RAIL COST ADJUSTMENT FACTOR

Coverage

The Rail Cost Adjustment Factor (RCAF) measures the rate of inflation in railroad inputs such as labor and fuel. The RCAF, which was created for regulatory purposes and is thus governed by the Surface Transportation Board (STB), is calculated by the Association of American Railroads (AAR) and submitted to the STB for approval.

There are five indexes associated with the RCAF; (1) the forecasted All-Inclusive Index — the price index that underlies the RCAF; (2) the actual All-Inclusive Index — calculated when data become available; (3) the RCAF (Unadjusted) — derived by adjusting the forecasted All-Inclusive Index by the "forecast error" from the second prior quarter; (4) the RCAF (Adjusted) — derived by modifying the RCAF (Unadjusted) for a moving five-year productivity gains as soon as the latest year of productivity is available; and (5) the RCAF-5 reflects a five-year moving average productivity adjustment factor which is incorporated into the index during the first quarter of each year.[1]

Base Period

The base period of the All-Inclusive Index is 1980; however, the Staggers Act of 1980 that established the RCAF requires periodic revisions in the base of the RCAF (now every five years). The RCAF is currently published on a fourth quarter 1997 reference base; the next scheduled update will be to the first quarter 2003.

Weights

The weights used to combine the seven component indexes that comprise the All-Inclusive Index, as well as the weights used within certain components, are based on freight operating expenses plus fixed charges — data supplied to the STB by the Class I railroads in their annual reports. Weights are updated each year to satisfy an STB requirement that is based on a Staggers Act provision, i.e., that the index should reflect the changing composition of railroad costs, including the quality and mix of material and labor. Beginning in the fourth quarter 2001, the weights are based on 2000 data. (The annual update regularly takes place in the fourth quarter of each year.)

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[1] **The Adjusted RCAF** reflects an additional year of productivity as soon as it is available. For example, the productivity for 1996 was incorporated into the 1992–1996 productivity calculation utilized in the second quarter 1998 Unadjusted RCAF.

The RCAF-5 reflects a consistent two-year lag in its introduction of a productivity factor. Thus, in the first quarter of 1998, the productivity of 1995 was added to the calculation – yielding a five-year rolling average for the period 1991–1995. The 1991–1995 productivity period will be employed for all 1998 RCAF-5 calculations.

Frequency and Source of Data

The RCAF is calculated quarterly. The AAR submits to the STB the forecast for the following quarter on the fifth day of the last month of each quarter (e.g., the fourth quarter forecast is submitted on September 5). The STB issues a decision approximately 15 days later, i.e., around the 20th of the month, in order that the required ten-day period is available for notice of rates that the railroads wish to change on the first day of the forecast quarter. There is no official annual RCAF, although the four quarterly indexes are sometimes averaged for comparison with other inflation indexes.

Timing of Revisions

There is no standard revision policy for the RCAF. If a minor correction is needed after the STB issues its decision on the RCAF, an adjustment will be made in a subsequent quarter's RCAF. In the extremely rare cases when a correction is major, a revised RCAF may be calculated and submitted to the STB. Railroads should immediately notify the AAR of any adjustments to inputs to the RCAF for prior periods, regardless of size, and the AAR will take appropriate next steps.

Presentation Format

The RCAF filing to the STB that is made on the fifth day of the last month of each quarter is available on the AAR web site. The AAR's quarterly publication, *AAR Railroad Cost Indexes,* is available by subscription. Since the latter publication is printed near the end of the quarter, it contains a synopsis of the STB's decision on the RCAF, as well as tables and background material from the filing, and historical tables of the All-Inclusive Index, the RCAF, and other railroad indexes.

Methodology

The seven component indexes, which are calculated as described below for the actual index, are weighted together to form the All-Inclusive Index. (Forecasting methods are described at the end of this section.) The RCAF (Unadjusted) is derived by applying the forecast error adjustment (based on the second prior quarter) to the forecasted All-Inclusive Index, and the RCAF (Adjusted) is derived by applying the productivity adjustment to the RCAF (Unadjusted).

Labor: The labor index reflects changes in the average unit price of wages and wage supplements (fringe benefits). The unit price of wages consists of two major components: the hourly rate for straight time compensation (STHR), which is straight time compensation divided by straight time hours paid for, and the hourly rate for pay for time not worked (PFTNW) (vacation, holidays, etc.), which is PFTNW compensation divided by straight time hours paid for. The wage index is the sum of the two rates for the current period divided by the sum of the two rates in the base period. When back pay, lump sums, and other forms of compensation, such as profit sharing, are paid to employees as part of labor contracts, those items are also factored into the wage index.

The wage supplements component is comprised of contributions for health and welfare benefits, payroll taxes for Railroad Retirement and Medicare, supplemental annuities, and unemployment insurance, and other wage supplements. The wage supplements index includes the employer portion of these payments on a per straight-time-hour-paid basis. The wage and wage supplements indexes are weighted together to derive the labor index.

The source of the labor data are the Wage Statistics and the R-1 annual reports, both of which are filed with the STB by the Class I railroads. In the fourth quarter of each year the hourly rates are rebenchmarked to the previous year's data. Quarterly adjustments in the hourly rates are estimated in accordance with wage increase provisions of labor union contracts and payroll tax and health and welfare contribution changes reported by the Railroad Retirement Board and the National Railway Labor Conference.

Fuel: The fuel index represents the change in the average price per gallon of No. 2 diesel fuel paid by the largest railroads. Beginning in February 1991, the price includes Federal excise taxes, transportation, and handling charges. The index reflects the original purchase price of fuel charged to railroad operating expenses during the middle month of the quarter. However, the purchase price is measured in the first month of the quarter, thereby reflecting an average one-month inventory lag before the fuel is charged to expense.

Materials and Supplies: The materials and supplies index measures changes in the prices of a market basket of 38 items that represent the preponderance of purchases by the six largest railroads. The price of each item at each railroad is converted to an index, and these individual railroad item indexes are weighted together to form an overall index for the item. Next, item indexes are weighted to form indexes by category (forest products, metal products, and other products) and these are weighted to derive the overall materials and supplies index. Weights at each stage are based on purchases for the most recent year. As with fuel, the index reflects the original purchase price of materials charged to railroad operating expenses during the quarter. In contrast to the one-month lag for fuel, a three-month lag is assumed for the average time a material or supply item is in inventory before it is charged to expenses; thus, the previous quarter's spot price is the current quarter's chargeout price.

Equipment Rents: Equipment rents has two components — car hire and lease rentals. The car hire index is a weighted average of car hire rates for various car types obtained from the Car Hire Rate Master File (CHARM). The lease rentals component is indexed by the change in the Producer Price Index for Industrial Commodities less Fuel and Related Products and Power (PPI-LF).

Depreciation: The depreciation index uses, as a surrogate, the Producer Price Index for Rail Equipment.

Interest: The interest index measures, essentially, the embedded cost of railroad debt, i.e., total interest expense divided by average total long term debt. In the fourth quarter of each year the interest rate is calculated for the most recent year (from data supplied in the railroads' annual reports to the STB) and used until the next year's fourth quarter (unlike the other components, which are adjusted quarterly).

Other Expenses: The "other expenses" index uses the Producer Price Index for Industrial Commodities less Fuel and Related Products and Power as a surrogate. "Other expenses" include purchased services, casualties and insurance, loss and damage, taxes other than income and payroll, and general and administrative expense.

Forecast Methods

Each of the seven All-Inclusive Index components is presented as a *forecast* when first submitted to the STB. Two quarters later, the *actual* indexes as calculated above are presented to the STB for the purpose of determining the forecast error. The actual index levels do not normally differ from the forecasts for three of the components — labor, materials and supplies, and interest — because of the methods used to forecast them.

The forecasts for labor and materials and supplies are based on advance information on what will happen to these components. Increases in labor are based largely on union contract provisions and payroll tax increases. Current quarter spot prices of materials and supplies are assumed to be the forecast quarter's chargeout prices, based on materials being held in inventory three months before being charged to expenses.

The actual interest rate (lagged by several quarters) is used for both the forecast and actual index. Thus, there is a timing difference, but no forecast error.

A variety of forecasting methods are used for the remaining four components. The fuel forecast is based on a consensus; projections of the fuel purchasing officers of the largest railroads, past, current, and futures prices of fuel, and forecasts presented in both specialized and general business publications are all taken into account. For the equipment rents forecast, estimates of car hire rates for individual car types are based on the latest available rates. An ARIMA (autoregressive integrated moving average) method[2] is used to forecast the Producer Price Indexes used as surrogates for the lease rentals, depreciation, and other expenses components.

[2]ARIMA analysis uses historical data for the variable being forecast to develop a forecasting model.