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March 3, 2017

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

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Dear Ms. Brown:

This submission is the AAR forecast of the second quarter 2017 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2017-2) *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 second quarter 2017 results on the fourth quarter 2012 base, and shows the percentage changes from the previous quarter.

	<u>2017Q1</u>	<u>2017Q2</u>	<u>% Change</u>
All-Inclusive Index	89.9	90.8	1.0
Preliminary RCAF	0.899	0.908	1.0
Forecast Error Adjustment	-0.011	-0.004	
RCAF (Unadjusted)	0.888	0.904	1.8
Productivity Adjustment Factor	2.3833	2.3952	
RCAF (Adjusted)	0.373	0.377	1.1
PAF-5	2.5147	2.5235	
RCAF-5	0.353	0.358	1.4

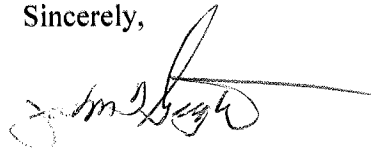
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In its October 3, 1996 decision in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*, the STB noted its intent to publish, in addition to the RCAF (Unadjusted) and RCAF (Adjusted), an RCAF-5 (i.e., a calculation of the productivity 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 black ink, appearing to read "John T. Gray", with a long horizontal flourish extending to the right.

John T. Gray

Attachments

**Second Quarter 2017
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2017-2)

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

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

March 3, 2017

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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 second quarter 2017. Calculations for the Productivity Adjustment Factor (page 5) utilize the Surface Transportation Board's (STB) latest Productivity Adjustment decision, which was served on February 24, 2017. In that decision, the STB said that it is "tentatively adopting 1.020 (2.0% per year) as the measure of average (geometric mean) change in railroad productivity for the 2011-2015 (five-year) period." The STB expressed concern that a "change in the way distances are measured" in the 2015 Waybill Sample would inappropriately skew the Output Index used in the productivity change calculation. Because of this concern, the STB developed a linking factor with the stated goal of eliminating changes to its Output Index caused by the methodology change. The Board also held a technical conference with interested parties and Board staff on February 28. Comments on the Productivity Adjustment decision are due by March 16, 2017, and replies are due by April 5, 2017.

At the time of this March 3 RCAF filing, there remain questions about the Board's new mileage methodology, its linking process, and the resulting Output Index and Productivity Change. Although the tentative productivity adjustment adopted in the Productivity decision became effective on March 1, the Board has not yet taken any further action to determine if its decision is final or requires modification. For the purposes of this filing, the RCAF (Adjusted) is affected by the Productivity decision, and the AAR has made its calculations as if the decision is final. The second productivity-adjusted RCAF, the RCAF-5, will not be affected by this decision until the beginning of 2018. Should the Productivity Change be adjusted by further Board action, the calculations in this filing would necessarily need to be adjusted also.

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 2015 (current) and 2014 (previous) weights are shown below. Weights calculated from 2014 data were used for the fourth quarter of 2015 through the third quarter of 2016. Beginning with the fourth quarter of 2016, weights calculated using 2015 data are used. Traffic and fuel prices were down in 2015, causing fuel expenses to decline substantially in both amount and as a percentage. Because of the huge drop in fuel expenses, the weight for the Fuel Index decreased considerably, while the weights for all of the other categories increased. Labor, Other, and Depreciation had the largest weight increases, as expenses in those categories were lower by small percentages compared to the other categories. The Other category consists of Purchased Services, Taxes (other than income and payroll), Casualties & Insurance, Loss & Damage, and General & Administrative expenses. The weight for Labor, 35.0 percent, is the highest it has been since it was 35.3 percent in 2005.

Weights for RCAF's All-Inclusive Index		
	2015	2014
Labor	35.0 %	31.7 %
Fuel	13.4	20.9
Materials & Supplies	5.4	5.2
Equipment Rents	5.8	5.4
Depreciation	13.9	12.6
Interest	1.9	1.5
Other	24.6	22.7
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 Second Quarter 2017

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.

	2015 Weights	Forecast		Percent Change
		Previous 2017Q1	Current 2017Q2	
1. Labor	35.0%	421.2	421.4	0.0 %
2. Fuel	13.4%	197.2	218.2	10.6
3. M&S	5.4%	274.3	264.8	-3.5
4. Equipment Rents	5.8%	224.3	222.6	-0.8
5. Depreciation	13.9%	225.3	223.2	-0.9
6. Interest	1.9%	60.6	60.6	0.0
7. Other	24.6%	218.4	222.3	1.8
8. Weighted Average				
a. 1980 = 100		287.9	290.8	
b. 1980 = 100 (linked)		267.4	270.1 ¹	
c. 4Q12 = 100		89.9	90.8 ²	1.0

¹ Index80 = (Current Index / Previous Index) * the Previous Quarter Linked Index
= (290.8 / 287.9) x 267.4
= 270.1

² To calculate the 4Q12 = 100 index:
Index4Q12 = (Current Linked Index / 4Q12 Basing Factor) * 100
= 270.1 divided by 297.6 times 100
= 90.8

Indexes based on other periods:

4Q07 based index = 270.1 / 245.9 x 100 = 109.8
4Q02 based index = 270.1 / 192.1 x 100 = 140.6
4Q97 based index = 270.1 / 173.2 x 100 = 155.9
4Q92 based index = 270.1 / 156.9 x 100 = 172.1
4Q87 based index = 270.1 / 132.2 x 100 = 204.3

Forecast vs. Actual All-Inclusive Index

Fourth Quarter 2016

Because of data availability, the forecast error adjustment has a two-quarter lag from each filing. As shown below, the fourth quarter actual index of 87.2 is 0.4 index points below the forecast value of 87.6. Therefore, the forecast error adjustment for second quarter 2017 is -0.4 index points.

	2015	Fourth Quarter 2016		Amt
	Weights	Forecast	Actual	Difference
1. Labor	35.0%	405.1	405.1	
2. Fuel	13.4%	200.1	201.9	
3. M&S	5.4%	245.8	245.8	
4. Equipment Rents ¹	5.8%	223.4	224.8	
5. Depreciation	13.9%	225.1	223.8	
6. Interest	1.9%	60.6	60.6	
7. Other	24.6%	216.9	218.6	
8. Weighted Average				
a. 1980 = 100		280.6	281.2	
b. 1980 = 100 (linked)		260.6	259.5 ²	
c. 4Q12 = 100 ³		87.6	87.2	-0.4

Forecast error —————→ **-0.4 index points**

Note: The standard linking procedure has been used to eliminate any changes to indexes that would be caused by updating weights. The Q3 unlinked weighted averages for the All-Inclusive Indexes (forecast and actual) and for Equipment Rents (forecast and actual) were recalculated using the new (2015) weights.

¹	2015	Fourth Quarter 2016	
	Weights	Forecast	Actual
Car-Hire	58.2%	209.1	209.6
Lease Rentals	41.8%	216.9	218.6
Weighted Average		212.4	213.4
Weighted Average (linked)		223.4	224.8

² Linked actual index = (actual index / previous actual index) x previous linked actual index.
 259.5 = 281.2 / 281.4 x 259.7

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 24, 2017, the Surface Transportation Board (STB) served a decision in Ex Parte 290 (Sub-No. 4) which *tentatively* adopted 2.0 percent as the geometric average productivity change for the five most recent years available. Their calculation added the year 2015 and removed the year 2010. In addition, it should be noted that the Board was concerned enough with its decision to calculate a tentative value, sponsor a technical conference, solicit public comment, and to state that it would "take further action, as appropriate, to determine whether the tentative productivity adjustment is final or requires modification". At the time (March 3) of this filing, there are still questions about the 2015 Output Index, and it is possible that the Productivity Adjustment Factors used with the RCAF could change.

The components of this average annual value are shown on the following table in ratio format – therefore, 1.020 is the same as an increase of 2.0 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			
2011 - 2015			
Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
2011	1.041	1.039	1.001
2012	1.007	0.999	1.008
2013	1.022	1.018	1.003 *
2014	1.055	1.036	1.018
2015	1.041	0.972	1.070
Average			1.020
Previous Average (2010-2014)			1.014

* The STB revised this number in its February 24, 2017, corrected decision.

Calculation of PAF and PAF-5			
For 2011-2015, use fourth root of avg. productivity change = 1.0050			
For 2010-2014, use fourth root of avg. productivity change = 1.0035			
Quarter	Year	PAF	PAF-5
Q1	2017	2.3833	2.5147
Q2	2017	2.3952	2.5235
Q3	2017	2.4072	2.5323
Q4	2017	2.4192	2.5412
Q1	2018	2.4313	2.5539

Rail Cost Adjustment Factor

Second Quarter 2017

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 2017Q1	Current 2017Q2	Percent Change
All-Inclusive Index ¹	89.9	90.8	1.0
Preliminary RCAF ²	0.899	0.908	1.0
Forecast Error Adjustment ³	<u>-0.011</u>	<u>-0.004</u>	
RCAF (Unadjusted) ⁴	0.888	0.904	1.8
Productivity Adjustment Factor ⁵	<u>2.3833</u>	<u>2.3952</u>	
RCAF (Adjusted) ⁶	0.373	0.377	1.1
PAF-5 ⁷	2.5147	2.5235	
RCAF-5 ⁸	0.353	0.358	1.4

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

Second Quarter 2017

The second quarter 2017 Labor Index was almost unchanged from the previous quarter. The index increased from 421.2 to 421.4 – an increase of 0.047 percent that rounds to 0.0 percent in Table A-1 on page 3 of this appendix. Lump Sums, Back Pay, and Other Supplements were the only items that changed.

Wage Index

New lump sums (performance incentives), partially offset by the complete amortization and removal of some back pay amounts, caused the Wage Index to climb from 351.7 to 351.8.

Wage Increases: No wage increases are currently scheduled for the second quarter in the national labor agreements. There are also no increases scheduled in independent labor agreements.

Lump Sums: The second quarter Lump Sum rate is 9.9 cents higher from the prior quarter. Two amounts became fully amortized and removed, but they were replaced by two new annual bonuses paid in 2017. In addition to the annual bonuses, another quarterly incentive bonus for one railroad's locomotive engineers was added in this 2017Q2 filing. This amount is for the bonus paid in the first quarter 2017 for performance in the fourth quarter 2016. This new quarterly bonus program has a fifth bonus, paid annually, for engineers that qualified for all four of the year's quarterly bonuses. Because this quarterly incentive bonus program started one year ago, none of the bonus amounts have become fully amortized and removed from the Lump Sum rate, and none of them replace a bonus from one year ago.

Back Pay: One very small back pay amount was added to the Back Pay rate, while two amounts (including one very large one) became fully amortized and removed. The net result was a decrease of 9.7 cents. The largest of the remaining back pay amounts is associated with a "snap back" from an independent labor agreement to the national agreement, and is negative. This negative amount, combined with two other back pay amounts, results in a current Back Pay rate of negative 1.9 cents.

Other: In wages, "Other" contains the amortization of incentive payments that a railroad makes each year to its dispatchers, yardmasters, and engineers. This amount is unchanged from the previous quarter.

Supplements Index

The Supplements Index also changed very little, rising from 660.1 to 660.4, which rounds to 0.0 percent for the percent change in Table A-1. "Other" Supplements was the only item to differ from last quarter.

Health & Welfare: The Health & Welfare rate rounded to the same number as the previous quarter. Some small changes to one railroad's employee cost sharing were the only change.

Railroad Retirement: The Railroad Retirement rate rounded to the same number because of the extremely small change in the taxable earnings rate.

Labor

Second Quarter 2017

Unemployment Insurance: The Unemployment Insurance rate rate was unchanged because of its low cap and the very small increase in taxable earnings.

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. The second quarter rate climbed 0.7 cents. The higher rate was caused mostly by annual employer stock contributions.

Labor Index Calculation

As shown in Table A-1 on the next page, the tiny increases in the Wage Index and Supplements Index combined to cause the Labor Index to rise from 421.2 to 421.4. The quarterly change rounds to 0.0 percent. The Labor Index is 1.2 percent higher than it was one year ago.

Labor

Second Quarter 2017

Table A-1 Labor Index

	2017Q1	2017Q2	Change	
			Percent	Amount
<u>Base Wage</u> – Straight Time & Pay For Time Not Worked	\$40.690	\$40.690	0.0%	\$0.000
Adjustments:				
Lump Sum	0.184	0.283	53.8%	\$0.099
Back Pay	0.078	-0.019	-124.4%	-\$0.097
Other	0.148	0.148	0.0%	\$0.000
Total Wages	<u>41.100</u>	<u>41.102</u>	0.0%	\$0.002
Health & Welfare Benefits	8.851	8.851	0.0%	\$0.000
RR Retirement & Medicare	8.548	8.548	0.0%	\$0.000
Unemployment Insurance	0.321	0.321	0.0%	\$0.000
Other	0.143	0.150	4.9%	\$0.007
Total Supplements	<u>\$17.863</u>	<u>\$17.870</u>	0.0%	\$0.007
Total Labor (as info only)	\$58.963	\$58.972		
Wage Index¹	351.7	351.8	0.0%	
Supplements Index²	660.1	660.4	0.0%	
Total labor Index, 2015 Weights ³	439.6	439.8		
Labor Index (linked)⁴	421.2	421.4	0.0%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

³ 2015 weights: wages, supplements 71.5% 28.5%

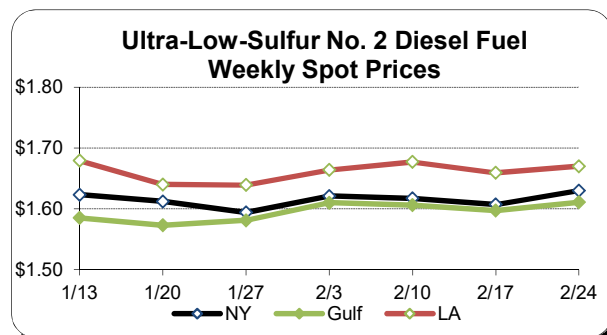
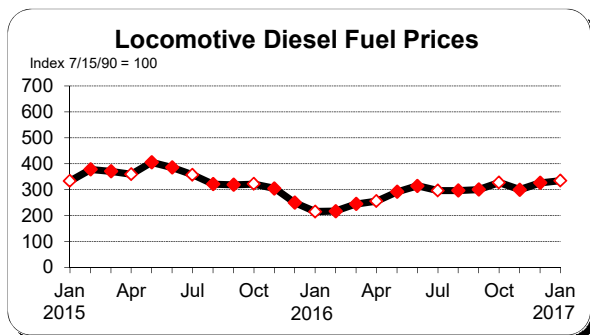
⁴ 2017Q2 linked Index = 2017Q1 linked x (2017Q2 / 2017Q1)
 = 421.2 x 439.8 / 439.6

Fuel

Second Quarter 2017

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 trended upward. While average prices for locomotive diesel fuel are available only through January 2017, data through four weeks of February are available for related fuel types. According to the Energy Information Administration, weekly spot prices for Ultra-Low-Sulfur Diesel Fuel* increased for the week ended February 24, and were slightly higher than they were in mid-January except for Los Angeles – which was 0.5 percent lower. The chart below (on left) shows the AAR's Monthly Locomotive Diesel Fuel Price Index from January 2015 through January 2017. The second chart (on right) shows recent spot prices for Ultra-Low-Sulfur No. 2 Diesel Fuel as reported by the Energy Information Administration. Prices appear to have a gradual upward trend.



Currently, distillate stocks are high enough that the U.S. Energy Information Administration does not believe that planned refinery outages in the first half of 2017 will affect fuel prices. However, the Organization of the Petroleum Exporting Countries' (OPEC) November 30 deal to limit oil production has had good compliance by its members. At least one source has reported that OPEC leaders want crude oil** prices to rise to around \$60 (spot prices were in the \$50s in February), and to balance higher prices with prices not being so high that they encourage U.S. shale oil producers. Railroads expect Q2 (April) locomotive diesel fuel prices to be 10.6 percent higher than their forecast for Q1 (January). Because the January forecast was too low, the Q2 forecast is only 5.7 percent higher than the average price railroads actually paid in January.

Forecast Fuel Index (1980 = 100)	218.2
Change from previous quarter forecast	10.6%
Change from previous quarter actual	5.7%

* 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.

** Since locomotive diesel fuel is made from refined crude oil, there is some price correlation.

Materials & Supplies

Second Quarter 2017

The second quarter 2017 Materials & Supplies Index is down 3.5 percent. Indexes for Forest Products and Miscellaneous Products decreased, while prices for Metal Products increased. The Materials & Supplies Index has now retreated to its value for 2015Q4, and is lower than its values for all of 2014.

2017Q2 Materials & Supplies Index = 264.8

2017Q1 Materials & Supplies Index = 274.3

Difference	-9.5 basis points
	or
	-3.5 %

Equipment Rents

Second Quarter 2017

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 data available. For the first quarter, December 1 of the previous year is typically used. For the second, third and fourth quarters; March 1, June 1, and September 1 are usually used, respectively. Using data retrieved from the latest CHARM file, an average rate per car is developed. Next, those average rates are grouped into four car type categories to create an overall summary of car hire rates. The summary rates are then compared from quarter to quarter, and weighted, to determine the Car Hire Index. In each fourth quarter filing, new weights for the four categories are used based on annual report data. The standard linking procedure is used to eliminate any changes to the Car Hire Index that would be caused solely by changing weights.

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 declined 2.6 percent because of small decreases in rates for privately owned cars and auto racks. A 1.8 percent increase in the projected PPI-LF (See Appendix G) used as a proxy for Lease Rentals, combined with the 2.6 percent decrease for Car Hire, caused the Equipment Rents Index to drop by 0.8 percent.

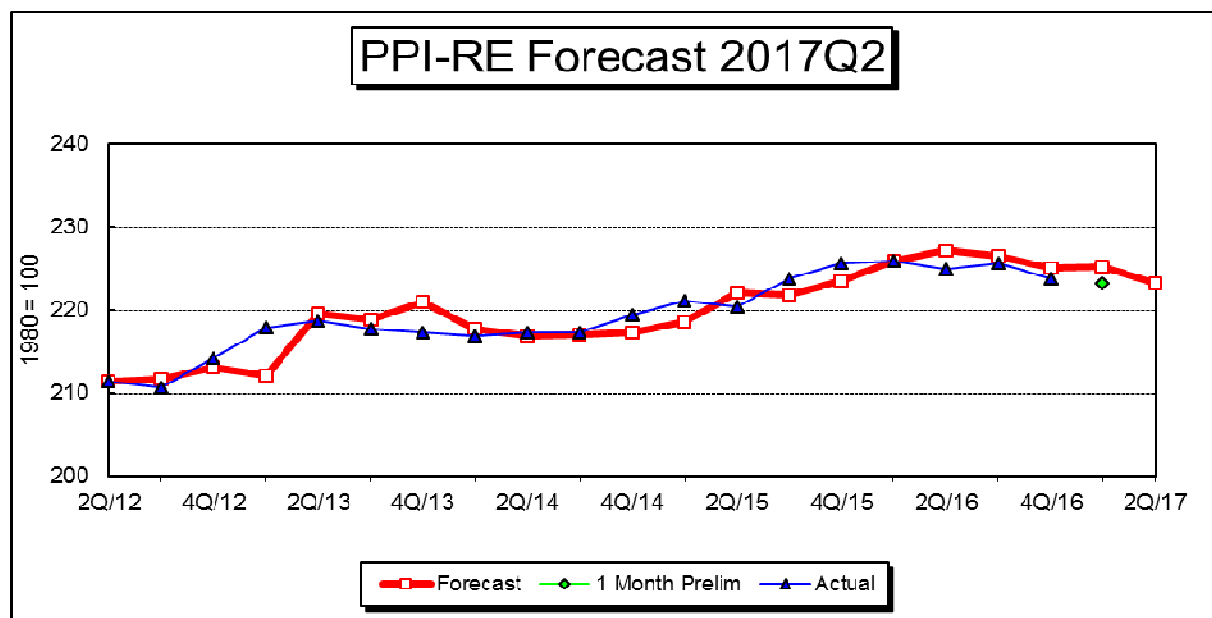
	2015			Percent
	Weight	2017Q1	2017Q2	Change
Car Hire	58.2%	209.6	204.1	-2.6 %
Lease Rentals	41.8%	218.4	222.3	1.8
Weighted Average		213.3	211.7	-0.8
Weighted Average (Linked)		224.3	222.6	-0.8

Depreciation

Second Quarter 2017

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 is a 0.9 percent decrease from the previous quarter's forecast. The monthly PPI-RE figures initially dropped after last quarter but are now going up by very small amounts. A portion of lower forecast may have been caused by the previous quarter forecast being too high.

Forecast of Depreciation Index (1982=100)	201.8
Forecast of Depreciation Index (1980=100)	223.2
Change from previous quarter forecast	-0.9%
Change from actual first month of previous quarter	0.0%
Change from same quarter of prior year (actual)	-0.8%



Depreciation

Second Quarter 2017

PPI RAILROAD EQUIPMENT

Using rule-based logic, the program narrowed down the choice to exponential smoothing or Box-Jenkins. The program performed an out-of-sample test to select between these two approaches. The rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each method. The cumulative MAD for Exponential smoothing was 2.35, and for Box-Jenkins was 1.08.

Based on the lower Mean Absolute Deviation, Box-Jenkins selected

Forecast Model for PPIRE

Box-Jenkins ARIMA(0, 1, 0)

Within-Sample Statistics

Sample size	72	No. parameters	0
Mean	196.48	Std. deviation	5.67
R-square	0.97	Adj. R-square	0.97
Durbin-Watson	2.44	Ljung-Box(18)	18.9 P=0.60
Forecast error	1.03	BIC	1.03
MAPE	0.37	SMAPE	0.37
RMSE	1.03	MAD	0.72
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Date	Actual
2016-Aug	204.4
2016-Sep	203.7
2016-Oct	203.7
2016-Nov	201.5
2016-Dec	201.6
2017-Jan	201.8

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2017-Feb	199.760	201.800	203.840
2017-Mar	198.915	201.800	204.685
2017-Apr	198.266	201.800	205.334
2017-May	197.720	201.800	205.880
2017-Jun	197.238	201.800	206.362
QTR AVG	197.741	201.800	205.859

Interest

Second Quarter 2017

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 2015 data, and was updated in the Q4 filing submitted on September 2, 2016. The Interest Index based on 2015 is higher than the version based on 2014 data, but lower than the figure based on 2013.

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 Obligations - Non-Current
44	Debt in Default - Non-Current
45	Accounts Payable: Affiliated Companies - Non-Current
46	Unamortized Debt Premium - Non-Current

2015	Interest Rate	4.76%
1980	Interest Rate	7.85%
2017Q2	Interest Index	60.6
2017Q1	Interest Index	60.6
	Percent Change	0.0%

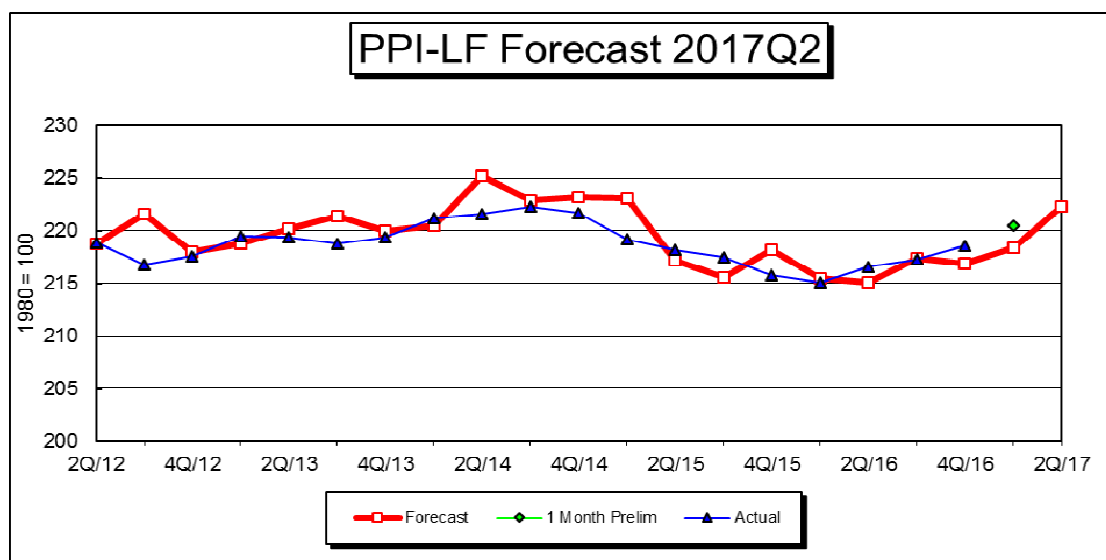
Other Expenses

Second Quarter 2017

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 been trending upward since February 2016 after mostly decreasing since August 2014. The forecast for 2017Q2 is 1.8 percent above the previous quarter forecast, which may have been too low.

Forecast of Other Expense Index (1982=100)	198.3
Forecast of Other Expense Index (1980=100)	222.3
Change from previous quarter forecast	1.8%
Change from actual first month of previous quarter	0.8%
Change from same quarter of prior year (actual)	2.6%



Other Expenses

Second Quarter 2017

PPI INDUSTRIAL COMMODITIES LESS FUELS AND RELATED PRODUCTS AND POWER

Using rule-based logic, the program narrowed down the choice to exponential smoothing or Box-Jenkins. An out-of-sample test was used to select between these two approaches.

A rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each method.

Cumulative MAD: Exponential smoothing = 1.51; Box-Jenkins = 1.44.

Based on the lower Mean Absolute Deviation, Box-Jenkins was selected

Forecast Model for PPILF

Box-Jenkins ARIMA(1,1,0)

Model Details

Term	Coefficient	Std. Error	t-Statistic	Significance
a[1]	0.6077	0.09544	6.367	1

Within-Sample Statistics

Sample size	72	No. parameters	1
Mean	194.8	Std. deviation	1.81
R-square	0.93	Adj. R-square	0.93
Durbin-Watson	1.86	Ljung-Box(18)	27.8 P=0.93
Forecast error	0.49	BIC	0.5
MAPE	0.19	SMAPE	0.19
RMSE	0.48	MAD	0.37
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Date	Actual
2016-Aug	194.0
2016-Sep	193.9
2016-Oct	194.5
2016-Nov	195.0
2016-Dec	195.5
2017-Jan	196.7

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2017-Feb	196.472	197.429	198.386
2017-Mar	196.060	197.872	199.685
2017-Apr	195.522	198.142	200.762
2017-May	194.943	198.305	201.667
2017-Jun	194.366	198.405	202.443
QTR AVG	194.944	198.284	201.624

Railroad and Union Abbreviations

Second Quarter 2017

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: The sale of the southern portion of the D&H received regulatory approval on May 15, 2015.

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).

AAR Workpapers Sent to STB for 2017 Q2 RCAF

March 3, 2017

1. Index Calculation Spreadsheet (index_calc.xlsx, 2 pages)
2. Summary of ST and PFTNW Hourly Rates (Summary.xlsx)
3. RCAF Taxable Wages adjustment calculation (TaxableRate.xlsx)
4. National Contracts spreadsheet, 2 sections (2 and 5 pages)
5. Wall Street Journal - 13 week Treasury Bill Rate from recent auction (a.k.a. 3-Mo. T-Bill)
6. 2017/Q2 RCAF Lump Sum Amortization summary, public version (1 page)
7. 2017/Q2 RCAF Back Pay Amortization summary, public version (1 page)
8. Health & Welfare worksheet (1 page)
9. Railroad Retirement spreadsheet (5 pages)
10. Unemployment Insurance Tax worksheet (1 page)
11. 2-page SAS run for 2017 Q2 Unemployment Insurance Tax
12. 5-Page This Week in Petroleum report from Energy Information Administration
13. Summary of Materials & Supplies - "U.S. Summary by Composition Category" (1 page)
14. RCAF Car Hire Forecast Spreadsheet for Equipment Rents (2 pages) plus source data page
15. 5 pages of PPI-RE for Depreciation including graph page, input/output, and BLS source data
16. 5 pages of PPI-LF for Other (and Lease Rentals) incl. graph page, input/output, BLS source data
17. Forecast Error calc. and workpapers (9 pages: calc, index actual, fuel, 3 car hire, 2 deprec, 2 other)

RCAF All-Inclusive Index's Labor Index Based on 2015 Benchmarks

	15 Wts.	3Q/16	3Q/16 Rebenchd As Info Only	% Chg	4Q/16	% Chg	1Q/17	% Chg	2Q/17	% Chg	3Q/17	% Chg
Straight Time		\$34.328	\$33.700	-1.8%	\$33.700	-1.8%	\$33.708	0.0%	\$33.708	0.0%		--
PFTNW		\$7.158	\$6.980	-2.5%	\$6.980	-2.5%	\$6.982	0.0%	\$6.982	0.0%		--
Total		\$41.486	\$40.680	-1.9%	\$40.680	-1.9%	\$40.690	0.0%	\$40.690	0.0%	\$0.000	--
Adjustments												
Lump Sum		\$0.159	\$0.159		\$0.171		\$0.184		\$0.283			
Back Pay		\$0.109	\$0.108		\$0.068		\$0.078		(\$0.019)			
Other		\$0.149	\$0.148		\$0.148		\$0.148		\$0.148			
Total Wages		\$41.903	\$41.095	-1.9%	\$41.067	-2.0%	\$41.100	0.1%	\$41.102	0.0%	\$0.000	--
Pre-Tax Reduction		(\$1.358)	(\$1.364)		(\$1.364)		(\$1.364)		(\$1.364)			
Taxable Wages		\$40.545	\$39.731		\$39.703		\$39.736		\$39.738		\$0.000	
H & W		\$7.906	\$7.551	-4.5%	\$7.551	-4.5%	\$8.851	17.2%	\$8.851	0.0%		--
RR Ret & Medicare		\$8.448	\$8.370	-0.9%	\$8.366	-1.0%	\$8.548	2.2%	\$8.548	0.0%		--
Unemp. Insurance		\$0.240	\$0.246	2.5%	\$0.246	2.5%	\$0.321	30.5%	\$0.321	0.0%		--
Other		\$0.206	\$0.205	-0.5%	\$0.114	-44.7%	\$0.143	25.4%	\$0.150	4.9%		--
Total		\$16.800	\$16.372	-2.5%	\$16.277	-3.1%	\$17.863	9.7%	\$17.870	0.0%	\$0.000	--
Adjustments												
Total Supplements		\$16.800	\$16.372	-2.5%	\$16.277	-3.1%	\$17.863	9.7%	\$17.870	0.0%	\$0.000	--
Total Labor		\$58.703	\$57.467	-2.1%	\$57.344	-2.3%	\$58.963	2.8%	\$58.972	0.0%	\$0.000	--
Wage Rate Index	0.7150	358.6	351.7	-1.9%	351.5	-2.0%	351.7	0.1%	351.8	0.0%	0.0	--
Supplements Index	0.2850	620.8	605.0	-2.5%	601.5	-3.1%	660.1	9.7%	660.4	0.0%	0.0	--
Total Labor Index '14 Wts.		431.8										
Total Labor Index '15 Wts.		433.3	423.9	-2.2%	422.8	-2.4%	439.6	4.0%	439.8	0.0%	0.0	--
Labor Index (Linked)		415.2			405.1	-2.4%	421.2	4.0%	421.4	0.0%	0.0	-100.0%

All Inclusive Index and RCAF using 2015 Benchmarks and Weights

	15 Wts.	3Q/16	15 Wts. 3Q/16	% Chg	4Q/16	% Chg	1Q/17	% Chg	2Q/17	% Chg	3Q/17	% Chg
Labor	0.350	415.20	415.2	0.0%	405.1	-2.4%	421.2	4.0%	421.4	0.0%	0.0	-100.0%
Fuel	0.134	195.60	195.6	0.0%	200.1	2.3%	197.2	-1.4%	218.2	10.6%	--	--
M&S	0.054	240.60	240.6	0.0%	245.8	2.2%	274.3	11.6%	264.8	-3.5%	--	--
Equip. Rents	0.058	216.80	216.8	0.0%	223.4	3.0%	224.3	0.4%	222.6	-0.8%	0.0	-100.0%
Depreciation	0.139	226.50	226.5	0.0%	225.1	-0.6%	225.3	0.1%	223.2	-0.9%	--	--
Interest	0.019	57.50	57.5	0.0%	60.6	5.4%	60.6	0.0%	60.6	0.0%	60.6	0.0%
Other	0.246	217.40	217.4	0.0%	216.9	-0.2%	218.4	0.7%	222.3	1.8%	--	--
Weighted Avg.	1.000	275.50	283.2	2.8%	280.6	-0.9%	287.9	2.6%	290.8	1.0%	1.2	-99.6%
Linked		263.00			260.6	-0.9%	267.4	2.6%	270.1	1.0%	1.1	-99.6%
Basing Factor												
10/1/80 basis	102.7	256.1			253.7	-0.9%	260.4	2.6%	263.0	1.0%	1.1	-99.6%
10/1/82	120.9	217.5			215.6	-0.9%	221.2	2.6%	223.4	1.0%	0.9	-99.6%
4Q/87	132.2	198.9			197.1	-0.9%	202.3	2.6%	204.3	1.0%	0.8	-99.6%
4Q/92	156.9	167.6			166.1	-0.9%	170.4	2.6%	172.1	1.0%	0.7	-99.6%
4Q/97	173.2	151.8			150.5	-0.9%	154.4	2.6%	155.9	1.0%	0.6	-99.6%
4Q/02	192.1	136.9			135.7	-0.9%	139.2	2.6%	140.6	1.0%	0.6	-99.6%
4Q/07	245.9	107.0			106.0	-0.9%	108.7	2.5%	109.8	1.0%	0.4	-99.6%
4Q/12 basis	297.6	88.4			87.6	-0.9%	89.9	2.6%	90.8	1.0%	0.4	-99.6%
Car Hire	0.582	198.00	198.0	0.0%	209.1	5.6%	209.6	0.2%	204.1	-2.6%	--	--
Lease Rents	0.418	217.40	217.4	0.0%	216.9	-0.2%	218.4	0.7%	222.3	1.8%	0.0	--
Weighted Avg Eq Rents		206.40	206.1	-0.1%	212.4	3.1%	213.3	0.4%	211.7	-0.8%	0.0	--
Linked Equipment Rents		216.80			223.4	3.0%	224.3	0.4%	222.6	-0.8%	0.0	-100.0%
Preliminary RCAF		0.884			0.876	-0.90%	0.899	2.6%	0.908	1.0%	0.004	-99.6%
Forecast Error Adj.		(0.042)			0.005		(0.011)		(0.004)			
RCAF Unadjusted		0.842			0.881	4.63%	0.888	0.8%	0.904	1.8%	0.004	-99.6%
PAF		2.3667			2.3750	0.35%	2.3833	0.35%	2.3952	0.50%	--	--
RCAF Adjusted		0.356			0.371	4.21%	0.373	0.5%	0.377	1.1%	#DIV/0!	--
PAF-5		2.5016			2.5059	0.17%	2.5147	0.35%	2.5235	0.35%	--	--
RCAF-5		0.337			0.352	4.45%	0.353	0.3%	0.358	1.4%	#DIV/0!	--

Hourly Rate for 2017 Q2

Straight Time and Time Paid For But Not Worked

2017Q2 Straight Time Hourly Rate (from national spreadsheet)

\$33.674

No change

Adjustments to 2015 base:

Adjustments added 2016 Q1

CN Railroads	A few COLAs and GWIs	0.005
Misc. Indep BLET, dispatchers, yardmasters	Non-union GWI	0.004
Soo Corp.	Non-union GWI rounds to 0.000	0.000

Adjustments added 2016 Q2

CN Railroads	No change	0.000
Misc. Indep BLET, dispatchers, yardmasters	No change	0.000
Soo Corp.	No change	0.000

Adjustments added 2016 Q3

CN Railroads	No change (2 small increases rounded to 0)	0.000
Misc. Indep BLET, dispatchers, yardmasters	2% GWI for 1 RR's BLET	0.017
Soo Corp.	No change	0.000

Adjustments added 2016 Q4

CN Railroads	No change	0.000
Misc. Indep BLET, dispatchers, yardmasters	No change	0.000
Soo Corp.	No change	0.000

Adjustments added 2017 Q1

CN Railroads	A few COLAs, 1 GWI and 2 new contracts	0.008
Misc. Indep BLET, dispatchers, yardmasters	No change	0.000
Soo Corp.	No change	0.000

Adjustments added 2017 Q2

CN Railroads	No change	0.000
Misc. Indep BLET, dispatchers, yardmasters	No change	0.000
Soo Corp.	No change	0.000

Adjusted STHR Total

\$33.708

Pay For Time Not Worked

PFTNW (from national spreadsheet)

\$6.975

Ratio Adj STHR to Nat STHR

33.708 /

33.674

=

1.00101

Adjusted Pay For Time Not Worked

\$6.982

Notes:

1. CN Railroads includes B&LE, CC&P, GTW, IC, and WC.
2. The Miscellaneous group consists of independent (for wages) BLET, and one railroad's dispatchers and yardmasters.
3. Soo Corp. includes SOO, D&H and DM&E although Soo Line participates in national agreements.

RCAF Taxable Wages

(To Use for Railroad Retirement and Unemployment Insurance Payroll Tax Calculations)

In the RCAF calculation, Total Wages are the wages paid, while Taxable Wages are the wages on which to base payroll tax calculations. The difference is caused by pre-tax employee contributions to help pay Health & Welfare costs. This page calculates that wage rate difference.

The national agreements feature employee Health & Welfare cost sharing. Some of the independent agreements adopt the dollar amount contributed under the national agreement, and some have their own employee contribution rate. This Cost Sharing is a pre-tax employee contribution to Health & Welfare insurance premiums paid by the employer. The employee contribution reduces employer Health & Welfare costs, while the Health & Welfare insurance premiums paid to the provider are unchanged. In the RCAF calculation, the reduction to the employer's Health & Welfare costs affect the Supplements portion of the Labor component of the index. The Taxable Wage Rate is used for Railroad Retirement and Unemployment Insurance calculations.

Reduction Calculation for 2Q/2017

U.S. ST Hours =

323,519,708

Wage Statistics are for 2015

Union Group	Employees	Mo. Rate	Annual \$
National BLET (BNSF, CSX, KCS, NS, SOO, UP)	26,829	(\$228.89)	(\$73,690,677.72)
National BMW (BNSF, CSX, KCS, NS, SOO, UP)	24,423	(\$228.89)	(\$67,082,165.64)
National BRS (BNSF, CSX, KCS, NS, SOO, UP)	7,638	(\$228.89)	(\$20,979,141.84)
National IAM (BNSF, CSX, KCS, NS, SOO, UP)	7,133	(\$228.89)	(\$19,592,068.44)
National IBBM (BNSF, CSX, KCS, NS, SOO, UP)	1,295	(\$228.89)	(\$3,556,950.60)
National IBEW (BNSF, CSX, KCS, NS, SOO, UP)	5,826	(\$228.89)	(\$16,002,157.68)
National NCFO (BNSF, CSX, KCS, NS, SOO, UP)	2,602	(\$228.89)	(\$7,146,861.36)
National SMW (BNSF, CSX, KCS, NS, SOO, UP)	1,054	(\$228.89)	(\$2,895,000.72)
National TCU (BNSF, CSX, KCS, NS, SOO, UP)	5,333	(\$228.89)	(\$14,648,044.44)
National TCU-CAR (BNSF, CSX, KCS, NS, SOO, UP)	9,425	(\$228.89)	(\$25,887,459.00)
National UTU (BNSF, CSX, KCS, NS, SOO, UP)	41,770	(\$228.89)	(\$114,728,823.60)
Yardmasters (BNSF, CSX, KCS, NS, SOO, UP)	1,885	(\$228.89)	(\$5,177,491.80)
National ATDA (wt. avg. BNSF, CSX, KCS, NS, SOO)	1,875	(\$228.89)	(\$5,150,025.00)
Independent CNGT (wt avg all union categories)	6,883	(\$226.48)	(\$18,706,342.08)
Independent SLC (wt avg all DH & DME union categories)	802	(\$239.03)	(\$2,300,424.72)
Total Union	144,773		(\$397,543,634.64)
All Other @ \$3,646,717.21 total per month			(\$43,760,606.52)
Total			(\$441,304,241.16)

Reduction in Wage Rate Per ST Hour

-\$1.36407220

Deduct this amount from the Wage Rate

-\$1.364

National Contracts U.S.

Straight Time Hourly Rate															Check Sum
Weight	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	1.00000
2015 Avg.	28.066	29.160	32.434	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	48.821	451.812
12/31/15	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	48.821	451.843
1/1/16	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	
4/1/16	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	
7/1/16	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	
10/1/16	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	
1/1/17	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	
4/1/17	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	
7/1/17	28.080	29.160	32.452	30.256	31.044	27.763	30.040	24.796	30.537	28.181	30.805	40.439	39.469	50.286	

Weighted Straight Time Hourly Rate															Total
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	
2015 Avg.	6.556	0.995	5.426	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.136	33.394
12/31/15	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.136	33.400
1/1/16	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674
4/1/16	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674
7/1/16	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674
10/1/16	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674
1/1/17	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674
4/1/17	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674
7/1/17	6.559	0.995	5.428	0.180	1.508	3.974	1.703	0.371	1.271	0.210	1.055	0.573	0.435	9.411	33.674

Note: The 2015 Average and 12/31/15 Straight Time Hourly Rates are the industry rates, and include all Class I railroad employees. The rates for 1/1/16 through 7/1/17 are based on the industry year-end rates updated by NATIONAL UNION wage increases using contract information. These national increases are diluted using "percent national" ratios to account for non-national union contracts. The impacts of non-national (or independent contract) increases after 2015 are not shown on this page and are handled separately.

National Contracts U.S.

Pay For Time Not Worked Hourly Rate															Check Sum
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	
Weight	0.23358	0.03411	0.16728	0.00596	0.04859	0.14313	0.0567	0.01498	0.04162	0.00746	0.03425	0.01418	0.01102	0.18714	1.00000
2015 Avg.	10.874	5.225	12.324	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.316	80.934
12/31/15	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.316	
1/1/16	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	
4/1/16	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	
7/1/16	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	
10/1/16	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	
1/1/17	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	
4/1/17	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	
7/1/17	10.879	5.225	12.331	4.400	6.846	5.023	4.323	3.133	4.688	3.558	4.969	6.473	7.781	1.356	

	Pay For Time Not Worked Hourly Rate														
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	Total
2015 Avg.	2.540	0.178	2.062	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.246	6.965
12/31/15	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.246	6.968
1/1/16	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975
4/1/16	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975
7/1/16	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975
10/1/16	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975
1/1/17	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975
4/1/17	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975
7/1/17	2.541	0.178	2.063	0.026	0.333	0.719	0.245	0.047	0.195	0.027	0.170	0.092	0.086	0.254	6.975

U.S. National Contract

UTU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				28.06626	10.87372
12/31/15 Industry Rate				28.08018	10.87911
1/1/16			94.635%	28.08018	10.87911
4/1/16			94.635%	28.08018	10.87911
7/1/16			94.635%	28.08018	10.87911
10/1/16			94.635%	28.08018	10.87911
1/1/17			94.635%	28.08018	10.87911
4/1/17			94.635%	28.08018	10.87911
7/1/17			94.635%	28.08018	10.87911

TCU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				29.15962	5.22524
12/31/15 Industry Rate				29.15962	5.22524
1/1/16			84.601%	29.15962	5.22524
4/1/16			84.601%	29.15962	5.22524
7/1/16			84.601%	29.15962	5.22524
10/1/16			84.601%	29.15962	5.22524
1/1/17			84.601%	29.15962	5.22524
4/1/17			84.601%	29.15962	5.22524
7/1/17			84.601%	29.15962	5.22524

BLET

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				32.43432	12.32435
12/31/15 Industry Rate				32.45155	12.33090
1/1/16			2.128%	32.45155	12.33090
4/1/16			2.128%	32.45155	12.33090
7/1/16			2.128%	32.45155	12.33090
10/1/16			2.128%	32.45155	12.33090
1/1/17			2.128%	32.45155	12.33090
4/1/17			2.128%	32.45155	12.33090
7/1/17			2.128%	32.45155	12.33090

U.S. National Contract

SMWIA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				30.25551	4.39984
12/31/15 Industry Rate				30.25551	4.39984
1/1/16			98.342%	30.25551	4.39984
4/1/16			98.342%	30.25551	4.39984
7/1/16			98.342%	30.25551	4.39984
10/1/16			98.342%	30.25551	4.39984
1/1/17			98.342%	30.25551	4.39984
4/1/17			98.342%	30.25551	4.39984
7/1/17			98.342%	30.25551	4.39984

BRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				31.04406	6.84638
12/31/15 Industry Rate				31.04406	6.84638
1/1/16			93.129%	31.04406	6.84638
4/1/16			93.129%	31.04406	6.84638
7/1/16			93.129%	31.04406	6.84638
10/1/16			93.129%	31.04406	6.84638
1/1/17			93.129%	31.04406	6.84638
4/1/17			93.129%	31.04406	6.84638
7/1/17			93.129%	31.04406	6.84638

BMWE

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				27.76305	5.02302
12/31/15 Industry Rate				27.76305	5.02302
1/1/16			91.815%	27.76305	5.02302
4/1/16			91.815%	27.76305	5.02302
7/1/16			91.815%	27.76305	5.02302
10/1/16			91.815%	27.76305	5.02302
1/1/17			91.815%	27.76305	5.02302
4/1/17			91.815%	27.76305	5.02302
7/1/17			91.815%	27.76305	5.02302

U.S. National Contract

TCU-Carmen

Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.			30.03993	4.32324
12/31/15 Industry Rate			30.03993	4.32324
1/1/16		93.067%	30.03993	4.32324
4/1/16		93.067%	30.03993	4.32324
7/1/16		93.067%	30.03993	4.32324
10/1/16		93.067%	30.03993	4.32324
1/1/17		93.067%	30.03993	4.32324
4/1/17		93.067%	30.03993	4.32324
7/1/17		93.067%	30.03993	4.32324

NCFO

Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.			24.79646	3.13282
12/31/15 Industry Rate			24.79646	3.13282
1/1/16		97.203%	24.79646	3.13282
4/1/16		97.203%	24.79646	3.13282
7/1/16		97.203%	24.79646	3.13282
10/1/16		97.203%	24.79646	3.13282
1/1/17		97.203%	24.79646	3.13282
4/1/17		97.203%	24.79646	3.13282
7/1/17		97.203%	24.79646	3.13282

IAM

Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.			30.53682	4.68799
12/31/15 Industry Rate			30.53682	4.68799
1/1/16		95.785%	30.53682	4.68799
4/1/16		95.785%	30.53682	4.68799
7/1/16		95.785%	30.53682	4.68799
10/1/16		95.785%	30.53682	4.68799
1/1/17		95.785%	30.53682	4.68799
4/1/17		95.785%	30.53682	4.68799
7/1/17		95.785%	30.53682	4.68799

U.S. National Contract

IBBM

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				28.18114	3.55838
12/31/15 Industry Rate				28.18114	3.55838
1/1/16			92.585%	28.18114	3.55838
4/1/16			92.585%	28.18114	3.55838
7/1/16			92.585%	28.18114	3.55838
10/1/16			92.585%	28.18114	3.55838
1/1/17			92.585%	28.18114	3.55838
4/1/17			92.585%	28.18114	3.55838
7/1/17			92.585%	28.18114	3.55838

IBEW

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				30.80540	4.96886
12/31/15 Industry Rate				30.80540	4.96886
1/1/16			95.079%	30.80540	4.96886
4/1/16			95.079%	30.80540	4.96886
7/1/16			95.079%	30.80540	4.96886
10/1/16			95.079%	30.80540	4.96886
1/1/17			95.079%	30.80540	4.96886
4/1/17			95.079%	30.80540	4.96886
7/1/17			95.079%	30.80540	4.96886

ATDA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				40.43923	6.47259
12/31/15 Industry Rate				40.43923	6.47259
1/1/16			65.787%	40.43923	6.47259
4/1/16			65.787%	40.43923	6.47259
7/1/16			65.787%	40.43923	6.47259
10/1/16			65.787%	40.43923	6.47259
1/1/17			65.787%	40.43923	6.47259
4/1/17			65.787%	40.43923	6.47259
7/1/17			65.787%	40.43923	6.47259

U.S. National Contract

YDMSTRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				39.46882	7.78105
12/31/15 Industry Rate				39.46882	7.78105
1/1/16			67.137%	39.46882	7.78105
4/1/16			67.137%	39.46882	7.78105
7/1/16			67.137%	39.46882	7.78105
10/1/16			67.137%	39.46882	7.78105
1/1/17			67.137%	39.46882	7.78105
4/1/17			67.137%	39.46882	7.78105
7/1/17			67.137%	39.46882	7.78105

OTHER

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2015 Industry Avg.				48.82125	1.31623
12/31/15 Industry Rate				48.82125	1.31623
1/1/16	3.00%		100.000%	50.28589	1.35572
4/1/16			100.000%	50.28589	1.35572
7/1/16			100.000%	50.28589	1.35572
10/1/16			100.000%	50.28589	1.35572
1/1/17			100.000%	50.28589	1.35572
4/1/17			100.000%	50.28589	1.35572
7/1/17			100.000%	50.28589	1.35572

Check Sums

	Increase	Applicable	ST HR	PFTNW HR
2015 AVG			451.81185	80.93371
12/31/15			451.84300	
		1171.294%		
		ok matches	ok matches	ok matches
			ok matches	

Should match check sum on National Increase Applicability for U.S. Total page.

1171.294%

All three should match check sums on U.S. Benchmark page.

EO, vice president or director, potentially conveys
s are required to report large trades to the SEC
dual trades by insiders, based on data received by
performance of the company
ian CEO: chief executive officer CFO: chief financial officer
GC: general counsel H: officer, director and beneficial owner
other C r OD: officer and director P: president UT:

Title No. of shrs in trans (000s) Price range (\$ in transaction) \$ Value (000s) Close (\$ Ytd (%)

CEO	426	15.87-16.53	7,000	16.62	2.0
BI	1,947	1.40	2,726	1.75	84.2
BI	974	1.40	1,364		
OE	150	8.71-8.83	1,316	8.48	17.9
D	15	65.37	1,000	65.10	5.9
CEO	32	31.50	1,000	31.20	-7.3
m BI	105	8.67-8.97	936	9.09	4.4
m BI	34	9.04-9.05	309		
O	41	18.50	749	18.89	3.2
CEO	60	9.41-9.66	577	9.58	-7.5
DI	15	28.00	420	28.03	-14.1
DI	11	26.64	296		
CEO	20	20.80	416	20.89	-43.4
D	5	56.96-57.11	308	53.71	-0.7
T	25	12.02	301	12.10	3.7
D	10	29.27	293	29.06	7.8
DO	49	5.10-5.45	253	5.50	11.1
OD	10	25.97	250	26.10	-5.3

D	5038**	45.29-46.02	230,079	45.33	25.5
CEO	3,963	45.60-46.07	180,820		
DI	462	80.17	117,171	91.22	15.9
CBI	2	80.17	117,171		
DI	10	40.00	36,000	40.53	15.1
D	632	40.65-40.84	25,756		
DI	1,000	35.35	35,350	35.51	26.6
CBI	738	41.24-42.22	30,684	41.55	5.3
DI	425	57.22-57.41	24,364	58.33	6.0
DI	203	57.40	11,663		
D	635**	30.13-30.50	19,217	30.22	11.8
OD	336	53.66	18,019	54.50	12.1
CEO	387	45.61-45.90	17,707	46.78	15.3
CEO	956	18.52	17,703	18.71	1.7
CBI	956	18.52	17,703		
CEO	235	71.13-72.13	16,865	71.69	8.2
CEO	218	77.23	16,836	80.71	12.1
P	17	831.84-836.81	13,919	846.55	6.8

	Buying	Selling
nce	1,659,024	266,280,696
th care	4,167,125	98,993,174
strial	829,975	121,738,252
ia	0	163,655,344
nology	507,630	167,141,125
sportation	7,580	13,349,990
ies	139,097	3,372,609

Sources: Thomson Financial; WSJ Market Data Group

BlackRock Municipal Trust	BK	14.09	14.05	-0.3	6.0
BlackRock Muni	BLE	14.79	14.70	-0.6	6.1
BlackRock Muni Tr	BYM	14.79	13.88	-6.2	5.7
BlackRock MuniAssets Fd	MUA	13.93	14.19	+1.9	4.9
BlackRock MuniEnhanced	MEN	11.68	11.30	-3.3	5.9
BlackRock MuniHdgs Inv	MFL	14.51	14.39	-0.8	5.8
BlackRock MuniHdgs City II	MUE	13.95	13.20	-5.4	5.8
BlackRock MuniHdgs	MHD	16.67	16.55	-0.7	5.9
BlackRock MuniVest	MVF	9.55	9.82	+2.8	6.0
BlackRock MuniVest II	MVT	15.08	15.83	+5.0	5.9
BlackRock MuniYield	MYD	14.55	14.35	-1.4	6.1
BlackRock MuniYld Quality	MQY	15.40	14.77	-4.1	5.9
BlackRock MuniYld Qlty II	MQT	13.54	12.77	-5.7	5.8
BlackRock MuniYld Qlty III	MYI	14.11	13.66	-3.2	6.0

Key Interest Rates

Data delayed due to holiday.

Borrowing Benchmarks

Money Rates

Key annual interest rates paid to borrow or lend money in U.S. and international markets. Rates below are a guide to general levels but don't always represent actual transactions.

International rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
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Prime rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
U.S.	3.75	3.75	3.75	3.50
Canada	2.70	2.70	2.70	2.70
Japan	1.475	1.475	1.475	1.475

Policy Rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
Euro zone	0.00	0.00	0.05	0.00
Switzerland	0.50	0.50	0.50	0.50
Britain	0.25	0.25	0.50	0.25
Australia	1.50	1.50	2.00	1.50

Overnight repurchase	Week Latest	Week ago	-52-Week-High	-52-Week-Low
U.S.	0.51	0.60	1.30	0.15

Other short-term rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
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Euro commercial paper	Week Latest	Week ago	-52-Week-High	-52-Week-Low
30 day	n.q.	n.q.	-0.13	-0.14
Two month	n.q.	n.q.	n.q.	n.q.
Three month	n.q.	n.q.	n.q.	n.q.
Four month	n.q.	n.q.	n.q.	n.q.
Five month	n.q.	n.q.	n.q.	n.q.
Six month	n.q.	n.q.	n.q.	n.q.

Libor	Week Latest	Week ago	-52-Week-High	-52-Week-Low
One month	0.77722	0.77000	0.78056	0.42830
Three month	1.05011	1.03900	1.05650	0.62340
Six month	1.35711	1.33794	1.36378	0.87830
One year	1.73539	1.71039	1.74511	1.15475

Euro Libor	Week Latest	Week ago	-52-Week-High	-52-Week-Low
One month	-0.392	-0.394	-0.262	-0.395
Three month	-0.352	-0.349	-0.216	-0.352
Six month	-0.246	-0.248	-0.124	-0.249
One year	-0.111	-0.110	-0.005	-0.112

Euro interbank offered rate (Euribor)	Week Latest	Week ago	-52-Week-High	-52-Week-Low
One month	-0.369	-0.373	-0.258	-0.374
Three month	-0.329	-0.329	-0.199	-0.329
Six month	-0.238	-0.240	-0.125	-0.244
One year	-0.109	-0.102	-0.001	-0.109

Inflation	Jan. Index level	Chg From (%)
	Dec '16	Jan '16

U.S. consumer price index	Week Latest	Week ago	-52-Week-High	-52-Week-Low
All items	242.839	0.58	2.5	

BlackRock MuniYld NJ Fd	MYJ	15.40	15.27	-0.8	5.7
BlackRock MuniYld NY Qlty	MYN	13.77	12.84	-6.8	5.2
Eaton Vance CA Muni Bd	EVM	12.23	11.38	-7.0	5.5
Invesco CA Value Mun Incm	VCV	13.20	12.29	-6.9	5.6
Invesco PA Value Mun Incm	VPV	13.76	12.19	-11.4	5.7
Invesco Inv Grade NY Muni	VTN	14.31	13.34	-6.8	5.7
Nuveen CA AMT-Free Qual	NXK	15.24	14.48	-5.0	5.6
Nuveen CA Muni Value	NCA	10.18	10.09	-0.9	4.3
Nuveen CA Quality Muni	NAC	15.20	14.42	-5.1	6.0
Nuveen MD Qual Muni	NMY	14.12	12.61	-10.7	5.2
Nuveen MI Qual Muni	NUM	15.01	13.33	-11.2	5.3
Nuveen NC Qual Muni	NNC	14.56	12.83	-11.9	4.4
Nuveen NJ Qual Muni	NXJ	15.08	13.17	-12.7	5.7
Nuveen NY AMT-Free	NRK	14.12	12.80	-9.3	5.2
Nuveen NY Qual Muni	NAN	14.76	13.63	-7.7	5.5
Nuveen OH Qual Muni	NUO	16.23	14.77	-9.0	5.0
Nuveen PA Qual Muni	NQP	14.69	13.12	-10.7	5.7
Nuveen VA Qual Muni	NPV	14.00	13.00	-7.1	4.7
PIMCO California Muni	PCQ	NA	16.02	NA	5.6
PIMCO California Muni II	PCK	NA	9.58	NA	6.1

Borrowing Benchmarks

WSJ.com/bonds

Money Rates

Key annual interest rates paid to borrow or lend money in U.S. and international markets. Rates below are a guide to general levels but don't always represent actual transactions.

International rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
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Prime rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
U.S.	3.75	3.75	3.75	3.50
Canada	2.70	2.70	2.70	2.70
Japan	1.475	1.475	1.475	1.475

Policy Rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
Euro zone	0.00	0.00	0.05	0.00
Switzerland	0.50	0.50	0.50	0.50
Britain	0.25	0.25	0.50	0.25
Australia	1.50	1.50	2.00	1.50

Overnight repurchase	Week Latest	Week ago	-52-Week-High	-52-Week-Low
U.S.	0.51	0.59	1.30	0.15

U.S. government rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
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Discount	Week Latest	Week ago	-52-Week-High	-52-Week-Low
	1.25	1.25	1.25	1.00

Federal funds	Week Latest	Week ago	-52-Week-High	-52-Week-Low
Effective rate	0.6800	0.6800	0.7000	0.2700
High	0.8125	0.8125	0.8125	0.5600
Low	0.5000	0.5000	0.6600	0.2000
Bid	0.6600	0.6500	0.6800	0.2000
Offer	0.6700	0.7500	0.7500	0.2600

Treasury bill auction	Week Latest	Week ago	-52-Week-High	-52-Week-Low
4 weeks	0.515	0.530	0.530	0.160
13 weeks	0.540	0.530	0.555	0.220
26 weeks	0.645	0.620	0.660	0.340

Secondary market	Week Latest	Week ago	-52-Week-High	-52-Week-Low
Fannie Mae				
30-year mortgage yields				
30 days	3.634	3.644	3.828	2.806
60 days	3.665	3.674	3.862	2.832

Notes on data:
U.S. prime rate is effective December 15, 2016. Discount rate is effective December 15, 2016. U.S. prime rate is the base rate on corporate loans posted by at least 70% of the 10 largest U.S. banks.
Other prime rates aren't directly comparable; lending practices vary widely by location.
DTCC GCF Repo Index is Depository Trust & Clearing Corp.'s weighted average for overnight trades in applicable CUSIPs. Value traded is in billions of U.S. dollars. Futures on the DTCC GCF Repo Index are traded on NYSE Life US.

Sources: Federal Reserve; Bureau of Labor Statistics; DTCC; SIX Financial Information; General Electric Capital Corp.; Tullett Prebon Information Ltd.

Voya Senior Income:A	12.80	NA	NA	5.4
Voya Senior Income:B	12.74	NA	NA	4.9
Voya Senior Income:C	12.78	NA	NA	4.9
Voya Senior Income:I	12.77	NA	NA	5.7
Voya Senior Income:W	12.81	NA	NA	5.7
High Yield Bond Funds				
PionierLSInterval	10.35	NA	NA	9.8
WA Middle Mkt Dbt	804.28	NA	NA	11.0
WA Middle Mkt Inc	WMF811.07	NA	NA	11.2
Other Domestic Taxable Bond Funds				
Capstone Church Capital	11.52	NA	NA	1.1
CION Ares Dysid Crd Fd	NA	NA	NA	NS
GL Beyond Income	4.38	NA	NA	NE
Palmer Square Opp Income	NA	NA	NA	6.6
Resource Credit IncA	NA	NA	NA	4.7
Resource Credit IncC	NA	NA	NA	4.2
Resource Credit IncD	NA	NA	NA	4.4
Resource Credit IncI	NA	NA	NA	4.8
Resource Credit IncT	NA	NA	NA	4.2
Resource Credit IncU	NA	NA	NA	4.7
Resource Credit IncV	NA	NA	NA	4.4

February 20, 2017

Other short-term rates	Week Latest	Week ago	-52-Week-High	-52-Week-Low
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Call money	Week Latest	Week ago	-52-Week-High	-52-Week-Low
	2.50	2.50	2.50	2.25

Commercial paper	Week Latest	Week ago	-52-Week-High	-52-Week-Low
30 to 270 days	n.q.	n.q.	n.q.	n.q.

Commercial paper (AA financial)	Week Latest	Week ago	-52-Week-High	-52-Week-Low
90 days	0.86	0.89	1.03	0.45

Euro commercial paper	Week Latest	Week ago	-52-Week-High	-52-Week-Low
30 day	n.q.	n.q.	-0.13	-0.14
Two month	n.q.	n.q.	n.q.	n.q.
Three month	n.q.	n.q.	n.q.	n.q.
Four month	n.q.	n.q.	n.q.	n.q.
Five month	n.q.	n.q.	n.q.	n.q.
Six month	n.q.	n.q.	n.q.	n.q.

Libor	Week Latest	Week ago	-52-Week-High	-52-Week-Low
One month	0.77944	0.77111	0.78056	0.42830
Three month	1.05233	1.03622	1.05650	0.61820
Six month	1.35739	1.33822	1.36378	0.86790
One year	1.73539	1.70261	1.74511	1.13975

Euro Libor	Week Latest	Week ago	-52-Week-High	-52-Week-Low
One month	-0.389	-0.391	-0.260	-0.395
Three month	-0.352	-0.349	-0.213	-0.352
Six month	-0.244	-0.248	-0.124	-0.249
One year	-0.111	-0.110	-0.005	-0.112

Euro interbank offered rate (Euribor)	Week Latest	Week ago	-52-Week-High	-52-Week-Low
One month	-0.371	-0.371	-0.255	-0.374
Three month	-0.329	-0.329	-0.198	-0.329
Six month	-0.239	-0.240	-0.125	-0.244
One year	-0.109	-0.101	-0.001	-0.109

DTCC GCF Repo Index	Week Latest	Week ago	-52-Week-High	-52-Week-Low
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RCAF Lump Sum Amortization 2017/Q2

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hour	U.S. ST Hours	
NS - BLET 2016Q1 PPI	2016Q2	2016Q3				323,519,708	2015
NS - BLET 2016Q2 PPI	2016Q3	2016Q4				323,519,708	2015
NS - BLET 2016Q3 PPI	2016Q4	2017Q1				323,519,708	2015
NS - BLET 2016Q4 PPI	2017Q1	2017Q2				323,519,708	2015
NS - BLET 2017 Ave PP	2017Q1	2017Q2				323,519,708	2015
NS - BLET 2017 TPB	2017Q1	2017Q2				323,519,708	2015
CSX - BLET 2017	2017Q1	2017Q2				323,519,708	2015
Total			\$91,196,177	0.28189			

Should be slightly less
than amortized amount.

Fell out

CSX - BLET 2016	2016Q1	2016Q2				323,519,708	2015
NS - BLET second bonus	2016Q1	2016Q2				323,519,708	2015

Interest Rate

2015/Q1	0.020
2015/Q2	0.020
2015/Q3	0.015
2015/Q4	0.050
2016/Q1	0.140
2016/Q2	0.320
2016/Q3	0.350
2016/Q4	0.310
2017/Q1	0.480
2017/Q2	0.540
2017/Q3	
2017/Q4	

Lump Sum Adjustment for 2017/Q2 → **0.282826**
or
0.283

RCAF Back Pay Amortization 2017/Q2

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hr.	U.S. ST Hours	
CSX - UTU National	2016Q2	2016Q3				323,519,708	2015
CN - 2 YMD	2016Q1	2017Q1				323,519,708	2015
DME - all unions 2017	2017Q1	2017Q2				323,519,708	2015

Total

(\$6,088,813) -0.01882053

Should be slightly less
than amortized amount.

Fell out

CSX - UTU CSRA	2015Q1	2016Q2					2015
DME - all unions 2016	2016Q1	2016Q2					2015

Interest Rate

2015/Q1	0.020
2015/Q2	0.020
2015/Q3	0.015
2015/Q4	0.050
2016/Q1	0.140
2016/Q2	0.320
2016/Q3	0.350
2016/Q4	0.310
2017/Q1	0.480
2017/Q2	0.540
2017/Q3	
2017/Q4	

Back Pay Adjustment for 2017/Q2

→ -0.01887
or
-0.019

Health and Welfare

	Employees Receiving			Total	
	Pay 2015	Monthly Contribution 2015 Avg. 2017		2015 Avg.	2017
1. All Employees					
a. Group health	173,496	\$1,298.28	\$1,693.72	\$225,246,386.88	\$293,853,645.12
b. Group dental	173,496	50.83	65.12	8,818,801.68	11,298,059.52
c. Early retirement major medical	173,496	109.90	166.75	19,067,210.40	28,930,458.00
d. Group vision	173,496	8.41	8.44	1,459,101.36	1,464,306.24
2. Supplemental Sickness					
a. Signalmen	8,093	30.74	37.00	248,778.82	299,441.00
b. Shopcrafts	25,865	53.18	60.00	1,375,500.70	1,551,900.00
c. MOW	25,948	32.87	40.00	852,910.76	1,037,920.00
d. Yardmasters	2,026	34.78	34.22	70,464.28	69,329.72
3. Short-Term Disability					
a. Engineers (CSX, KCS, SOO, UP)	13,753	40.00	40.00	550,120.00	550,120.00
4. Monthly Total Premiums				257,689,274.88	339,055,179.60
5. Monthly Employee Contributions To H&W					
a. National BLET (BNSF, CSX, KCS, NS, SOO, UP)	26,829	(\$198.00)	(\$228.89)	(\$5,312,142.00)	(6,140,889.81)
b. National BMWE (BNSF, CSX, KCS, NS, SOO, UP)	24,423	(\$198.00)	(\$228.89)	(\$4,835,754.00)	(5,590,180.47)
c. National BRS (BNSF, CSX, KCS, NS, SOO, UP)	7,638	(\$198.00)	(\$228.89)	(\$1,512,324.00)	(1,748,261.82)
d. National IAM (BNSF, CSX, KCS, NS, SOO, UP)	7,133	(\$198.00)	(\$228.89)	(\$1,412,334.00)	(1,632,672.37)
e. National IBBM (BNSF, CSX, KCS, NS, SOO, UP)	1,295	(\$198.00)	(\$228.89)	(\$256,410.00)	(296,412.55)
f. National IBEW (BNSF, CSX, KCS, NS, SOO, UP)	5,826	(\$198.00)	(\$228.89)	(\$1,153,548.00)	(1,333,513.14)
g. National NCFO (BNSF, CSX, KCS, NS, SOO, UP)	2,602	(\$198.00)	(\$228.89)	(\$515,196.00)	(595,571.78)
h. National SMW (BNSF, CSX, KCS, NS, SOO, UP)	1,054	(\$198.00)	(\$228.89)	(\$208,692.00)	(241,250.06)
i. National TCU (BNSF, CSX, KCS, NS, SOO, UP)	5,333	(\$198.00)	(\$228.89)	(\$1,055,934.00)	(1,220,670.37)
j. National TCU-CAR (BNSF, CSX, KCS, NS, SOO, UP)	9,425	(\$198.00)	(\$228.89)	(\$1,866,150.00)	(2,157,288.25)
k. National UTU (BNSF, CSX, KCS, NS, SOO, UP)	41,770	(\$198.00)	(\$228.89)	(\$8,270,460.00)	(9,560,735.30)
l. Yardmasters (BNSF, CSX, KCS, NS, SOO, UP)	1,885	(\$198.00)	(\$228.89)	(\$373,230.00)	(431,457.65)
m. National ATDA (wt. avg. BNSF, CSX, KCS, NS, SOO)	1,875	(\$198.00)	(\$228.89)	(\$371,250.00)	(429,168.75)
n. Independent CNGT (wt avg all union categories)	6,883	(\$196.05)	(\$226.48)	(\$1,349,412.15)	(1,558,861.84)
o. Independent SLC (wt avg all DH & DME union categories)	802	(\$181.36)	(\$239.03)	(\$145,450.72)	(191,702.06)
p.					
Total Major Union	144,773			(\$28,638,286.87)	(\$33,128,636.22)
All Other Employee Contributions*				(\$3,646,717.21)	(\$3,646,717.21)
6. Net Employer Monthly Payments				\$225,404,270.80	\$302,279,826.17
7. Ratio Projected Year to Base Year, Based on Net Monthly Payments					1.34106
8. H&W hourly rate for base year 2015				\$6.600	
9. H&W hourly rate for projected quarter					\$8.851

* Non-union employee contributions net of opt-outs. The \$28,638,286.87 in major union contributions, plus \$3,646,717.21 in all other employee contributions, totals to the 12-month average of the total employee contributions reported to the AAR in its WF survey.

Railroad Retirement and Medicare for RCAF

Inputs:

RRB Earnings Distribution Year 2014
 Wage Statistics Year 2015
 Current Year 2017
 Employees Receiving Pay* 173,496

* from 2015 wage statistics

Tier I Maximum Taxable Earnings for 2017 127,200
 Tier II Maximum Taxable Earnings for 2017 94,500
 Medicare Maximum Taxable Earnings for 2017 no limit
 Tier I Employer Tax Rate for 2017 6.20%
 Tier II Employer Tax Rate for 2017 13.10%
 Medicare Employer Tax Rate for 2017 1.45%

USA RCAF	Wage Rate	Update Factor	Railroad Retirement Tax	Hourly Rate
2014	\$38.866			
2015	\$39.887	1.02627	\$704,695,495	\$8.392 hourly rate from SUPPL2015.xlsx
1Q/2017	\$39.736	1.02238	\$717,783,577	\$8.548 Rate = Taxable Rate
2Q/2017	\$39.738	1.02244	\$717,809,378	\$8.548
3Q/2017		0.00000	--	\$0.000
4Q/2017		0.00000	--	\$0.000

Railroad Retirement & Medicare, U.S.

From 2014 Earnings Distribution			1Q/2017 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtlly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$32,319	2.349 %	4,075	\$33,042	\$8,261	\$8,261	\$8,261	\$8,261	\$33,665,472	\$33,665,472	\$33,665,472	
41,700 - 43,699	\$42,942	1.007	1,747	43,903	10,976	10,976	10,976	10,976	19,175,889	19,175,889	19,175,889	
43,700 - 45,699	\$44,610	0.863	1,497	45,609	11,402	11,402	11,402	11,402	17,072,094	17,072,094	17,072,094	
45,700 - 47,699	\$46,638	0.959	1,664	47,682	11,920	11,920	11,920	11,920	19,833,634	19,833,634	19,833,634	
47,700 - 49,699	\$48,787	1.198	2,078	49,879	12,470	12,470	12,470	12,470	25,918,192	25,918,192	25,918,192	
49,700 - 51,699	\$50,610	1.438	2,495	51,743	12,936	12,936	12,936	12,936	32,272,975	32,272,975	32,272,975	
51,700 - 53,699	\$52,789	2.061	3,576	53,971	13,493	13,493	13,493	13,493	48,246,432	48,246,432	48,246,432	
53,700 - 55,699	\$54,867	2.061	3,576	56,095	14,024	14,024	14,024	14,024	50,145,617	50,145,617	50,145,617	
55,700 - 57,699	\$56,742	2.349	4,075	58,012	14,503	14,503	14,503	14,503	59,105,981	59,105,981	59,105,981	
57,700 - 59,699	\$58,648	4.936	8,564	59,961	14,990	14,990	14,990	14,990	128,372,540	128,372,540	128,372,540	
59,700 - 61,699	\$60,771	4.267	7,403	62,131	15,533	15,533	15,533	15,533	114,990,722	114,990,722	114,990,722	
61,700 - 63,699	\$62,628	3.595	6,237	64,030	16,007	16,007	16,007	16,007	99,841,527	99,841,527	99,841,527	
63,700 - 65,699	\$64,769	3.356	5,823	66,219	16,555	16,555	16,555	16,555	96,390,209	96,390,209	96,390,209	
65,700 - 67,699	\$66,691	3.835	6,654	68,184	17,046	17,046	17,046	17,046	113,416,535	113,416,535	113,416,535	
67,700 - 69,699	\$68,686	2.733	4,742	70,224	17,556	17,556	17,556	17,556	83,243,749	83,243,749	83,243,749	
69,700 - 71,699	\$70,601	3.068	5,323	72,181	18,045	18,045	18,045	18,045	96,052,790	96,052,790	96,052,790	
71,700 - 73,699	\$72,635	2.637	4,575	74,261	18,565	18,565	18,565	18,565	84,937,573	84,937,573	84,937,573	
73,700 - 75,699	\$74,686	3.500	6,072	76,358	19,089	19,089	19,089	19,089	115,918,038	115,918,038	115,918,038	
75,700 - 77,699	\$76,699	3.356	5,823	78,416	19,604	19,604	19,604	19,604	114,144,616	114,144,616	114,144,616	
77,700 - 79,699	\$78,731	2.828	4,906	80,493	20,123	20,123	20,123	20,123	98,734,504	98,734,504	98,734,504	
79,700 - 81,699	\$80,665	2.828	4,906	82,471	20,618	20,618	20,618	20,618	101,159,883	101,159,883	101,159,883	
81,700 - 83,699	\$82,752	2.828	4,906	84,604	21,151	21,151	21,151	21,151	103,777,136	103,777,136	103,777,136	
83,700 - 85,699	\$84,649	2.733	4,742	86,544	21,636	21,636	21,636	21,636	102,590,050	102,590,050	102,590,050	
85,700 - 87,699	\$86,782	3.068	5,323	88,725	22,181	22,181	22,181	22,181	118,067,070	118,067,070	118,067,070	
87,700 - 89,699	\$88,820	2.589	4,492	90,808	22,702	22,702	22,702	22,702	101,973,328	101,973,328	101,973,328	
89,700 - 91,699	\$90,764	2.493	4,325	92,796	23,199	23,199	23,199	23,199	100,341,290	100,341,290	100,341,290	
91,700 - 93,699	\$92,605	2.061	3,576	94,678	23,669	23,669	23,625	23,669	84,636,209	84,477,154	84,636,209	
93,700 - 95,699	\$94,558	1.918	3,328	96,675	24,169	24,169	23,625	24,169	80,424,923	78,615,809	80,424,923	
95,700 - 97,699	\$96,658	2.349	4,075	98,822	24,705	24,705	23,625	24,705	100,684,959	96,281,822	100,684,959	
97,700 - 99,699	\$98,713	2.397	4,159	100,923	25,231	25,231	23,625	25,231	104,926,735	98,249,267	104,926,735	
99,700 - 101,699	\$100,922	1.534	2,661	103,181	25,795	25,795	23,625	25,795	68,652,283	62,876,252	68,652,283	
101,700 - 103,699	\$102,756	1.965	3,409	105,056	26,264	26,264	23,625	26,264	89,539,264	80,542,265	89,539,264	
103,700 - 105,699	\$104,668	1.103	1,914	107,011	26,753	26,753	23,625	26,753	51,195,668	45,210,238	51,195,668	
105,700 - 107,699	\$106,491	1.726	2,995	108,875	27,219	27,219	23,625	27,219	81,507,481	70,746,030	81,507,481	
107,700 - 109,699	\$108,562	1.294	2,245	110,992	27,748	27,748	23,625	27,748	62,295,387	53,039,028	62,295,387	
109,700 - 111,699	\$110,722	1.726	2,995	113,200	28,300	28,300	23,625	28,300	84,745,860	70,746,030	84,745,860	
111,700 - 113,699	\$112,675	0.959	1,664	115,197	28,799	28,799	23,625	28,799	47,917,036	39,307,904	47,917,036	
113,700 - 115,699	\$114,552	0.815	1,414	117,116	29,279	29,279	23,625	29,279	41,400,355	33,405,570	41,400,355	
\$115,700 - over	\$172,509	11.218	19,463	176,371	44,093	31,800	23,625	44,093	618,916,445	459,808,208	858,165,338	
TOTAL	\$86,492	100.000	173,496						3,596,230,451	3,352,693,424	3,835,479,344	
Total Taxable Earnings									3,596,230,451	3,352,693,424	3,835,479,344	
Employer Tax Rate									6.20%	13.10%	1.45%	
Quarterly Payment									\$222,966,288	\$439,202,838	\$55,614,450	
Total Tier I, Tier II, and Medicare Paid this Quarter											\$717,783,577	

Railroad Retirement & Medicare, U.S.

From 2014 Earnings Distribution			2Q/2017 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$32,319	2.349 %	4,075	\$33,044	\$8,261	\$8,261	\$8,261	\$8,261	\$33,667,166	\$33,667,166	\$33,667,166	
41,700 - 43,699	\$42,942	1.007	1,747	43,905	10,976	10,976	10,976	10,976	19,176,854	19,176,854	19,176,854	
43,700 - 45,699	\$44,610	0.863	1,497	45,611	11,403	11,403	11,403	11,403	17,072,953	17,072,953	17,072,953	
45,700 - 47,699	\$46,638	0.959	1,664	47,684	11,921	11,921	11,921	11,921	19,834,633	19,834,633	19,834,633	
47,700 - 49,699	\$48,787	1.198	2,078	49,882	12,470	12,470	12,470	12,470	25,919,497	25,919,497	25,919,497	
49,700 - 51,699	\$50,610	1.438	2,495	51,745	12,936	12,936	12,936	12,936	32,274,599	32,274,599	32,274,599	
51,700 - 53,699	\$52,789	2.061	3,576	53,973	13,493	13,493	13,493	13,493	48,248,861	48,248,861	48,248,861	
53,700 - 55,699	\$54,867	2.061	3,576	56,098	14,024	14,024	14,024	14,024	50,148,141	50,148,141	50,148,141	
55,700 - 57,699	\$56,742	2.349	4,075	58,015	14,504	14,504	14,504	14,504	59,108,956	59,108,956	59,108,956	
57,700 - 59,699	\$58,648	4.936	8,564	59,964	14,991	14,991	14,991	14,991	128,379,001	128,379,001	128,379,001	
59,700 - 61,699	\$60,771	4.267	7,403	62,134	15,534	15,534	15,534	15,534	114,996,510	114,996,510	114,996,510	
61,700 - 63,699	\$62,628	3.595	6,237	64,033	16,008	16,008	16,008	16,008	99,846,552	99,846,552	99,846,552	
63,700 - 65,699	\$64,769	3.356	5,823	66,222	16,556	16,556	16,556	16,556	96,395,060	96,395,060	96,395,060	
65,700 - 67,699	\$66,691	3.835	6,654	68,187	17,047	17,047	17,047	17,047	113,422,243	113,422,243	113,422,243	
67,700 - 69,699	\$68,686	2.733	4,742	70,227	17,557	17,557	17,557	17,557	83,247,939	83,247,939	83,247,939	
69,700 - 71,699	\$70,601	3.068	5,323	72,185	18,046	18,046	18,046	18,046	96,057,624	96,057,624	96,057,624	
71,700 - 73,699	\$72,635	2.637	4,575	74,265	18,566	18,566	18,566	18,566	84,941,848	84,941,848	84,941,848	
73,700 - 75,699	\$74,686	3.500	6,072	76,362	19,090	19,090	19,090	19,090	115,923,872	115,923,872	115,923,872	
75,700 - 77,699	\$76,699	3.356	5,823	78,420	19,605	19,605	19,605	19,605	114,150,361	114,150,361	114,150,361	
77,700 - 79,699	\$78,731	2.828	4,906	80,497	20,124	20,124	20,124	20,124	98,739,473	98,739,473	98,739,473	
79,700 - 81,699	\$80,665	2.828	4,906	82,475	20,619	20,619	20,619	20,619	101,164,975	101,164,975	101,164,975	
81,700 - 83,699	\$82,752	2.828	4,906	84,609	21,152	21,152	21,152	21,152	103,782,359	103,782,359	103,782,359	
83,700 - 85,699	\$84,649	2.733	4,742	86,548	21,637	21,637	21,637	21,637	102,595,213	102,595,213	102,595,213	
85,700 - 87,699	\$86,782	3.068	5,323	88,729	22,182	22,182	22,182	22,182	118,073,013	118,073,013	118,073,013	
87,700 - 89,699	\$88,820	2.589	4,492	90,813	22,703	22,703	22,703	22,703	101,978,461	101,978,461	101,978,461	
89,700 - 91,699	\$90,764	2.493	4,325	92,800	23,200	23,200	23,200	23,200	100,346,341	100,346,341	100,346,341	
91,700 - 93,699	\$92,605	2.061	3,576	94,683	23,671	23,671	23,625	23,671	84,640,469	84,477,154	84,640,469	
93,700 - 95,699	\$94,558	1.918	3,328	96,680	24,170	24,170	23,625	24,170	80,428,971	78,615,809	80,428,971	
95,700 - 97,699	\$96,658	2.349	4,075	98,827	24,707	24,707	23,625	24,707	100,690,027	96,281,822	100,690,027	
97,700 - 99,699	\$98,713	2.397	4,159	100,928	25,232	25,232	23,625	25,232	104,932,017	98,249,267	104,932,017	
99,700 - 101,699	\$100,922	1.534	2,661	103,186	25,797	25,797	23,625	25,797	68,655,738	62,876,252	68,655,738	
101,700 - 103,699	\$102,756	1.965	3,409	105,061	26,265	26,265	23,625	26,265	89,543,771	80,542,265	89,543,771	
103,700 - 105,699	\$104,668	1.103	1,914	107,016	26,754	26,754	23,625	26,754	51,198,245	45,210,238	51,198,245	
105,700 - 107,699	\$106,491	1.726	2,995	108,880	27,220	27,220	23,625	27,220	81,511,584	70,746,030	81,511,584	
107,700 - 109,699	\$108,562	1.294	2,245	110,998	27,749	27,749	23,625	27,749	62,298,522	53,039,028	62,298,522	
109,700 - 111,699	\$110,722	1.726	2,995	113,206	28,302	28,302	23,625	28,302	84,750,125	70,746,030	84,750,125	
111,700 - 113,699	\$112,675	0.959	1,664	115,203	28,801	28,801	23,625	28,801	47,919,448	39,307,904	47,919,448	
113,700 - 115,699	\$114,552	0.815	1,414	117,122	29,281	29,281	23,625	29,281	41,402,438	33,405,570	41,402,438	
\$115,700 - over	\$172,509	11.218	19,463	176,379	44,095	31,800	23,625	44,095	618,916,445	459,808,208	858,208,531	
TOTAL		100.000	173,496						Total Taxable Earnings	3,596,380,306	3,352,798,084	3,835,672,393
									Employer Tax Rate	6.20%	13.10%	1.45%
									Quarterly Payment	\$222,975,579	\$439,216,549	\$55,617,250

Total Tier I, Tier II, and Medicare Paid this Quarter

\$717,809,378

Railroad Retirement & Medicare, U.S.

From 2014 Earnings Distribution			3Q/2017 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$32,319	2.349 %	4,075	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,942	1.007	1,747	0	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,610	0.863	1,497	0	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,638	0.959	1,664	0	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,787	1.198	2,078	0	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,610	1.438	2,495	0	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,789	2.061	3,576	0	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,867	2.061	3,576	0	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,742	2.349	4,075	0	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,648	4.936	8,564	0	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,771	4.267	7,403	0	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,628	3.595	6,237	0	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,769	3.356	5,823	0	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,691	3.835	6,654	0	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,686	2.733	4,742	0	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,601	3.068	5,323	0	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,635	2.637	4,575	0	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,686	3.500	6,072	0	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,699	3.356	5,823	0	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,731	2.828	4,906	0	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,665	2.828	4,906	0	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,752	2.828	4,906	0	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,649	2.733	4,742	0	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,782	3.068	5,323	0	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,820	2.589	4,492	0	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,764	2.493	4,325	0	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,605	2.061	3,576	0	0	0	90	0	0	322,370	0	0
93,700 - 95,699	\$94,558	1.918	3,328	0	0	0	1,089	0	0	3,622,277	0	0
95,700 - 97,699	\$96,658	2.349	4,075	0	0	0	2,162	0	0	8,811,341	0	0
97,700 - 99,699	\$98,713	2.397	4,159	0	0	0	3,213	0	0	13,360,218	0	0
99,700 - 101,699	\$100,922	1.534	2,661	0	0	0	4,342	0	0	11,555,518	0	0
101,700 - 103,699	\$102,756	1.965	3,409	0	0	0	5,279	0	0	17,998,505	0	0
103,700 - 105,699	\$104,668	1.103	1,914	0	0	0	6,257	0	0	11,973,436	0	0
105,700 - 107,699	\$106,491	1.726	2,995	0	0	0	7,189	0	0	21,527,004	0	0
107,700 - 109,699	\$108,562	1.294	2,245	0	0	0	8,247	0	0	18,515,852	0	0
109,700 - 111,699	\$110,722	1.726	2,995	0	0	0	9,352	0	0	28,003,924	0	0
111,700 - 113,699	\$112,675	0.959	1,664	0	0	0	10,350	0	0	17,220,676	0	0
113,700 - 115,699	\$114,552	0.815	1,414	0	0	0	11,310	0	0	15,991,652	0	0
\$115,700 - over	\$172,509	11.218	19,463	0	0	24,587	23,625	0	478,540,980	459,808,208	0	0
TOTAL		100.000	173,496						478,540,980	628,710,983	0	0
									Employer Tax Rate	6.20%	13.10%	1.45%
									Quarterly Payment	\$29,669,541	\$82,361,139	\$0

Total Tier I, Tier II, and Medicare Paid this Quarter

\$112,030,680

Railroad Retirement & Medicare, U.S.

From 2014 Earnings Distribution			4Q/2017 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$32,319	2.349 %	4,075	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,942	1.007	1,747	0	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,610	0.863	1,497	0	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,638	0.959	1,664	0	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,787	1.198	2,078	0	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,610	1.438	2,495	0	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,789	2.061	3,576	0	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,867	2.061	3,576	0	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,742	2.349	4,075	0	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,648	4.936	8,564	0	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,771	4.267	7,403	0	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,628	3.595	6,237	0	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,769	3.356	5,823	0	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,691	3.835	6,654	0	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,686	2.733	4,742	0	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,601	3.068	5,323	0	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,635	2.637	4,575	0	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,686	3.500	6,072	0	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,699	3.356	5,823	0	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,731	2.828	4,906	0	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,665	2.828	4,906	0	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,752	2.828	4,906	0	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,649	2.733	4,742	0	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,782	3.068	5,323	0	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,820	2.589	4,492	0	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,764	2.493	4,325	0	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,605	2.061	3,576	0	0	0	0	0	0	0	0	0
93,700 - 95,699	\$94,558	1.918	3,328	0	0	0	0	0	0	0	0	0
95,700 - 97,699	\$96,658	2.349	4,075	0	0	0	0	0	0	0	0	0
97,700 - 99,699	\$98,713	2.397	4,159	0	0	0	0	0	0	0	0	0
99,700 - 101,699	\$100,922	1.534	2,661	0	0	0	0	0	0	0	0	0
101,700 - 103,699	\$102,756	1.965	3,409	0	0	0	0	0	0	0	0	0
103,700 - 105,699	\$104,668	1.103	1,914	0	0	0	0	0	0	0	0	0
105,700 - 107,699	\$106,491	1.726	2,995	0	0	0	0	0	0	0	0	0
107,700 - 109,699	\$108,562	1.294	2,245	0	0	0	0	0	0	0	0	0
109,700 - 111,699	\$110,722	1.726	2,995	0	0	0	0	0	0	0	0	0
111,700 - 113,699	\$112,675	0.959	1,664	0	0	0	0	0	0	0	0	0
113,700 - 115,699	\$114,552	0.815	1,414	0	0	0	0	0	0	0	0	0
\$115,700 - over	\$172,509	11.218	19,463	0	0	0	17,312	0	0	336,949,246	0	0
TOTAL		100.000	173,496						0	336,949,246	0	
Total Taxable Earnings									0	336,949,246	0	
Employer Tax Rate									6.20%	13.10%	1.45%	
Quarterly Payment									\$0	\$44,140,351	\$0	

Total Tier I, Tier II, and Medicare Paid this Quarter

\$44,140,351

RCAF Unemployment Insurance Tax

	Unemployment Ins.			RRB	Factor	Avg. Ann.	Un. Ins.
	Tax	Earnings	Hourly	Sample	To Update	Taxable	Hourly
	Rate	Base	Earnings	Year	RRB Sample	Earnings	Rate
			\$34.752	(2011)			
2012 Avg.	5.00%	\$16,380	\$36.269		1.043652	\$15,446.41	\$0.411
3Q/13 reb.	0.67%	\$16,860	\$37.587		1.081578	\$15,902.69	\$0.057
4Q/13	0.67%	\$16,860	\$37.545		1.080369	\$15,902.09	\$0.057
1Q/14	0.68%	\$17,280	\$37.908		1.090815	\$16,289.96	\$0.059
2Q/14	0.68%	\$17,280	\$38.121		1.096944	\$16,293.07	\$0.059
3Q/14	0.68%	\$17,280	\$39.016		1.122698	\$16,305.78	\$0.059
			\$36.269	(2012)			
2013 Avg.	0.67%	\$16,860	\$36.760		1.013538	\$15,578.13	\$0.057
3Q/14 reb.	0.68%	\$17,280	\$38.308		1.056219	\$15,976.08	\$0.059
4Q/14	0.68%	\$17,280	\$38.319		1.056522	\$15,976.25	\$0.059
1Q/15	2.31%	\$17,460	\$39.385		1.085914	\$16,152.67	\$0.204
2Q/15	2.31%	\$17,460	\$39.595		1.091704	\$16,155.78	\$0.204
3Q/15	2.31%	\$17,460	\$39.581		1.091318	\$16,155.57	\$0.204
			\$36.760	(2013)			
2014 Avg.	0.68%	\$17,280	\$38.866		1.057291	\$16,395.26	\$0.059
3Q/15 reb.	2.31%	\$17,460	\$40.503		1.101823	\$16,583.82	\$0.203
4Q/15	2.31%	\$17,460	\$40.590		1.104189	\$16,585.04	\$0.203
1Q/16	2.73%	\$17,460	\$40.888		1.112296	\$16,589.15	\$0.240
2Q/16	2.73%	\$17,460	\$40.731		1.108025	\$16,586.99	\$0.240
3Q/16	2.73%	\$17,460	\$40.545		1.102965	\$16,584.41	\$0.240
			\$38.866	(2014)			
2015 Avg.	2.31%	\$17,460	\$39.887		1.026257	\$16,460.37	\$0.208
3Q/16 reb.	2.73%	\$17,460	\$39.731		1.022244	\$16,458.00	\$0.246
4Q/16	2.73%	\$17,460	\$39.703		1.021523	\$16,457.57	\$0.246
1Q/17	3.37%	\$18,540	\$39.736		1.022372	\$17,436.31	\$0.321
2Q/17	3.37%	\$18,540	\$39.738		1.022424	\$17,436.34	\$0.321
3Q/17					0.000000		\$0.000

Note: Average Annual Taxable Earnings is calculated from the RRB 1% sample data, by multiplying the average annual earnings in the file times the "Factor", and limiting the amount to the earnings base. Thus, the annual hourly earnings used for the calculation of the Factor is for the RRB sample year, and the Factor brings the earnings in the RRB 1% sample file to the current quarter's level.

TOTAL GROSS EARNINGS AND AVERAGE GROSS EARNINGS-2014 RRB File

The MEANS Procedure

Variable	N	Sum	Mean
ANUAL_US	2741	45117871.70	16460.37
QTRLY_US	2741	47793007.65	17436.34

The MEANS Procedure

Variable	N	Sum	Mean
FactorA	2741	2812.97	1.0262570
FactorQ	2741	2802.46	1.0224240
Capa	2741	47857860.00	17460.00
Capq	2741	50818140.00	18540.00

This Week in Petroleum

Release date: March 1, 2017 | Next release date: March 8, 2017

Planned refinery outages through first half of the year not expected to constrain availability of transportation fuels

The U.S. Energy Information Administration's (EIA) latest analysis of [planned refinery outages](#) during the first half of 2017 finds that such outages are not expected to cause a shortfall in the supply of petroleum products including gasoline, jet fuel, and distillate fuel, relative to expected demand, either nationally or within any U.S. region. This result occurs despite the current high level of U.S. gasoline demand, which in 2016 was as high as or higher than in any past year.

National supply and demand balances have limited implications regionally because pipeline infrastructure, geography, and marine shipping regulations constrain the amount of product that can flow between regions in the United States. Likely supply available despite planned refinery outages appears to be adequate in all regions

EIA's national and regional conclusions are the result of simulating regional supply on a monthly basis based on a set of assumptions about refinery operations. The report considers planned shutdowns of refinery units as reported by Industrial Info Resources (IIR) and provides EIA's analysis of the implications of outages affecting atmospheric crude distillation units, fluidized catalytic cracking units, catalytic reforming units, hydrocracking units, and coking units. Barring unusually high unplanned outages, planned outages that extend beyond schedule, or higher-than-expected demand, the supply of gasoline, jet fuel, and distillate fuel is expected to be adequate in all regions through June 2017.

Planned outages in the Gulf Coast region for the first half of 2017 are higher than average, but regional inventories appear to be sufficient to offset lost production from those planned outages. The Gulf Coast region contains more than half of the U.S. refining capacity, and as a result produces far more petroleum products than it consumes. The region's surplus production supplies other U.S. regions, most notably the East Coast and the Midwest, as well as international markets. EIA's calculations indicate above-average Gulf Coast production reductions due to planned capacity outages, with gasoline reductions from full capacity production of roughly 344,000 barrels per day (b/d) in both February and March, and 311,000 b/d of distillate fuel in February and 246,000 b/d in March. In total over the first half of 2017, gasoline reductions represent 27% of current inventory, jet fuel reductions represent 28% of current inventory, and distillate reductions represent 26% of existing inventory. With Gulf Coast gasoline and jet fuel inventories at their highest level in 10 years, distillate inventories close to the 10-year average, and high levels of gasoline and distillate exports that could be diverted to domestic markets to offset reductions in refinery production, there are several options to make up for production losses due to planned refinery outages in the Gulf Coast.

Planned outages in the Midwest region for the first half of 2017 are lower than average levels for all types of refinery units, so supply of petroleum products is likely to be adequate to meet domestic demand in the Midwest during the first half of 2017. Production losses from planned outages in the Midwest are expected to reach their highest level in April, with slightly lower losses in May. Total estimated production losses for gasoline, jet fuel, and distillate fuel over the first half of 2017 are equivalent to 7%, 16%, and 6%, respectively, of existing inventories in the region as of January 20. The Midwest has 21% of the nation's refining capacity and represents 25% of total U.S. demand for petroleum products. As a result, Midwest refineries produce most of the gasoline and distillate fuel consumed in the region, particularly during the winter when consumption is lower. Additional supply is available from inventories and from the Gulf Coast, if needed.

Planned outages in the West Coast region for the first half of 2017 are close to average, and regional inventories appear to be sufficient to offset lost production from brief periods of higher planned outages. The West Coast has 16% of the nation's refining capacity and represents 15% of total U.S. demand for petroleum products. Planned outages, which are expected to peak in March will produce cumulative reductions in petroleum product production over the first half of 2017 equivalent to 19% of existing gasoline inventory, 32% of jet fuel inventory, and 45% of distillate fuel inventory.

Planned outages in the East Coast region for the first half of 2017 are lower than average, so supply of petroleum products is likely to be adequate to meet domestic demand in the East Coast during the first half of 2017. The East Coast has 7% of the nation's refinery capacity and represents 29% of total U.S. demand for petroleum products. Consequently, supplies are transferred into the East Coast from other regions, primarily from the Gulf Coast and from imports out of the Atlantic Basin market.

Planned outages in the Rocky Mountain region for the first quarter of 2017 are lower than average, with some higher outages in the second quarter. Regional product inventories, which are currently at or above average levels for this time of year, appear to be sufficient to offset lost

production from those planned outages. The Rocky Mountain region has 4% of the nation's refining capacity and represents 4% of total U.S. demand for petroleum products.

While unanticipated events could result in some issues, EIA's detailed review found no region in which planned refinery outages are likely to lead to inadequate gasoline, distillate, or jet fuel supplies during the first half of 2017.

U.S. average regular gasoline and diesel prices increase

The U.S. average regular gasoline retail price increased one cent from the previous week to \$2.31 per gallon on February 27, up 53 cents from the same time last year. The West Coast price increased five cents to \$2.80 per gallon, while the Rocky Mountain and Midwest prices each increased two cents to \$2.27 per gallon and \$2.21 per gallon, respectively. The Gulf Coast price remained unchanged at \$2.07 per gallon, and the East Coast price fell less than one cent, remaining at \$2.29 per gallon.

The U.S. average diesel fuel price increased less than one cent to \$2.58 per gallon on February 27, 59 cents higher than a year ago. The Rocky Mountain price increased three cents to \$2.58 per gallon, the East Coast price increased one cent to \$2.64 per gallon, and the Midwest price increased less than one cent, remaining at \$2.50 per gallon. The West Coast and Gulf Coast prices remained virtually unchanged at \$2.66 per gallon and \$2.43 per gallon, respectively.

Propane inventories fall

U.S. propane stocks decreased by 0.5 million barrels last week to 49.3 million barrels as of February 24, 2017, 13.8 million barrels (21.6%) lower than a year ago. Gulf Coast and Midwest inventories each decreased by 0.4 million barrels, while East Coast inventories increased by 0.2 million barrels. Rocky Mountain/West Coast inventories remained virtually unchanged. Propylene non-fuel-use inventories represented 5.1% of total propane inventories.

Residential heating oil price increases, propane price decreases

As of February 27, 2017, residential heating oil prices averaged nearly \$2.65 per gallon, less than one cent per gallon more than last week's price and 56 cents per gallon higher than last year's price at this time. The average wholesale heating oil price is just under \$1.74 per gallon, nearly two cents per gallon more than last week and almost 61 cents per gallon higher than a year ago.

Residential propane prices averaged just below \$2.42 per gallon, three cents per gallon less than last week's price but just over 39 cents per gallon higher than a year ago. Wholesale propane prices averaged just below \$0.74 per gallon, nearly nine cents per gallon lower than last week but just under 23 cents per gallon higher than last year's price.

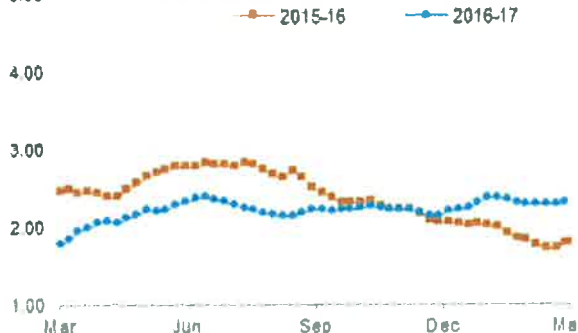
For questions about This Week in Petroleum, contact the Petroleum Markets Team at 202-586-4522.

Retail prices (dollars per gallon)

U.S. regular gasoline prices

dollars per gallon

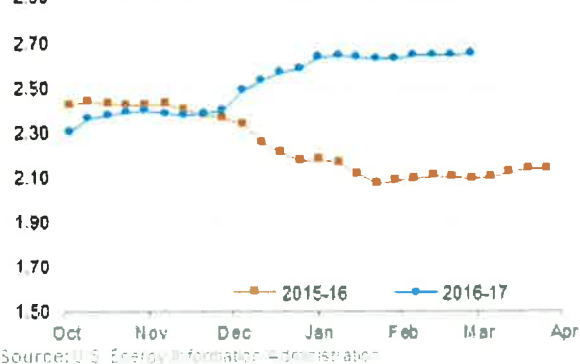
5.00



U.S. residential heating oil prices

dollars per gallon

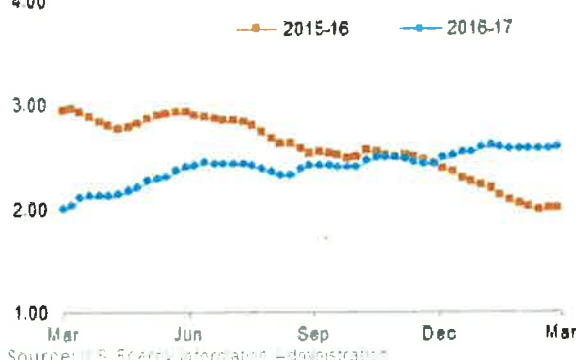
2.90



U.S. on-highway diesel fuel prices

dollars per gallon

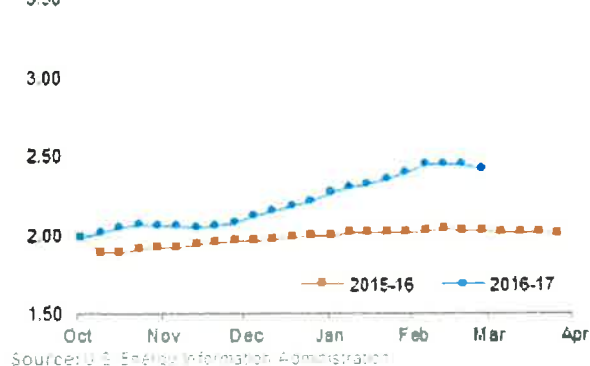
4.00



U.S. residential propane prices

dollars per gallon

3.50



	Retail prices	Change from last	
	02/27/17	Week	Year
Gasoline	2.314	0.012	0.531
Diesel	2.577	0.005	0.588
Heating Oil	2.648	0.003	0.559
Propane	2.418	-0.029	0.392

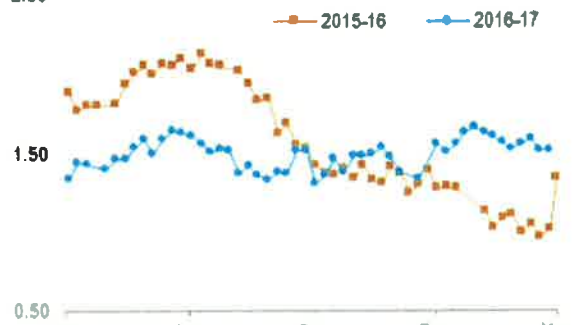
Futures prices (dollars per gallon*)

Crude oil futures price contract 1
dollars per barrel



Source: U.S. Energy Information Administration, New York Mercantile Exchange, NYMEX

RBOB gasoline futures price contract 1
dollars per gallon



Source: U.S. Energy Information Administration, Thomson Reuters

Heating oil futures price contract 1
dollars per gallon

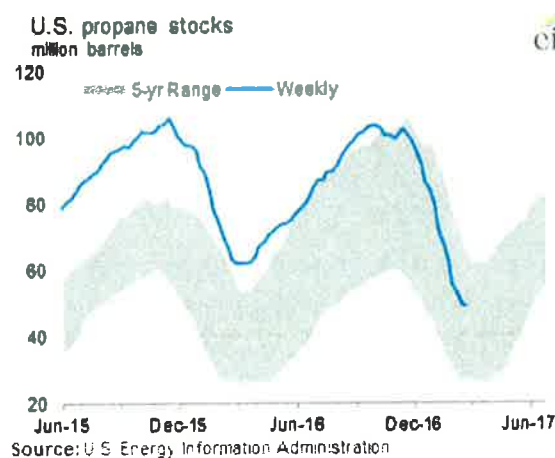
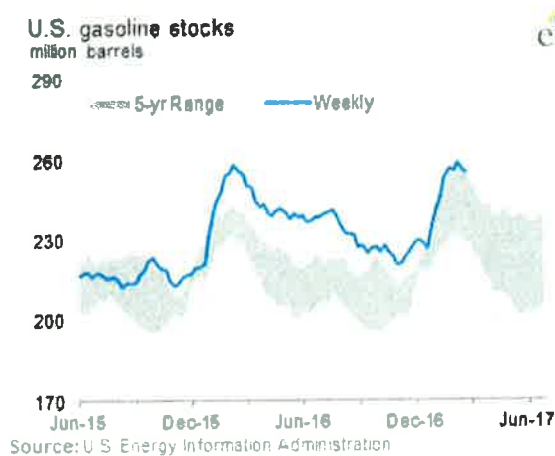
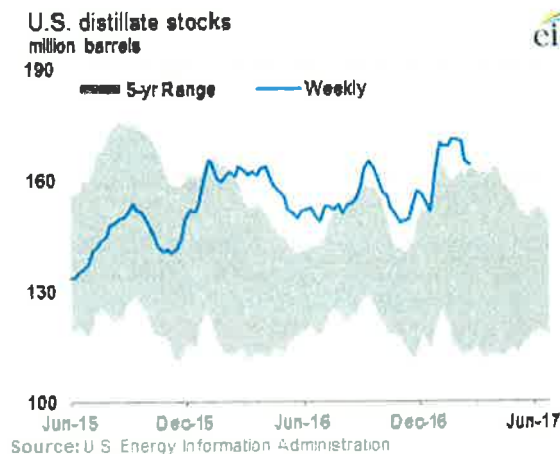
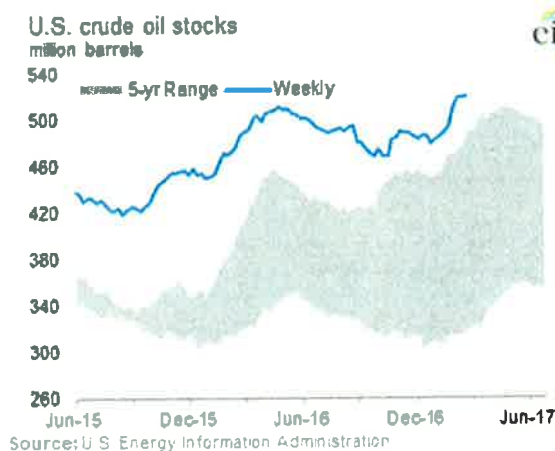


Source: U.S. Energy Information Administration, Thomson Reuters

	Futures prices	Change from last	
	02/24/17	Week	Year
Crude oil	53.89	0.59	21.21
Gasoline	1.515	-0.002	0.498
Heating oil	1.640	0.004	0.589

*Note: Crude oil price in dollars per barrel.

Stocks (million barrels)



	Stocks			Change from last	
	02/24/17	Week	Year		
Crude oil	520.2	1.5	33.5		
Gasoline	255.9	-0.5	0.9		
Distillate	164.2	-0.9	0.6		
Propane	49.307	-0.536	-13.758		

U.S.

Summary by Composition Category

	MS-2015		Prev. Idx	2017Q1		Calculation		Relative of Change
	MS Amount	Weight		Cur Idx		Prev. Idx	Cur Idx	
Forest Products	917,714,420	0.1138	309.93	300.45		35.27	34.19	
Metal Products	4,919,531,031	0.6102	166.55	169.10		101.63	103.18	
Misc. Products	2,224,493,596	0.2759	441.86	407.70		121.91	112.48	
Total	8,061,739,047	0.9999	258.81	249.85				0.9654
Total Linked			258.52	249.58				
'77 = 100 Link Fact.= 1.423			367.87	355.15				
'80 = 100 Link Fact.= 1.061			274.29	264.80				

As info only	Change
Forest Products	-3.06%
Metal Products	1.53%
Misc. Products	<u>-7.73%</u>
Total ('80=100)	-3.46%
Rounded 80 Indices	-3.5%
Rounded 77 Indices	-3.5%

RCAF (Forecast)

	1980	June 3Q/16	Sept. 4Q/16	Dec. 1Q/17	Mar. 2Q/17	June 3Q/17
RATE						
RR-OWNED TIME	31.00	64.00	64.00	64.00	64.00	---
RR-OWNED MILEAGE	4.69	6.70	6.70	6.70	6.70	---
PRIVATELY-OWNED CARS	25.47	51.47	55.07	55.18	53.50	---
AUTORACKS	47.00	82.48	84.26	86.17	81.91	---
INDEX						
RR-OWNED TIME	100.0	206.5	206.5	206.5	206.5	---
RR-OWNED MILEAGE	100.0	142.9	142.9	142.9	142.9	---
PRIVATELY-OWNED CARS	100.0	202.1	216.2	216.7	210.1	---
AUTORACKS	100.0	175.5	179.3	183.3	174.3	---
CAR HIRE INDEX (old wts) 2014	100.0	198.5	---	---	---	---
CAR HIRE INDEX (new wts) 2015	100.0	198.0	209.1	209.6	204.1	---
CAR HIRE INDEX (LINKED)	100.0	198.0	209.1	209.6	204.1	---

Note: The Car Hire Index for third quarter using *old weights* and *linked* should match that quarter's filing. The third quarter *new weights* version is used in the fourth quarter linked index calculation to ensure that the transition from old weights to new weights does not impact the linked index.

Note: Indexes are rounded, rates are full float.

Equipment Rents Data From CHARM

	2016 (first day of month)						2017 (first day of month)							
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Railroad Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	8,221	8,230	8,223	8,360	8,469	8,474	8,557	8,512	8,655					
Rate (in cents)														
Superstructures #3 - Auto Rack	59.0	59.0	59.0	60.0	62.0	61.0	62.0	61.0	62.0					
All other #1 - Time	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0					
All other #2 - Mileage	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7					
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	55,135	55,284	55,495	55,461	55,557	55,700	55,769	55,751	55,736					
Covered Hoppers	384,653	386,864	388,061	388,522	390,438	392,048	393,488	394,008	395,193					
Tank Cars	401,942	402,781	403,243	403,552	404,110	404,703	404,987	405,072	405,140					
Others	289,832	289,264	289,515	290,003	290,971	291,569	292,302	292,750	292,543					
Rate (in cents)														
Superstructures #1 - Time	83.0	83.0	83.0	83.0	83.0	83.0	84.0	84.0	84.0					
Superstructures #2 - Mileage	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6					
Superstructures #3 - Auto Rack	87.0	87.0	88.0	88.0	89.0	90.0	84.0	85.0	85.0					
Covered Hoppers #2 - Mileage	45.2	45.3	45.3	45.3	45.3	45.2	45.3	45.4	45.5					
Tank Cars #2 - Mileage	80.4	80.6	89.7	89.9	90.0	90.1	90.3	90.4	84.8					
Others #1 -Time	82.0	82.0	83.0	83.0	84.0	84.0	86.0	86.0	86.0					
Others #2 - Mileage	7.8	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0					
AVERAGE RATES														
Private Superstructures	21.11	21.11	21.11	21.11	21.11	21.11	21.34	21.34	21.34	0.00	0.00	0.00	0.00	0.00
Private Others	26.00	26.10	26.43	26.43	26.65	26.65	27.09	27.09	27.09	0.00	0.00	0.00	0.00	0.00
Private Total	51.61	51.76	55.07	55.13	55.20	55.18	55.39	55.44	53.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	83.37	83.37	84.26	84.33	85.43	86.17	81.07	81.82	81.91	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

WEIGHTS	"Old Wts"	"New Wts"
	2014	2015
For RCAF & RCR		
RR-owned Time	0.156	0.124
RR-owned Mileage	0.060	0.062
Privately-owned Cars	0.758	0.776
Autoracks	0.026	0.038
----- Check sum	1.000	1.000

Weights for Equipment Rents (not used in Car Hire calculation)		
	2014	2015
Car Hire - U.S.	0.565	0.582
Lease Rentals - U.S.	0.435	0.418
----- Check sum	1.000	1.000

Note: The 4 bold lines are used for the Car Hire Rate. Private Total uses a weighted average of the Covered Hoppers, Tank Cars, Combined Private Superstructures, and Combined Private Others rates.

CHARM Process - Car Hire Rate Report

Average Car Rental Rates for 03/2017

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	8,655	116	0.078	62
Railroad	Number of Zero-Rated Vehicular Flats	58	.	.	.
Railroad	All Other Cars	437,448	64	0.067	.
Railroad	Number of Zero-Rated Other Cars	17,801	.	.	.
Railroad	Total Railroad Equipment	463,962	.	.	.
		.	.	.	.
Private	Vehicular Flats	55,736	84	0.016	85
Private	Number of Zero-Rated Vehicular Flats	72	.	.	.
Private	Covered Hoppers	395,193	0	0.455	.
Private	Number of Zero-Rated Covered Hoppers	12,841	.	.	.
Private	Tanks	405,140	0	0.848	.
Private	Number of Zero-Rated Tanks	8,656	.	.	.
Private	All Other Cars	292,543	86	0.080	.
Private	Number of Zero-Rated Other Cars	23,940	.	.	.
Private	Total Private Equipment	1,194,121	.	.	.

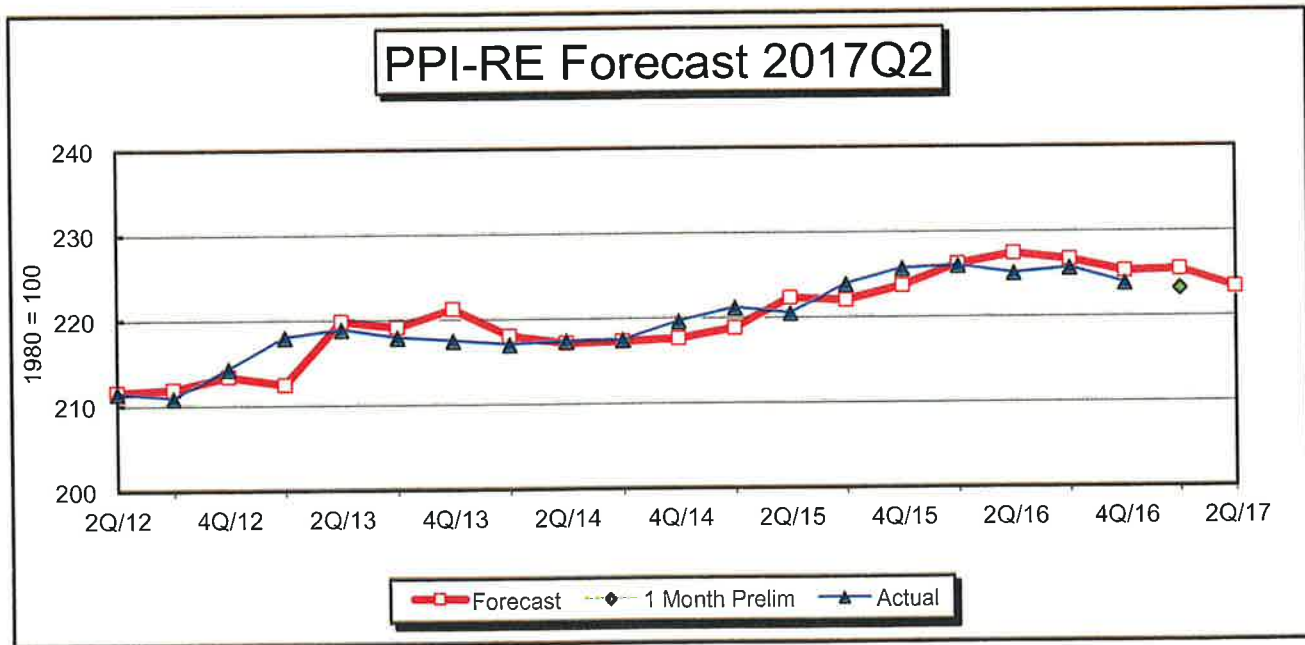
Notes
This report excludes these car types: D (Locomotives), M (MoW, EOTs, etc.), U (Containers), Z (Trailers).
All TTX equipment (including ABOX, RBOX, GONX) is contained in the Private section of report.
Equipment can be zero rated due to owners supplying incorrect or insufficient information to the car accounting process.
Zero-rated equipment includes those with Umler Rate_Indicator of 6 and 0 (zero).
Zero-rated equipment is excluded from the averages shown in this report.
Equipment must be Active in Umler to be included in this report; Pre-registered and Inactive cars are excluded.

PPI-RE Forecast (for Depreciation Component)

	Forecast	Actual	1 Month Prelim
2Q/12	211.4	211.4	
3Q/12	211.7	210.8	
4Q/12	213.2	214.2	
1Q/13	212.2	217.9	
2Q/13	219.6	218.8	
3Q/13	218.9	217.8	
4Q/13	221.0	217.4	
1Q/14	217.8	216.9	
2Q/14	216.9	217.3	
3Q/14	217.1	217.4	
4Q/14	217.4	219.5	
1Q/15	218.6	221.1	
2Q/15	222.1	220.4	
3Q/15	221.8	223.8	
4Q/15	223.5	225.6	
1Q/16	226.0	225.9	
2Q/16	227.2	225.0	
3Q/16	226.5	225.6	
4Q/16	225.1	223.8	
1Q/17	225.3		223.2
2Q/17	223.2		

1980 Base

	PPI-RE Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2017Q2						
Low	197.7	218.7	-2.8%			
Midpoint	201.8	223.2	-0.8%	0.0%	-0.3%	-0.9%
High	205.9	227.8	1.2%			



Forecast Report for PPIRE

Description: PPIRE

Expert Analysis

Using rule-based logic I have narrowed down the choice to exponential smoothing or Box-Jenkins. I will perform an out-of-sample test to select between these two approaches.

The cumulative MAD for Exponential smoothing was 2.35 and for Box-Jenkins was 1.08. The rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each method.

Based on the lower MAD, I will use Box-Jenkins.

Model Details

Expert selection

Box-Jenkins

ARIMA(0, 1, 0)

Within-Sample Statistics

Sample size	72	No. parameters	0
Mean	196.48	Std. deviation	5.67
R-square	0.97	Adj. R-square	0.97
Durbin-Watson	2.44	Ljung-Box(18)	18.9 P=0.60
Forecast error	1.03	BIC	1.03
MAPE	0.37	SMAPE	0.37
RMSE	1.03	MAD	0.72
MAD/Mean Ratio	0		

Historic Data

Date	Historic
2011-Feb	185.1
2011-Mar	187
2011-Apr	186.6
2011-May	186.7
2011-Jun	186.8
2011-Jul	187.3
2011-Aug	187.4
2011-Sep	187.5
2011-Oct	187.5
2011-Nov	187.7
2011-Dec	189.9
2012-Jan	190.1
2012-Feb	190.1
2012-Mar	190.6
2012-Apr	191.8
2012-May	191.6
2012-Jun	191.5
2012-Jul	192
2012-Aug	190.4
2012-Sep	190.9
2012-Oct	194.9

2012-Nov	193.9
2012-Dec	194.1
2013-Jan	196
2013-Feb	195.2
2013-Mar	195.8
2013-Apr	195.2
2013-May	198.1
2013-Jun	196.3
2013-Jul	195.4
2013-Aug	194.5
2013-Sep	194.6
2013-Oct	195.1
2013-Nov	195.2
2013-Dec	196.9
2014-Jan	196
2014-Feb	197.4
2014-Mar	196.8
2014-Apr	196.2
2014-May	196.7
2014-Jun	196.8
2014-Jul	197.8
2014-Aug	197.9
2014-Sep	198.3
2014-Oct	199.3
2014-Nov	199.9
2014-Dec	199.5
2015-Jan	200.8
2015-Feb	200.5
2015-Mar	199.5
2015-Apr	200.5
2015-May	200
2015-Jun	201.4
2015-Jul	201.6
2015-Aug	202.8
2015-Sep	202.8
2015-Oct	204.4
2015-Nov	203.9
2015-Dec	204.5
2016-Jan	204
2016-Feb	204.2
2016-Mar	203.3
2016-Apr	203
2016-May	203.5
2016-Jun	203.5
2016-Jul	203.5
2016-Aug	204.4
2016-Sep	203.7
2016-Oct	203.7
2016-Nov	201.5
2016-Dec	201.6
2017-Jan	201.8

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2017-Feb	199.76	201.8	203.84
2017-Mar	198.915	201.8	204.685
2017-Apr	198.266	201.8	205.334
2017-May	197.72	201.8	205.88
2017-Jun	197.238	201.8	206.362
2017-Jul	196.803	201.8	206.797
2017-Aug	196.402	201.8	207.198
2017-Sep	196.03	201.8	207.57
2017-Oct	195.679	201.8	207.921
2017-Nov	195.348	201.8	208.252
2017-Dec	195.034	201.8	208.566
2018-Jan	194.733	201.8	208.867

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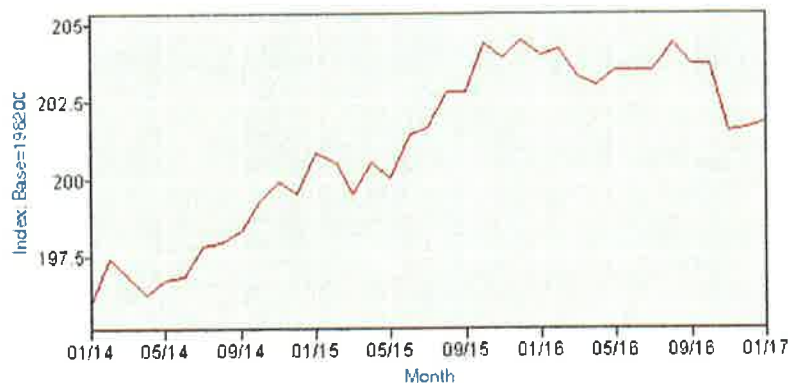
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Producer Price Index-Commodities

Series Id: WPU144
 Not Seasonally Adjusted
 Group: Transportation equipment
 Item: Railroad equipment
 Base Date: 198200


 Download: [x](#) [xlsx](#)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	196.0	197.4	196.8	196.2	196.7	196.8	197.8	197.9	198.3	199.3	199.9	199.5
2015	200.8	200.5	199.5	200.5	200.0	201.4	201.6	202.8	202.8	204.4	203.9	204.5
2016	204.0	204.2	203.3	203.0	203.5	203.5	203.5	204.4	203.7	203.7(P)	201.5(P)	201.6(P)
2017	201.8(P)											

P : Preliminary. All indexes are subject to revision four months after original publication.

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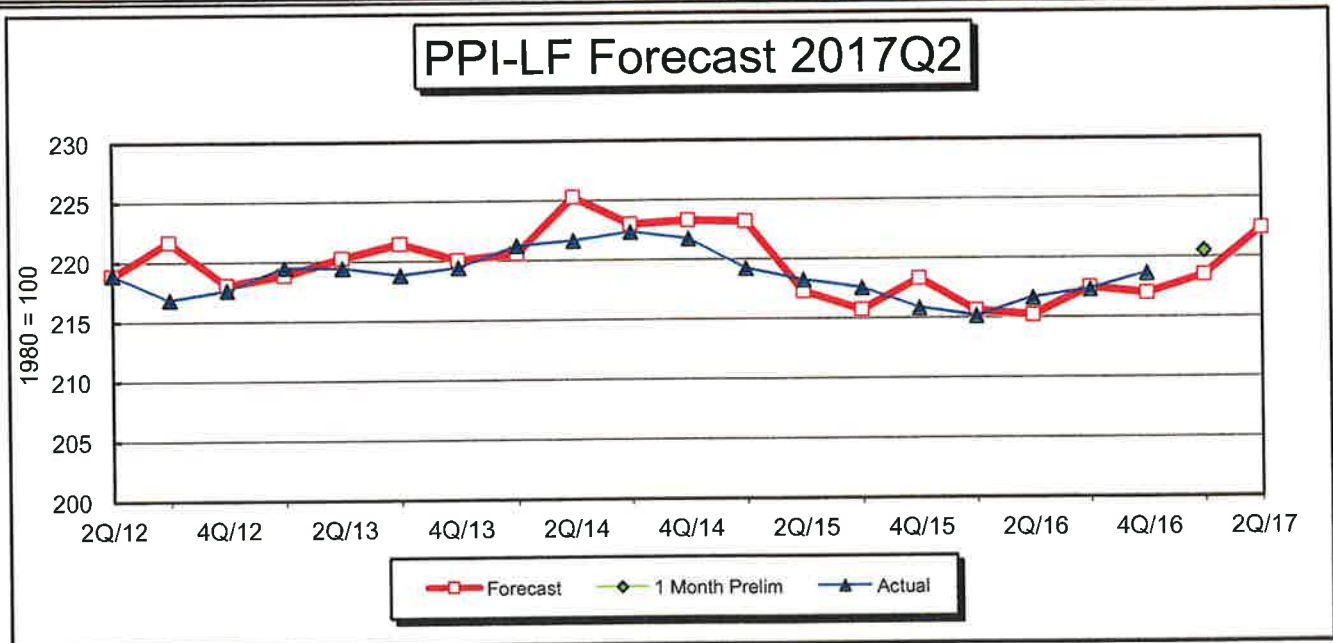
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PPI-LF Forecast (for Other and Lease Rentals Components)

	Forecast	Actual	1 Month Prelim
2Q/12	218.8	218.9	
3Q/12	221.6	216.8	
4Q/12	218.0	217.6	
1Q/13	218.8	219.5	
2Q/13	220.2	219.4	
3Q/13	221.4	218.8	
4Q/13	220.0	219.4	
1Q/14	220.5	221.2	
2Q/14	225.2	221.6	
3Q/14	222.9	222.3	
4Q/14	223.2	221.7	
1Q/15	223.1	219.2	
2Q/15	217.2	218.2	
3Q/15	215.6	217.5	
4Q/15	218.2	215.8	
1Q/16	215.5	215.1	
2Q/16	215.1	216.6	
3Q/16	217.4	217.3	
4Q/16	216.9	218.6	
1Q/17	218.4		220.5
2Q/17	222.3		

1980 Base

	PPI-LF Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2017Q2						
Low	194.9	218.5	0.9%			
Midpoint	198.3	222.3	2.6%	0.8%	1.7%	1.8%
High	201.6	226.0	4.3%			



Forecast Report for PPILF

Description: PPILF

Expert Analysis

Using rule-based logic I have narrowed down the choice to exponential smoothing or Box-Jenkins. I will perform an out-of-sample test to select between these two approaches.

The cumulative MAD for Exponential smoothing was 1.51 and for Box-Jenkins was 1.44. The rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each method.

Based on the lower MAD, I will use Box-Jenkins.

Model Details

Expert selection

Box-Jenkins

ARIMA(1, 1, 0)

Term	Coefficient	Std. Error	t-Statistic	Significance
a[1]	0.6077	0.09544	6.367	1

Within-Sample Statistics

Sample size	72	No. parameters	1
Mean	194.8	Std. deviation	1.81
R-square	0.93	Adj. R-square	0.93
Durbin-Watson	1.86	Ljung-Box(18)	27.8 P=0.93
Forecast error	0.49	BIC	0.5
MAPE	0.19	SMAPE	0.19
RMSE	0.48	MAD	0.37
MAD/Mean Ratio	0		

Historic Data

Date	Historic
2011-Feb	190.2
2011-Mar	191.2
2011-Apr	193
2011-May	193.7
2011-Jun	193.9
2011-Jul	194.6
2011-Aug	194.5
2011-Sep	194.6
2011-Oct	193.9
2011-Nov	193.2
2011-Dec	192.7
2012-Jan	193.8
2012-Feb	194.7
2012-Mar	195.7
2012-Apr	195.8
2012-May	195.4
2012-Jun	193.7
2012-Jul	193.3
2012-Aug	193.3

2012-Sep	193.7
2012-Oct	193.9
2012-Nov	194
2012-Dec	194.2
2013-Jan	195.3
2013-Feb	196.1
2013-Mar	196.1
2013-Apr	195.9
2013-May	195.5
2013-Jun	195.4
2013-Jul	195.2
2013-Aug	195.3
2013-Sep	195.1
2013-Oct	195.4
2013-Nov	195.5
2013-Dec	195.9
2014-Jan	197.2
2014-Feb	197.6
2014-Mar	197.3
2014-Apr	197.7
2014-May	197.6
2014-Jun	197.7
2014-Jul	198.2
2014-Aug	198.4
2014-Sep	198.3
2014-Oct	198.2
2014-Nov	197.4
2014-Dec	196.7
2015-Jan	196
2015-Feb	195.4
2015-Mar	195
2015-Apr	194.8
2015-May	194.9
2015-Jun	195.2
2015-Jul	194.9
2015-Aug	193.9
2015-Sep	193.1
2015-Oct	192.9
2015-Nov	192.3
2015-Dec	191.9
2016-Jan	191.9
2016-Feb	191.8
2016-Mar	192.1
2016-Apr	192.8
2016-May	193.4
2016-Jun	193.7
2016-Jul	193.7
2016-Aug	194
2016-Sep	193.9
2016-Oct	194.5
2016-Nov	195
2016-Dec	195.5
2017-Jan	196.7

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2017-Feb	196.472	197.429	198.386
2017-Mar	196.06	197.872	199.685
2017-Apr	195.522	198.142	200.762
2017-May	194.943	198.305	201.667
2017-Jun	194.366	198.405	202.443
2017-Jul	193.809	198.465	203.121
2017-Aug	193.28	198.502	203.724
2017-Sep	192.779	198.524	204.269
2017-Oct	192.307	198.538	204.769
2017-Nov	191.861	198.546	205.232
2017-Dec	191.438	198.551	205.664
2018-Jan	191.036	198.554	206.072

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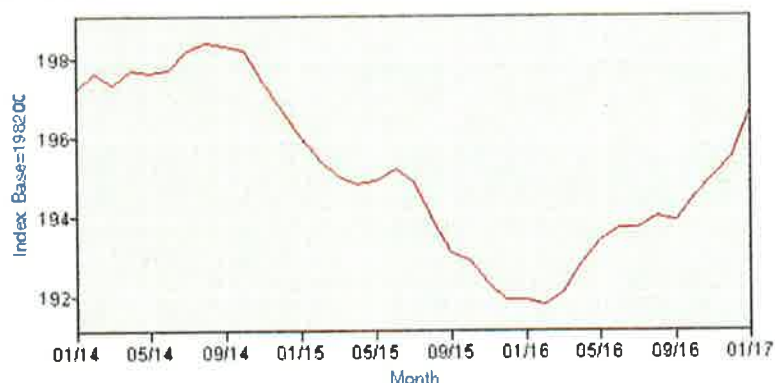
Series Id: WPU03T15M05

Not Seasonally Adjusted

Group: Industrial Commodities less fuels

Item: Industrial commodities less fuels

Base Date: 198200


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Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	197.2	197.6	197.3	197.7	197.6	197.7	198.2	198.4	198.3	198.2	197.4	196.7
2015	196.0	195.4	195.0	194.8	194.9	195.2	194.9	193.9	193.1	192.9	192.3	191.9
2016	191.9	191.8	192.1	192.8	193.4	193.7	193.7	194.0	193.9	194.5(P)	195.0(P)	195.5(P)
2017	196.7(P)											

P : Preliminary. All indexes are subject to revision four months after original publication.

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Forecast Error Calculation

	2015	Fourth Quarter 2016		Difference		Notes			
	Weight	2016Q4 Forecast	2016Q4 Actual	Pt.	Pct.				
Labor	35.0%	405.1	405.1	0.0	0%	* actual=forecast			
Fuel	13.4%	200.1	201.9	1.8	1%	from 1st month of quarter			
M&S	5.4%	245.8	245.8	0.0	0%	* actual=forecast			
Equip Rents	5.8%	223.4	224.8	1.4	1%	from Equipment Rents below			
Depreciation	13.9%	225.1	223.8	-1.3	-1%	PPI-RE <table><tr><td>203.70</td><td>201.50</td><td>201.60</td></tr></table> 0.9040	203.70	201.50	201.60
203.70	201.50	201.60							
Interest	1.9%	60.6	60.6	0.0	0%	* actual=forecast			
Other	24.6%	216.9	218.6	1.7	1%	PPI-LF <table><tr><td>194.50</td><td>195.00</td><td>195.50</td></tr></table> 0.8920	194.50	195.00	195.50
194.50	195.00	195.50							
Weighted Avg	100.0%								
1980 = 100		280.6	281.2			calculated			
1980 = 100 (linked)		260.6	259.5			calculated			
4Q12r = 100	2.976	87.6	87.2			calculated			
4Q07 = 100	2.459	106.0	105.5			calculated			
4Q02 = 100	1.921	135.7	135.1			calculated			
4Q97 = 100	1.732	150.5	149.8			calculated			
4Q92 = 100	1.569	166.1	165.4			calculated			
Forecast Error		-0.4				calculated -0.004 = RCAF adj.			
Prior Quarter									
1980 = 100		283.2	281.4 **			Re-calculated using new weights			
1980 = 100 (linked)		263.0	259.7						
4Q12r = 100		88.4	87.3			calculated			
4Q07 = 100		107.0	105.6			calculated			
4Q02 = 100		136.9	135.2			calculated			
4Q97 = 100		151.8	149.9			calculated			
4Q92 = 100		167.6	165.5			calculated			
Equipment Rents									
Car Hire	58.2%	209.1	209.6			from Equipment Rents/CHARM			
Lease Rentals	41.8%	216.9	218.6			(equals PPI-LF from above)			
Weighted Average		212.4	213.4			calculated			
Linked		223.4	224.8			calculated			
Prior Quarter									
Weighted Average		206.1	206.6 **			Re-calculated using new weights			
Linked		216.8	217.6						
Sum of Weights	ok					** if fourth quarter, weighted avg for prior needs to use new weights, linked is ok			
Sum of ER Wt.	ok								

Factors to change from
1982=100 to 1980 = 100

All-Inclusive Index (Actual)

	15 Wts	3Q/16 14 Wts	3Q/16 15 Wts	% Chg.	4Q/16 15 Wts	% Chg.	1Q/17 15 Wts	% Chg.	2Q/17 15 Wts	% Chg.	3Q/17 15 Wts	% Chg.
Labor	35.0%	415.2	415.2	0.0%	405.1	-2.4%	421.2	4.0%		NA		NA
Fuel	13.4%	183.1	183.1	0.0%	201.9	10.3%		NA		NA		NA
M&S	5.4%	240.6	240.6	0.0%	245.8	2.2%	274.3	11.6%		NA		NA
Equipment Rents	5.8%	217.6	217.6	0.0%	224.8	3.3%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA
Depreciation	13.9%	225.6	225.6	0.0%	223.8	-0.8%		NA		NA		NA
Interest	1.9%	57.5	57.5	0.0%	60.6	5.4%	60.6	0.0%	60.6	0.0%	60.6	0.0%
Other	24.6%	217.3	217.3	0.0%	218.6	0.6%		NA		NA		NA
	<u>1.0000</u>											
Weighted Avg.		272.8	281.4	3.2%	281.2	-0.1%	163.4	-41.9%	#DIV/0!	NA	#DIV/0!	NA
Linked		259.7			259.5	-0.1%	150.8	-41.9%	#DIV/0!	NA	#DIV/0!	NA
10/1/80	1.027	252.9			252.7	-0.1%	146.8	-41.9%	#DIV/0!	NA	#DIV/0!	NA
10/1/82	1.209	214.8			214.6	-0.1%	124.7	-41.9%	#DIV/0!	NA	#DIV/0!	NA
4Q/87	1.322	196.4			196.3	-0.1%	114.1	-41.9%	#DIV/0!	NA	#DIV/0!	NA
4Q/92	1.569	165.5			165.4	-0.1%	96.1	-41.9%	#DIV/0!	NA	#DIV/0!	NA
4Q/97	1.732	149.9			149.8	-0.1%	87.1	-41.9%	#DIV/0!	NA	#DIV/0!	NA
4Q/02	1.921	135.2			135.1	-0.1%	78.5	-41.9%	#DIV/0!	NA	#DIV/0!	NA
4Q/07	2.459	105.6			105.5	-0.1%	61.3	-41.9%	#DIV/0!	NA	#DIV/0!	NA
4Q/12	2.976	87.3			87.2	-0.1%	50.7	-41.9%	#DIV/0!	NA	#DIV/0!	NA

Equipment Rents

Car Hire	58.2%	199.0	199.0	0.0%	209.6	5.3%		NA		NA		NA
Lease Rentals	41.8%	217.3	217.3	0.0%	218.6	0.6%	0.0	NA	0.0	NA	0.0	NA
	1.0000											
ER Weighted Avg		207.0	206.6	-0.2%	213.4	3.3%	0.0	NA	0.0	NA	0.0	NA
ER Linked		217.6			224.8	3.3%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA

Impact/Check of weight change	14 Wts	15 Wts
Labor	131.618	145.320
Fuel	38.268	24.535
Material & Supplies	12.511	12.992
Equipment Rents	11.750	12.621
Depreciation	28.426	31.358
Interest	0.863	1.093
Other	49.327	53.456
Weighted Avg.	272.763	281.375
ER Weighted Avg.	206.9605	206.6494

As info only

RCAF Fuel (Actual All-Inclusive Index)

October 2016

Monthly Report

	October 2016 Price (cents) (1)	1/1/81 Price (cents) (2)	1/91 New Method Linking Factors (3)	October 2016 Index 1/1/81=100 (4)	Linking Factor 1980=100 (5)	October 2016 1980=100 Current Index (6)
U.S.	165.19	89.34	99.415	183.82	1.096	201.47

(4) = (1) / (2) x (3)

(6) = (4) x (5)

Final Actual All-inclusive Index Used for RCAF's Forecast Error Adjustment

	October 2016 1980=100 Current Index	Adjustment Factor	October 2016 1980=100 Linked Index
U.S.	201.47	1.00192	201.86 ←

January	=	Q1
April	=	Q2
July	=	Q3
October	=	Q4

RCAF (Actual)

		1980	Aug 3Q/16	Nov 4Q/16	Feb 1Q/17	May 2Q/17	Aug 3Q/17
RATE							
RR-OWNED TIME		31.00	64.00	64.00	---	---	---
RR-OWNED MILEAGE		4.69	6.70	6.70	---	---	---
PRIVATELY-OWNED CARS		25.47	51.76	55.20	---	---	---
AUTORACKS		47.00	83.37	85.43	---	---	---
INDEX							
RR-OWNED TIME		100.0	206.5	206.5	---	---	---
RR-OWNED MILEAGE		100.0	142.9	142.9	---	---	---
PRIVATELY-OWNED CARS		100.0	203.2	216.7	---	---	---
AUTORACKS		100.0	177.4	181.8	---	---	---
CAR HIRE INDEX (old wts)	2014	100.0	199.4	---	---	---	---
CAR HIRE INDEX (new wts)	2015	100.0	198.9	209.5	---	---	---
CAR HIRE INDEX (LINKED)		100.0	199.0	209.6	---	---	---

Note: Indexes are rounded, rates are full float.

Equipment Rents Data From CHARM

	2016 (first day of month)						2017 (first day of month)							
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Railroad Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	8,221	8,230	8,223	8,360	8,469	8,474								
Rate (in cents)														
Superstructures #3 - Auto Rack	59.0	59.0	59.0	60.0	62.0	61.0								
All other #1 - Time	64.0	64.0	64.0	64.0	64.0	64.0								
All other #2 - Mileage	6.7	6.7	6.7	6.7	6.7	6.7								
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	55,135	55,284	55,495	55,461	55,557	55,700								
Covered Hoppers	384,653	386,864	388,061	388,522	390,438	392,048								
Tank Cars	401,942	402,781	403,243	403,552	404,110	404,703								
Others	289,832	289,264	289,515	290,003	290,971	291,569								
Rate (in cents)														
Superstructures #1 - Time	83.0	83.0	83.0	83.0	83.0	83.0								
Superstructures #2 - Mileage	1.6	1.6	1.6	1.6	1.6	1.6								
Superstructures #3 - Auto Rack	87.0	87.0	88.0	88.0	89.0	90.0								
Covered Hoppers #2 - Mileage	45.2	45.3	45.3	45.3	45.3	45.2								
Tank Cars #2 - Mileage	80.4	80.6	89.7	89.9	90.0	90.1								
Others #1 - Time	82.0	82.0	83.0	83.0	84.0	84.0								
Others #2 - Mileage	7.8	7.9	8.0	8.0	8.0	8.0								
AVERAGE RATES														
Private Superstructures	21.11	21.11	21.11	21.11	21.11	21.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Others	26.00	26.10	26.43	26.43	26.65	26.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Total	51.61	51.76	55.07	55.13	55.20	55.18	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	83.37	83.37	84.26	84.33	85.43	86.17	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

WEIGHTS	"Old Wts"	"New Wts"
	2014	2015
For RCAF & RCR		
RR-owned Time	0.156	0.124
RR-owned Mileage	0.060	0.062
Privately-owned Cars	0.758	0.776
Autoracks	0.026	0.038
----- Check sum	1.000	1.000

Weights for Equipment Rents (not used in Car Hire calculation)		
	2014	2015
Car Hire - U.S.	0.565	0.582
Lease Rentals - U.S.	0.435	0.418
----- Check sum	1.000	1.000

Note: The 4 bold lines are used for the Car Hire Rate. Private Total uses a weighted average of the Covered Hoppers, Tank Cars, Combined Private Superstructures, and Combined Private Others rates.

CHARM Process - Car Hire Rate Report

Average Car Rental Rates for 11/2016

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	8,469	118	0.079	62
Railroad	Number of Zero-Rated Vehicular Flats	50	.	.	.
Railroad	All Other Cars	441,904	64	0.067	.
Railroad	Number of Zero-Rated Other Cars	18,300	.	.	.
Railroad	Total Railroad Equipment	468,723	.	.	.
		.	.	.	.
Private	Vehicular Flats	55,557	83	0.016	89
Private	Number of Zero-Rated Vehicular Flats	129	.	.	.
Private	Covered Hoppers	390,438	0	0.453	.
Private	Number of Zero-Rated Covered Hoppers	12,435	.	.	.
Private	Tanks	404,110	0	0.900	.
Private	Number of Zero-Rated Tanks	8,634	.	.	.
Private	All Other Cars	290,971	84	0.080	.
Private	Number of Zero-Rated Other Cars	24,634	.	.	.
Private	Total Private Equipment	1,186,908	.	.	.

Notes
This report excludes these car types: D (Locomotives), M (MoW, EOTs, etc.), U (Containers), Z (Trailers).
All TTX equipment (including ABOX, RBOX, GONX) is contained in the Private section of report.
Equipment can be zero rated due to owners supplying incorrect or insufficient information to the car accounting process.
Zero-rated equipment includes those with Umler Rate_Indicator of 6 and 0 (zero).
Zero-rated equipment is excluded from the averages shown in this report.
Equipment must be Active in Umler to be included in this report; Pre-registered and Inactive cars are excluded.

RCAF - Depreciation

Series ID : wpu144

Not Seasonally Adjusted

Group : Transportation equipment

Item : Railroad equipment

		Forecast Year 2017			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	17Q1	17Q2	17Q3	17Q4
For Actual	→	16Q3	16Q4	17Q1	17Q2
January	2016	204.0	204.0	204.0	204.0
February	2016	204.2	204.2	204.2	204.2
March	2016	203.3	203.3	203.3	203.3
April	2016	203.0	203.0	203.0	203.0
May	2016	203.5	203.5	203.5	203.5
June	2016	203.5	203.5	203.5	203.5
July	2016	203.5	203.5		
August	2016	203.5	204.4		
September	2016	204.8	203.7		
October	2016	203.7	203.7		
November	2016		201.5		
December	2016		201.6		
January	2017		201.8		
February	2017				
March	2017				
April	2017				
May	2017				
June	2017				
July	2017				
Actual Qtr.		203.9	202.3	NA	NA

1980=100

Actual Qtr.	225.6	223.8	NA	NA
First Mo. next qtr.	225.3	223.2	NA	NA

0.904 =1980

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Producer Price Index-Commodities

Series Id: WPU144
Not Seasonally Adjusted
Group: Transportation equipment
Item: Railroad equipment
Base Date: 198200

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Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	204.0	204.2	203.3	203.0	203.5	203.5	203.5	204.4	203.7	203.7(P)	201.5(P)	201.6(P)
2017	201.8(P)											

P : Preliminary. All indexes are subject to revision four months after original publication.

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RCAF - Other

Series ID : wpu03t15m05

Not Seasonally Adjusted

Group : Industrial Commodities less fuels

Item : Industrial commodities less fuels

		Forecast Year 2017			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	17Q1	17Q2	17Q3	17Q4
For Actual	→	16Q3	16Q4	17Q1	17Q2
January	2016	191.9	191.9	191.9	191.9
February	2016	191.8	191.8	191.8	191.8
March	2016	192.1	192.1	192.1	192.1
April	2016	192.8	192.8	192.8	192.8
May	2016	193.4	193.4	193.4	193.4
June	2016	193.7	193.7	193.7	193.7
July	2016	193.5	193.7		
August	2016	193.8	194.0		
September	2016	194.0	193.9		
October	2016	194.5	194.5		
November	2016		195.0		
December	2016		195.5		
January	2017		196.7		
February	2017				
March	2017				
April	2017				
May	2017				
June	2017				
July	2017				
Actual Qtr.		193.8	195.0	NA	NA
1980=100					
Actual Qtr.		217.3	218.6	NA	NA
First Mo. next qtr.		218.0	220.5	NA	NA

0.892 =1980

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Data extracted on: February 22, 2017 (1:11:46 PM)

Producer Price Index-Commodities

Series Id: WPU03T15M05

Not Seasonally Adjusted

Group: Industrial Commodities less fuels

Item: Industrial commodities less fuels

Base Date: 198200

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Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	191.9	191.8	192.1	192.8	193.4	193.7	193.7	194.0	193.9	194.5(P)	195.0(P)	195.5(P)
2017	196.7(P)											

P : Preliminary. All indexes are subject to revision four months after original publication.

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