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The Honorable Cynthia T. Brown
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Surface Transportation Board
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This submission is the AAR forecast of the third quarter 2019 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2019-3) *Quarterly Rail Cost Adjustment Factor*. The versions of RCAF-related indices covered in this filing are: the All-Inclusive Index (initiated in the second quarter of 1985), the Unadjusted RCAF (produced since October 1982), the Adjusted RCAF (first published in the second quarter of 1989), and the RCAF-5 (created by the STB in its Ex Parte No. 290 (Sub-No. 7) decision served October 3, 1996). The table below summarizes the third quarter 2019 results and compares to the previous quarter. Both quarters are shown on a 4Q\2017=100 base.

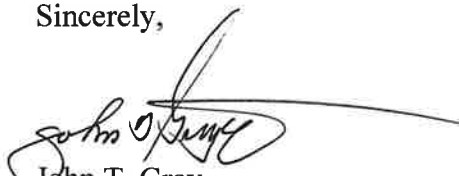
	<u>2019Q2</u>	<u>2019Q3</u>	<u>% Change</u>
All-Inclusive Index	106.7	108.2	1.4
Preliminary RCAF	1.067	1.082	1.4
Forecast Error Adjustment	-0.002	-0.025	
RCAF (Unadjusted)	1.065	1.057	-0.8
Productivity Adjustment Factor	2.3621	2.3649	
RCAF (Adjusted)	0.451	0.447	-0.9
PAF-5	2.5210	2.5185	
RCAF-5	0.422	0.420	-0.5

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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 Tiffany Placker (202 639-2381) of this office.

Sincerely,



John T. Gray

Attachments

**Third Quarter 2019
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2019-3)

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

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

June 5, 2019

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Introduction

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

This quarter's projection of railroad costs is for the third quarter 2019. All national labor unions will receive a general wage increase of 3 percent this quarter.

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 expense 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 2017 (current) and 2016 (previous) weights are shown below. Weights calculated from 2016 data were used for the fourth quarter of 2017 through the third quarter of 2018. Beginning with the fourth quarter of 2018, weights calculated using 2017 data are used.

The weight for Fuel increased 2.2 percentage points, and Depreciation's was up 0.1 percentage points. The remaining component weights all decreased by 0.1 to 1.1 percentage points. Although expenses were higher in every category except Equipment Rents, Fuel and Depreciation had the highest percentage increases in expenses. Traffic and fuel prices were up in 2017, causing fuel expenses to be 27 percent higher. Depreciation expenses increased 6.2 percent, possibly caused by higher capital expenditures in recent years and spending on positive train control. Labor expenses were up 3.4 percent, but Labor's weight decreased.

Weights for RCAF's All-Inclusive Index		
	2017	2016
Labor	34.8 %	35.6 %
Fuel	12.9	10.7
Materials & Supplies	4.9	5.0
Equipment Rents	5.7	5.9
Depreciation	15.7	15.6
Interest	2.1	2.2
Other	23.9	25.0
Total	100.0	100.0

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

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

All-Inclusive Index Third Quarter 2019

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.

		Forecast		
	2017 Weights	Previous 2019Q2	Current 2019Q3	Percent Change
1. Labor	34.8%	439.7	444.7	1.1 %
2. Fuel	12.9%	259.2	269.0	3.8
3. M&S	4.9%	267.6	273.1	2.1
4. Equipment Rents	5.7%	237.1	238.0	0.4
5. Depreciation	15.7%	223.1	229.5	2.9
6. Interest	2.1%	62.4	62.4	0.0
7. Other	23.9%	231.8	232.2	0.2
8. Weighted Average				
a. 1980 = 100		304.8	309.2	
b. 1980 = 100 (linked)		282.1	286.2 ¹	
c. 4Q17 = 100		106.7	108.2 ²	1.4

¹ Index80 = (Current Index / Previous Index) * the Previous Quarter Linked Index
 = (309.2 / 304.8) x 282.1
 = 286.2

² To calculate the 4Q17 = 100 index:
 Index4Q17 = (Current Linked Index / 4Q17 Basing Factor) * 100
 = 286.2 divided by 264.5 times 100
 = 108.2

Indexes based on other periods:

4Q12 based index = 286.2 / 297.6 x 100 = 96.2
4Q07 based index = 286.2 / 245.9 x 100 = 116.4
4Q02 based index = 286.2 / 192.1 x 100 = 149.0
4Q97 based index = 286.2 / 173.2 x 100 = 165.2
4Q92 based index = 286.2 / 156.9 x 100 = 182.4

Forecast vs. Actual All-Inclusive Index First Quarter 2019

Because of data availability, the forecast error adjustment has a two-quarter lag from each filing. As shown below, the first quarter actual index of 104.6 is 2.5 index points below the forecast value of 107.1. Therefore, the forecast error adjustment for third quarter 2019 is -2.5 index points.

	2017	First Quarter 2019		Amt
	Weights	Forecast	Actual	Difference
1. Labor	34.8%	440.3	440.3	
2. Fuel	12.9%	256.8	222.0	
3. M&S	4.9%	268.3	268.3	
4. Equipment Rents ¹	5.7%	236.3	235.4	
5. Depreciation	15.7%	226.1	225.2	
6. Interest	2.1%	62.4	62.4	
7. Other	23.9%	235.8	233.2	
8. Weighted Average				
a. 1980 = 100		306.1	300.8	
b. 1980 = 100 (linked)		283.3	276.6 ²	
c. 4Q17 = 100 ³		107.1	104.6	-2.5

Forecast error —————→ **-2.5 index points**

¹	2017	First Quarter 2019	
	Weights	Forecast	Actual
Car-Hire	60.5%	216.7	216.4
Lease Rentals	39.5%	235.8	233.2
Weighted Average		224.2	223.0
Weighted Average (linked)		236.3	235.4

² Linked actual index = (actual index / previous actual index) x previous linked actual index.
 276.6 = 300.8 / 310.3 x 285.3

³ The 4Q17 based indexes are 1980 based indexes divided by the 4Q17 basing factor (264.5/100).
 Other basing factors are: 4Q12 = 297.6; 4Q07 = 245.9; 4Q02 = 192.1; 4Q97 = 173.2; and 4Q92 = 156.9.

Productivity

On March 11, 2019, the Surface Transportation Board served a decision which proposed to adopt 0.5 percent as the geometric average productivity change for the five most recent years available. Their five year rolling geometric average calculation added the year 2017 and removed the year 2012. The components of this average annual value are shown on the following table in ratio format – therefore, 1.005 is the same as an increase of 0.5 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			
2013 - 2017			
Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
2013	1.022	1.018	1.003
2014	1.055	1.036	1.018
2015	0.913	0.972	0.939
2016	0.955	0.941	1.015
2017	1.045	0.992	1.053
Average			1.005
Previous Average (2012-2016)			0.996

Calculation of PAF and PAF-5			
For 2013-2017, use fourth root of avg. productivity change = 1.0012			
For 2012-2016, use fourth root of avg. productivity change = 0.9990			
Quarter	Year	PAF	PAF-5
Q1	2019	2.3593	2.5235
Q2	2019	2.3621	2.5210
Q3	2019	2.3649	2.5185
Q4	2019	2.3677	2.5160
Q1	2020	2.3705	2.5190

Rail Cost Adjustment Factor

Third Quarter 2019

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 the 2018Q1 index, the All-Inclusive Index was rebased to a 2017Q4=100 basis as required in the applicable statute.

	Previous 2019Q2	Current 2019Q3	Percent Change
All-Inclusive Index ¹	106.7	108.2	1.4
Preliminary RCAF ²	1.067	1.082	1.4
Forecast Error Adjustment ³	<u>-0.002</u>	<u>-0.025</u>	
RCAF (Unadjusted) ⁴	1.065	1.057	-0.8
Productivity Adjustment Factor ⁵	<u>2.3621</u>	<u>2.3649</u>	
RCAF (Adjusted) ⁶	0.451	0.447	-0.9
PAF-5 ⁷	2.5210	2.5185	
RCAF-5 ⁸	0.422	0.420	-0.5

¹ See All-Inclusive Index on page 3.

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

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

⁴ Preliminary RCAF plus the forecast error adjustment.

⁵ See Productivity on page 5.

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

⁷ See Productivity on page 5.

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

Appendixes

Labor

Third Quarter 2019

The third quarter 2019 Labor Index is 1.1 percent higher than the previous quarter.

Wage Rate Index

The Wage Rate Index portion of the Labor Index is up 1.2% because of general wage increases given in the third quarter.

Wage Increases: All national labor unions will received a three percent general wage increase in the third quarter 2019. Several independent unions are also receiving a three or four percent wage increase. There were four new independent labor agreements that were also added to this quarter's index.

Lump Sums: The third quarter lump sum rate is unchanged from the previous quarter. One amount was fully amortized and removed, but it was replaced by a new amount that was similar to the one removed.

Back Pay: The back pay rate decreased 43 cents, or 74%. Five amounts were fully amortized and removed, while only two small new amounts were added.

Other: In wages, "Other" contains the amortization of incentive compensation payments (similar to lump sums) that one railroad makes each year to its dispatchers, yardmasters, and locomotive engineers. This incentive compensation payment is updated each year in the third quarter, and it is higher than last year by 11.8%. Therefore, the amortized rate is up by 2.2 cents (12%) from the prior quarter.

Labor

Third Quarter 2019

Supplements Index

The Supplements Index increased by 1.0 percent due to increases in the railroad retirement rate and other fringe benefits.

Health & Welfare: The Health & Welfare rate is unchanged from the previous quarter.

Railroad Retirement: The Railroad Retirement rate increased 8.6 cents due to higher taxable wages, which were a result of the general wage increases given to union and independent groups.

Unemployment Insurance: The Unemployment Insurance rate is unchanged from the previous quarter.

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 third quarter rate is 9.1 cents higher than last quarter.

Labor Index Calculation

As shown in Table A-1 on the next page, the 1.2 percent increase in the Wage Rate Index and the 1.0 percent increase in the Supplements Index combined to cause the Labor Index to rise 1.1 percent from the previous quarter. The linked third quarter 2019 Labor index is 444.7, which is 2.4 percent higher than one year ago.

Labor

Third Quarter 2019

Table A-1 Labor Index

	2019Q2	2019Q3	Change	
			Percent	Amount
<u>Base Wage</u> – Straight Time & Pay For Time Not Worked	\$42.813	\$43.772	2.2%	\$0.959
Adjustments:				
Lump Sum	0.539	0.539	0.0%	\$0.000
Back Pay	0.584	0.153	-73.8%	-\$0.431
Other	0.182	0.204	12.1%	\$0.022
Total Wages	<u>44.118</u>	<u>44.668</u>	1.2%	\$0.550
Health & Welfare Benefits	8.302	8.302	0.0%	\$0.000
RR Retirement & Medicare	9.116	9.202	0.9%	\$0.086
Unemployment Insurance	0.333	0.333	0.0%	\$0.000
Other	0.212	0.303	42.9%	\$0.091
Total Supplements	<u>\$17.963</u>	<u>\$18.140</u>	1.0%	\$0.177
Total Labor (as info only)	\$62.081	\$62.808		
Wage Index¹	377.6	382.3	1.2%	
Supplements Index²	663.8	670.4	1.0%	
Total labor Index, 2017 Weights ³	464.9	470.2		
Labor Index (linked)⁴	439.7	444.7	1.1%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

³ 2017 weights: wages, supplements 69.5% 30.5%

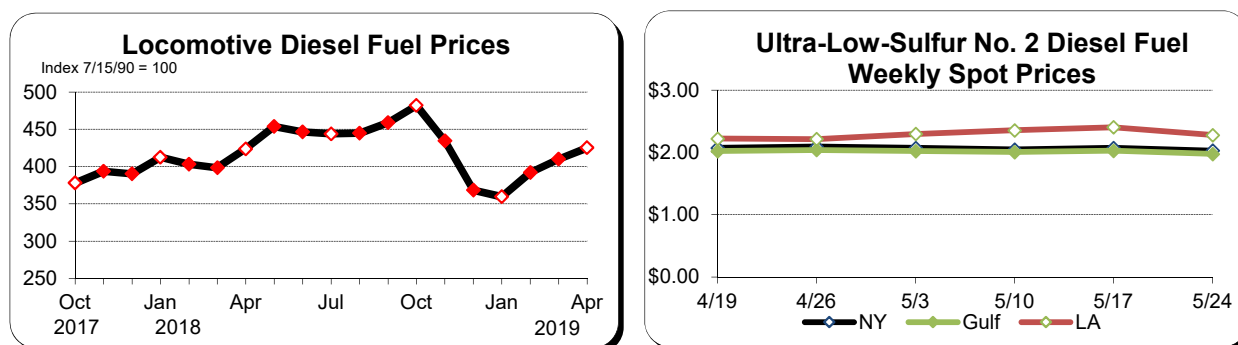
⁴ 2019Q3 linked Index = 2019Q2 linked x (2019Q3 / 2019Q2)
 = 439.7 x 470.2 / 464.9

Fuel

Third Quarter 2019

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 reached a low point in January 2019, but has been increasing since then. While average prices for locomotive diesel fuel are available only through April 2019, data through four weeks of May are available for related fuel types. According to the Energy Information Administration, the daily spot price as of May 28 for Ultra-Low-Sulfur Diesel Fuel* is about 2.9 percent lower than the average for April. The chart below (on left) shows the AAR's Monthly Locomotive Diesel Fuel Price Index from October 2017 through April 2019. The second chart (on right) shows recent spot prices for Ultra-Low-Sulfur No. 2 Diesel Fuel as reported by the Energy Information Administration.



Using information from the EIA, although prices increased from January through April, small decreases occurred in May. Railroads that responded to the AAR's forecast survey expect small price increases by July (Q3) compared to prices that actually occurred for April (Q2). The third quarter 2019 forecast is 3.8 percent higher than the previous quarter forecast, and 2.5% higher than the prior quarter actual.

Forecast Fuel Index (1980 = 100)	269.0
Change from previous quarter forecast	3.8%
Change from previous quarter actual	2.5%

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

Materials & Supplies

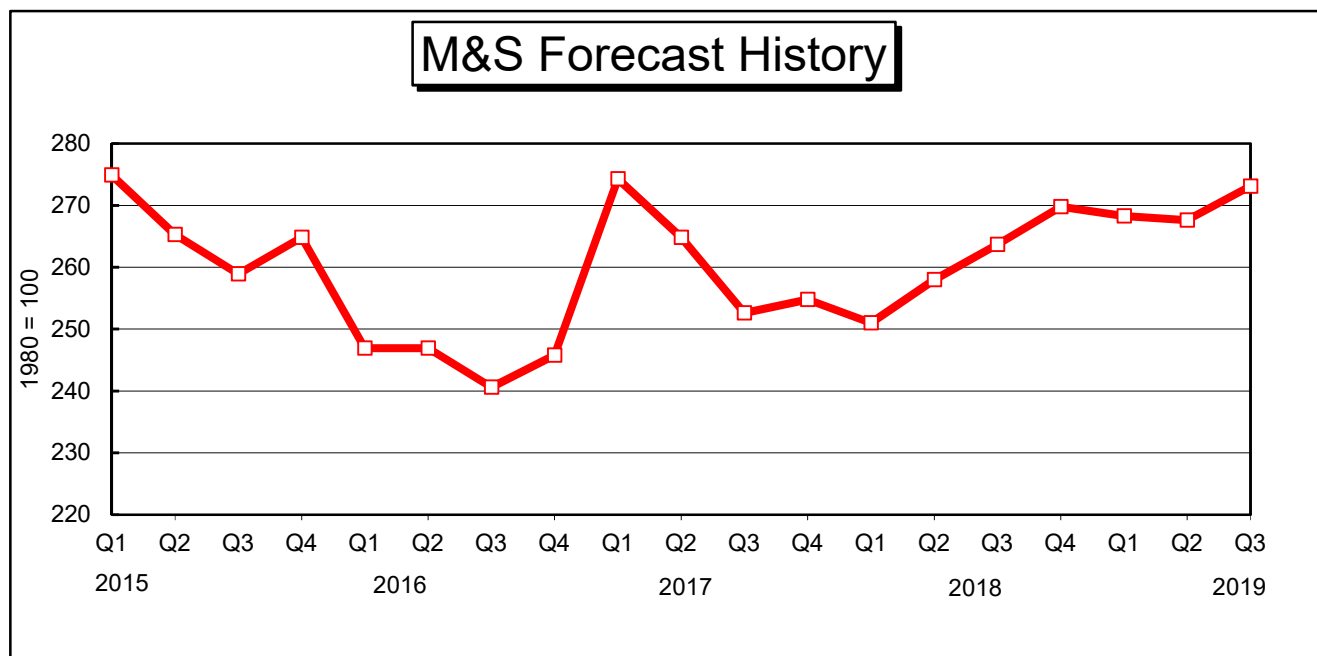
Third Quarter 2019

The third quarter 2019 Materials & Supplies Index is up 2.1 percent from the previous quarter. Prices increased for Miscellaneous Products, which includes ballast, batteries, and diesel heating oil.

2019Q3 Materials & Supplies Index = 273.1

2019Q2 Materials & Supplies Index = 267.6

Difference	5.5 basis points
	or
	2.1 %



Equipment Rents

Third Quarter 2019

The Equipment Rents Index consists of two components – car hire and lease rentals. The methodologies 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.

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 shows the results of the Equipment Rents Index calculation. The third quarter Car Hire portion of the Index rose 0.6 percent because of higher rates for auto racks. The projected PPI-LF (See Appendix G) used as a proxy for Lease Rentals, rose 0.2 percent. Combined, these changes caused the Equipment Rents Index to rise 0.4 percent.

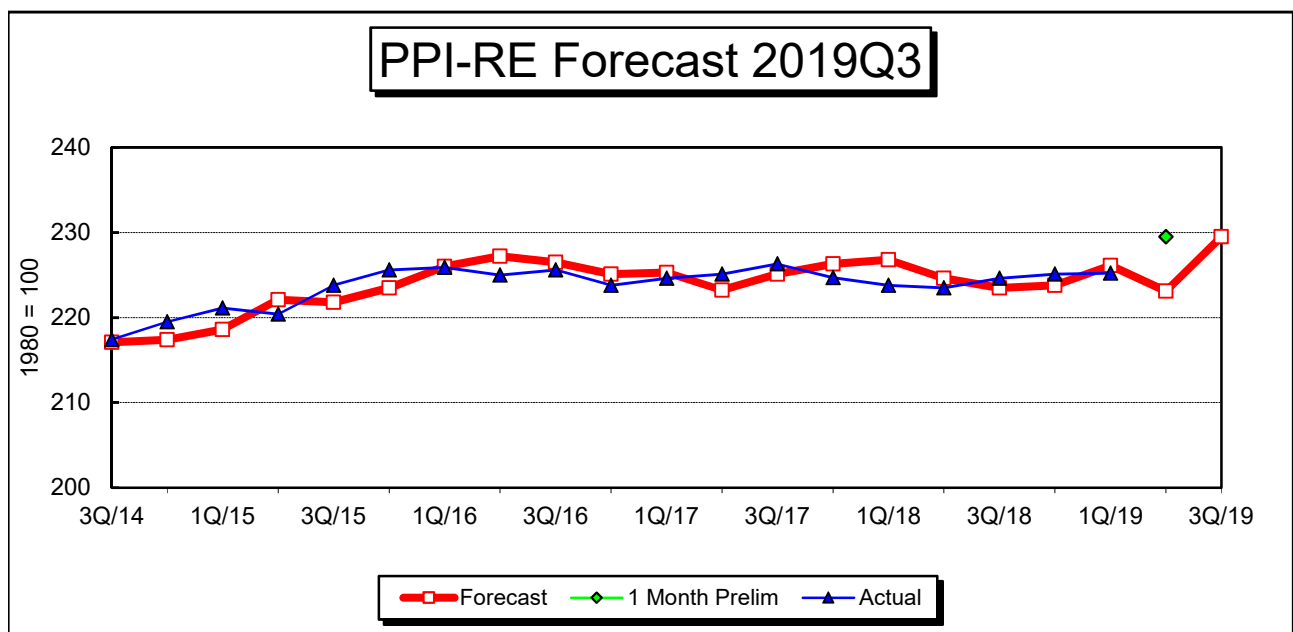
	2017			Percent
	Weight	2019Q2	2019Q3	Change
Car Hire	60.5%	220.5	221.8	0.6 %
Lease Rentals	39.5%	231.8	232.2	0.2
Weighted Average		225.0	225.9	0.4
Weighted Average (Linked)		237.1	238.0	0.4

Depreciation

Third Quarter 2019

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 2.9 percent increase from the previous quarter's forecast.

Forecast of Depreciation Index (1982=100)	207.5
Forecast of Depreciation Index (1980=100)	229.5
Change from previous quarter forecast	2.9%
Change from actual first month of previous quarter	0.0% = 0.00%
Change from same quarter of prior year (actual)	2.2%



Depreciation

Third Quarter 2019

PPI RAILROAD EQUIPMENT

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 2.37 and for Box-Jenkins was 2.34.
 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	201.17	Std. deviation	3.09
R-square	0.86	Adj. R-square	0.87
Durbin-Watson	2.14	Ljung-Box(18)	13.4 P=0.24
Forecast error	1.13	BIC	1.13
MAPE	0.35	SMAPE	0.35
RMSE	1.13	MAD	0.71
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2018-Nov	201.3
2018-Dec	201.3
2019-Jan	201.4
2019-Feb	201.7
2019-Mar	207.6
2019-Apr	207.5

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2019-May	205.266	207.500	209.734
2019-Jun	204.341	207.500	210.659
2019-Jul	203.631	207.500	211.369
2019-Aug	203.032	207.500	211.968
2019-Sep	202.505	207.500	212.495
QTR AVG	203.056	207.500	211.944

Interest

Third Quarter 2019

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 2017 data, and was updated in the Q4 filing submitted on September 5, 2018. The Interest Index based on 2017 increased slightly from 2016's all-time low. Interest rates for 10- and 30-year U.S. Treasury Bonds, and Corporate AAA bonds, also increased from 2016 to 2017. Changes in the mix of maturities for the debt portfolio can also cause changes in the railroad average.

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 listed below account for the line number changes effective beginning with the 2016 annual report.

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	
29	Current Liabilities, Loans and Notes Payable
38	Equipment Obligations and Other Long Term Debt Due Within One Year
40	Non-Current Liabilities: Funded Debt Unmatured
41	Non-Current Liabilities: Equipment Obligations
42	Non-Current Liabilities: Capitalized Lease Obligations
43	Non-Current Liabilities: Debt in Default
44	Non-Current Liabilities: Accounts Payable: Affiliated Companies
45	Non-Current Liabilities: Unamortized Debt Premium

2017	Interest Rate	4.90%
1980	Interest Rate	7.85%
2019Q3	Interest Index	62.4
2019Q2	Interest Index	62.4
	Percent Change	0.0%

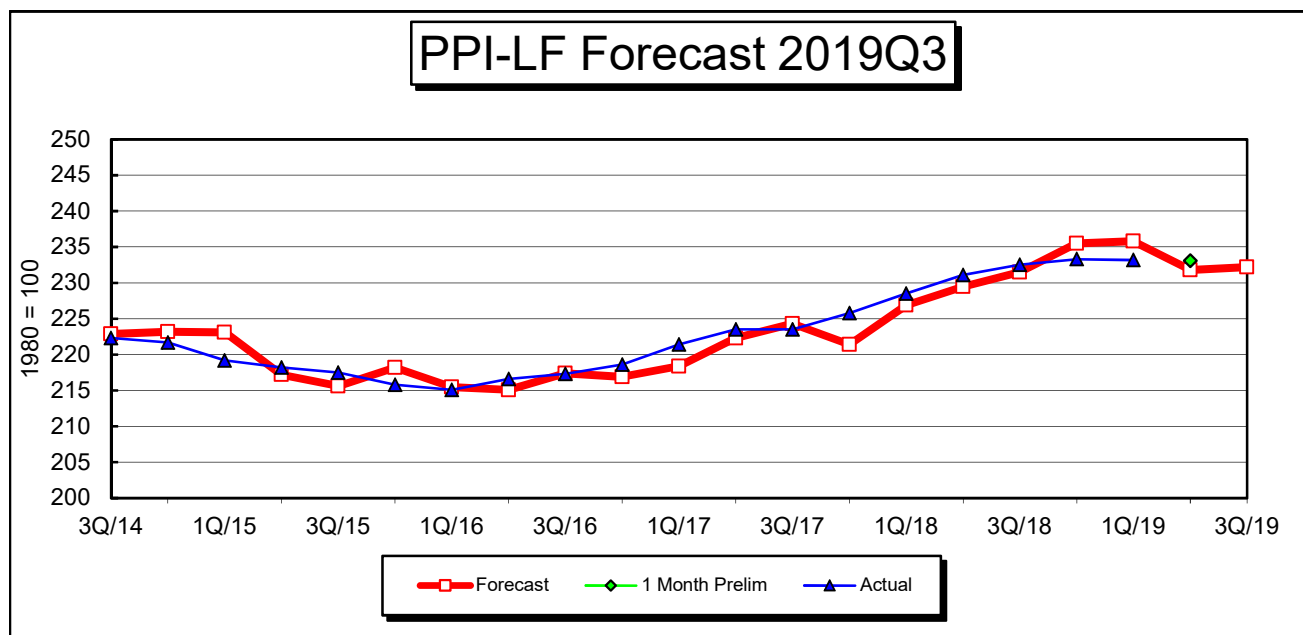
Other Expenses

Third Quarter 2019

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. The figure forecast by the model is 0.2 percent higher than the prior quarter forecast.

Forecast of Other Expense Index (1982=100)	207.1
Forecast of Other Expense Index (1980=100)	232.2
Change from previous quarter forecast	0.2%
Change from actual first month of previous quarter	-0.4%
Change from same quarter of prior year (actual)	-0.1%



Other Expenses

Third Quarter 2019

PPI INDUSTRIAL COMMODITIES LESS FUELS AND RELATED PRODUCTS AND POWER

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 1.87 and for Box-Jenkins was 1.19.
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.

Expert selection

Box-Jenkins

ARIMA(1, 1, 0)

Term	Coefficient	Std. Error	t-Statistic	Significance
a[1]	0.6741	0.08853	7.614	1

Within-Sample Statistics

Sample size	72	No. parameters	1
Mean	198.51	Std. deviation	5.1
R-square	0.99	Adj. R-square	0.99
Durbin-Watson	2.07	Ljung-Box(18)	14.7 P=0.32
Forecast error	0.41	BIC	0.42
MAPE	0.16	SMAPE	0.16
RMSE	0.41	MAD	0.32
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Date	Actual
2018-Nov	208.5
2018-Dec	207.8
2019-Jan	207.7
2019-Feb	208.0
2019-Mar	208.4
2019-Apr	207.9

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2019-May	206.759	207.563	208.367
2019-Jun	205.767	207.336	208.904
2019-Jul	204.86	207.183	209.505
2019-Aug	204.041	207.079	210.117
2019-Sep	203.303	207.01	210.717
QTR AVG	204.068	207.091	210.113

Railroad and Union Abbreviations

Third Quarter 2019

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.)

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	International Association of Sheet Metal, Air, Rail, and Transportation Workers - Transportation Division*
SMART-MD	International Association of Sheet Metal, Air, Rail, and Transportation Workers - Mechanical Division**
TCU	Transportation Communication International Union
TCU-Carmen	Brotherhood of Railway Carmen Division of the Transportation Communications International Union

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)
SMW	Sheet Metal Workers' International Association (see SMART-MD)
UTU	United Transportation Union (merged into SMART)
UTU-YMD	United Transportation Union Yardmaster Department (see SMART-TD)

* Represents employees formerly represented by the UTU (conductors and brakemen) and also has a separate yardmasters department.

** Represents employees formerly represented by the SMW (steel workers)

AAR Workpapers Sent to STB for 2019 Q3 RCAF

June 5, 2019

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)
Copies of National agreements are not included because they have already been shown in prior filings
5. Wall Street Journal - 13 week Treasury Bill Rate from recent auction (a.k.a. 3-Mo. T-Bill)
6. 2019/Q3 RCAF Lump Sum Amortization summary, public version (1 page)
7. 2019/Q3 RCAF Back Pay Amortization summary, public version (1 page)
Individual back pay calculations are not included because of single railroad data
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 2019 Q3 Unemployment Insurance Tax
12. 2 pages from EIA including spot prices for various distillates
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 (10 pages: calc, fuel, 3 car hire, 2 deprec, 2 other, Actual)

All Inclusive Index and RCAF using 2017 Benchmarks and Weights

17 Wts.

	17 Wts.	3Q/18	% Chg	4Q/18	% Chg	1Q/19	% Chg	2Q/19	% Chg	3Q/19	% Chg
Labor	0.348	434.30	0.0%	439.2	1.1%	440.3	0.3%	439.7	-0.1%	444.7	1.1%
Fuel	0.129	291.00	0.0%	283.9	-2.4%	256.8	-9.5%	259.2	0.9%	269.0	3.8%
M&S	0.049	263.70	0.0%	269.8	2.3%	268.3	-0.6%	267.6	-0.3%	273.1	2.1%
Equip. Rents	0.057	230.50	0.0%	236.0	2.4%	236.3	0.1%	237.1	0.3%	238.0	0.4%
Depreciation	0.157	223.50	0.0%	223.8	0.1%	226.1	1.0%	223.1	-1.3%	229.5	2.9%
Interest	0.021	60.50	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%
Other	0.239	231.50	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%	232.2	0.2%
Weighted Avg.	1.000	306.60	-0.1%	308.9	0.8%	306.1	-0.9%	304.8	-0.4%	309.2	1.4%
Linked		283.60		285.9	0.8%	283.3	-0.9%	282.1	-0.4%	286.2	1.5%
Basing Factor											
10/1/80 basis	102.7	276.1		278.4	0.8%	275.9	-0.9%	274.7	-0.4%	278.7	1.5%
10/1/82	120.9	234.6		236.5	0.8%	234.3	-0.9%	233.3	-0.4%	236.7	1.5%
4Q/87	132.2	214.5		216.3	0.8%	214.3	-0.9%	213.4	-0.4%	216.5	1.5%
4Q/92	156.9	180.8		182.2	0.8%	180.6	-0.9%	179.8	-0.4%	182.4	1.4%
4Q/97	173.2	163.7		165.1	0.9%	163.6	-0.9%	162.9	-0.4%	165.2	1.4%
4Q/02	192.1	147.6		148.8	0.8%	147.5	-0.9%	146.9	-0.4%	149.0	1.4%
4Q/07	245.9	115.3		116.3	0.9%	115.2	-0.9%	114.7	-0.4%	116.4	1.5%
4Q/12	297.6	95.3		96.1	0.8%	95.2	-0.9%	94.8	-0.4%	96.2	1.5%
4Q/17 basis	264.5	107.2		108.1	0.8%	107.1	-0.9%	106.7	-0.4%	108.2	1.4%
Car Hire	0.605	210.40	0.0%	216.4	2.9%	216.7	0.1%	220.5	1.8%	221.8	0.6%
Lease Rents	0.395	231.50	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%	232.2	0.2%
Weighted Avg Eq Rents		219.20	-0.2%	223.9	2.4%	224.2	0.1%	225.0	0.4%	225.9	0.4%
Linked Equipment Rents		230.50		236.0	2.4%	236.3	0.1%	237.1	0.3%	238.0	0.4%
Preliminary RCAF		1.072		1.081	0.84%	1.071	-0.9%	1.067	-0.4%	1.082	1.4%
Forecast Error Adj.		(0.011)		(0.002)		(0.013)		(0.002)		(0.025)	
RCAF Unadjusted		1.061		1.079	1.70%	1.058	-1.9%	1.065	0.7%	1.057	-0.8%
PAF		2.3641		2.3617	-0.10%	2.3593	-0.10%	2.3621	0.12%	2.3649	0.1%
RCAF Adjusted		0.449		0.457	1.78%	0.448	-2.0%	0.451	0.7%	0.447	-0.9%
PAF-5		2.5298		2.5260	-0.15%	2.5235	-0.10%	2.5210	-0.10%	2.5185	-0.10%
RCAF-5		0.419		0.427	1.91%	0.419	-1.9%	0.422	0.7%	0.420	-0.5%

RCAF All-Inclusive Index's Labor Index Based on 2017 Benchmarks

17 Wts.	3Q/18	3Q/18 Rebench As Info Only	% Chg	4Q/18	% Chg	1Q/19	% Chg	2Q/19	% Chg	3Q/19	% Chg
Straight Time	\$35.154	\$35.524	1.1%	\$35.537	1.1%	\$35.857	0.9%	\$35.857	0.0%	\$36.629	2.2%
PFTNW	\$6.839	\$6.933	1.4%	\$6.936	1.4%	\$6.956	0.3%	\$6.956	0.0%	\$7.143	2.7%
Total	\$41.993	\$42.457	1.1%	\$42.473	1.1%	\$42.813	0.8%	\$42.813	0.0%	\$43.772	2.2%
Adjustments											
Lump Sum	\$0.390	\$0.401		\$0.400		\$0.399		\$0.539		\$0.539	
Back Pay	\$1.232	\$1.268		\$1.283		\$0.773		\$0.584		\$0.153	
Other	\$0.177	\$0.182		\$0.182		\$0.182		\$0.182		\$0.204	
Total Wages	\$43.792	\$44.308	1.2%	\$44.338	1.2%	\$44.167	-0.4%	\$44.118	-0.1%	\$44.668	1.2%
Pre-Tax Reduction	(\$1.361)	(\$1.362)		(\$1.362)		(\$1.362)		(\$1.362)		(\$1.362)	
Taxable Wages	\$42.431	\$42.946		\$42.976		\$42.805		\$42.756		\$43.306	
H & W	\$8.101	\$8.229	1.6%	\$8.229	1.6%	\$8.302	0.9%	\$8.302	0.0%	\$8.302	0.0%
RR Ret & Medicare	\$8.867	\$9.064	2.2%	\$9.069	2.3%	\$9.124	0.6%	\$9.116	-0.1%	\$9.202	0.9%
Unemp. Insurance	\$0.365	\$0.360	-1.4%	\$0.360	-1.4%	\$0.333	-7.5%	\$0.333	0.0%	\$0.333	0.0%
Other	\$0.288	\$0.297	3.1%	\$0.146	-49.3%	\$0.234	60.3%	\$0.212	-9.4%	\$0.303	42.9%
Total	\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$18.140	1.0%
Adjustments											
Total Supplements	\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$18.140	1.0%
Total Labor	\$61.413	\$62.258	1.4%	\$62.142	1.2%	\$62.160	0.0%	\$62.081	-0.1%	\$62.808	1.2%
Wage Rate Index	0.6950	374.8	1.2%	379.4	1.2%	378.0	-0.4%	377.6	-0.1%	382.3	1.2%
Supplements Index	0.3050	651.2	1.9%	657.9	1.0%	664.9	1.1%	663.8	-0.2%	670.4	1.0%
Total Labor Index '16 Wts.	455.5										
Total Labor Index '17 Wts.	459.1	465.9	1.5%	464.3	1.1%	465.5	0.3%	464.9	-0.1%	470.2	1.1%
Labor Index (Linked)	434.3			439.2	1.1%	440.3	0.3%	439.7	-0.1%	444.7	1.1%

Hourly Rate for 2019 Q3

Straight Time and Time Paid For But Not Worked

2019Q3 Straight Time Hourly Rate (from national spreadsheet) **\$36.439**
 3% GWI for national unions

Adjustments to 2017 base:

Added 2018 Q1		
Miscellaneous Independents	Non-Union GWI and COLAs	0.003
Soo Corp.	nothing	0.000
Added 2018 Q2		
Miscellaneous Independents	retro increases for one railroad union	0.005
Soo Corp.	nothing	0.000
Added 2018 Q3		
Miscellaneous Independents	GWIs and COLAs	0.080
Soo Corp.	nothing	0.000
Added 2018 Q4		
Miscellaneous Independents	New agreements and non-union increases	0.011
Soo Corp.	New agreements	0.002
Added 2019 Q1		
Miscellaneous Independents	One new agreement and non-union increase	0.006
Soo Corp.	Nothing	0.000
Added 2019 Q2		
Miscellaneous Independents	Nothing	0.000
Soo Corp.	Nothing	0.000
Added 2019 Q3		
Miscellaneous Independents	GWIs and one new agreement	0.080
Soo Corp.	3 new agreements	0.003

Adjusted STHR Total **\$36.629**

Pay For Time Not Worked

PFTNW (from national spreadsheet) \$7.106
 Ratio Adj STHR to Nat STHR 36.629 / 36.439 = 1.00521

Adjusted Pay For Time Not Worked **\$7.143**

Adjusted STHR + Adjusted Pay For Time Not Worked **\$43.772**

Notes:

- Miscellaneous Independent is mostly trainmen, yardmasters, and non-union plus CN's IAM employees.
Includes 20 union groups with employees and 5 non-union groups with employees.
- Soo Corp. includes SOO, D&H and DM&E.

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 3Q/2019

U.S. ST Hours =

287,199,489

Wage Statistics are for 2017

Union Group	Employees	Mo. Rate	Annual \$
National ATDA (BNSF, CSX, KCS, NS, SOO, GTW, WC)	1,712	(\$228.89)	(\$4,702,316.16)
National BLET (BNSF, CSX, KCS, NS, UP, SOO, DH)	23,736	(\$228.89)	(\$65,195,196.48)
National BMW (All except SOO, DME, DH)	22,484	(\$228.89)	(\$61,756,353.12)
National BRS (All except DME)	7,429	(\$228.89)	(\$20,405,085.72)
National IAM (BNSF, CSX, KCS, NS, SOO, UP)	6,402	(\$228.89)	(\$17,584,245.36)
National IBBM (BNSF, CSX, KCS, NS, SOO, UP, IC)	836	(\$228.89)	(\$2,296,224.48)
National IBEW (All except DME)	5,550	(\$228.89)	(\$15,244,074.00)
National NCFO (All except DME and WC)	2,322	(\$228.89)	(\$6,377,790.96)
National SMW (BNSF, CSX, KCS, NS, UP, IC)	906	(\$228.89)	(\$2,488,492.08)
National TCU (All except DME and DH)	5,043	(\$228.89)	(\$13,851,507.24)
National TCU-CAR (All except DME)	8,861	(\$228.89)	(\$24,338,331.48)
National UTU (BNSF, CSX, KCS, NS, UP, SOO, DH)	34,615	(\$228.89)	(\$95,076,328.20)
Yardmasters (BNSF, CSX, KCS, NS, UP, SOO, DH)	1,609	(\$228.89)	(\$4,419,408.12)
Misc Indep (DME, portions of DH & SOO, portions of CN)	3,696	(\$232.23)	(\$10,299,713.04)
Total Union	125,201		(\$344,035,066.44)
All Other @ \$3,918,543.88 total per month			(\$47,022,526.56)
Total			(\$391,057,593.00)

Reduction in Wage Rate Per ST Hour	-\$1.36162357
Deduct this amount from the Wage Rate	-\$1.362

National Contracts U.S.

Straight Time Hourly Rate															Check Sum
UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER		
Weight	0.23292	0.03167	0.17443	0.00564	0.05048	0.14303	0.05703	0.01457	0.04204	0.00513	0.03523	0.01431	0.01047	0.18304	1.00000
2017 Avg.	28.982	29.972	32.461	30.384	31.721	28.054	29.913	25.319	30.386	29.362	30.787	41.791	40.528	49.879	459.540
12/31/17	28.982	29.980	32.538	30.384	31.723	28.054	29.916	25.321	30.388	29.364	30.787	41.791	40.528	49.879	459.635
1/1/18	30.086	29.980	33.361	30.384	32.975	28.054	29.916	25.321	30.388	29.364	30.787	42.916	41.616	50.876	
4/1/18	30.086	31.111	33.361	30.384	32.975	28.054	31.086	26.329	30.388	29.364	30.787	42.916	41.616	50.876	
7/1/18	30.795	31.871	33.883	32.396	33.786	29.870	31.853	26.984	30.388	31.208	32.810	43.630	42.307	50.876	
10/1/18	30.795	31.871	33.883	32.396	33.786	29.870	31.853	26.984	30.388	31.208	32.810	43.630	42.307	50.876	
1/1/19	30.795	31.871	33.883	32.396	33.786	29.870	31.853	26.984	32.312	31.208	32.810	43.630	42.307	52.148	
4/1/19	30.795	31.871	33.883	32.396	33.786	29.870	31.853	26.984	32.312	31.208	32.810	43.630	42.307	52.148	
7/1/19	31.666	32.807	34.519	33.368	34.783	30.743	32.795	27.790	33.237	32.102	33.784	44.502	43.150	52.148	

Weighted Straight Time Hourly Rate														
UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	Total
2017 Avg.	6.750	0.949	5.662	0.171	1.601	4.013	1.706	0.369	1.278	0.151	0.598	0.424	9.130	33.887
12/31/17	6.751	0.949	5.676	0.171	1.601	4.013	1.706	0.369	1.278	0.151	0.598	0.424	9.130	33.901
1/1/18	7.008	0.949	5.819	0.171	1.665	4.013	1.706	0.369	1.278	0.151	0.614	0.436	9.312	34.575
4/1/18	7.008	0.985	5.819	0.171	1.665	4.013	1.773	0.384	1.278	0.151	0.614	0.436	9.312	34.692
7/1/18	7.173	1.009	5.910	0.183	1.705	4.272	1.817	0.393	1.278	0.160	0.625	0.443	9.312	35.436
10/1/18	7.173	1.009	5.910	0.183	1.705	4.272	1.817	0.393	1.278	0.160	0.625	0.443	9.312	35.436
1/1/19	7.173	1.009	5.910	0.183	1.705	4.272	1.817	0.393	1.359	0.160	0.625	0.443	9.545	35.750
4/1/19	7.173	1.009	5.910	0.183	1.705	4.272	1.817	0.393	1.359	0.160	0.625	0.443	9.545	35.750
7/1/19	7.376	1.039	6.021	0.188	1.756	4.397	1.870	0.405	1.397	0.165	0.637	0.452	9.545	36.439

Note: The 2017 Average and 12/31/17 Straight Time Hourly Rates are the industry rates, and include all Class I railroad employees. The rates for 1/1/18 through 7/1/19 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 2017 are not shown on this page and are handled separately.

National Contracts U.S.

Pay For Time Not Worked Hourly Rate														Check	
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	Sum
Weight	0.23292	0.03167	0.17443	0.00564	0.05048	0.14303	0.05703	0.01457	0.04204	0.00513	0.03523	0.01431	0.01047	0.18304	1.00000
2017 Avg.	9.679	4.424	11.164	4.546	6.659	5.243	4.325	3.364	4.923	4.483	5.037	6.588	7.827	1.264	79.527
12/31/17	9.679	4.425	11.191	4.547	6.660	5.243	4.325	3.364	4.924	4.484	5.037	6.588	7.827	1.264	
1/1/18	10.048	4.425	11.473	4.547	6.922	5.243	4.325	3.364	4.924	4.484	5.037	6.765	8.037	1.289	
4/1/18	10.048	4.592	11.473	4.547	6.922	5.243	4.495	3.499	4.924	4.484	5.037	6.765	8.037	1.289	
7/1/18	10.284	4.704	11.653	4.848	7.093	5.582	4.605	3.586	4.924	4.765	5.368	6.877	8.170	1.289	
10/1/18	10.284	4.704	11.653	4.848	7.093	5.582	4.605	3.586	4.924	4.765	5.368	6.877	8.170	1.289	
1/1/19	10.284	4.704	11.653	4.848	7.093	5.582	4.605	3.586	5.236	4.765	5.368	6.877	8.170	1.321	
4/1/19	10.284	4.704	11.653	4.848	7.093	5.582	4.605	3.586	5.236	4.765	5.368	6.877	8.170	1.321	
7/1/19	10.575	4.842	11.872	4.993	7.302	5.746	4.742	3.693	5.385	4.902	5.527	7.015	8.333	1.321	

Pay For Time Not Worked Hourly Rate															
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	Total
2017 Avg.	2.254	0.140	1.947	0.026	0.336	0.750	0.247	0.049	0.207	0.023	0.177	0.094	0.082	0.231	6.564
12/31/17	2.254	0.140	1.952	0.026	0.336	0.750	0.247	0.049	0.207	0.023	0.177	0.094	0.082	0.231	6.569
1/1/18	2.340	0.140	2.001	0.026	0.349	0.750	0.247	0.049	0.207	0.023	0.177	0.097	0.084	0.236	6.727
4/1/18	2.340	0.145	2.001	0.026	0.349	0.750	0.256	0.051	0.207	0.023	0.177	0.097	0.084	0.236	6.744
7/1/18	2.395	0.149	2.033	0.027	0.358	0.798	0.263	0.052	0.207	0.024	0.189	0.098	0.086	0.236	6.916
10/1/18	2.395	0.149	2.033	0.027	0.358	0.798	0.263	0.052	0.207	0.024	0.189	0.098	0.086	0.236	6.916
1/1/19	2.395	0.149	2.033	0.027	0.358	0.798	0.263	0.052	0.220	0.024	0.189	0.098	0.086	0.242	6.935
4/1/19	2.395	0.149	2.033	0.027	0.358	0.798	0.263	0.052	0.220	0.024	0.189	0.098	0.086	0.242	6.935
7/1/19	2.463	0.153	2.071	0.028	0.369	0.822	0.270	0.054	0.226	0.025	0.195	0.100	0.087	0.242	7.106

U.S. National Contract

UTU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				28.98227	9.67903
12/31/17 Industry Rate				28.98240	9.67907
1/1/18	4.04%		94.268%	30.08618	10.04769
4/1/18			94.268%	30.08618	10.04769
7/1/18	2.50%		94.268%	30.79522	10.28449
10/1/18			94.268%	30.79522	10.28449
1/1/19			94.268%	30.79522	10.28449
4/1/19			94.268%	30.79522	10.28449
7/1/19	3.00%		94.268%	31.66612	10.57534

The 4.04% GWI combines two retroactive GWIs of 2% for 7/1/2016 and 7/1/2017 in the new labor agreement.

TCU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				29.97179	4.42391
12/31/17 Industry Rate				29.97976	4.42509
1/1/18			97.817%	29.97976	4.42509
4/1/18	4.04%		97.817%	31.11058	4.59200
7/1/18	2.50%		97.817%	31.87136	4.70430
10/1/18			97.817%	31.87136	4.70430
1/1/19			97.817%	31.87136	4.70430
4/1/19			97.817%	31.87136	4.70430
7/1/19	3.00%		97.817%	32.80662	4.84234

\$31.164 adjusted to remove COLAs received by 5 RRs.

BLET

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				32.46149	11.16408
12/31/17 Industry Rate				32.53834	11.19051
1/1/18	4.04%		62.576%	33.36094	11.47341
4/1/18			62.576%	33.36094	11.47341
7/1/18	2.50%		62.576%	33.88284	11.65291
10/1/18			62.576%	33.88284	11.65291
1/1/19			62.576%	33.88284	11.65291
4/1/19			62.576%	33.88284	11.65291
7/1/19	3.00%		62.576%	34.51892	11.87167

U.S. National Contract

SMWIA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.		\$32.402 adjusted to remove COLAs received by 1 RR.		30.38359	4.54644
12/31/17 Industry Rate				30.38444	4.54657
1/1/18			100.000%	30.38444	4.54657
4/1/18			100.000%	30.38444	4.54657
7/1/18	6.641%		100.000%	32.39626	4.84761
10/1/18			100.000%	32.39626	4.84761
1/1/19			100.000%	32.39626	4.84761
4/1/19			100.000%	32.39626	4.84761
7/1/19	3.00%		100.000%	33.36814	4.99304

The 6.641% combines 2.0% GWIs retroactive to 7/1/2016 and 7/1/2017 and 2.5% GWI 7/1/2018.

BRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.		\$32.983 adjusted to remove COLAs received by 2 RRs.		31.72130	6.65928
12/31/17 Industry Rate				31.72271	6.65957
1/1/18	4.04%		98.368%	32.97506	6.92248
4/1/18			98.368%	32.97506	6.92248
7/1/18	2.50%		98.368%	33.78598	7.09272
10/1/18			98.368%	33.78598	7.09272
1/1/19			98.368%	33.78598	7.09272
4/1/19			98.368%	33.78598	7.09272
7/1/19	3.00%		98.368%	34.78302	7.30203

BMWE

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				28.05381	5.24311
12/31/17 Industry Rate				28.05381	5.24311
1/1/18			97.469%	28.05381	5.24311
4/1/18			97.469%	28.05381	5.24311
7/1/18	6.641%		97.469%	29.86971	5.58250
10/1/18			97.469%	29.86971	5.58250
1/1/19			97.469%	29.86971	5.58250
4/1/19			97.469%	29.86971	5.58250
7/1/19	3.00%		97.469%	30.74312	5.74573

U.S. National Contract

TCU-Carmen

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.		\$31.108 adjusted to remove COLAs received by 5 RRs.		29.91308	4.32501
12/31/17 Industry Rate				29.91616	4.32546
1/1/18			98.637%	29.91616	4.32546
4/1/18	4.04%		98.637%	31.08611	4.49462
7/1/18	2.50%		98.637%	31.85267	4.60545
10/1/18			98.637%	31.85267	4.60545
1/1/19			98.637%	31.85267	4.60545
4/1/19			98.637%	31.85267	4.60545
7/1/19	3.00%		98.637%	32.79522	4.74173

NCFO

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.		\$26.338 adjusted to remove COLAs received by 3 RRs.		25.31937	3.36430
12/31/17 Industry Rate				25.32063	3.36447
1/1/18			99.477%	25.32063	3.36447
4/1/18	4.04%		99.477%	26.32949	3.49852
7/1/18	2.50%		99.477%	26.98428	3.58553
10/1/18			99.477%	26.98428	3.58553
1/1/19			99.477%	26.98428	3.58553
4/1/19			99.477%	26.98428	3.58553
7/1/19	3.00%		99.477%	27.78958	3.69253

IAM

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				30.38573	4.92337
12/31/17 Industry Rate				30.38767	4.92368
1/1/18			95.374%	30.38767	4.92368
4/1/18			95.374%	30.38767	4.92368
7/1/18			95.374%	30.38767	4.92368
10/1/18			95.374%	30.38767	4.92368
1/1/19	6.641%		95.374%	32.31237	5.23554
4/1/19			95.374%	32.31237	5.23554
7/1/19	3.00%		95.374%	33.23690	5.38534

The 6.641% combines 2.0% GWIs retroactive to 7/1/2016 and 7/1/2017 and 2.5% GWI 7/1/2018.

U.S. National Contract

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.		\$31.225 adjusted to remove COLAs received by 1 RR.		29.36225	4.48340
12/31/17 Industry Rate				29.36371	4.48362
1/1/18			95.453%	29.36371	4.48362
4/1/18			95.453%	29.36371	4.48362
7/1/18	6.641%		95.453%	31.20784	4.76520
10/1/18			95.453%	31.20784	4.76520
1/1/19			95.453%	31.20784	4.76520
4/1/19			95.453%	31.20784	4.76520
7/1/19	3.00%		95.453%	32.10151	4.90166

IBEW

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				30.78745	5.03687
12/31/17 Industry Rate				30.78745	5.03687
1/1/18			98.937%	30.78745	5.03687
4/1/18			98.937%	30.78745	5.03687
7/1/18	6.641%		98.937%	32.81030	5.36781
10/1/18			98.937%	32.81030	5.36781
1/1/19			98.937%	32.81030	5.36781
4/1/19			98.937%	32.81030	5.36781
7/1/19	3.00%		98.937%	33.78414	5.52714

ATDA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				41.79089	6.58753
12/31/17 Industry Rate				41.79089	6.58753
1/1/18	4.04%		66.619%	42.91565	6.76483
4/1/18			66.619%	42.91565	6.76483
7/1/18	2.50%		66.619%	43.63040	6.87750
10/1/18			66.619%	43.63040	6.87750
1/1/19			66.619%	43.63040	6.87750
4/1/19			66.619%	43.63040	6.87750
7/1/19	3.00%		66.619%	44.50239	7.01495

YDMSTRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				40.52842	7.82686
12/31/17 Industry Rate				40.52842	7.82686
1/1/18	4.04%		66.411%	41.61580	8.03686
4/1/18			66.411%	41.61580	8.03686
7/1/18	2.50%		66.411%	42.30674	8.17029
10/1/18			66.411%	42.30674	8.17029
1/1/19			66.411%	42.30674	8.17029
4/1/19			66.411%	42.30674	8.17029
7/1/19	3.00%		66.411%	43.14963	8.33307

OTHER

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2017 Industry Avg.				49.87891	1.26398
12/31/17 Industry Rate				49.87891	1.26398
1/1/18	2.00%		100.000%	50.87649	1.28926
4/1/18			100.000%	50.87649	1.28926
7/1/18			100.000%	50.87649	1.28926
10/1/18			100.000%	50.87649	1.28926
1/1/19	2.50%		100.000%	52.14840	1.32149
4/1/19			100.000%	52.14840	1.32149
7/1/19			100.000%	52.14840	1.32149

Check Sums

	Increase	Applicable	ST HR	PFTNW HR
2017 AVG			459.54035	79.52719
12/31/17			459.63529	
		1271.406%		
		ok matches	ok matches	ok matches
			ok matches	

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

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

Putnam Mas Inco **PIM** 4.79 4.54 -5.2 6.7
Putnam Premier Income Tr **PPT** 5.34 5.14 -3.7 6.9
Wells Fargo Multi-Sector **ERC** 13.16 12.39 -5.9 10.1

search Systems

O, vice president or director, potentially conveys
are required to report large trades to the SEC
al trades by insiders, based on data received by
nance of the company

n CEO: chief executive officer CFO: chief financial officer
IC: general counsel H: officer, director and beneficial owner
her O: officer OD: officer and director P: president UT:

Title	No. of shrs in trans (000s)	Price range (\$) in transaction	\$ Value (000s)	Close (\$)	Ytd (%)
DOI	1,995	23.09-24.31	47,341	22.48	41.7
BI	2,523	8.82-8.89	22,309	9.22	-13.3
BI	211	9.00	1,900		
DI	431	33.13-34.50	14,606	34.88	82.2
DI	629	19.25	12,099	16.08	35.1
CEO	93*	42.71	3,972	38.47	-4.3
CEOI	634	4.63-4.74	2,949	4.69	-28.3
CEOI	422	4.63-4.74	1,966		
DI	274	7.48	2,050	8.73	31.3
DI	274	7.48	2,050		
CEO	39	51.93	2,004	50.55	-5.4
CEOI	80	17.93	1,435	18.13	-11.6
CEOI	80	17.93	1,435		
CBI	100	13.26-13.35	1,330	14.01	-3.4
CB	93	12.91	1,202	13.08	99.4
CEO	135	7.40	1,000	7.12	-36.1
P	35	28.57	1,000	27.81	-1.8
D	71	11.50-12.81	895	13.22	

DOI	2,448	100.65-101.55	247,710	102.67	10.2
BI	2,448	100.65-101.55	247,710		
BI	2,448	100.65-101.55	247,710		
DOI	2,129	101.05-102.21	216,470		
BI	2,129	101.05-102.21	216,470		
BI	2,129	101.05-102.21	216,470		

DI	15,000	12.61	189,150	12.91	15.5
DI	4,000	12.61	50,440		

DOI	2,500	69.00	172,500	69.27	122.4
B	3,451	45.63	157,471	46.71	17.3

DI	3,000	24.53	73,575	24.01	6.9
OD	1,042	67.72-68.06	70,724	68.43	30.8

B	600*	53.00	31,800	53.90	50.2
BI	395	65.17-69.07	26,142	59.39	81.6

CEO	34	717.02-727.81	24,632	728.82	28.9
DOI	1,834	13.31	24,415	13.23	20.9

CEO	57	346.25-351.82	20,031	354.39	32.4
CEO	47	351.90-356.59	16,674	348.07	30.6

or	Buying	Selling
ance	3,762,154	77,184,019

ilth care	1,982,095	168,496,724
ustrial	281,765	42,028,441

dia	332,650	5,562,323
hnology	1,784,959	23,702,004

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	ago	-52-Week- High	Low

Prime rates

U.S.	5.50	5.50	5.50	4.75
Canada	3.95	3.95	3.95	3.45
Japan	1.475	1.475	1.475	1.475

Policy Rates

Euro zone	0.00	0.00	0.00	0.00
Switzerland	0.50	0.50	0.50	0.50
Britain	0.75	0.75	0.75	0.50
Australia	1.50	1.50	1.50	1.50

Other short-term rates

	Week Latest	ago	-52-Week- high	low
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Libor

One month	2.42813	2.43600	2.52238	1.97563
Three month	2.52488	2.52338	2.82375	2.30031
Six month	2.54863	2.55975	2.90788	2.46688
One year	2.61900	2.64688	3.14413	2.61425

Euro Libor

One month	-0.418	-0.417	-0.390	-0.422
Three month	-0.359	-0.354	-0.324	-0.369
Six month	-0.317	-0.313	-0.288	-0.334
One year	-0.222	-0.220	-0.159	-0.237

Euro interbank offered rate (Euribor)

One month	-0.372	-0.368	-0.362	-0.372
Three month	-0.311	-0.314	-0.306	-0.324
Six month	-0.240	-0.241	-0.227	-0.271
One year	-0.148	-0.135	-0.108	-0.186

May 24, 2019

Inflation

	April index level	Chg From (%) March '19	April '18
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U.S. consumer price index

All items	255.548	0.53	2.0
Core	262.332	0.19	2.1

International rates				
	Week Latest	ago	-52-Week- High	Low

Prime rates

U.S.	5.50	5.50	5.50	4.75
Canada	3.95	3.95	3.95	3.45
Japan	1.475	1.475	1.475	1.475

Policy Rates

Euro zone	0.00	0.00	0.00	0.00
Switzerland	0.50	0.50	0.50	0.50
Britain	0.75	0.75	0.75	0.50
Australia	1.50	1.50	1.50	1.50

Overnight repurchase

U.S.	2.46	2.49	3.23	1.73
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U.S. government rates

Discount

	3.00	3.00	3.00	2.25
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Federal funds

Effective rate	2.4100	2.4100	2.4800	1.7200
High	2.6000	2.6000	2.6500	1.9500
Low	2.2500	2.3000	2.4400	1.6500
Bid	2.3500	2.3300	2.4400	1.6800
Offer	2.4000	2.4000	2.4500	1.7100

Treasury bill auction

4 weeks	2.335	2.365	2.470	1.720
13 weeks	2.335	2.360	2.465	1.895
26 weeks	2.340	2.355	2.505	2.030

Secondary market

Fannie Mae

30-year mortgage yields				
30 days	3.578	3.612	4.607	3.497
60 days	3.591	3.625	4.632	3.531

Other short-term rates

	Week Latest	ago	-52-Week- high	low
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Call money

	4.25	4.25	4.25	3.50
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Commercial paper (AA financial)				
	Week Latest	ago	-52-Week- High	Low

Libor

One month	2.42813	2.44188	2.52238	1.97563
Three month	2.52488	2.52188	2.82375	2.30031
Six month	2.54863	2.55375	2.90788	2.46688
One year	2.61900	2.63538	3.14413	2.61425

Euro Libor

One month	-0.418	-0.414	-0.390	-0.422
Three month	-0.359	-0.354	-0.324	-0.369
Six month	-0.317	-0.315	-0.288	-0.334
One year	-0.222	-0.226	-0.159	-0.237

Euro interbank offered rate (Euribor)

One month	-0.372	-0.368	-0.362	-0.372
Three month	-0.311	-0.313	-0.306	-0.324
Six month	-0.241	-0.240	-0.227	-0.271
One year	-0.148	-0.133	-0.108	-0.188

	Value Latest	-52-Week- Traded	High	Low
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DTCC GCF Repo Index

Treasury	2.425	2.462	5.149	1.739
MBS	2.440	60.050	4.434	1.762

	Open	Implied
Settle	Change	Interest

DTCC GCF Repo Index Futures

Treasury Jun	97.500	0.000	14	2.500
Treasury Jly	97.540	-0.010	17	2.460
Treasury Aug	97.575	-0.025	16	2.425

Notes on data:

U.S. prime rate is the base rate on corporate loans posted by at least 70% of the 10 largest U.S. banks, and is effective December 20, 2018. Other prime rates aren't directly comparable; lending practices vary widely by location. Discount rate is effective December 20, 2018. 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. Federal funds rates are Tullett Prebon rates as of 5:30 p.m. ET. Futures on the DTCC GCF Repo Index are traded on NYSE Liffe US.

Sources: Federal Reserve; Bureau of Labor Statistics; DTCC; SIX Financial Information; Tullett Prebon Information, Ltd.

Cash Prices | WSJ.com/commodities

Monday, May 27, 2019

These prices reflect buying and selling of a variety of actual or "physical" commodities in the marketplace—separate from the futures price on an exchange, which reflects what the commodity might be worth in future months.

Monday				
Metals				

Gold, per troy oz

LBMA Gold Price AM	*1281.50
LBMA Gold Price PM	*1282.50

Silver, per troy oz

LBMA spot price	*111.4600
(U.S.\$ equivalent)	*14.5500

Other metals

LBMA Platinum Price PM	*800.0
Aluminum, LME, \$ per metric ton	*1761.5

Fibers and Textiles

Cotlook 'A' Index-t	*78.50
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Friday, May 24, 2019

Friday				
Energy				

Coal, C.Aplc, 12500Btu, 12SO2-r,w	76.450
Coal, Pwdr Rvr Bsn, 8800Btu, 0.85O2-r,w	12.400

Metals

Gold, per troy oz

Engelhard Industrial	1292.84
Engelhard fabricated	1389.80
Handy & Harman base	1282.50
Handy & Harman fabricated	1423.58
LBMA Gold Price AM	*1275.95
LBMA Gold Price PM	*1283.65
Krugerrand, wholesale-e	1335.72
Maple Leaf-e	1348.57
American Eagle-e	1348.57
Mexican peso-e	1556.54
Austria crown-e	1261.92

Friday				
Metals				

Silver, per troy oz

Engelhard Industrial	14.5900
Engelhard fabricated	17.5080
Handy & Harman base	14.5830
Handy & Harman fabricated	18.2290
LBMA spot price	*11.4500
(U.S.\$ equivalent)	*14.4800
Coins, wholesale \$1,000 face-a	10837

Other metals

LBMA Platinum Price PM	*798.0
Platinum, Engelhard Industrial	803.0
Platinum, Engelhard fabricated	903.0
Palladium, Engelhard Industrial	1335.0
Palladium, Engelhard fabricated	1435.0
Aluminum, LME, \$ per metric ton	*1740.0
Copper, Comex spot	2.7065
Iron Ore, 62% Fe CFR China-s	103.7
Shredded Scrap, US Midwest-s,m	296
Steel, HRC USA, FOB Midwest Mill-s	596

Fibers and Textiles

Burlap, 10-oz, 40-inch NY yd-n,w	0.5675
Cotton, 1 1/16 std lw-md Mphs-u	0.6389
Cotlook 'A' Index-t	*77.75
Hides, hvly native steers piece fob-u	n.q.
Wool, 64s, staple, Terr del-u,w	n.q.

Grains and Feeds

Barley, top-quality Mnlps-u	n.a.
Bran, wheat middlings, KC-u	58
Corn, No. 2 yellow, Cent IL-bp-u	3.8250
Corn gluten feed, Midwest-u,w	92.4
Corn gluten meal, Midwest-u,w	356.7
Cottonseed meal-u,w	213
Hominy feed, Cent IL-u,w	99

Friday			
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**RCAF Lump Sum Amortization
2019/Q3**

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hour	U.S. ST Hours
NS - BLET 2018Q2 PPI	2018Q3	2018Q4				287,199,489
NS - BLET 2018Q3 PPI	2018Q4	2019Q1				287,199,489
CSX - BLET 2019	2019Q1	2019Q2				287,199,489
NS - BLET 2018Q4 PPI	2019Q1	2019Q2				287,199,489
NS - BLET 2019 Ave PPI	2019Q1	2019Q2				287,199,489
NS - BLET 2019 TPB	2019Q1	2019Q2				287,199,489
NS - BLET 2019Q1 PPI	2019Q2	2019Q3				287,199,489
Total			\$152,539,079	0.53113		

Should be slightly less
than amortized amount.

Fell out

NS - BLET 2018Q1 PPI	2018Q2	2018Q3		287,199,489
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Interest Rate

2017/Q1	0.480
2017/Q2	0.540
2017/Q3	0.920
2017/Q4	1.070
2018/Q1	1.285
2018/Q2	1.570
2018/Q3	1.880
2018/Q4	2.080
2019/Q1	2.370
2019/Q2	2.405
2019/Q3	2.335
2019/Q4	

Lump Sum Adjustment for 2019/Q3	→ 0.538942
	or
	0.539

RCAF Back Pay Amortization 2019/Q3

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hr.	U.S. ST Hours	
Nat. IBEW 2018 offset	2018Q3	2018Q4	(\$1,613,331)	-0.00561746	-0.02247	287,199,489	2017
CN Railroads (5 amounts)	2018Q3	2018Q4				287,199,489	2017
CP Railroads (6 amounts)	2018Q3	2018Q4				287,199,489	2017
National IAM 2018	2018Q4	2019Q1	\$35,282,327	0.12284955	0.49140	287,199,489	2017
DME - all unions 2019	2019Q1	2019Q2				287,199,489	2017
WC BLET	2019Q2	2019Q3				287,199,489	2017
CP Railroads (3 amounts)	2019Q2	2019Q3				287,199,489	2017
Total			\$43,193,248	0.15039459			

Should be slightly less
than amortized amount.

Fell out

National IBBM 2018	2018Q2	2018Q3	\$2,965,203	0.01032454	0.04130	287,199,489	2017
CSX BLET 2017	2018Q1	2018Q3				287,199,489	2017
National IBEW 2018	2018Q2	2018Q3	\$22,468,731	0.07823388	0.31294	287,199,489	2017
National SMW 2018	2018Q2	2018Q3	\$3,424,677	0.01192438	0.04770	287,199,489	2017
National BMW 2018	2018Q2	2018Q3	\$76,685,654	0.26701180	1.06806	287,199,489	2017

Notes:

"UTU" is now called SMART-TD (Transportation Division), and SMW is now called SMART-MD (Mechanical Division)

CN railroads 2018Q4 = IC BLET, CCP BLET, GTW UTU, GTW UTU-YMD, WC UTU-YMD

CP railroads 2018Q4 = DH BRC, DH IAM, SOO NCFO, SOO IBEW, SOO BRS, SOO UTU-YDM

CP railroads 2019Q3 = DME IAM, SOO IAM, SOO BRC

Interest Rate

2017/Q1	0.480
2017/Q2	0.540
2017/Q3	0.920
2017/Q4	1.070
2018/Q1	1.285
2018/Q2	1.570
2018/Q3	1.880
2018/Q4	2.080
2019/Q1	2.370
2019/Q2	2.405
2019/Q3	2.335
2019/Q4	

Back Pay Adjustment for 2019/Q3 → 0.15261
or
0.153

Health and Welfare 2019Q3

	Employees Receiving			Total	
	Pay 2017	Monthly Contribution 2017 Avg. 2019		2017 Avg.	2019
1. All Employees					
a. Group health	150,320	\$1,693.72	\$1,607.55	\$254,599,990.40	\$241,646,916.00
b. Group dental	150,320	65.12	63.67	9,788,838.40	9,570,874.40
c. Early retirement major medical	150,320	166.75	129.38	25,065,860.00	19,448,401.60
d. Group vision	150,320	8.44	8.44	1,268,700.80	1,268,700.80
2. Supplemental Sickness					
a. Signalmen	7,462	37.00	41.32	276,094.00	308,329.84
b. Shopcrafts	22,837	60.00	67.87	1,370,220.00	1,549,947.19
c. MOW	23,077	40.00	44.82	923,080.00	1,034,311.14
d. Yardmasters	1,714	34.22	45.75	58,653.08	78,415.50
3. Short-Term Disability					
a. Engineers (CSX, KCS, SOO, UP)	11,805	40.00	40.00	472,200.00	472,200.00
4. Monthly Total Premiums				293,823,636.68	275,378,096.47
5. Monthly Employee Contributions To H&W					
a. National ATDA (BNSF, CSX, KCS, NS, SOO, GTW, WC)	1,712	(\$228.89)	(\$228.89)	(\$391,859.68)	(391,859.68)
b. National BLET (BNSF, CSX, KCS, NS, UP, SOO, DH)	23,736	(\$228.89)	(\$228.89)	(\$5,432,933.04)	(5,432,933.04)
c. National BMWE (All except SOO, DME, DH)	22,484	(\$228.89)	(\$228.89)	(\$5,146,362.76)	(5,146,362.76)
d. National BRS (All except DME)	7,429	(\$228.89)	(\$228.89)	(\$1,700,423.81)	(1,700,423.81)
e. National IAM (BNSF, CSX, KCS, NS, SOO, UP)	6,402	(\$228.89)	(\$228.89)	(\$1,465,353.78)	(1,465,353.78)
f. National IBBM (BNSF, CSX, KCS, NS, SOO, UP, IC)	836	(\$228.89)	(\$228.89)	(\$191,352.04)	(191,352.04)
g. National IBEW (All except DME)	5,550	(\$228.89)	(\$228.89)	(\$1,270,339.50)	(1,270,339.50)
h. National NCFO (All except DME and WC)	2,322	(\$228.89)	(\$228.89)	(\$531,482.58)	(531,482.58)
i. National SMW (BNSF, CSX, KCS, NS, UP, IC)	906	(\$228.89)	(\$228.89)	(\$207,374.34)	(207,374.34)
j. National TCU (All except DME and DH)	5,043	(\$228.89)	(\$228.89)	(\$1,154,292.27)	(1,154,292.27)
k. National TCU-CAR (All except DME)	8,861	(\$228.89)	(\$228.89)	(\$2,028,194.29)	(2,028,194.29)
l. National UTU (BNSF, CSX, KCS, NS, UP, SOO, DH)	34,615	(\$228.89)	(\$228.89)	(\$7,923,027.35)	(7,923,027.35)
m. Yardmasters (BNSF, CSX, KCS, NS, UP*, SOO, DH)	1,609	(\$228.89)	(\$228.89)	(\$368,284.01)	(368,284.01)
n. Misc Indep (DME, portions of DH & SOO, portions of CN)	3,696	(\$231.73)	(\$232.23)	(\$856,458.59)	(858,309.42)
Total Major Union	125,201			(\$28,667,738.04)	(\$28,669,588.87)
All Other Employee Contributions*				(\$3,918,543.88)	(\$3,918,543.88)
6. Net Employer Monthly Payments				\$261,237,354.76	\$242,789,963.72
7. Ratio Projected Year to Base Year, Based on Net Monthly Payments					0.92938
8. H&W hourly rate for base year 2017				\$8.933	
9. H&W hourly rate for projected quarter					\$8.302

* Non-union employee contributions net of opt-outs. The \$28,667,738.04 in major union contributions, plus \$3,918,543.88 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	2016	Tier I Maximum Taxable Earnings for 2019	132,900
Wage Statistics Year	2017	Tier II Maximum Taxable Earnings for 2019	98,700
Current Year	2019	Medicare Maximum Taxable Earnings for 2019	no limit
Employees Receiving Pay*	150,320	Tier I Employer Tax Rate for 2019	6.20%
* from 2017 final wage statistics		Tier II Employer Tax Rate for 2019	13.10%
		Medicare Employer Tax Rate for 2019	1.45%

USA RCAF	Wage		Update Factor	Railroad		Hourly	
	Rate			Retirement Tax		Rate	
2016	\$39.231						
2017	\$39.599	1.00938		\$607,976,250		\$8.514	
1Q/2019	\$42.805	1.09110		\$651,543,798		\$9.124	
2Q/2019	\$42.756	1.08985		\$650,999,782		\$9.116	
3Q/2019	\$43.306	1.10387		\$657,106,084		\$9.202	
4Q/2019		0.00000		--		\$0.000	

Railroad Retirement & Medicare, U.S.

From 2016 Earnings Distribution

Earnings Groups	Avg Ann. Earnings	% of Total Employees	1Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
			Employees Recvg. Pay	Annual Earnings	Avg Qtrly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)	Tier I	Tier II	Medicare
\$0 - 41,699	\$30,262	2.166 %	3,256	\$33,019	\$8,255	\$8,255	\$8,255	\$8,255	\$26,876,826	\$26,876,826	\$26,876,826	\$26,876,826
41,700 - 43,699	\$42,903	0.591	888	46,812	11,703	11,703	11,703	11,703	10,396,737	10,396,737	10,396,737	10,396,737
43,700 - 45,699	\$44,763	0.935	1,405	48,841	12,210	12,210	12,210	12,210	17,161,399	17,161,399	17,161,399	17,161,399
45,700 - 47,699	\$46,647	1.379	2,073	50,897	12,724	12,724	12,724	12,724	26,376,058	26,376,058	26,376,058	26,376,058
47,700 - 49,699	\$48,750	1.034	1,554	53,191	13,298	13,298	13,298	13,298	20,668,885	20,668,885	20,668,885	20,668,885
49,700 - 51,699	\$50,730	2.068	3,109	55,352	13,838	13,838	13,838	13,838	43,016,720	43,016,720	43,016,720	43,016,720
51,700 - 53,699	\$52,751	1.379	2,073	57,557	14,389	14,389	14,389	14,389	29,827,501	29,827,501	29,827,501	29,827,501
53,700 - 55,699	\$54,804	1.723	2,590	59,797	14,949	14,949	14,949	14,949	38,718,581	38,718,581	38,718,581	38,718,581
55,700 - 57,699	\$56,791	2.806	4,218	61,965	15,491	15,491	15,491	15,491	65,341,497	65,341,497	65,341,497	65,341,497
57,700 - 59,699	\$58,815	3.299	4,959	64,173	16,043	16,043	16,043	16,043	79,559,550	79,559,550	79,559,550	79,559,550
59,700 - 61,699	\$60,675	4.628	6,957	66,203	16,551	16,551	16,551	16,551	115,139,684	115,139,684	115,139,684	115,139,684
61,700 - 63,699	\$62,661	4.628	6,957	68,370	17,092	17,092	17,092	17,092	118,908,410	118,908,410	118,908,410	118,908,410
63,700 - 65,699	\$64,649	4.825	7,253	70,539	17,635	17,635	17,635	17,635	127,903,087	127,903,087	127,903,087	127,903,087
65,700 - 67,699	\$66,673	4.530	6,809	72,747	18,187	18,187	18,187	18,187	123,842,610	123,842,610	123,842,610	123,842,610
67,700 - 69,699	\$68,534	3.447	5,182	74,778	18,694	18,694	18,694	18,694	96,865,531	96,865,531	96,865,531	96,865,531
69,700 - 71,699	\$70,724	3.988	5,995	77,167	19,292	19,292	19,292	19,292	115,649,528	115,649,528	115,649,528	115,649,528
71,700 - 73,699	\$72,852	2.905	4,367	79,489	19,872	19,872	19,872	19,872	86,777,976	86,777,976	86,777,976	86,777,976
73,700 - 75,699	\$74,718	2.462	3,701	81,525	20,381	20,381	20,381	20,381	75,428,450	75,428,450	75,428,450	75,428,450
75,700 - 77,699	\$76,600	3.644	5,478	83,578	20,895	20,895	20,895	20,895	114,453,489	114,453,489	114,453,489	114,453,489
77,700 - 79,699	\$78,723	3.151	4,737	85,895	21,474	21,474	21,474	21,474	101,711,940	101,711,940	101,711,940	101,711,940
79,700 - 81,699	\$80,708	3.299	4,959	88,061	22,015	22,015	22,015	22,015	109,174,396	109,174,396	109,174,396	109,174,396
81,700 - 83,699	\$82,622	2.757	4,144	90,149	22,537	22,537	22,537	22,537	93,401,611	93,401,611	93,401,611	93,401,611
83,700 - 85,699	\$84,690	2.314	3,478	92,405	23,101	23,101	23,101	23,101	80,355,829	80,355,829	80,355,829	80,355,829
85,700 - 87,699	\$86,732	2.905	4,367	94,633	23,658	23,658	23,658	23,658	103,311,198	103,311,198	103,311,198	103,311,198
87,700 - 89,699	\$88,666	3.348	5,033	96,744	24,186	24,186	24,186	24,186	121,720,707	121,720,707	121,720,707	121,720,707
89,700 - 91,699	\$90,699	2.708	4,071	98,962	24,740	24,740	24,740	24,740	100,710,107	100,710,107	100,710,107	100,710,107
91,700 - 93,699	\$92,738	1.526	2,294	101,187	25,297	25,297	25,297	25,297	56,601,568	56,601,568	56,601,568	56,601,568
93,700 - 95,699	\$94,689	1.822	2,739	103,315	25,829	25,829	25,829	25,829	67,580,640	67,580,640	67,580,640	67,580,640
95,700 - 97,699	\$96,618	1.428	2,147	105,420	26,355	26,355	26,355	26,355	56,572,862	56,572,862	56,572,862	56,572,862
97,700 - 99,699	\$98,600	1.822	2,739	107,583	26,896	26,896	26,896	26,896	73,662,624	73,662,624	73,662,624	73,662,624
99,700 - 101,699	\$100,896	1.871	2,812	110,088	27,522	27,522	27,522	27,522	77,405,111	77,405,111	77,405,111	77,405,111
101,700 - 103,699	\$102,684	1.526	2,294	112,039	28,010	28,010	28,010	28,010	64,250,899	64,250,899	64,250,899	64,250,899
103,700 - 105,699	\$104,566	1.231	1,850	114,092	28,523	28,523	28,523	28,523	52,780,129	52,780,129	52,780,129	52,780,129
105,700 - 107,699	\$106,714	1.625	2,443	116,436	29,109	29,109	29,109	29,109	60,273,623	60,273,623	60,273,623	60,273,623
107,700 - 109,699	\$108,748	1.329	1,998	118,655	29,664	29,664	29,664	29,664	49,294,550	49,294,550	49,294,550	49,294,550
109,700 - 111,699	\$110,767	0.788	1,185	120,858	30,215	30,215	30,215	30,215	35,789,737	35,789,737	35,789,737	35,789,737
111,700 - 113,699	\$112,607	0.886	1,352	122,866	30,716	30,716	30,716	30,716	32,863,034	32,863,034	32,863,034	32,863,034
113,700 - 115,699	\$114,747	1.034	1,554	125,201	31,300	31,300	31,300	31,300	48,650,104	48,650,104	48,650,104	48,650,104
\$115,700 - over	\$168,229	10.193	15,322	183,555	45,889	33,225	45,889	45,889	509,077,357	509,077,357	509,077,357	509,077,357
TOTAL	\$84,275	100.000	150,320						3,261,529,964	3,047,505,702	13.10%	3,455,565,054
									Employer Tax Rate	6.20%		1.45%
									Quarterly Payment	\$202,214,858	\$399,223,247	\$50,105,693

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

\$651,543,798

Railroad Retirement & Medicare, U.S.

From 2016 Earnings Distribution

Earnings Groups	Avg Ann. Earnings	% of Total Employees	2Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
			Employees Recvg. Pay	Annual Earnings	Avg Qlty Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)	Tier I	Tier II	Medicare
\$0 - 41,699	\$30,262	2.166 %	3,256	\$32,981	\$8,245	\$8,245	\$8,245	\$8,245	\$26,846,059	\$26,846,059		\$26,846,059
41,700 - 43,699	\$42,903	0.591	888	46,758	11,689	11,689	11,689	11,689	10,384,835	10,384,835		10,384,835
43,700 - 45,699	\$44,763	0.935	1,405	48,785	12,196	12,196	12,196	12,196	17,141,754	17,141,754		17,141,754
45,700 - 47,699	\$46,647	1.379	2,073	50,838	12,710	12,710	12,710	12,710	26,345,864	26,345,864		26,345,864
47,700 - 49,699	\$48,750	1.034	1,554	53,130	13,283	13,283	13,283	13,283	20,645,225	20,645,225		20,645,225
49,700 - 51,699	\$50,730	2.068	3,109	55,288	13,822	13,822	13,822	13,822	42,967,478	42,967,478		42,967,478
51,700 - 53,699	\$52,751	1.379	2,073	57,491	14,373	14,373	14,373	14,373	29,793,356	29,793,356		29,793,356
53,700 - 55,699	\$54,804	1.723	2,590	59,728	14,932	14,932	14,932	14,932	38,674,259	38,674,259		38,674,259
55,700 - 57,699	\$56,791	2.806	4,218	61,894	15,473	15,473	15,473	15,473	65,266,699	65,266,699		65,266,699
57,700 - 59,699	\$58,815	3.299	4,959	64,100	16,025	16,025	16,025	16,025	79,468,476	79,468,476		79,468,476
59,700 - 61,699	\$60,675	4.628	6,957	66,127	16,532	16,532	16,532	16,532	115,007,881	115,007,881		115,007,881
61,700 - 63,699	\$62,661	4.628	6,957	68,291	17,073	17,073	17,073	17,073	118,772,292	118,772,292		118,772,292
63,700 - 65,699	\$64,649	4.825	7,253	70,458	17,614	17,614	17,614	17,614	127,756,673	127,756,673		127,756,673
65,700 - 67,699	\$66,673	4.530	6,809	72,664	18,166	18,166	18,166	18,166	123,700,845	123,700,845		123,700,845
67,700 - 69,699	\$68,534	3.447	5,182	74,692	18,673	18,673	18,673	18,673	96,754,646	96,754,646		96,754,646
69,700 - 71,699	\$70,724	3.988	5,995	77,079	19,270	19,270	19,270	19,270	115,517,141	115,517,141		115,517,141
71,700 - 73,699	\$72,852	2.905	4,367	79,398	19,849	19,849	19,849	19,849	86,678,639	86,678,639		86,678,639
73,700 - 75,699	\$74,718	2.462	3,701	81,432	20,358	20,358	20,358	20,358	75,342,106	75,342,106		75,342,106
75,700 - 77,699	\$76,600	3.644	5,478	83,483	20,871	20,871	20,871	20,871	114,322,471	114,322,471		114,322,471
77,700 - 79,699	\$78,723	3.151	4,737	85,796	21,449	21,449	21,449	21,449	101,595,508	101,595,508		101,595,508
79,700 - 81,699	\$80,708	3.299	4,959	87,960	21,990	21,990	21,990	21,990	109,049,422	109,049,422		109,049,422
81,700 - 83,699	\$82,622	2.757	4,144	90,046	22,511	22,511	22,511	22,511	93,294,692	93,294,692		93,294,692
83,700 - 85,699	\$84,690	2.314	3,478	92,300	23,075	23,075	23,075	23,075	80,263,844	80,263,844		80,263,844
85,700 - 87,699	\$86,732	2.905	4,367	94,525	23,631	23,631	23,631	23,631	103,192,935	103,192,935		103,192,935
87,700 - 89,699	\$88,666	3.348	5,033	96,633	24,158	24,158	24,158	24,158	121,581,370	121,581,370		121,581,370
89,700 - 91,699	\$90,699	2.708	4,071	98,849	24,712	24,712	24,712	24,712	100,594,822	100,594,822		100,594,822
91,700 - 93,699	\$92,738	1.526	2,294	101,071	25,268	25,268	25,268	25,268	57,961,114	57,961,114		57,961,114
93,700 - 95,699	\$94,689	1.822	2,739	103,197	25,799	25,799	25,799	25,799	70,659,794	70,659,794		70,659,794
95,700 - 97,699	\$96,618	1.428	2,147	105,299	26,325	26,325	26,325	26,325	56,508,101	56,508,101		56,508,101
97,700 - 99,699	\$98,600	1.822	2,739	107,459	26,865	26,865	26,865	26,865	73,578,301	73,578,301		73,578,301
99,700 - 101,699	\$100,896	1.871	2,812	109,962	27,490	27,490	27,490	27,490	69,398,122	69,398,122		69,398,122
101,700 - 103,699	\$102,684	1.526	2,294	111,910	27,978	27,978	27,978	27,978	64,177,350	64,177,350		64,177,350
103,700 - 105,699	\$104,566	1.231	1,850	113,962	28,490	28,490	28,490	28,490	52,719,710	52,719,710		52,719,710
105,700 - 107,699	\$106,714	1.625	2,443	116,303	29,076	29,076	29,076	29,076	71,023,036	71,023,036		71,023,036
107,700 - 109,699	\$108,748	1.329	1,998	118,519	29,630	29,630	29,630	29,630	59,193,051	59,193,051		59,193,051
109,700 - 111,699	\$110,767	0.788	1,185	120,720	30,180	30,180	30,180	30,180	35,748,768	35,748,768		35,748,768
111,700 - 113,699	\$112,607	0.886	1,332	122,725	30,681	30,681	30,681	30,681	40,862,372	40,862,372		40,862,372
113,700 - 115,699	\$114,747	1.034	1,554	125,057	31,264	31,264	31,264	31,264	48,594,413	48,594,413		48,594,413
\$115,700 - over	\$168,229	10.193	15,322	183,345	45,836	33,225	24,675	45,836	509,077,357	378,073,252		702,307,576
TOTAL		100.000	150,320						3,258,379,160	3,045,281,970		3,451,609,379
Total Taxable Earnings									3,258,379,160	3,045,281,970		3,451,609,379
Employer Tax Rate									6.20%	13.10%		1.45%
Quarterly Payment									\$202,019,508	\$398,931,938		\$50,048,336
Total Tier I, Tier II, and Medicare Paid this Quarter												\$650,999,782

Railroad Retirement & Medicare, U.S.

From 2016 Earnings Distribution

Earnings Groups	Avg Ann. Earnings	% of Total Employees	3Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info					Total Taxable Earnings (Taxable x Employees)			
			Employees Recvg. Pay	Annual Earnings	Avg Qtrly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Tier I	Tier II	Medicare
\$0 - 41,699	\$30,262	2.166 %	3,256	\$33,405	\$8,351	\$8,351	\$8,351	\$8,351	\$27,191,399	\$27,191,399	\$27,191,399
41,700 - 43,699	\$42,903	0.591	888	47,359	11,840	11,840	11,840	11,840	10,518,422	10,518,422	10,518,422
43,700 - 45,699	\$44,763	0.935	1,405	49,413	12,353	12,353	12,353	12,353	17,362,260	17,362,260	17,362,260
45,700 - 47,699	\$46,647	1.379	2,073	51,492	12,873	12,873	12,873	12,873	26,684,769	26,684,769	26,684,769
47,700 - 49,699	\$48,750	1.034	1,554	53,814	13,453	13,453	13,453	13,453	20,910,799	20,910,799	20,910,799
49,700 - 51,699	\$50,730	2.068	3,109	55,999	14,000	14,000	14,000	14,000	43,520,198	43,520,198	43,520,198
51,700 - 53,699	\$52,751	1.379	2,073	58,230	14,558	14,558	14,558	14,558	30,176,609	30,176,609	30,176,609
53,700 - 55,699	\$54,804	1.723	2,590	60,497	15,124	15,124	15,124	15,124	39,171,753	39,171,753	39,171,753
55,700 - 57,699	\$56,791	2.806	4,218	62,690	15,672	15,672	15,672	15,672	66,106,270	66,106,270	66,106,270
57,700 - 59,699	\$58,815	3.299	4,959	64,924	16,231	16,231	16,231	16,231	80,490,734	80,490,734	80,490,734
59,700 - 61,699	\$60,675	4.628	6,957	66,977	16,744	16,744	16,744	16,744	116,487,307	116,487,307	116,487,307
61,700 - 63,699	\$62,661	4.628	6,957	69,170	17,292	17,292	17,292	17,292	120,300,142	120,300,142	120,300,142
63,700 - 65,699	\$64,649	4.825	7,253	71,364	17,841	17,841	17,841	17,841	129,400,096	129,400,096	129,400,096
65,700 - 67,699	\$66,673	4.530	6,809	73,598	18,400	18,400	18,400	18,400	125,292,094	125,292,094	125,292,094
67,700 - 69,699	\$68,534	3.447	5,182	75,653	18,913	18,913	18,913	18,913	97,999,268	97,999,268	97,999,268
69,700 - 71,699	\$70,724	3.988	5,995	78,070	19,518	19,518	19,518	19,518	117,003,118	117,003,118	117,003,118
71,700 - 73,699	\$72,852	2.905	4,367	80,419	20,105	20,105	20,105	20,105	87,793,646	87,793,646	87,793,646
73,700 - 75,699	\$74,718	2.462	3,701	82,479	20,620	20,620	20,620	20,620	76,311,283	76,311,283	76,311,283
75,700 - 77,699	\$76,600	3.644	5,478	84,557	21,139	21,139	21,139	21,139	115,793,080	115,793,080	115,793,080
77,700 - 79,699	\$78,723	3.151	4,737	86,900	21,725	21,725	21,725	21,725	102,902,401	102,902,401	102,902,401
79,700 - 81,699	\$80,708	3.299	4,959	89,091	22,273	22,273	22,273	22,273	110,452,200	110,452,200	110,452,200
81,700 - 83,699	\$82,622	2.757	4,144	91,204	22,801	22,801	22,801	22,801	94,494,806	94,494,806	94,494,806
83,700 - 85,699	\$84,690	2.314	3,478	93,487	23,372	23,372	23,372	23,372	81,296,333	81,296,333	81,296,333
85,700 - 87,699	\$86,732	2.905	4,367	95,741	23,935	23,935	23,935	23,935	104,520,377	104,520,377	104,520,377
87,700 - 89,699	\$88,666	3.348	5,033	97,876	24,469	24,469	24,469	24,469	123,145,355	123,145,355	123,145,355
89,700 - 91,699	\$90,699	2.708	4,071	100,120	25,030	25,030	25,030	25,030	101,888,842	101,888,842	101,888,842
91,700 - 93,699	\$92,738	1.526	2,294	102,371	25,593	25,593	25,593	25,593	58,706,708	58,706,708	58,706,708
93,700 - 95,699	\$94,689	1.822	2,739	104,525	26,131	26,131	26,131	26,131	71,568,740	71,568,740	71,568,740
95,700 - 97,699	\$96,618	1.428	2,147	106,654	26,663	26,663	26,663	26,663	52,966,605	52,966,605	52,966,605
97,700 - 99,699	\$98,600	1.822	2,739	108,842	27,210	27,210	27,210	27,210	74,524,789	74,524,789	74,524,789
99,700 - 101,699	\$100,896	1.871	2,812	111,376	27,844	27,844	27,844	27,844	78,311,079	78,311,079	78,311,079
101,700 - 103,699	\$102,684	1.526	2,294	113,350	28,337	28,337	28,337	28,337	65,002,907	65,002,907	65,002,907
103,700 - 105,699	\$104,566	1.231	1,850	115,427	28,857	28,857	28,857	28,857	53,397,880	53,397,880	53,397,880
105,700 - 107,699	\$106,714	1.625	2,443	117,799	29,450	29,450	29,450	29,450	60,273,623	60,273,623	60,273,623
107,700 - 109,699	\$108,748	1.329	1,998	120,044	30,011	30,011	30,011	30,011	49,294,550	49,294,550	49,294,550
109,700 - 111,699	\$110,767	0.788	1,185	122,273	30,568	30,568	30,568	30,568	36,208,629	36,208,629	36,208,629
111,700 - 113,699	\$112,607	0.886	1,352	124,304	31,076	31,076	31,076	31,076	32,863,034	32,863,034	32,863,034
113,700 - 115,699	\$114,747	1.034	1,554	126,666	31,666	31,666	31,666	31,666	38,352,570	38,352,570	38,352,570
\$115,700 - over	\$168,229	10.193	15,322	185,703	46,426	33,225	24,675	46,426	509,077,357	378,073,252	711,341,844
TOTAL		100.000	150,320						3,293,745,331	3,070,242,220	3,496,009,818
Employer Tax Rate									6.20%	13.10%	1.45%
Quarterly Payment									\$204,212,211	\$402,201,731	\$50,692,142

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

\$557,106,084

Railroad Retirement & Medicare, U.S.

From 2016 Earnings Distribution

Earnings Groups	Avg Ann. Earnings	% of Total Employees	4Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
			Employees Recvg. Pay	Annual Earnings	Avg Qtrly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)	Tier I	Tier II	Medicare
\$0 - 41,699	\$30,262	2.166 %	3,256	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,903	0.591	888	0	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,763	0.935	1,405	0	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,647	1.379	2,073	0	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,750	1.034	1,554	0	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,730	2.068	3,109	0	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,751	1.379	2,073	0	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,804	1.723	2,590	0	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,791	2.806	4,218	0	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,815	3.299	4,959	0	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,675	4.628	6,957	0	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,661	4.628	6,957	0	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,649	4.825	7,253	0	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,673	4.530	6,809	0	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,534	3.447	5,182	0	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,724	3.988	5,995	0	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,852	2.905	4,367	0	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,718	2.462	3,701	0	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,600	3.644	5,478	0	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,723	3.151	4,737	0	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,708	3.299	4,959	0	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,622	2.757	4,144	0	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,690	2.314	3,478	0	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,732	2.905	4,367	0	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,666	3.348	5,033	0	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,699	2.708	4,071	0	0	0	458	0	0	0	1,862,750	0
91,700 - 93,699	\$92,738	1.526	2,294	0	0	0	2,132	0	0	0	4,890,658	0
93,700 - 95,699	\$94,689	1.822	2,739	0	0	0	3,734	0	0	0	10,227,387	0
95,700 - 97,699	\$96,618	1.428	2,147	0	0	0	5,318	0	0	0	11,416,153	0
97,700 - 99,699	\$98,600	1.822	2,739	0	0	0	6,946	0	0	0	19,023,794	0
99,700 - 101,699	\$100,896	1.871	2,812	0	0	0	8,831	0	0	0	24,838,327	0
101,700 - 103,699	\$102,684	1.526	2,294	0	0	0	10,300	0	0	0	23,626,452	0
103,700 - 105,699	\$104,566	1.231	1,850	0	0	0	11,845	0	0	0	21,918,958	0
105,700 - 107,699	\$106,714	1.625	2,443	0	0	0	13,609	0	0	0	33,243,253	0
107,700 - 109,699	\$108,748	1.329	1,998	0	0	0	15,280	0	0	0	30,524,780	0
109,700 - 111,699	\$110,767	0.788	1,185	0	0	(0)	16,938	0	(0)	0	20,062,922	0
111,700 - 113,699	\$112,607	0.886	1,332	0	0	0	18,449	0	0	0	24,570,487	0
113,700 - 115,699	\$114,747	1.034	1,554	0	0	0	20,206	0	0	0	31,406,326	0
\$115,700 - over	\$168,229	10.193	15,322	0	0	33,225	24,675	0	509,077,357	378,073,252	0	0
TOTAL		100.000	150,320				Total Taxable Earnings		509,077,357	635,685,499		0
							Employer Tax Rate		6.20%	13.10%		1.45%
							Quarterly Payment		\$31,562,796	\$83,274,800		\$0
							Total Tier I, Tier II, and Medicare Paid this Quarter					
							\$114,837,596					

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
			\$36.760	(2013)			
2014 Avg.	0.68%	\$17,280	\$38.866		0.999988	\$16,395.26	\$0.059
3Q/15 reb.	2.31%	\$17,460	\$40.503		1.042107	\$16,583.82	\$0.203
4Q/15	2.31%	\$17,460	\$40.590		1.044345	\$16,585.04	\$0.203
1Q/16	2.73%	\$17,460	\$40.888		1.052012	\$16,589.15	\$0.240
2Q/16	2.73%	\$17,460	\$40.731		1.047973	\$16,586.99	\$0.240
3Q/16	2.73%	\$17,460	\$40.545		1.043187	\$16,584.41	\$0.240
			\$38.866	(2014)			
2015 Avg.	2.31%	\$17,460	\$39.887		1.000000	\$16,460.37	\$0.208
3Q/16 reb.	2.73%	\$17,460	\$39.731		0.996089	\$16,458.00	\$0.246
4Q/16	2.73%	\$17,460	\$39.703		0.995387	\$16,457.57	\$0.246
1Q/17	3.37%	\$18,540	\$39.736		0.996214	\$17,436.31	\$0.321
2Q/17	3.37%	\$18,540	\$39.738		0.996264	\$17,436.34	\$0.321
3Q/17	3.37%	\$18,540	\$39.775		0.997192	\$17,436.97	\$0.321
			\$39.887	(2015)			
2016 Avg.	2.73%	\$17,460	\$39.231		1.000000	\$16,664.96	\$0.247
3Q/17 reb.	3.37%	\$18,540	\$39.154		0.998037	\$17,655.72	\$0.323
4Q/17	3.37%	\$18,540	\$39.156		0.998088	\$17,655.75	\$0.323
1Q/18	3.76%	\$18,720	\$40.555		1.033749	\$17,843.78	\$0.364
2Q/18	3.76%	\$18,720	\$40.961		1.044098	\$17,850.31	\$0.364
3Q/18	3.76%	\$18,720	\$42.431		1.081568	\$17,873.30	\$0.365
			\$39.231	(2016)			
2017 Avg.	3.37%	\$18,540	\$39.599		1.009380	\$17,625.49	\$0.319
3Q/18 reb.	3.76%	\$18,720	\$42.946		1.094696	\$17,832.94	\$0.360
4Q/18	3.76%	\$18,720	\$42.976		1.095460	\$17,833.29	\$0.360
1Q/19	3.38%	\$19,260	\$42.805		1.091101	\$18,330.97	\$0.333
2Q/19	3.38%	\$19,260	\$42.756		1.089852	\$18,330.37	\$0.333
3Q/19	3.38%	\$19,260	\$43.306		1.103872	\$18,336.98	\$0.333

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.

The MEANS Procedure

Variable	N	Sum	Mean
ANUAL_US	2573	45350374.36	17625.49
QTRLY_US	2573	47181047.28	18336.98

The MEANS Procedure

Variable	N	Sum	Mean
FactorA	2573	2597.13	1.0093800
FactorQ	2573	2840.26	1.1038720
Capa	2573	47703420.00	18540.00
Capq	2573	49555980.00	19260.00



PETROLEUM & OTHER LIQUIDS

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Spot Prices

(Crude Oil in Dollars per Barrel, Products in Dollars per Gallon)

Period: **Monthly** ▼

Product by Area	 	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	View History
Crude Oil								
WTI - Cushing, Oklahoma	☐	56.96	49.52	51.38	54.95	58.15	63.86	1986-2019
Brent - Europe	☐	64.75	57.36	59.41	63.96	66.14	71.23	1987-2019
Conventional Gasoline								
New York Harbor, Regular	☐	1.625	1.449	1.425	1.568	1.812	2.042	1986-2019
U.S. Gulf Coast, Regular	☐	1.546	1.357	1.353	1.470	1.817	2.006	1986-2019
RBOB Regular Gasoline								
Los Angeles	☐	1.739	1.597	1.607	1.817	2.004	2.512	2003-2019
No. 2 Heating Oil								
New York Harbor	☐	2.033	1.784	1.819	1.931	1.965	2.036	1986-2019
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	2.048	1.801	1.846	1.962	1.988	2.062	2006-2019
U.S. Gulf Coast	☐	1.962	1.687	1.774	1.908	1.939	2.012	2006-2019
Los Angeles	☐	2.055	1.793	1.812	1.935	2.017	2.201	1996-2019
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	1.945	1.696	1.784	1.914	1.902	1.977	1990-2019
Propane								
Mont Belvieu, Texas	☐	0.745	0.677	0.665	0.673	0.670	0.642	1992-2019

Click on the source key icon to learn how to download series into Excel, or to embed a chart or map on your website.

- = No Data Reported; -- = Not Applicable; NA = Not Available; W = Withheld to avoid disclosure of individual company data.

Notes: Weekly, monthly, and annual prices are calculated by EIA from daily data by taking an unweighted average of the daily closing spot prices for a given product over the specified time period. See Definitions, Sources, and Notes link above for more information on this table.

Release Date: 5/30/2019

Next Release Date: 6/5/2019



PETROLEUM & OTHER LIQUIDS

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Spot Prices

(Crude Oil in Dollars per Barrel, Products in Dollars per Gallon)

Period: Weekly ▼

Product by Area	 	04/19/19	04/26/19	05/03/19	05/10/19	05/17/19	05/24/19	View History
Crude Oil								
WTI - Cushing, Oklahoma	☐	63.80	65.28	62.90	61.81	62.10	60.72	1986-2019
Brent - Europe	☐	70.87	72.93	71.59	71.25	73.32	70.89	1987-2019
Conventional Gasoline								
New York Harbor, Regular	☐	2.069	2.125	2.020	1.921	1.956	1.911	1986-2019
U.S. Gulf Coast, Regular	☐	2.000	2.071	1.999	1.878	1.894	1.868	1986-2019
RBOB Regular Gasoline								
Los Angeles	☐	2.564	2.543	2.541	2.328	2.231	2.152	2003-2019
No. 2 Heating Oil								
New York Harbor	☐	2.048	2.066	2.046	2.030	2.054	2.004	1986-2019
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	2.074	2.094	2.072	2.050	2.076	2.030	2006-2019
U.S. Gulf Coast	☐	2.021	2.042	2.022	2.005	2.028	1.978	2006-2019
Los Angeles	☐	2.221	2.217	2.297	2.356	2.406	2.281	1996-2019
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	1.982	2.010	1.984	1.982	2.022	1.978	1990-2019
Propane								
Mont Belvieu, Texas	☐	0.629	0.656	0.615	0.598	0.610	0.552	1992-2019

Click on the source key icon to learn how to download series into Excel, or to embed a chart or map on your website.

- = No Data Reported; -- = Not Applicable; NA = Not Available; W = Withheld to avoid disclosure of individual company data.

Notes: Weekly, monthly, and annual prices are calculated by EIA from daily data by taking an unweighted average of the daily closing spot prices for a given product over the specified time period. See Definitions, Sources, and Notes link above for more information on this table.

Release Date: 5/30/2019

Next Release Date: 6/5/2019

U.S.

Summary by Composition Category

	MS-2018		Prev. Idx	2019Q2		Calculation		Relative of Change
	MS Amount	Weight		Cur Idx		Prev. Idx	Cur Idx	
Forest Products	585,399,423	0.1065	343.94	336.99		36.63	35.89	
Metal Products	3,538,047,604	0.6438	175.42	174.09		112.94	112.08	
Misc. Products	1,372,228,909	0.2497	385.79	412.72		96.33	103.06	
Total	5,495,675,936	1.0000	245.90	251.03				1.0209
Total Linked			252.17	257.44				
'77 = 100 Link Fact.= 1.423			358.84	366.34				
'80 = 100 Link Fact.= 1.061			267.55	273.14				

As info only	Change
Forest Products	-2.02%
Metal Products	-0.76%
Misc. Products	6.98%
Total ('80=100)	2.09%
Rounded 80 Indices	2.1%
Rounded 77 Indices	2.1%

Car Hire for RCAF - Revised 2017 Weights

Car Hire Index used in RCAF's All-Inclusive Index (Forecast)

	1980	June 3Q/18	Sept. 4Q/18	Dec. 1Q/19	Mar. 2Q/19	June 3Q/19
RATE						
RR-OWNED TIME	31.00	64.00	64.00	64.00	65.00	65.00
RR-OWNED MILEAGE	4.69	6.60	6.70	6.70	6.70	6.70
PRIVATELY-OWNED CARS	25.47	55.51	57.27	57.30	58.58	58.88
AUTORACKS	47.00	84.84	87.00	87.67	83.67	86.19
INDEX						
RR-OWNED TIME	100.0	206.5	206.5	206.5	209.7	209.7
RR-OWNED MILEAGE	100.0	140.7	142.9	142.9	142.9	142.9
PRIVATELY-OWNED CARS	100.0	217.9	224.8	225.0	230.0	231.2
AUTORACKS	100.0	180.5	185.1	186.5	178.0	183.4
CAR HIRE INDEX (old wts) 2016	100.0	209.1	--	--	--	--
CAR HIRE INDEX (new wts) 2017	100.0	211.2	217.2	217.5	221.3	222.6
CAR HIRE INDEX (LINKED)	100.0	210.4	216.4	216.7	220.5	221.8

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.

Car Hire Data From CHARM

Car Hire Data From CHARM	2018 (first day of month)						2019 (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)	10,741	10,849	10,867	10,873	10,859	10,867	10,980	10,987	11,107	11,132	11,226	11,316		
Superstructures (Vehicular Flats)														
Rate (in cents)	86.0	87.0	87.0	87.0	86.0	86.0	86.0	86.0	87.0	88.0	89.0	92.0		
Superstructures #3 - Auto Rack	64.0	64.0	64.0	64.0	64.0	64.0	64.0	65.0	65.0	65.0	65.0	65.0		
All other #1 - Time	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7		
All other #2 - Mileage														
Private Equipment														
No. of Cars (cars with rates only)	55,504	55,500	55,392	55,268	55,162	55,158	55,092	55,090	55,038	55,146	55,203	55,179		
Superstructures (Vehicular Flats)	421,139	422,430	423,225	424,175	425,349	426,465	426,889	427,681	428,680	429,508	429,447	429,373		
Covered Hoppers	405,718	405,541	405,949	406,278	406,924	407,122	407,849	408,068	408,804	409,769	409,873	411,017		
Tank Cars	291,908	291,714	292,215	292,904	295,029	295,548	296,028	296,805	296,959	296,995	296,817	297,458		
Others														
Rate (in cents)	84.0	84.0	84.0	84.0	84.0	84.0	85.0	85.0	86.0	86.0	86.0	86.0		
Superstructures #1 - Time	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4		
Superstructures #2 - Mileage	86.0	86.0	87.0	87.0	88.0	88.0	82.0	82.0	83.0	83.0	84.0	85.0		
Superstructures #3 - Auto Rack	46.2	46.2	46.2	46.3	46.3	46.3	45.2	45.3	45.4	45.4	45.5	45.5		
Covered Hoppers #2 - Mileage	89.9	90.0	94.6	94.7	94.7	94.8	94.5	94.6	98.1	98.2	98.3	98.4		
Tank Cars #2 - Mileage	89.0	90.0	90.0	90.0	90.0	90.0	98.0	98.0	98.0	99.0	99.0	100.0		
Others #1 - Time	8.2	8.2	8.3	8.3	8.3	8.3	8.2	8.2	8.3	8.3	8.3	8.3		
Others #2 - Mileage														
AVERAGE RATES														
Private Superstructures	21.14	21.14	21.14	21.14	21.14	21.14	21.38	21.38	21.61	21.61	21.61	21.61	0.00	0.00
Private Others	27.96	28.18	28.28	28.28	28.28	28.28	29.96	29.96	30.06	30.28	30.28	30.50	0.00	0.00
Private Total	55.58	55.66	57.27	57.33	57.29	57.30	57.24	57.29	58.58	58.69	58.77	58.88	#DIV/0!	#DIV/0!
Autoracks	86.00	86.16	87.00	87.00	87.67	87.67	82.66	82.67	83.67	83.84	84.84	86.19	#DIV/0!	#DIV/0!

Car Hire Weights	"Old Wts" New Wts"	
	2016	2017
For RCAF & RCR		
RR-owned Time	0.091	0.073
RR-owned Mileage	0.058	0.049
Privately-owned Cars	0.762	0.822
Autoracks	0.089	0.056
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2016	2017
Car Hire - U.S.	0.583	0.605
Lease Rentals - U.S.	0.417	0.395
----- Check sum	1.000	1.000

Notes:

The Car Hire Index and Lease Rentals Index are weighed together to calculate the Equipment Rents Index
 CHARM is the Car Hire Accounting Rate Master
 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 06/2019

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	11,316	109	0.062	92
Railroad	Number of Zero-Rated Vehicular Flats	56	.	.	.
Railroad	All Other Cars	406,692	65	0.067	.
Railroad	Number of Zero-Rated Other Cars	15,900	.	.	.
Railroad	Total Railroad Equipment	433,964	.	.	.
		.	.	.	.
Private	Vehicular Flats	55,179	86	0.014	85
Private	Number of Zero-Rated Vehicular Flats	89	.	.	.
Private	Covered Hoppers	429,373	0	0.455	.
Private	Number of Zero-Rated Covered Hoppers	14,661	.	.	.
Private	Tanks	411,017	0	0.984	.
Private	Number of Zero-Rated Tanks	10,997	.	.	.
Private	All Other Cars	297,458	100	0.083	.
Private	Number of Zero-Rated Other Cars	24,242	.	.	.
Private	Total Private Equipment	1,243,016	.	.	.

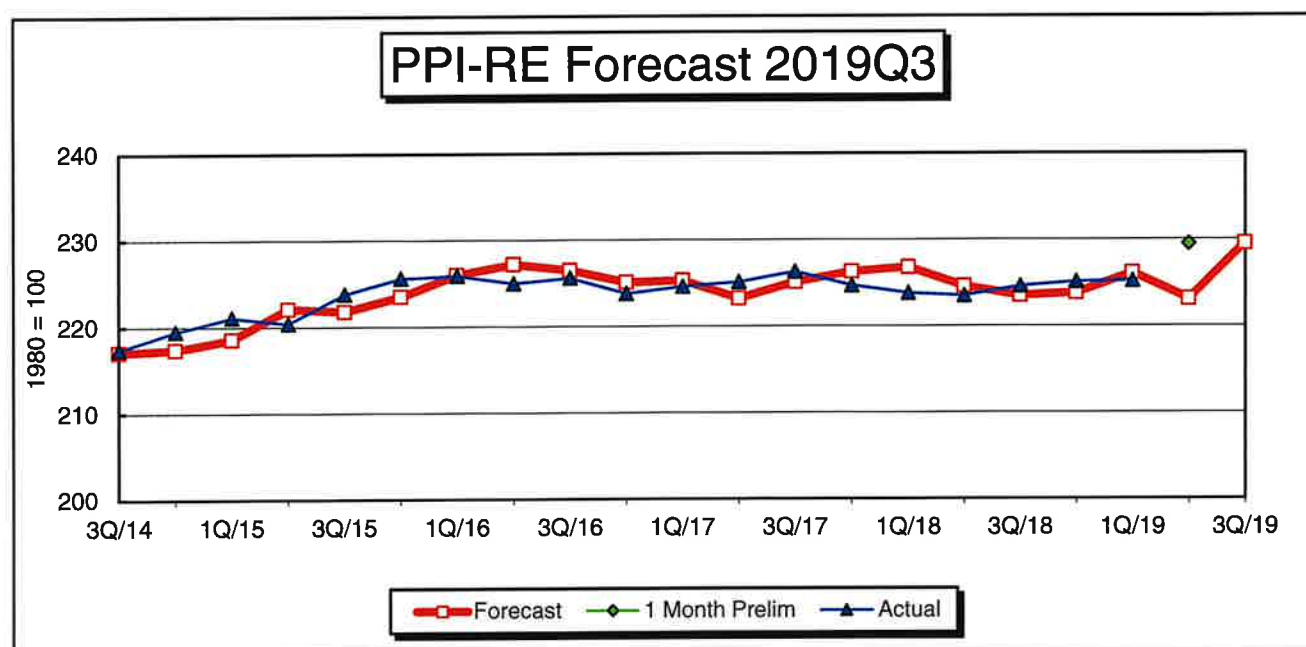
Notes
This report excludes these car types: D (Locomotives), M (MoW, EOTs, etc.), U (Containers), Z (Trailers).
All TTX equipment (including ABOX, RBOX, GONX) is contained in the Private section of report.
Equipment can be zero rated due to owners supplying incorrect or insufficient information to the 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
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	224.6	
2Q/17	223.2	225.1	
3Q/17	225.1	226.3	
4Q/17	226.3	224.7	
1Q/18	226.8	223.8	
2Q/18	224.6	223.5	
3Q/18	223.5	224.6	
4Q/18	223.8	225.1	
1Q/19	226.1	225.2	
2Q/19	223.1		229.5
3Q/19	229.5		

1980 Base

	PPI-RE Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2019Q3						
Low	203.1	224.7	0.0%			
Midpoint	207.5	229.5	2.2%	0.0%	1.9%	2.9%
High	211.9	234.4	4.4%			



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PPI Commodity Data

Series Id: WP0144
Not Seasonally Adjusted
Series Title: PPI Commodity data for Transportation equipment-Railroad equipment, not seasonally adjusted
Group: Transportation equipment
Item: Railroad equipment
Base Date: 198200

Download: [XLS](#) [XLSX](#)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	202.1	202.1	202.0	202.1	202.1	202.1	204.1	204.1	201.1	201.3	201.3	201.3
2019	201.4(P)	201.7(P)	207.6(P)	207.5(P)								

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

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5/15/2019

RCAFdepreciation

Association of American Railroads

5/28/2019

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 2.37 and for Box-Jenkins was 2.34.
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	201.17	Std. deviation	3.09
R-square	0.86	Adj. R-square	0.87
Durbin-Watson	2.14	Ljung-Box(18)	13.4 P=0.24
Forecast error	1.13	BIC	1.13
MAPE	0.35	SMAPE	0.35
RMSE	1.13	MAD	0.71
MAD/Mean Ratio	0		

Historic Data

Date	Historic
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	201.8
2017-Jan	201.9
2017-Feb	204.1
2017-Mar	203.3
2017-Apr	203.4
2017-May	203.5
2017-Jun	204.6
2017-Jul	203.6
2017-Aug	204.5
2017-Sep	203.8
2017-Oct	202.8
2017-Nov	201.7
2017-Dec	201.6
2018-Jan	202.1
2018-Feb	202.1
2018-Mar	202
2018-Apr	202.1
2018-May	202.1
2018-Jun	202.1
2018-Jul	204.1
2018-Aug	204.1
2018-Sep	201.1
2018-Oct	201.3
2018-Nov	201.3
2018-Dec	201.3
2019-Jan	201.4
2019-Feb	201.7
2019-Mar	207.6
2019-Apr	207.5

Forecast Data

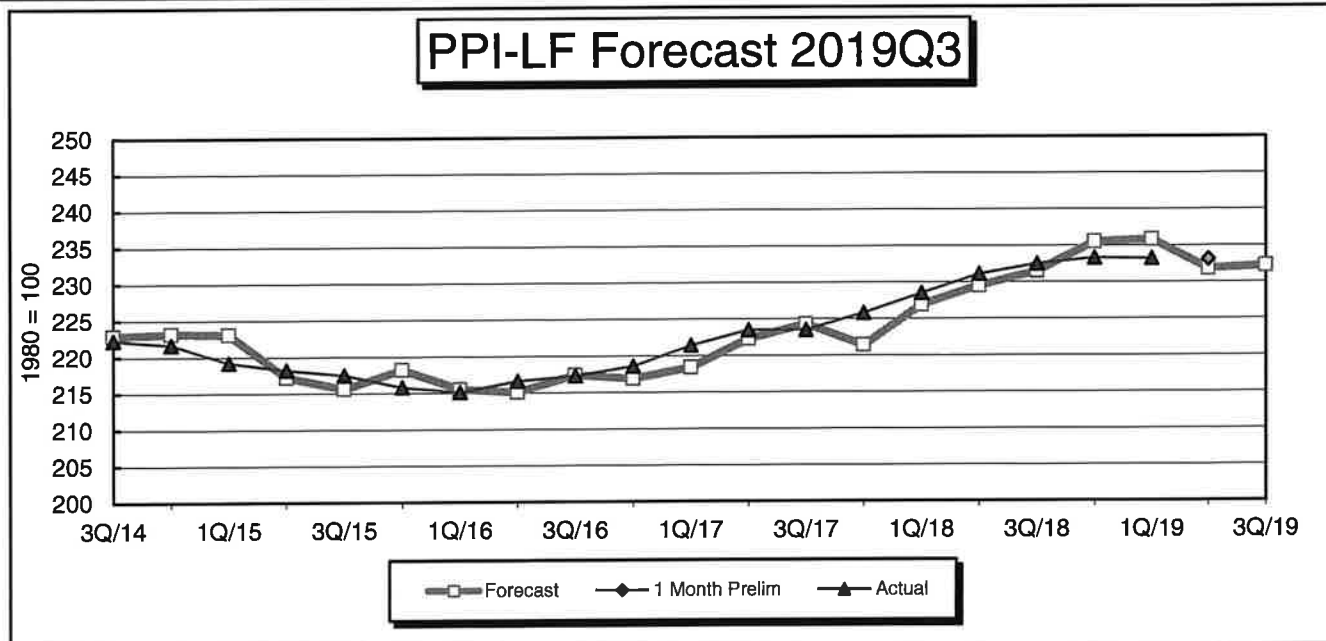
Date	2.5 Lower	Forecast	97.5 Upper
2019-May	205.266	207.5	209.734
2019-Jun	204.341	207.5	210.659
2019-Jul	203.631	207.5	211.369
2019-Aug	203.032	207.5	211.968
2019-Sep	202.505	207.5	212.495
2019-Oct	202.028	207.5	212.972
2019-Nov	201.589	207.5	213.411
2019-Dec	201.181	207.5	213.819
2020-Jan	200.798	207.5	214.202
2020-Feb	200.436	207.5	214.564
2020-Mar	200.091	207.5	214.909
2020-Apr	199.761	207.5	215.239

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

	Forecast	Actual	1 Month Prelim
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	221.4	
2Q/17	222.3	223.5	
3Q/17	224.3	223.5	
4Q/17	221.4	225.8	
1Q/18	226.9	228.5	
2Q/18	229.5	231.1	
3Q/18	231.5	232.5	
4Q/18	235.5	233.3	
1Q/19	235.8	233.2	
2Q/19	231.8		233.1
3Q/19	232.2		

1980 Base

	PPI-LF Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2019Q3						
Low	204.1	228.8	-1.6%			
Midpoint	207.1	232.2	-0.1%	-0.4%	-0.4%	0.2%
High	210.1	235.5	1.3%			



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PPI Commodity Data

Series Id: WPU03T15M05

Not Seasonally Adjusted

Series Title: PPI Commodity data for Industrial commodities less fuels, not seasonally adjusted**Group:** Industrial Commodities less fuels**Item:** Industrial commodities less fuels**Base Date:** 198200**Download:**  [xlsx](#)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	203.0	203.8	204.8	205.4	206.3	207.0	207.4	207.6	207.9	208.7	208.5	207.8
2019	207.7(P)	208.0(P)	208.4(P)	207.9(P)								

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

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5/15/2019

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 1.87 and for Box-Jenkins was 1.19.

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]	0.6741	0.08853	7.614	1

Within-Sample Statistics

Sample size	72	No. parameters	1
Mean	198.51	Std. deviation	5.1
R-square	0.99	Adj. R-square	0.99
Durbin-Watson	2.07	Ljung-Box(18)	14.7 P=0.32
Forecast error	0.41	BIC	0.42
MAPE	0.16	SMAPE	0.16
RMSE	0.41	MAD	0.32
MAD/Mean Ratio	0		

Historic Data

Date	Historic
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	194.3
2016-Nov	194.9
2016-Dec	195.6
2017-Jan	196.8
2017-Feb	197.8
2017-Mar	198.7
2017-Apr	199.3
2017-May	199.2
2017-Jun	199.4
2017-Jul	199.2
2017-Aug	199.7
2017-Sep	200
2017-Oct	200.9
2017-Nov	201.5
2017-Dec	201.7
2018-Jan	203
2018-Feb	203.8
2018-Mar	204.8
2018-Apr	205.4
2018-May	206.3
2018-Jun	207
2018-Jul	207.4
2018-Aug	207.6
2018-Sep	207.9
2018-Oct	208.7
2018-Nov	208.5
2018-Dec	207.8
2019-Jan	207.7
2019-Feb	208
2019-Mar	208.4
2019-Apr	207.9

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2019-May	206.759	207.563	208.367
2019-Jun	205.767	207.336	208.904
2019-Jul	204.86	207.183	209.505
2019-Aug	204.041	207.079	210.117
2019-Sep	203.303	207.01	210.717
2019-Oct	202.633	206.963	211.293
2019-Nov	202.023	206.931	211.84
2019-Dec	201.462	206.91	212.358
2020-Jan	200.944	206.896	212.847
2020-Feb	200.461	206.886	213.311
2020-Mar	200.008	206.879	213.751
2020-Apr	199.581	206.875	214.169

Forecast Error Calculation

	First Quarter 2019			Difference		Notes
	2017 Weight	2019Q1 Forecast	2019Q1 Actual	Pt.	Pct.	
Labor	34.8%	440.3	440.3	0.0	0%	* actual=forecast
Fuel	12.9%	256.8	222.0	-34.8	-14%	from 1st month of quarter
M&S	4.9%	268.3	268.3	0.0	0%	* actual=forecast
Equip Rents	5.7%	236.3	235.4	-0.9	0%	from Equipment Rents below
Depreciation	15.7%	226.1	225.2	-0.9	0%	PPI-RE
Interest	2.1%	62.4	62.4	0.0	0%	* actual=forecast
Other	23.9%	235.8	233.2	-2.6	-1%	PPI-LF
Weighted Avg	100.0%					
1980 = 100		306.1	300.8			calculated
1980 = 100 (linked)		283.3	276.6			calculated
4Q17 = 100	2.645	107.1	104.6			calculated
4Q12 = 100	2.976	95.2	92.9			calculated
4Q07 = 100	2.459	115.2	112.5			calculated
4Q02 = 100	1.921	147.5	144.0			calculated
4Q97 = 100	1.732	163.6	159.7			calculated
Forecast Error		-2.5				calculated -0.025 = RCAF adj.
Prior Quarter						
1980 = 100		308.9	310.3 **			
1980 = 100 (linked)		285.9	285.3			
4Q17 = 100		108.1	107.9			calculated
4Q12 = 100		96.1	95.9			calculated
4Q07 = 100		116.3	116.0			calculated
4Q02 = 100		148.8	148.5			calculated
4Q97 = 100		165.1	164.7			calculated
Equipment Rents						
Car Hire		216.7	216.4			from Equipment Rents/CHARM
Lease Rentals	60.5%	235.8	233.2			(equals PPI-LF from above)
Weighted Average	39.5%	224.2	223.0			calculated
Linked		236.3	235.4			calculated
Prior Quarter						
Weighted Average		223.9	223.3 **			
Linked		236.0	235.7			
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

0.9040
0.8920

RCAF Fuel (Actual All-Inclusive Index)

January 2019

Monthly Report

	January 2019 Price (cents) (1)	1/1/81 Price (cents) (2)	1/91 New Method Linking Factors (3)	January 2019 Index 1/1/81=100 (4)	Linking Factor 1980=100 (5)	January 2019 1980=100 Current Index (6)
U.S.	181.65	89.34	99.415	202.13	1.096	221.54

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

(6) = (4) x (5)

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

	January 2019 1980=100 Current Index	Adjustment Factor	January 2019 1980=100 Linked Index
U.S.	221.54	1.00192	221.97 ←

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

Car Hire for RCAF - Revised 2017 Weights

Car Hire Index used in RCAF's All-Inclusive Index (Actual)

		1980	Aug 3Q/18	Nov 4Q/18	Feb 1Q/19	May 2Q/19	Aug 3Q/19
RATE							
	RR-OWNED TIME	31.00	64.00	64.00	65.00	--	--
	RR-OWNED MILEAGE	4.69	6.70	6.70	6.70	--	--
	PRIVATELY-OWNED CARS	25.47	55.66	57.29	57.29	--	--
	AUTORACKS	47.00	86.16	87.67	82.67	--	--
INDEX							
	RR-OWNED TIME	100.0	206.5	206.5	209.7	--	--
	RR-OWNED MILEAGE	100.0	142.9	142.9	142.9	--	--
	PRIVATELY-OWNED CARS	100.0	218.5	224.9	225.0	--	--
	AUTORACKS	100.0	183.3	186.5	175.9	--	--
CAR HIRE INDEX (old wts)	2016	100.0	209.9	--	--	--	--
CAR HIRE INDEX (new wts)	2017	100.0	211.9	217.4	217.1	--	--
CAR HIRE INDEX (LINKED)		100.0	211.2	216.7	216.4	--	--

Note: Indexes are rounded, rates are full float.

Car Hire Data From CHARM

	2018 (first day of month)					2019 (first day of month)							
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul

Railroad Equipment

No. of Cars (cars with rates only)	10,741	10,849	10,867	10,873	10,859	10,867	10,980	10,987	11,107					
Superstructures (Vehicular Flats)														
Rate (in cents)	86.0	87.0	87.0	87.0	86.0	86.0	86.0	86.0	87.0					
Superstructures #3 - Auto Rack	64.0	64.0	64.0	64.0	64.0	64.0	64.0	65.0	65.0					
All other #1 - Time	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7					
All other #2 - Mileage														

Private Equipment

No. of Cars (cars with rates only)	55,504	55,500	55,392	55,268	55,162	55,158	55,092	55,090	55,038					
Superstructures (Vehicular Flats)	421,139	422,430	423,225	424,175	425,349	426,465	426,889	427,681	428,680					
Covered Hoppers	405,718	405,541	405,949	406,278	406,924	407,122	407,849	408,068	408,804					
Tank Cars	291,908	291,714	292,215	292,904	295,029	295,548	296,028	296,805	296,959					
Others														
Rate (in cents)	84.0	84.0	84.0	84.0	84.0	84.0	85.0	85.0	86.0					
Superstructures #1 - Time	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4					
Superstructures #2 - Mileage	86.0	86.0	87.0	87.0	88.0	88.0	82.0	82.0	83.0					
Superstructures #3 - Auto Rack	46.2	46.2	46.2	46.3	46.3	46.3	45.2	45.3	45.4					
Covered Hoppers #2 - Mileage	89.9	90.0	94.6	94.7	94.7	94.8	94.5	94.6	98.1					
Tank Cars #2 - Mileage	89.0	90.0	90.0	90.0	90.0	90.0	98.0	98.0	98.0					
Others #1 - Time	8.2	8.2	8.3	8.3	8.3	8.3	8.2	8.2	8.3					
Others #2 - Mileage														

AVERAGE RATES

Private Superstructures	21.14	21.14	21.14	21.14	21.14	21.14	21.38	21.38	21.61	0.00	0.00	0.00	0.00	0.00
Private Others	27.96	28.18	28.28	28.28	28.28	28.28	29.96	29.96	30.06	0.00	0.00	0.00	0.00	0.00
Private Total	55.58	55.66	57.27	57.33	57.29	57.30	57.24	57.29	58.58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	86.00	86.16	87.00	87.00	87.67	87.67	82.66	82.67	83.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Car Hire Weights	"Old Wts" New Wts"	
	2016	2017
For RCAF & RCR		
RR-owned Time	0.091	0.073
RR-owned Mileage	0.058	0.049
Privately-owned Cars	0.762	0.822
Autoracks	0.089	0.056
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2016	2017
Car Hire - U.S.	0.583	0.605
Lease Rentals - U.S.	0.417	0.395
----- Check sum	1.000	1.000

Notes:

The Car Hire Index and Lease Rentals Index are weighed together to calculate the Equipment Rents Index
 CHARM is the Car Hire Accounting Rate Master
 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 03/2019

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	11,107	109	0.063	87
Railroad	Number of Zero-Rated Vehicular Flats	37	.	.	.
Railroad	All Other Cars	411,267	65	0.067	.
Railroad	Number of Zero-Rated Other Cars	14,870	.	.	.
Railroad	Total Railroad Equipment	437,281	.	.	.
		.	.	.	.
Private	Vehicular Flats	55,038	86	0.014	83
Private	Number of Zero-Rated Vehicular Flats	143	.	.	.
Private	Covered Hoppers	428,680	0	0.454	.
Private	Number of Zero-Rated Covered Hoppers	13,318	.	.	.
Private	Tanks	408,804	0	0.981	.
Private	Number of Zero-Rated Tanks	10,182	.	.	.
Private	All Other Cars	296,959	98	0.083	.
Private	Number of Zero-Rated Other Cars	24,316	.	.	.
Private	Total Private Equipment	1,237,440	.	.	.

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 2019			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	19Q1	19Q2	19Q3	19Q4
For Actual	→	18Q3	18Q4	19Q1	19Q2
January	2018	202.1	202.1	202.1	202.1
February	2018	202.1	202.1	202.1	202.1
March	2018	202.0	202.0	202.0	202.0
April	2018	202.1	202.1	202.1	
May	2018	202.1	202.1	202.1	
June	2018	202.1	202.1	202.1	
July	2018	202.4	204.1	204.1	
August	2018	202.4	204.1	204.1	
September	2018	204.1	201.1	201.1	
October	2018	204.6	204.6	201.3	
November	2018		204.6	201.3	
December	2018		201.3	201.3	
January	2019		201.4	201.4	
February	2019			201.7	
March	2019			207.6	
April	2019			207.5	
May	2019				
June	2019				
July	2019				
Actual Qtr.		203.0	203.5	203.6	NA

1980=100

Actual Qtr.	224.6	225.1	225.2	NA
First Mo. next qtr.	226.3	222.8	229.5	NA

0.904 =1980

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PPI Commodity Data

Series Id: WPU144
Not Seasonally Adjusted
Series Title: PPI Commodity data for Transportation equipment-Railroad equipment, 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
2018	202.1	202.1	202.0	202.1	202.1	202.1	204.1	204.1	201.1	201.3	201.3	201.3
2019	201.4(P)	201.7(P)	207.6(P)	207.5(P)								

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

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5/15/2019

RCAF - Other

Series ID : wpu03t15m05

Not Seasonally Adjusted

Group : Industrial Commodities less fuels

Item : Industrial commodities less fuels

		Forecast Year 2019			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	19Q1	19Q2	19Q3	19Q4
For Actual	→	18Q3	18Q4	19Q1	19Q2
January	2018	203.0	203.0	203.0	203.0
February	2018	203.8	203.8	203.8	203.8
March	2018	204.8	204.8	204.8	204.8
April	2018	205.4	205.4	205.4	
May	2018	206.3	206.3	206.3	
June	2018	207.0	207.0	207.0	
July	2018	207.5	207.4	207.4	
August	2018	207.4	207.6	207.6	
September	2018	207.4	207.9	207.9	
October	2018	208.3	208.3	208.7	
November	2018		208.3	208.5	
December	2018		207.6	207.8	
January	2019		207.7	207.7	
February	2019			208.0	
March	2019			208.4	
April	2019			207.9	
May	2019				
June	2019				
July	2019				
Actual Qtr.		207.4	208.1	208.0	NA

1980=100

Actual Qtr.	232.5	233.3	233.2	NA
First Mo. next qtr.	233.5	232.8	233.1	NA

0.892 =1980

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PPI Commodity Data

Series Id: WPU03T15M05
Not Seasonally Adjusted
Series Title: PPI Commodity data for Industrial commodities less fuels, 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
2018	203.0	203.8	204.8	205.4	206.3	207.0	207.4	207.6	207.9	208.7	208.5	207.8
2019	207.7(P)	208.0(P)	208.4(P)	207.9(P)								

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

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5/15/2019

All-Inclusive Index (Actual) - Revised 2017 Weights

	17 Wts	3Q/18 16 Wts	3Q/18 17 Wts	% Chg.	4Q/18 17 Wts	% Chg.	1Q/19 17 Wts	% Chg.	2Q/19 17 Wts	% Chg.	3Q/19 17 Wts	% Chg.
Labor		434.3	434.3	0.0%	439.2	1.1%	440.3	0.3%		NA		NA
Fuel	34.8%	274.0	274.0	0.0%	297.4	8.5%	222.0	-25.4%		NA		NA
M&S	12.9%	263.7	263.7	0.0%	269.8	2.3%	268.3	-0.6%		NA		NA
Equipment Rents	4.9%	231.8	231.8	0.0%	235.7	1.7%	235.4	-0.1%	0.0	NA	#DIV/0!	NA
Depreciation	5.7%	224.6	224.6	0.0%	225.1	0.2%	225.2	0.0%		NA		NA
Interest	15.7%	60.5	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%
Other	2.1%	232.5	232.5	0.0%	233.3	0.3%	233.2	0.0%		NA		NA
	23.9%											
	1.0000											
Weighted Avg.		305.3	304.7	-0.2%	310.3	1.8%	300.8	-3.1%	1.3	NA	#DIV/0!	NA
Linked		280.2			285.3	1.8%	276.6	-3.0%	1.2	NA	#DIV/0!	NA
10/1/80	1.027	272.8			277.8	1.8%	269.3	-3.1%	1.2	NA	#DIV/0!	NA
10/1/82	1.209	231.8			236.0	1.8%	228.8	-3.1%	1.0	NA	#DIV/0!	NA
4Q/87	1.322	212.0			215.8	1.8%	209.2	-3.1%	0.9	NA	#DIV/0!	NA
4Q/92	1.569	178.6			181.8	1.8%	176.3	-3.0%	0.8	NA	#DIV/0!	NA
4Q/97	1.732	161.8			164.7	1.8%	159.7	-3.0%	0.7	NA	#DIV/0!	NA
4Q/02	1.921	145.9			148.5	1.8%	144.0	-3.0%	0.6	NA	#DIV/0!	NA
4Q/07	2.459	113.9			116.0	1.8%	112.5	-3.0%	0.5	NA	#DIV/0!	NA
4Q/12	2.976	94.2			95.9	1.8%	92.9	-3.1%	0.4	NA	#DIV/0!	NA
4Q/17	2.645	105.9			107.9	1.9%	104.6	-3.1%	0.5	NA	#DIV/0!	NA

Equipment Rents

Car Hire	60.5%	211.2	211.2	0.0%	216.7	2.6%	216.4	-0.1%		NA		NA
Lease Rentals	39.5%	232.5	232.5	0.0%	233.3	0.3%	233.2	0.0%	0.0	NA	0.0	NA
	1.0000											
ER Weighted Avg		220.1	219.6	-0.2%	223.3	1.7%	223.0	-0.1%	0.0	NA	0.0	NA
ER Linked		231.8			235.7	1.7%	235.4	-0.1%	0.0	NA	#DIV/0!	NA

Impact/Check of weight change		16 Wts	17 Wts
Labor		137.673	151.136
Fuel		57.266	35.346
Material & Supplies		13.712	12.921
Equipment Rents		12.517	13.213
Depreciation		28.300	35.262
Interest		0.908	1.271
Other		52.778	55.568
Weighted Avg.		303.153	304.717
ER Weighted Avg.		220.4655	219.6135

As info only