

ASSOCIATION
OF AMERICAN
RAILROADS

John T. Gray
Senior Vice President - Policy & Economics

June 3, 2016

The Honorable Cynthia T. Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, SW
Washington, DC 20423-0001

Dear Ms. Brown:

This submission is the AAR forecast of the third quarter 2016 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2016-3) *Quarterly Rail Cost Adjustment Factor*. The versions of RCAF-related indices covered in this filing are: the All-Inclusive Index (initiated in the second quarter of 1985), the Unadjusted RCAF (produced since October 1982), the Adjusted RCAF (first published in the second quarter of 1989), and the RCAF-5 (created by the STB in its Ex Parte No. 290 (Sub-No. 7) decision served October 3, 1996). The table below summarizes the third quarter 2016 results on the fourth quarter 2012 base, and shows the percentage changes from the previous quarter.

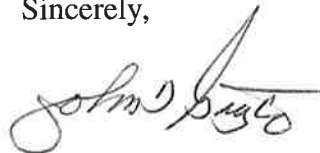
	<u>2016Q2</u>	<u>2016Q3</u>	<u>% Change</u>
All-Inclusive Index	85.2	88.4	3.8
Preliminary RCAF	0.852	0.884	3.8
Forecast Error Adjustment	-0.012	-0.042	
RCAF (Unadjusted)	0.840	0.842	0.2
Productivity Adjustment Factor	2.3584	2.3667	
RCAF (Adjusted)	0.356	0.356	0.0
PAF-5	2.4974	2.5016	
RCAF-5	0.336	0.337	0.3

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June 3, 2016

In its October 3, 1996 decision in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*, the STB noted its intent to publish, in addition to the RCAF (Unadjusted) and RCAF (Adjusted), an RCAF-5 (i.e., a calculation of the productivity adjusted RCAF values as if the agency had always used a 5-year rolling average to calculate the productivity adjustment). In response to a request by STB staff, the AAR is including a calculation of the RCAF-5 in its quarterly RCAF filing. The AAR and its members, however, do not believe the publication of a third RCAF index is required or permitted by the applicable statute (49 U.S.C. § 10708) and do not endorse its publication.

Our quarterly non-proprietary work papers underlying this submission are e-filed herewith, in accordance with the ICC's order in Ex Parte No. 290 (Sub-No. 2), *Railroad Cost Recovery Procedures*, served February 8, 1990. We have notified Pedro Ramirez, in the STB office handling this proceeding, of our plan to e-file the submission and non-proprietary work papers. A second copy of the submission and non-proprietary work papers, plus selected highly confidential work papers, will be hand-delivered to Mr. Ramirez's Data Collection and Auditing Team. All work papers are available for STB inspection. Questions should be directed to me or Clyde Crimmel (202 639-2309) of this office.

Sincerely,

A handwritten signature in cursive script, appearing to read "John T. Gray".

John T. Gray

Attachments

**Third Quarter 2016
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2016-3)

**Quarterly Rail Cost Adjustment Factor
Surface Transportation Board**

**Policy and Economics Department
Association of American Railroads**

June 3, 2016

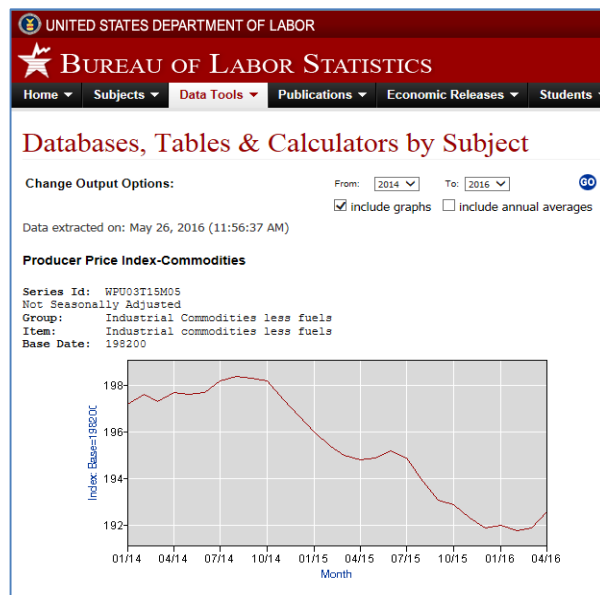
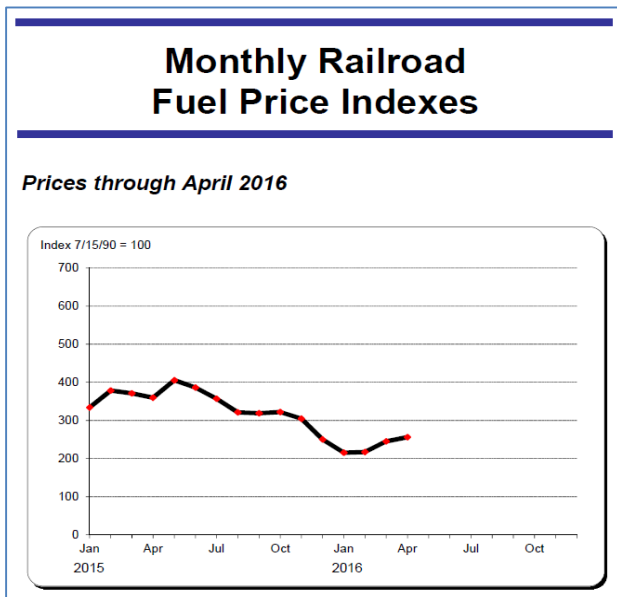
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Introduction

On January 2, 1985, the Interstate Commerce Commission (ICC) adopted the All-Inclusive Index as the basis for the Rail Cost Adjustment Factor (RCAF). The quarterly projection of railroad costs, as documented herein, employs the All-Inclusive Index as required by the regulations. Also presented in this submission is the RCAF, both Adjusted and Unadjusted, as required by the ICC in its decision in Ex Parte No. 290 (Sub-No. 4), Rail Cost Recovery Procedures - Productivity Adjustment, served March 24, 1989. In addition, the AAR has included the RCAF-5, which was instituted by a Surface Transportation Board decision served October 3, 1996 in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*. The AAR and its members do not believe the additional productivity-adjusted index is required or permitted by the applicable statute, and do not endorse its publication.

This quarter's projection of railroad costs is for the third quarter 2016. Some trends to take note of – fuel prices and the PPI-Less Fuel (used for Other Expenses) are starting to go up after long declines.



Index Weights

In the Ex Parte No. 290 (Sub-No. 2) final rules, issued in April 1981, the Interstate Commerce Commission mandated that the weights of each major cost component be updated annually. These "external" weights are calculated using data from Schedules 410 and 210 of the R-1 annual report filed with the Surface Transportation Board by the Class I railroads. The weights are typically updated with the fourth quarter projection.

The 2014 (current) and 2013 (previous) weights are shown below. Weights calculated from 2013 data were used for the fourth quarter of 2014 through the third quarter of 2015. Beginning with the fourth quarter of 2015, weights calculated using 2014 data are used. Fuel and Interest expenses were down in 2014, and those decreases are reflected in their lower weights. Depreciation expenses increased at about double the rate of total expenses, possibly caused by record capital expenditures for new equipment and infrastructure. The weight for Depreciation increased by 0.6 percentage points, as did the weight for Other – which consists of Purchased Services, Taxes (other than income and payroll), Casualties & Insurance, Loss & Damage, and General & Administrative expenses. Other increases were 0.3 for Materials & Supplies, and 0.1 for Labor. Expenses for Materials & Supplies were probably more affected by higher volumes than prices. The weight for Equipment Rents was unchanged.

Weights for RCAF's All-Inclusive Index		
	2014	2013
Labor	31.7 %	31.6 %
Fuel	20.9	22.1
Materials & Supplies	5.2	4.9
Equipment Rents	5.4	5.4
Depreciation	12.6	12.0
Interest	1.5	1.9
Other	22.7	22.1
Total	100.0	100.0

Reweightings of the index is accomplished by calculating both the current quarter (normally the fourth) and prior (normally the third) quarter indexes with the new weights. The relative change between the two quarters is then multiplied times the prior quarter (usually the third) *linked* index. Use of this method ensures that the weight change, by itself, does not cause a change in the level of the All-Inclusive Index.

Internal weights in the labor and equipment rents components are updated at the same time as the external weights. When these weights are changed, they are also linked using the procedure described above in order to eliminate the effect of the change in weighting.

All-Inclusive Index Third Quarter 2016

The components and values of the current and previous All-Inclusive Indexes are shown below. Details of the construction of each component of the index are contained in the Appendices.

	2014 Weights	Forecast		Percent Change
		Previous 2016Q2	Current 2016Q3	
1. Labor	31.7%	416.4	415.2	-0.3 %
2. Fuel	20.9%	148.7	195.6	31.5
3. M&S	5.2%	246.9	240.6	-2.6
4. Equipment Rents	5.4%	215.1	216.8	0.8
5. Depreciation	12.6%	227.2	226.5	-0.3
6. Interest	1.5%	57.5	57.5	0.0
7. Other	22.7%	215.1	217.4	1.1
8. Weighted Average				
a. 1980 = 100		265.8	275.5	
b. 1980 = 100 (linked)		253.7	263.0 ¹	
c. 4Q12 = 100		85.2	88.4 ²	3.8

¹ Index80 = (Current Index / Previous Index) * the Previous Quarter Linked Index
= (275.5 / 265.8) x 253.7
= 263.0

² To calculate the 4Q12 = 100 index:
Index4Q12 = (Current Linked Index / 4Q12 Basing Factor) * 100
= 263.0 divided by 297.6 times 100
= 88.4

Indexes based on other periods:

- 4Q07 based index = 263.0 / 245.9 x 100 = 107.0
- 4Q02 based index = 263.0 / 192.1 x 100 = 136.9
- 4Q97 based index = 263.0 / 173.2 x 100 = 151.8
- 4Q92 based index = 263.0 / 156.9 x 100 = 167.6
- 4Q87 based index = 263.0 / 132.2 x 100 = 198.9

Forecast vs. Actual All-Inclusive Index First Quarter 2016

Because of data availability, the forecast error adjustment has a two-quarter lag from each filing. As shown below, the first quarter actual index of 84.0 is 4.2 index points below the forecast value of 88.2. Therefore, the forecast error adjustment for third quarter 2016 is -4.2 index points.

	2014 Weights	First Quarter 2016		Amt Difference
		Forecast	Actual	
1. Labor	31.7%	417.7	417.7	
2. Fuel	20.9%	191.2	132.7	
3. M&S	5.2%	246.9	246.9	
4. Equipment Rents ¹	5.4%	214.3	215.2	
5. Depreciation	12.6%	226.0	225.9	
6. Interest	1.5%	57.5	57.5	
7. Other	22.7%	215.5	215.1	
8. Weighted Average				
a. 1980 = 100		275.0	262.8	
b. 1980 = 100 (linked)		262.5	250.1 ²	
c. 4Q12 = 100 ³		88.2	84.0	-4.2

Forecast error \longrightarrow **-4.2 index points**

1	2014 Weights	First Quarter 2016	
		Forecast	Actual
Car-Hire	56.5%	195.1	196.8
Lease Rentals	43.5%	215.5	215.1
Weighted Average		204.0	204.8
Weighted Average (linked)		214.3	215.2

² Linked actual index = (actual index / previous actual index) x previous linked actual index.

$$250.1 = 262.8 / 273.0 \times 259.8$$

³ The 4Q12 based indexes are 1980 based indexes divided by the 4Q12 basing factor (297.6/100).
 Other basing factors are: 4Q07 = 245.9; 4Q02 = 192.1; 4Q97 = 173.2; 4Q92 = 156.9; and 4Q87 = 132.2.

Productivity

On February 12, 2016, the Surface Transportation Board (STB) served a decision in Ex Parte 290 (Sub-No. 4) which added the year 2014 to the Productivity Adjustment Factor (PAF) and removed the year 2009. This creates a geometric average annual productivity change, for the five-year period 2010 through 2014, of 1.4 percent per year. The components of this average annual value are shown on the following table in ratio format – therefore, 1.014 is the same as an increase of 1.4 percent.

Productivity changes are calculated by multiplying each of the five productivity changes together and taking the result to the one-fifth power. The productivity adjustment factors (PAF) for each quarter are calculated by increasing the previous quarter's PAF by quarterly versions of the annual rate, which are the fourth root of the geometric average annual growth rate. The difference between the PAF and the PAF-5 is the timing of the five-year productivity trend.

Comparison of Output, Input, & Productivity			
2010 - 2014			
Year	Output Index (1)	Input Index (2)	Productivity ¹ Changes (3)
2010	1.109	1.070	1.037
2011	1.041	1.039	1.001
2012	1.007	0.999	1.008
2013	1.022	1.018	1.004
2014	1.055	1.036	1.018
Average			1.014
Previous Average (2009-2013)			1.007

¹ The values shown in Column 3 are based on full float calculations and may not exactly match numbers calculated using the rounded numbers displayed in Columns 1 and 2.

Calculation of PAF and PAF-5			
For 2010-2014, use fourth root of avg. productivity change = 1.0035			
For 2009-2013, use fourth root of avg. productivity change = 1.0017			
Quarter	Year	PAF	PAF-5
Q1	2016	2.3502	2.4932
Q2	2016	2.3584	2.4974
Q3	2016	2.3667	2.5016
Q4	2016	2.3750	2.5059
Q1	2017	2.3833	2.5147

Rail Cost Adjustment Factor Third Quarter 2016

Four RCAF values are presented in this filing. Two are not modified for productivity (Preliminary RCAF and RCAF Unadjusted), and two incorporate a productivity calculation (RCAF Adjusted and RCAF-5). The All-Inclusive Index and all four RCAF values, plus the percent change for each, are shown below. Note that, beginning with 2013Q1, the All-Inclusive Index is on a 2012Q4=100 basis.

	Previous 2016Q2	Current 2016Q3	Percent Change
All-Inclusive Index ¹	85.2	88.4	3.8
Preliminary RCAF ²	0.852	0.884	3.8
Forecast Error Adjustment ³	<u>-0.012</u>	<u>-0.042</u>	
RCAF (Unadjusted) ⁴	0.840	0.842	0.2
Productivity Adjustment Factor ⁵	<u>2.3584</u>	<u>2.3667</u>	
RCAF (Adjusted) ⁶	0.356	0.356	-
PAF-5 ⁷	2.4974	2.5016	
RCAF-5 ⁸	0.336	0.337	0.3

¹ See All-Inclusive Index on page 3.

² All-Inclusive Index divided by the All-Inclusive Index in the base period (100.0).

³ The current figure is from Forecast vs. Actual All-Inclusive Index in this filing (page 4). The previous quarter figure is shown in a similar section of the previous quarter's filing.

⁴ Preliminary RCAF plus the forecast error adjustment.

⁵ See Productivity on page 5.

⁶ RCAF (Unadjusted) divided by the Productivity Adjustment Factor (PAF).

⁷ See Productivity on page 5.

⁸ RCAF (Unadjusted) divided by the PAF-5.

Appendixes

Labor

Third Quarter 2016

The third quarter 2016 Labor Index is forecast to decrease 0.3 percent from the previous quarter. A higher employee health & welfare cost sharing contribution rate, which lowers costs for employers, was the biggest contributor to the change.

Wage Rate Index

The Wage Rate Index portion of the Labor Index declined 0.1 percent. A drop in the back pay rate caused much of the decrease of 2.3 cents in the Total Wages rate.

Wage Increases: No wage increases are currently scheduled for the third quarter in any national labor agreements, and only two independent labor agreements have increases scheduled for July 1. A small group of independent unions receive cost-of-living adjustments (COLA) effective July 1. However, July's adjustment is zero because of the way the CPI changed between September 2015 and March 2016.

Lump Sums: The third quarter lump sum rate increased 1.3 cents from the prior quarter. Since no amounts became fully amortized and removed, the addition of one new bonus caused the entire change. The new bonus amount is one railroad's quarterly Professional Performance Incentive given to locomotive engineers that achieve availability and safety goals.

Back Pay: The third quarter back pay rate decreased by 4.9 cents. This change was the result of two amounts from last year being fully amortized and removed, plus a negative amount related to a "snap back" to the national agreement.

Other: In wages, "Other" contains the amortization of incentive payments that a railroad makes each year to its dispatchers, yardmasters, and engineers. Last year's payment has now been fully amortized and removed. It has been replaced by an amount paid in early 2016 for performance in 2015. This amount is a little smaller than the previous year, and results in a rate that is 0.8 cents lower.

Supplements Index

The Supplements Index dropped 0.6 percent. Lower health & welfare costs for employers were the major cause of the decrease.

Health & Welfare: The Health & Welfare rate decreased 13.6 cents. The change was caused by increased employee health & welfare cost sharing in the national agreements, which lowers employer costs. In addition to the full participants in the national labor agreements, many of the independent labor agreements participate in the national agreement sections related to health & welfare, despite differing for wages.

Railroad Retirement: The Railroad Retirement rate decreased 0.3 percent (or 2.6 cents). The decrease was caused by lower taxable earnings which resulted from a combination of slightly lower wages and more employee contributions in pre-tax dollars to health and welfare.

Unemployment Insurance: The Unemployment Insurance rate did not change from the previous quarter.

Labor

Third Quarter 2016

Other: The "Other" category is a reflection of all other fringe benefits, and currently contains known employer contributions to employee 401(k) accounts and employer contributions to employee stock plans that are recorded as fringe benefits. For the third quarter, the rate is 5.6 cents higher. Much of the change in this rate was caused by one railroad's annual 401(k) match for its BLET employees, plus another railroad's stock awards, annual ESOP contribution, and bonus match.

Labor Index Calculation

As shown in Table A-1 on the next page, the 0.1 percent decrease in the Wage Rate Index and the 0.6 percent decline in the Supplements Index combined to cause the Labor Index to be 0.3 percent lower. The linked third quarter 2016 index is 415.2 – its lowest level in 2016.

Labor Third Quarter 2016

Table A-1 Labor Index

	2016Q2	2016Q3	Change	
			Percent	Amount
<u>Base Wage</u> – Straight Time & Pay For Time Not Worked	\$41.465	\$41.486	0.1%	\$0.021
Adjustments:				
Lump Sum	0.146	0.159	8.9%	\$0.013
Back Pay	0.158	0.109	-31.0%	-\$0.049
Other	0.157	0.149	-5.1%	-\$0.008
Total Wages	<u>41.926</u>	<u>41.903</u>	-0.1%	-\$0.023
Health & Welfare Benefits	8.042	7.906	-1.7%	-\$0.136
RR Retirement & Medicare	8.474	8.448	-0.3%	-\$0.026
Unemployment Insurance	0.240	0.240	0.0%	\$0.000
Other	0.150	0.206	37.3%	\$0.056
Total Supplements	<u>\$16.906</u>	<u>\$16.800</u>	-0.6%	-\$0.106
Total Labor (as info only)	\$58.832	\$58.703		
Wage Index¹	358.8	358.6	-0.1%	
Supplements Index²	624.8	620.8	-0.6%	
Total labor Index, 2014 Weights ³	433.0	431.8		
Labor Index (linked)⁴	416.4	415.2	-0.3%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

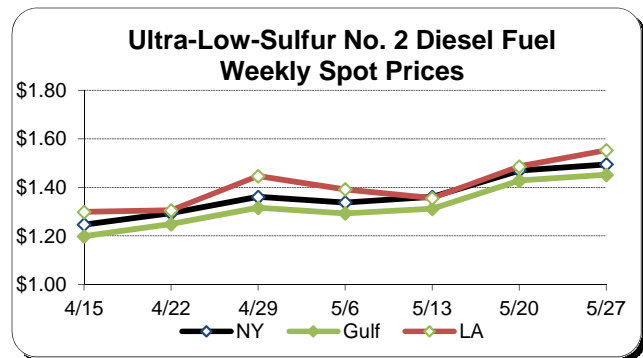
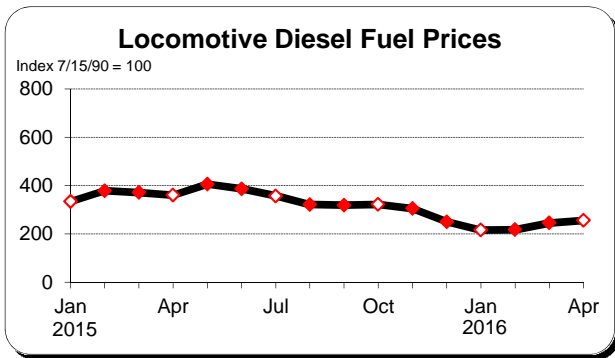
³ 2014 weights: wages, supplements 72.1% 27.9%

⁴ 2016Q3 linked Index = 2016Q2 linked x (2016Q3 / 2016Q2)
 = 416.4 x 431.8 / 433.0

Fuel Third Quarter 2016

The forecast for fuel is based on: (1) a survey of railroad fuel purchasing officers concerning current price and volume levels, (2) expectations of railroad purchasing officers based on their own forecast models and discussions with their major suppliers, and (3) a consensus of petroleum industry experts and general business publications. Fuel purchases are assumed to remain in inventory for 30 days before the fuel is consumed (and therefore expensed). Therefore, prices *paid* in the first month of each quarter are for fuel *expensed* in the second (or middle) month of the quarter, and the middle month expensed is used to represent each quarter.

The average locomotive diesel fuel price for January 2016 was the lowest in over 10 years. Since that time, prices have been rising. The chart below shows the AAR's Monthly Locomotive Diesel Fuel Price Index from January 2015 through April 2016. The second chart shows recent spot prices for Ultra-Low-Sulfur No. 2 Diesel Fuel as reported by the Energy Information Administration, which are already up 20 percent from mid-April.



While average prices for locomotive diesel fuel are available only through April 2016, data through most of May are available for related fuel types. According to the Energy Information Administration, weekly spot prices for Ultra-Low-Sulfur Diesel Fuel* are still trending upward. Continuing the trend, railroads expect Q3 (July 2016) locomotive diesel fuel prices to be higher than the price they paid for Q2 (April). Therefore, the Q3 forecast is 24 percent higher than the price railroads actually paid in April, and 32 percent higher than the Q2 forecast (which was too low).

Forecast Fuel Index (1980 = 100)	195.6
Change from previous quarter forecast	31.5%
Change from previous quarter actual	23.9%

* Heating oil, Ultra-Low-Sulfur No. 2 Diesel Fuel, and locomotive diesel fuel are part of a group of closely related products, commonly labeled as distillates, that differ mostly by their sulfur content. Because of these similarities, these fuels are produced together and have similar pricing trends.

Materials & Supplies

Third Quarter 2016

The third quarter 2016 Materials & Supplies Index is down 2.6 percent. The decrease was caused by lower prices in the Forest Products and Miscellaneous Products categories. Ballast, creosote, lube oil, batteries, and more items are included in Miscellaneous Products. Increases in prices in the Metals Products category kept the Materials & Supplies Index from declining by a higher percentage.

2016Q3 Materials & Supplies Index = 240.6

2016Q2 Materials & Supplies Index = 246.9

Difference	-6.3 basis points
	or
	-2.6 %

Equipment Rents Third Quarter 2016

The Equipment Rents Index consists of two components – car hire and lease rentals. The methodology used to create these two components and the final Equipment Rents Index are explained below.

Car Hire

The car hire component is indexed using data from the Car Hire Accounting Rate Master (CHARM) file. Car hire rates for the forecast quarter are estimated based on data for active freight cars using the most recent month available. For the first quarter, December 1 of the previous year is used. For the second, third and fourth quarters; March 1, June 1, and September 1 are used, respectively. Using data retrieved from the latest CHARM file, an average rate per car is developed. Next, those average rates are grouped into car type categories to create an overall summary of car hire rates. The summary rates are then compared from quarter to quarter to determine the Car Hire Index.

Lease Rentals

The lease rentals portion of the Equipment Rents Index uses the Producer Price Index for Industrial Commodities less Fuel and Related Products and Power (PPI-LF). The Commission adopted this surrogate in its decision served March 13, 1987. The AAR uses six years of historical data to derive its forecast for the PPI-LF. The forecast is used not only for lease rentals, but also for the "Other" component of the All-Inclusive Index. Appendix G discusses the forecast in more detail.

Equipment Rents Index Calculation

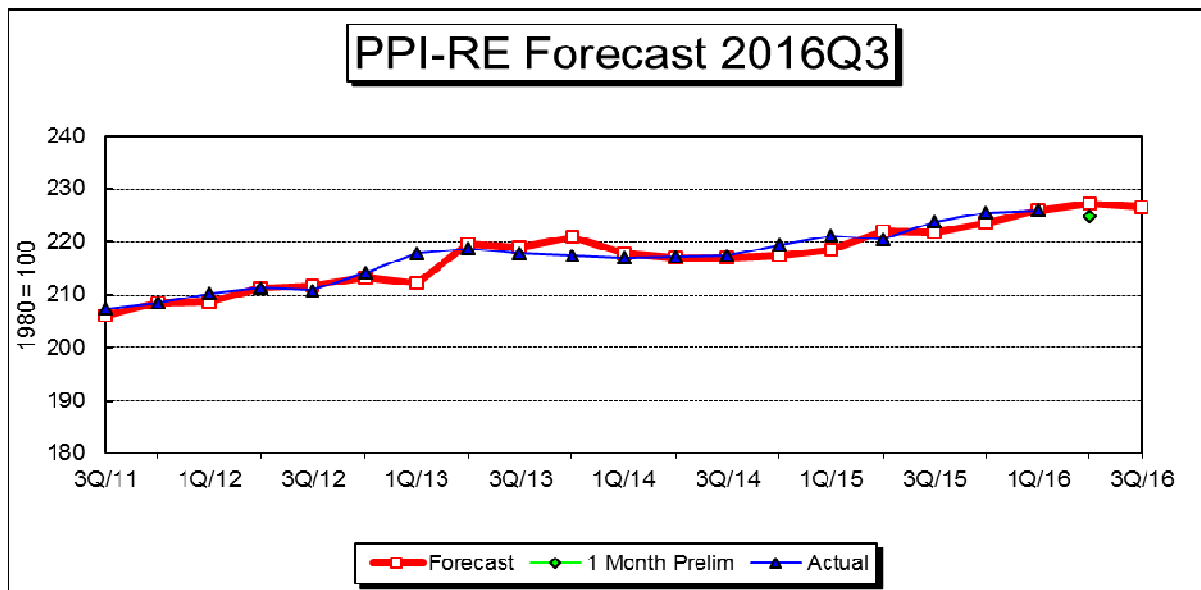
The table below calculates the Equipment Rents Index. The second quarter Car Hire portion of the Index increased 0.6 percent because of increases in rates that occurred over the last three months for autoracks and privately-owned cars. A 1.1 percent increase in the projected PPI-LF (See Appendix G) used as a proxy for Lease Rentals, combined with the 0.6 percent increase for Car Hire, caused the Equipment Rents Index to increase 0.8 percent.

	2014	2016Q2	2016Q3	Percent
	Weight			Change
Car Hire	56.5%	196.9	198.0	0.6 %
Lease Rentals	43.5%	215.1	217.4	1.1
Weighted Average		204.8	206.4	0.8
Weighted Average (Linked)		215.1	216.8	0.8

Depreciation Third Quarter 2016

The Producer Price Index for Railroad Equipment (PPI-RE) is used to index depreciation expense. The PPI-RE is forecast using an ARIMA (Auto-Regressive Integrated Moving Average) process where a statistical package picks the model that best fits the historical data set (see next page), and that model is then used for the forecast. The historical data set contains 6 years of monthly data (a sample size of 72), where the most recent available data point is the first month of the quarter prior to the forecast quarter. For a first quarter forecast, the most recent month of data available would be for October of the prior year. For a second quarter forecast, January would normally be the most recent period available. April and July would be the most recent months available for third and fourth quarter forecasts, respectively. The output from the forecast model is shown on page 2 of this appendix on a 1982=100 basis. The figure forecast by the model, a 0.3 percent decrease from the previous quarter's forecast, reflects a monthly PPI-RE figure that dropped in April, and possibly a forecast for Q2 that was too high.

Forecast of Depreciation Index (1982=100)	204.8
Forecast of Depreciation Index (1980=100)	226.5
Change from previous quarter forecast	-0.3%
Change from actual first month of previous quarter	0.7%
Change from same quarter of prior year (actual)	1.2%



Depreciation Third Quarter 2016

PPI RAILROAD EQUIPMENT

Exponential smoothing outperforms Box-Jenkins by 1.161 to 1.790 out-of-sample Mean Absolute Deviation. I tried 78 forecasts up to a maximum horizon 12. For Box-Jenkins, I used a log transform.

Series is trended and seasonal.

Recommended model: Exponential Smoothing

Forecast Model for PPIRE

Holt exponential smoothing: Linear trend, No seasonality

Component	Smoothing Weight	Final Value
Level	0.65115	203.78
Trend	0.01892	0.24863

Within-Sample Statistics

Sample size 72	Number of parameters 2
Mean 194.2	Standard deviation 6.315
R-square 0.9787	Adjusted R-square 0.9784
Durbin-Watson 1.959	Ljung-Box(18)=22.91 P=0.8059
Forecast error 0.9278	BIC 0.9709
MAPE 0.003225	RMSE 0.9149
MAD 0.6299	

Actual Values for the Most Recent 6 Periods:

Date	Actual
2015-11	203.9
2015-12	204.5
2016-01	204.2
2016-02	204.2
2016-03	204.3
2016-04	203.3

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2016-05	202.127	204.030	205.933
2016-06	201.995	204.279	206.562
2016-07	201.918	204.527	207.137
2016-08	201.877	204.776	207.675
2016-09	201.863	205.025	208.186
QTR AVG	201.886	204.776	207.666

Interest Third Quarter 2016

The Interstate Commerce Commission, in its decision served February 28, 1989, revised the All-Inclusive Index methodology to include a specific interest component, which is to track changes in the average interest rate from year to year. The interest rate is essentially the embedded cost of debt, i.e., total interest expense divided by average total long term debt.

The interest rate is calculated for the most recent year and used until the next year's figures are finalized. The source data are from a summary of the annual reports (Form R-1) submitted by each of the Class I railroads. Although the data set is received at the end of March, it is not used until the September filing. This enables data to be entered into a database and reviewed – and any revisions made, if necessary, before the data are used in the Index. The current Interest Index is based on 2014 data, and was updated in the Q4 filing submitted on September 4, 2015.

The R-1 source for interest expense is Schedule 210, column b. The lines currently used are listed below. The source for average total debt is Schedule 200. The sums of data from columns b and c (ending and beginning balances) are combined and divided by 2 to compute an average balance. The line numbers are listed below.

Interest Expense (Schedule 210)

- Line
- 42 Total Fixed Charges
- 44 Contingent Interest
- less
- 22 Release of Premium on Funded Debt

Average Total Debt (Schedule 200)

- Line
- 30 Current Loans and Notes Payable
- 39 Equipment Obligations and Other Long Term Debt Due Within One Year
- 41 Funded Debt Unmatured - Non-Current
- 42 Equipment Obligations - Non-Current
- 43 Capitalized Lease Obligatons - Non-Current
- 44 Debt in Default - Non-Current
- 45 Accounts Payable: Affiliated Companies - Non-Current
- 46 Unamortized Debt Premium - Non-Current

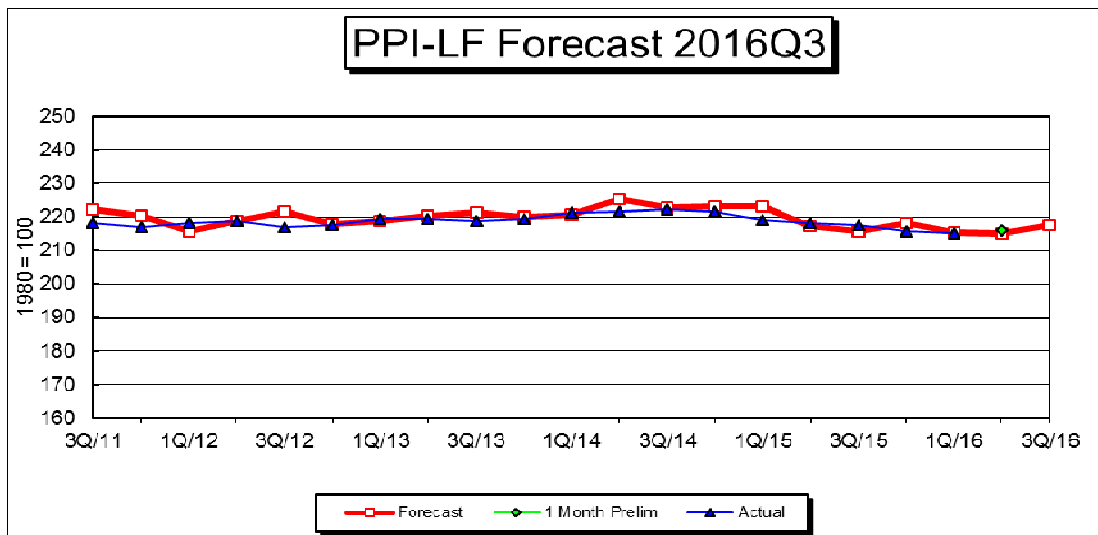
2014	Interest Rate	4.51%
1980	Interest Rate	7.85%
2016Q3	Interest Index	57.5
2016Q2	Interest Index	57.5
	Percent Change	0.0%

Other Expenses Third Quarter 2016

The Producer Price Index for Industrial Commodities less Fuels and Related Products and Power (PPI-LF) is used to index purchased services, casualties and insurance, loss and damage, taxes (other than income and payroll), general and administrative expenses, and lease rentals. These expenses, when grouped together, are usually called "Other" expenses.

Like the PPI-RE, the PPI-LF is forecast using an ARIMA process on 6 years of monthly data (a sample size of 72) with the most recent available monthly data being the first month of the quarter prior to the forecast quarter. For a first quarter forecast, the most recent month of data available would be for October of the prior year. For a second quarter forecast, January would normally be the most recent month available. April and July would be the most recent months available for third and fourth quarter forecasts respectively. The output from the forecast model is shown on page 2 of this appendix for 1982=100. Monthly PPI-LF figures have increased in three of the last four months, and the index for April increased by the largest amount in years. The forecast for 2016Q3 is 1.1 percent above the previous quarter.

Forecast of Other Expense Index (1982=100)	193.9
Forecast of Other Expense Index (1980=100)	217.4
Change from previous quarter forecast	1.1%
Change from actual first month of previous quarter	0.7%
Change from same quarter of prior year (actual)	0.0%



Other Expenses Third Quarter 2016

**PPI INDUSTRIAL COMMODITIES LESS FUELS
AND RELATED PRODUCTS AND POWER**

Box-Jenkins outperforms exponential smoothing by 1.430 to 1.649 out-of-sample Mean Absolute Deviation. I tried 78 forecasts up to a maximum horizon 12.

Series is stationary and nonseasonal.

Recommended model: Box-Jenkins
Forecast Model for PPILF
ARIMA(2,0,0)

Term	Coefficient	Std. Error	t-Statistic	Significance
a[1]	1.6829	0.0804	20.9324	1.0000
a[2]	-0.6968	0.0800	-8.7067	1.0000
_CONST	2.6957			

Sample size 72	Number of parameters 2
Mean 193.6	Standard deviation 3.901
R-square 0.9825	Adjusted R-square 0.9823
Durbin-Watson 2.075	Ljung-Box(18)=32.22 P=0.9793
Forecast error 0.5193	BIC 0.5434
MAPE 0.001985	RMSE 0.5121
MAD 0.3839	

Actual Values for the Most Recent 6 Periods:

Date	Actual
2015-11	192.3
2015-12	191.9
2016-01	192.0
2016-02	191.8
2016-03	191.9
2016-04	192.6

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2016-05	192.097	193.101	194.105
2016-06	191.492	193.456	195.421
2016-07	190.798	193.706	196.613
2016-08	190.088	193.877	197.666
2016-09	189.399	193.992	198.584
QTR AVG	190.095	193.858	197.621

Railroad and Union Abbreviations

Third Quarter 2016

Railroads

BLE	Bessemer & Lake Erie Railroad (Part of CN's Grand Trunk Corp.)
BNSF	BNSF Railway Company
CC	Chicago, Central & Pacific (Part of CN's Grand Trunk Corp. Sometimes noted as CC&P.)
CN	Canadian National Railway (Commonly known as CN, owns Grand Trunk Corporation.)
CNGT	AAR's abbreviation for Grand Trunk Corporation (Almost all of CN's U.S. operations.)
CP	Canadian Pacific (Also noted as CPR. Owns the U.S. Class I railroad Soo Line.)
CPSL	AAR's abbreviation for Soo Line Corporation (CP's U.S. operations including SOO, D&H, and DME.)
CSX	CSX Transportation
D&H	Delaware & Hudson (Part of Canadian Pacific's U.S. operations, included beginning 2011Q4.)
DME	Dakota, Minnesota & Eastern (Part of Canadian Pacific's U.S. operations, included beginning 2011Q4.)
GTW	Grand Trunk Western Railroad (Part of CN's Grand Trunk Corp.)
IC	Illinois Central Railroad (Part of CN's Grand Trunk Corp.)
KCS	Kansas City Southern Railway
NS	Norfolk Southern Combined Railroad Subsidiaries (a.k.a. Norfolk Southern Railway or NS Rail)
SOO	Soo Line Railroad (The largest part of Canadian Pacific's U.S. operations.)
UP	Union Pacific Railroad
WC	Wisconsin Central and subsidiaries (Part of CN's Grand Trunk Corp.)

Note: A portion of the DM&E was sold during 2014.

Note: A proposal was made in November 2014 to sell a portion of the D&H pending regulatory approval.

Major Unions Involved with Railroads

ATDA	American Train Dispatchers Association
BLET	Brotherhood of Locomotive Engineers and Trainmen Div. of the International Brotherhood of Teamsters
BMWED	Brotherhood of Maintenance of Way Employees Division of the International Brotherhood of Teamsters
BRS	Brotherhood of Railroad Signalmen
IAM	International Association of Machinists and Aerospace Workers
IBBM	International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers & Helpers
IBEW	International Brotherhood of Electrical Workers
NCFO	National Conference of Firemen and Oilers
SMART-TD	Sheet Metal Air Rail Transportation - Transportation Division*
SMW	Sheet Metal Workers' International Association
TCU	Transportation Communication International Union
TCU-Carmen	Brotherhood of Railway Carmen Division of the Transportation Communications International Union
UTU-Yard	United Transportation Union Yardmaster Department (also noted as UTU-YMD)

Predecessor Unions (Some AAR databases use these old abbreviations.)

BLE	Brotherhood of Locomotive Engineers (predecessor to BLET)
BMWE	Brotherhood of Maintenance of Way Employees (predecessor to BMWED)
BRC	Brotherhood of Railway Carmen (predecessor to TCU-Carmen)
IBFO	International Brotherhood of Firemen and Oilers (predecessor to NCFO)
UTU	United Transportation Union (merged into SMART)

* Typically represents employees formerly represented by the UTU (conductors and brakemen).