prices supplied by each of the Class I railroads. The weighting factors are the total number of gallons consumed by locomotives on each of the roads in the weighting year.

The materials and supplies index is based on price changes in a market basket of 38 items which make up the preponderance of railroads' purchases. Mid-quarter prices for these items are collected from the nine largest railroads in the U.S., which together account for over 85 percent of all Class I railroads' purchases. The weighting for the market basket items consists of the dollar amounts purchased in the weighting year.

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The "other expenses" component was indexed in the IMI using the PPI for All Commodities as a surrogate for specific indices. This interim procedure has been replaced in the Commission's new all-inclusive index.

The AAR's March 5, 1985 quarterly index submission to the ICC utilized the newly-required all-inclusive index for the first time. This index differs from the interim mid-quarter index in several ways:

1. The interest component (four percent of the index) has been deleted from the index;

2. As a result of deleting interest, the weights of the other components have shifted as shown:

1983 INDEX WEIGHTS

Interim Midquarter Index		All-Inclusive Index	
Labor	48.5%	Labor	50.4%
Fuel	10.3	Fuel	10.8
Materials and Supplies	7.2	Materials and Supplies	7.5
Other Expenses	34.0	Equipment Rents	9.6
		Depreciation	7.7
		Other Expenses	14.0
TOTAL	100.0%		100.0%

3. The methodology for each of the components of "other expenses" is different in the all-inclusive index than it was in the IMI. In the interim midquarter index the other expenses were indexed as a group using the PPI for All Commodities as a surrogate. In the all-inclusive index the PPI for Railroad Equipment (PPI-RE) is used for the depreciation index, and the PPI for Industrial Commodities less Fuel and Related Products and Power (PPI-LF) is used for other expenses, which consist of purchased services, taxes (other than payroll and income), casualties and insurance, loss and damage, and general and administrative expenses. The equipment rents index consists of two components--car hire and lease rentals. The car hire component measures the change in the average rate for cars registered on the Universal Machine Language Equipment Register, while the lease rentals index will use actual lease rentals data from the roads, deflated by the amount of locomotive horsepower leased or the amount of freight car capacity leased, as appropriate. This index has not yet been developed, although it may be in place in time for the June 5, 1985 filing.

The RCAF is developed by the ICC from a forecast of the index for the upcoming quarter. Forecasting in the usual sense of the word is not necessary for labor, materials and supplies, and car hire, since what will happen to these components in the future is known in advance. For example, increases in labor are based largely on union contract provisions and payroll tax increases, which are known in time to be incorporated in the "forecast".[1/]

In the case of materials and supplies, a three-month lag is observed between the time of purchase and the time an item is charged to operating expense.[2/] Since it is the latter that is measured in the index, the current quarter's spot prices are used to represent the forecast quarter's charge-out prices.

The other component which does not require a true forecast is car hire, since car hire rate increases are known in advance and can be factored into the calculation. In this case, however, the actual index for the

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1/ The only labor component which requires estimation is health and welfare, since not all the following year's contribution rates are known in December when the first quarter forecast is filed with the ICC.

2/ This three-month lag factor is based upon a survey of railroad purchasing officers.

quarter could be different from the forecast because the number of cars and their various rates are constantly changing.

On the other hand, fuel, lease rentals, the PPI-RE, and the PPI-LF must be forecast. The fuel forecast is made on a consensus basis, i.e., the projections of the fuel purchasing officers of the largest railroads, past and current prices of fuel, and the projections found in both specialized and general business publications are all taken into account. The lease rentals forecast will probably use an ARIMA method, the same method that is used to forecast the PPI's. ARIMA methods use historical data for the same variable to develop a forecasting model.

The "forecasts" of all the components of the index are multiplied by their respective weights and the results are added together to obtain the composite index. The final steps involve a linking process and a rebasing to the currently required base level for the ICC. The linking is necessitated by changing weights periodically, and also, in second quarter 1985, by changing the composition of the index. Linking is accomplished by determining the relative change between the forecasts for the upcoming quarter and the current quarter and then multiplying that change times the previous level of the index, which was calculated with different weights.

FOUR AND ONE-HALF YEARS OF RESULTS

In the 4 1/2 years since passage of the Staggers Act, the index which has been the basis for the RCAF increased to a level of 127.9 (1980=100) in third quarter, 1984, but has since fallen to a level of 126.0. The following table shows the history of the AAR index and of the RCAF. The index (the IMI until the second quarter of 1985, and the all-inclusive index in the second quarter, 1985) is shown on a 1980 base in the first column.1/

The RCAF, in column 2, is shown on two bases-- October 1, 1980 and October 1, 1982. The reason for the changeover to October 1, 1982, beginning with first quarter, 1983, was the requirement, as quoted previously, that at that time the denominator of the RCAF should be the index for the fourth quarter of 1982. Furthermore, the base rate for the 24-month period beginning on October 1, 1982 was to be the rates in effect on that date. At the pre-

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1/ During the first year the index was 1979-based, and since that time has been a 1980-based index.

AAR INDEX AND RCAF

	AAR Index Used to Determine RCAF (1980=100) (1)	Rail Cost Adjustment Factor (2)	Allowable Quarterly Increase (3)
10/1/80	102.7	1.000	
4Q,80	103.4	1.007	0.7%
1Q,81	108.6	1.057	5.0
2Q,81	110.7	1.078	2.0
3Q,81	113.8	1.108	2.8
4Q,81	115.4	1.124	1.4
1Q,82	120.9	1.177	4.7
2Q,82	118.4	1.153	-
3Q,82	119.0	1.159	-
4Q,82	119.0	1.159	-
10/1/82		1.000	
1Q,83	122.1	1.010	1.0
2Q,83	118.4	0.979	-
3Q,83	120.8	0.999	-
4Q,83	122.4	1.012	0.2
1Q,84	127.3	1.053 1/	4.1
2Q,84	127.3	1.053	-
3Q,84	127.9	1.058	0.4 2/
4Q,84	127.3	1.053	-
1Q,85	126.7	1.048	-
2Q,85	126.0	1.042	-

1/ The ICC in 2Q,84 determined that the 1Q,84 RCAF should have been 1.052, but no retroactive rate actions were ordered.

2/ The index increase of 0.5% was reduced to a 0.4% allowable increase to adjust for the 0.1% overstatement in first quarter 1984.

sent time, the denominator of the RCAF is the first quarter 1982 index of 120.9 rather than the lower fourth quarter 1982 index of 119.0. This adjustment was necessary because base rates in effect on October 1, 1982 reflected the level of the index in first quarter 1982. Failure to recognize this adjustment would have led to excessive cost recovery.

The last column of the table shows the rate increases allowed by the Commission as a result of the increases in the RCAF. There have been no increases since third quarter 1984, because the index has declined in each subsequent quarter.

ISSUES REMAINING

The most significant RCAF issue outstanding (which is docketed by the ICC as Ex Parte No. 290 (Sub-No.4)) concerns mainly whether the index used as the basis for the RCAF should be adjusted for productivity. Shippers argue that since the AAR index is an input price index, it should be adjusted for productivity increases to convert it to an output index which would measure the increase in cost per unit of output. Shortly after the ICC implemented Section 203 of the Staggers Act, shippers petitioned for judicial review of the Commission's final decision, which did not require a productivity adjustment. On May 4, 1982 the United States Court of Appeals for the D.C. Circuit upheld the Commission's decision not to adopt any productivity or other input-output adjustments other than those reflected in the changing composition of rail inputs. The court also stated that it expected the Commission to review the index and revise it if circumstances warranted.1/

In accordance with this Court decision, the ICC questioned whether a productivity adjustment should be adopted in an Advance Notice of Proposed Rulemaking on July 23, 1982. Several productivity adjustment methodologies were proposed by respondents, including one by Douglas W. Caves and Laurits R. Christensen, which was the object of several questions included in the ICC's September 27, 1984 Notice of Proposed Rulemaking. Public comments were filed February 11, 1985 in response to the Commission's NPR, and reply comments were due March 29, 1985.

1/ Western Coal Traffic League v. United States, 677 F. 2d 915 (D.C. Cir. 1982).

The AAR argues in this case that the Commission should not adopt the Caves-Christensen or any other methodology for adjusting the index for productivity. The principal bases for this conclusion are:

1. Productivity adjustments to the index would prevent the railroad industry from fully recovering its cost increases, since competition already forces railroads to transfer a share of productivity growth to shippers through lower rates and "flagouts" or "holddowns" from rate increases. Adjustment of the index would mean a double pass-through of the gains.

2. Productivity adjustments to the index would reduce the railroads' incentive to increase productivity.

3. Accurate, timely, and reliable measures of railroad productivity do not exist.

4. Because the industry is revenue-inadequate, even a small overestimate of productivity gains could have serious adverse consequences.

Another RCAF issue which remains outstanding is the methodology of the all-inclusive index. Even though the Commission's January 2, 1985 decision has adopted a modified version of the all-inclusive index, as mentioned previously, the methodology still appears to be "interim" in many cases. For several components the Commission has left room for change by adopting a methodology (usually one of the Producer Price Indexes) "for use at this time," or by asking that further proposals be made. Purchased services is a component for which the Commission adopted a Producer Price Index, but suggested that the AAR develop an index which would make use of actual railroad data. Depreciation is another component which utilizes a Producer Price Index "at this time." The Commission stated that if it adopts replacement cost accounting in Ex Parte No. 393 (Sub-No. 1), the depreciation component of the index would need to be modified accordingly.[1/]

Certain other issues continue to recur. In February, 1985 a petition was filed by certain shippers to reopen the Ex Parte No. 290 (Sub-No. 2) proceeding on the grounds

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1/ January 2, 1985 decision, p. 15.

that it contains material error.[1/] At issue are the methodologies for equipment rents, depreciation, and purchased services, the use of the three-month Treasury Bill rate to calculate the opportunity cost of capital when railroads collect funds for the payment of retroactive wages in advance of their disbursement,[2/] and whether or not there should be allowed an additional audit of the index. These questions, especially the last, have been raised many times before. The Commission has consistently turned down this request, stating that, "we are still convinced that the integrity of the index and the confidential nature of the data which underlie it are protected by both the CPA's audit, our review of the CPA's procedures and workpapers, and our own independent review and audit of the index."[3/]

1/ The due date for comments was extended to April 1, 1985.

2/ This happens during contract negotiations. If management makes an offer, that amount is reflected in the STHR, and hence in the index. The opportunity cost of those funds is later to be subtracted from the index, so that, in effect, shippers receive payment for the railroads' use of those funds prior to their disbursement by the carriers.

3/ Ex Parte No. 290 (Sub-No. 2) decision, January 2, 1985, p. 4.

In its response to the petition, the AAR supported the ICC decision in all respects. In regard to the shipper audit question, in addition to reiterating its position that the public interest is adequately protected by the Commission's audit procedures, it stated that the railroads have no reason to willfully supply data which would bias the index. The industry is well aware that to call the integrity of the index into question by the use of incorrect data or procedures would be both counter-productive and short-sighted. The railroads have no desire to return to the lengthy and expensive rate proceedings under prior regulation that cost the industry so much in lost revenues.[1/]

1/ AAR April 1, 1985 Response to Petition to Reopen Ex Parte No. 290 (Sub-No. 2) filed by Carolina Power and Light Company, et al.

CONCLUSION

The RCAF is a mechanism for recovering inflationary cost increases which the railroad industry considers essential to its financial health, since it allows them to obtain prompt cost-recovery rate increases with minimal regulatory delay. Over time, the index methodology underlying the RCAF may continue to be refined, but the RCAF itself will remain an important Staggers Act reform.