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John T. Gray

Senior Vice President - Policy & Economics

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

Dear Ms. Brown:

This submission is the AAR forecast of the second quarter 2019 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2019-2) *Quarterly Rail Cost Adjustment Factor*. The versions of RCAF-related indices covered in this filing are: the All-Inclusive Index (initiated in the second quarter of 1985), the Unadjusted RCAF (produced since October 1982), the Adjusted RCAF (first published in the second quarter of 1989), and the RCAF-5 (created by the STB in its Ex Parte No. 290 (Sub-No. 7) decision served October 3, 1996). The table below summarizes the second quarter 2019 results and compares to the previous quarter. Both quarters are shown on a 4Q\2017=100 base.

	<u>2019Q1</u>	<u>2019Q2</u>	<u>% Change</u>
All-Inclusive Index	107.1	106.6	-0.5
Preliminary RCAF	1.071	1.066	-0.5
Forecast Error Adjustment	-0.013	-0.003	
RCAF (Unadjusted)	1.058	1.063	0.5
Productivity Adjustment Factor ¹	2.3593	2.3593	
RCAF (Adjusted)	0.448	0.451	0.7
PAF-5 ¹	2.5235	2.5235	
RCAF-5	0.419	0.421	0.5

¹ See page 2 of this cover letter, as well as the Introduction and Productivity pages for more information. The PAF and PAF-5 for 2019Q2 are equal to 2019Q1 because the Board has not issued new productivity figures.

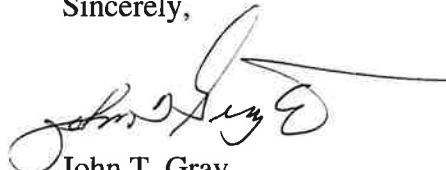
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In its October 3, 1996 decision in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*, the STB noted its intent to publish, in addition to the RCAF (Unadjusted) and RCAF (Adjusted), an RCAF-5 (i.e., a calculation of the productivity 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.

Late on March 4, 2019, the Board served a decision regarding the Railroad Cost Recovery Procedures - Productivity Adjustment that states "the Board has not yet issued the productivity change for 2017 and for the 2013-2017 averaging period". The decision directed the AAR to choose a methodology for applying a productivity adjustment to this quarter's filing, and to clearly note what method was chosen. The AAR has chosen to use last year's productivity figures in this March 5 filing; therefore, the productivity figures this second quarter match those that were used in the first quarter of 2019.

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

**Second Quarter 2019
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2019-2)

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

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

March 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 second quarter 2019. Late on March 4, 2019, the Board served a decision regarding the Railroad Cost Recovery Procedures - Productivity Adjustment that states "the Board has not yet issued the productivity change for 2017 and for the 2013-2017 averaging period". The decision directed the AAR to choose a methodology for applying a productivity adjustment to this quarter's filing, and to clearly note what method was chosen. The AAR has chosen to use last year's productivity figures in this March 5 filing; therefore, the productivity figures this second quarter match those that were used in the first quarter 2019.

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 2.3 percentage points, and Depreciation's was up 0.2 percentage points. The remaining component weights all decreased by 0.1 to 1.0 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	35.0 %	35.6 %
Fuel	13.0	10.7
Materials & Supplies	4.9	5.0
Equipment Rents	5.2	5.9
Depreciation	15.8	15.6
Interest	2.1	2.2
Other	24.0	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 Second 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	Previous	Current	Percent
	Weights	2019Q1	2019Q2	Change
1. Labor	35.0%	440.3	439.7	-0.1 %
2. Fuel	13.0%	256.8	259.2	0.9
3. M&S	4.9%	268.3	267.6	-0.3
4. Equipment Rents	5.2%	236.7	237.5	0.3
5. Depreciation	15.8%	226.1	223.1	-1.3
6. Interest	2.1%	62.4	62.4	0.0
7. Other	24.0%	235.8	231.8	-1.7
8. Weighted Average				
a. 1980 = 100		306.6	305.2	
b. 1980 = 100 (linked)		283.3	282.0 ¹	
c. 4Q17 = 100		107.1	106.6 ²	-0.5

¹ Index80 = (Current Index / Previous Index) * the Previous Quarter Linked Index
= (305.2 / 306.6) x 283.3
= 282.0

² To calculate the 4Q17 = 100 index:
Index4Q17 = (Current Linked Index / 4Q17 Basing Factor) * 100
= 282.0 divided by 264.5 times 100
= 106.6

Indexes based on other periods:

4Q12 based index = 282.0 / 297.6 x 100 = 94.8
4Q07 based index = 282.0 / 245.9 x 100 = 114.7
4Q02 based index = 282.0 / 192.1 x 100 = 146.8
4Q97 based index = 282.0 / 173.2 x 100 = 162.8
4Q92 based index = 282.0 / 156.9 x 100 = 179.7

Forecast vs. Actual All-Inclusive Index Fourth Quarter 2018

Because of data availability, the forecast error adjustment has a two-quarter lag from each filing. As shown below, the fourth quarter actual index of 107.8 is 0.3 index points below the forecast value of 108.1. Therefore, the forecast error adjustment for second quarter 2019 is -0.3 index points.

	2017	Fourth Quarter 2018		Amt
	Weights	Forecast	Actual	Difference
1. Labor	35.0%	439.2	439.2	
2. Fuel	13.0%	283.9	297.4	
3. M&S	4.9%	269.8	269.8	
4. Equipment Rents ¹	5.2%	236.4	235.9	
5. Depreciation	15.8%	223.8	225.1	
6. Interest	2.1%	62.4	62.4	
7. Other	24.0%	235.5	233.3	
8. Weighted Average				
a. 1980 = 100		309.3	310.7	
b. 1980 = 100 (linked)		285.8	285.2 ²	
c. 4Q17 = 100 ³		108.1	107.8	-0.3

Forecast error —————→ **-0.3 index points**

Notes: New weights have been utilized. The standard linking procedure has been used to eliminate any changes to indexes that would be caused by updating weights. The Q3 unlinked weighted averages for the All-Inclusive Indexes (forecast and actual) and for Equipment Rents (forecast and actual) were recalculated using the new (2017) weights.

¹	2017	Fourth Quarter 2018	
	Weights	Forecast	Actual
Car-Hire	61.5%	216.9	217.1
Lease Rentals	38.5%	235.5	233.3
Weighted Average		224.1	223.3
Weighted Average (linked)		236.4	235.9

² Linked actual index = (actual index / previous actual index) x previous linked actual index.
 285.2 = 310.7 / 305.2 x 280.2

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

Late on March 4, 2019, the Board served a decision regarding the Railroad Cost Recovery Procedures - Productivity Adjustment that states "the Board has not yet issued the productivity change for 2017 and for the 2013-2017 averaging period". The decision directed the AAR to choose a methodology for applying a productivity adjustment to this quarter's filing, and to clearly note what method was chosen. The AAR has chosen to use last year's productivity figures in this March 5 filing; therefore, the productivity figures this second quarter match those that were used in the first quarter of 2019.

These numbers are derived from a decision served February 8, 2018, which proposed to adopt -0.4 percent as the geometric average productivity change for the five most recent years available. Their five year rolling geometric average calculation added the year 2016 and removed the year 2011. The components of this average annual value are shown on the following table in ratio format – therefore, 0.996 is the same as a decrease of 0.4 percent. Productivity changes are calculated by multiplying each of the five productivity changes together and taking the result to the one-fifth power. The productivity adjustment factors (PAF) for each quarter are calculated by increasing the previous quarter's PAF by quarterly versions of the annual rate, which are the fourth root of the geometric average annual growth rate. The difference between the PAF and the PAF-5 is the timing of the five-year productivity trend.

Comparison of Output, Input, & Productivity

2012 - 2016

Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
2012	1.007	0.999	1.008
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
Average			0.996
Previous Average (2011-2015)			0.994

Calculation of PAF and PAF-5

For 2012-2016, use fourth root of avg. productivity change = 0.9990

For 2011-2015, use fourth root of avg. productivity change = 0.9985

Quarter	Year	PAF	PAF-5	
Q1	2018	2.3689	2.5374	2011-2015
Q2	2018	2.3665	2.5336	
Q3	2018	2.3641	2.5298	2012-2016
Q4	2018	2.3617	2.5260	
Q1	2019	2.3593	2.5235	

Rail Cost Adjustment Factor

Second 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). Because new productivity figures have not been issued yet (see Introduction and Productivity pages), the AAR is using the same Productivity Adjustment Factor and PAF-5 as were used in the prior quarter (2019Q1). 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 2019Q1	Current 2019Q2	Percent Change
All-Inclusive Index ¹	107.1	106.6	-0.5
Preliminary RCAF ²	1.071	1.066	-0.5
Forecast Error Adjustment ³	<u>-0.013</u>	<u>-0.003</u>	
RCAF (Unadjusted) ⁴	1.058	1.063	0.5
Productivity Adjustment Factor ⁵	<u>2.3593</u>	<u>2.3593</u>	
RCAF (Adjusted) ⁶	0.448	0.451	0.7
PAF-5 ⁷	2.5235	2.5235	
RCAF-5 ⁸	0.419	0.421	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 Second Quarter 2019

The second quarter 2019 Labor Index decreased very slightly by 0.1 percent from the previous quarter.

Wage Rate Index

The Wage Rate Index portion of the Labor Index is lower by 0.1 percent. This was caused by a decrease in the amount of back pay.

Wage Increases: There are no national, independent, or non-union wage increases scheduled for the second quarter 2019.

Lump Sums: The second quarter lump sum rate is up by 14 cents. Five amounts (one quarterly and four annual) were fully amortized and removed, but they were replaced by four new amounts (one quarterly and three annual). Two of the new annual bonuses were bigger than the previous year, which caused the increase this quarter.

Back Pay: The back pay rate decreased 18.9 cents, or 24%. Five amounts were fully amortized and removed, while only one small new amount was 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 rate is unchanged from the previous quarter.

Labor

Second Quarter 2019

Supplements Index

The Supplements Index decreased 0.2 percent. This was due mostly to a lower amount for fringe benefits.

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

Railroad Retirement: The Railroad Retirement rate decreased 0.8 cents, or 0.1 percent due to slightly lower taxable wages.

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 second quarter rate is 2.2 cents lower than last quarter.

Labor Index Calculation

As shown in Table A-1 on the next page, the 0.1 percent decrease in the Wage Rate Index and the 0.2 percent decrease in the Supplements Index combined to cause the Labor Index to fall 0.1 percent from the previous quarter. The linked second quarter 2019 Labor index is 439.7, which is 4.1 percent higher than one year ago.

Labor

Second Quarter 2019

Table A-1 Labor Index

	2019Q1	2019Q2	Change	
			Percent	Amount
<u>Base Wage</u> – Straight Time & Pay For Time Not Worked	\$42.813	\$42.813	0.0%	\$0.000
Adjustments:				
Lump Sum	0.399	0.539	35.1%	\$0.140
Back Pay	0.773	0.584	-24.5%	-\$0.189
Other	0.182	0.182	0.0%	\$0.000
Total Wages	<u>44.167</u>	<u>44.118</u>	-0.1%	-\$0.049
Health & Welfare Benefits	8.302	8.302	0.0%	\$0.000
RR Retirement & Medicare	9.124	9.116	-0.1%	-\$0.008
Unemployment Insurance	0.333	0.333	0.0%	\$0.000
Other	0.234	0.212	-9.4%	-\$0.022
Total Supplements	<u>\$17.993</u>	<u>\$17.963</u>	-0.2%	-\$0.030
Total Labor (as info only)	\$62.160	\$62.081		
Wage Index¹	378.0	377.6	-0.1%	
Supplements Index²	664.9	663.8	-0.2%	
Total labor Index, 2017 Weights ³	465.5	464.9		
Labor Index (linked)⁴	440.3	439.7	-0.1%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

³ 2017 weights: wages, supplements 69.5% 30.5%

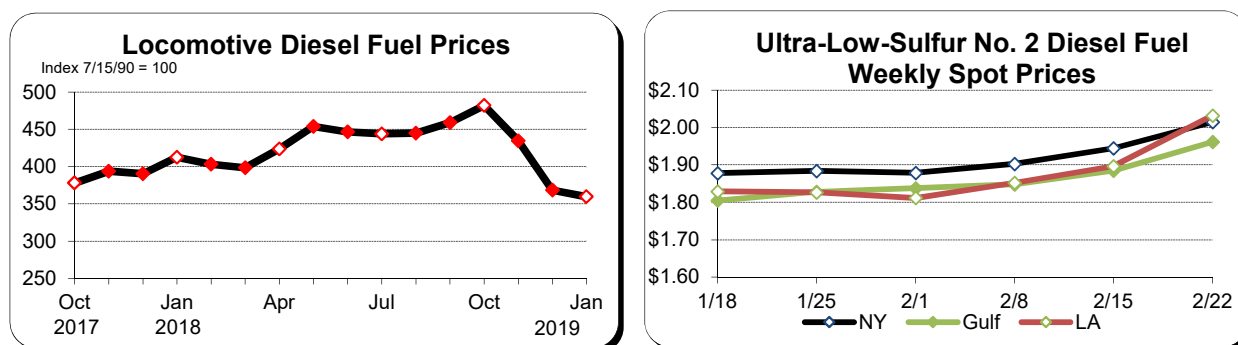
⁴ 2019Q2 linked Index = 2019Q1 linked x (2019Q2 / 2019Q1)
 = 440.3 x 464.9 / 465.5

Fuel

Second 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 has been trending upward since June 2017, and reached a peak in October 2018, before falling for the next three months. While average prices for locomotive diesel fuel are available only through January 2019, data through four weeks of February are available for related fuel types. According to the Energy Information Administration, the daily spot price as of February 25 for Ultra-Low-Sulfur Diesel Fuel* is about 7.6 percent higher than the average for January. The chart below (on left) shows the AAR's Monthly Locomotive Diesel Fuel Price Index from October 2017 through January 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.



In its *This Week in Petroleum* report released February 27, the U.S. Energy Information Administration said that U.S. average regular gasoline and diesel fuel prices have increased about 7 cents since the prior week. Railroads that responded to the forecast survey expect price increases by April (Q2) compared to prices that actually occurred for January (Q1). The second quarter 2019 forecast is 0.9 percent higher than the previous quarter forecast.

Forecast Fuel Index (1980 = 100)	259.2
Change from previous quarter forecast	0.9%
Change from previous quarter actual	16.2%

* 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

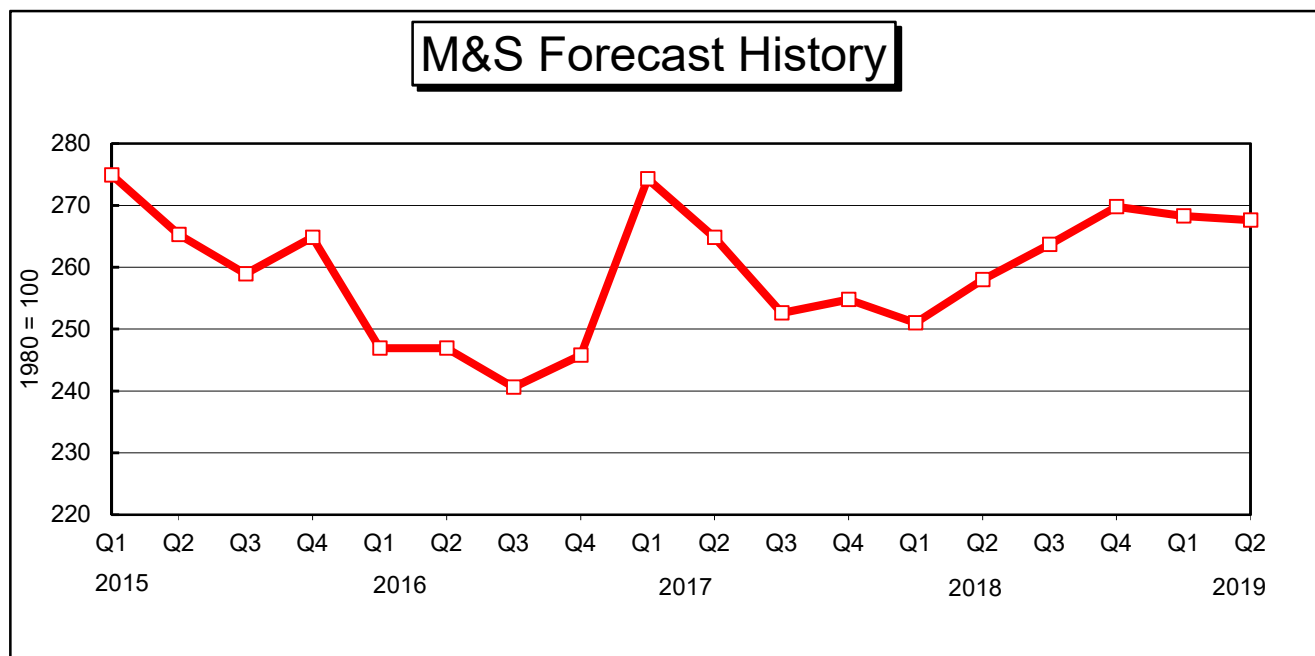
Second Quarter 2019

The second quarter 2019 Materials & Supplies Index is down 0.3 percent from the previous quarter. Prices decreased for Metal Products and Miscellaneous Products.

2019Q2 Materials & Supplies Index = 267.6

2019Q1 Materials & Supplies Index = 268.3

Difference	-0.7 basis points
	or
	-0.3 %



Equipment Rents

Second 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 second quarter Car Hire portion of the Index rose 1.8 percent because of higher rates for tank cars and auto racks. The projected PPI-LF (See Appendix G) used as a proxy for Lease Rentals, fell 1.7 percent. Combined, these changes caused the Equipment Rents Index to rise 0.3 percent.

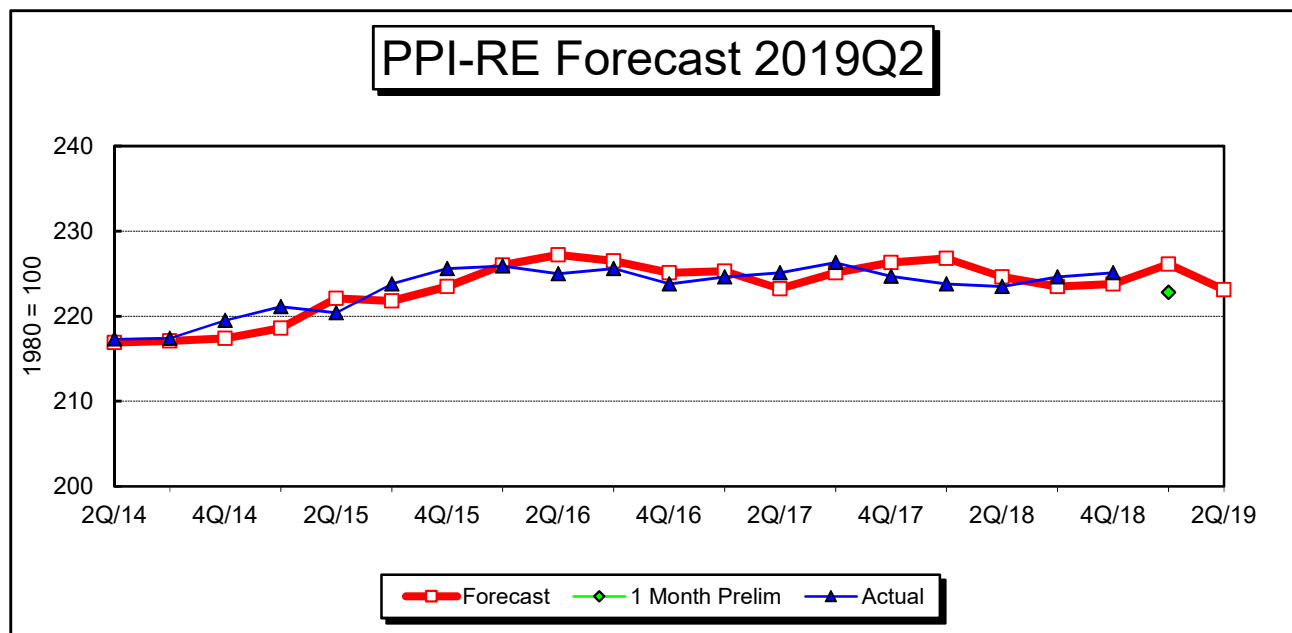
	2017			Percent
	Weight	2019Q1	2019Q2	Change
Car Hire	61.5%	217.2	221.1	1.8 %
Lease Rentals	38.5%	235.8	231.8	-1.7
Weighted Average		224.4	225.2	0.4
Weighted Average (Linked)		236.7	237.5	0.3

Depreciation

Second 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 1.3 percent decrease from the previous quarter's forecast.

Forecast of Depreciation Index (1982=100)	201.7
Forecast of Depreciation Index (1980=100)	223.1
Change from previous quarter forecast	-1.3%
Change from actual first month of previous quarter	0.1% = 0.13%
Change from same quarter of prior year (actual)	-0.2%



Depreciation

Second 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 1.42 and for Box-Jenkins was 1.40.
 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, 1)

Term	Coefficient	Std. Error	t-Statistic	Significance
b[1]	0.3341	0.1149	2.908	0.9951

Within-Sample Statistics

Sample size	72	No. parameters	1
Mean	200.84	Std. deviation	3.17
R-square	0.89	Adj. R-square	0.89
Durbin-Watson	1.98	Ljung-Box(18)	8.6 P=0.03
Forecast error	1.07	BIC	1.09
MAPE	0.38	SMAPE	0.38
RMSE	1.06	MAD	0.77
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2018-Aug	204.1
2018-Sep	201.1
2018-Oct	204.6
2018-Nov	204.6
2018-Dec	201.3
2019-Jan	201.4

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2019-Feb	199.611	201.703	203.795
2019-Mar	199.189	201.703	204.217
2019-Apr	198.829	201.703	204.577
2019-May	198.509	201.703	204.897
2019-Jun	198.219	201.703	205.187
QTR AVG	198.519	201.703	204.887

Interest

Second 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%
2019Q2	Interest Index	62.4
2019Q1	Interest Index	62.4
	Percent Change	0.0%

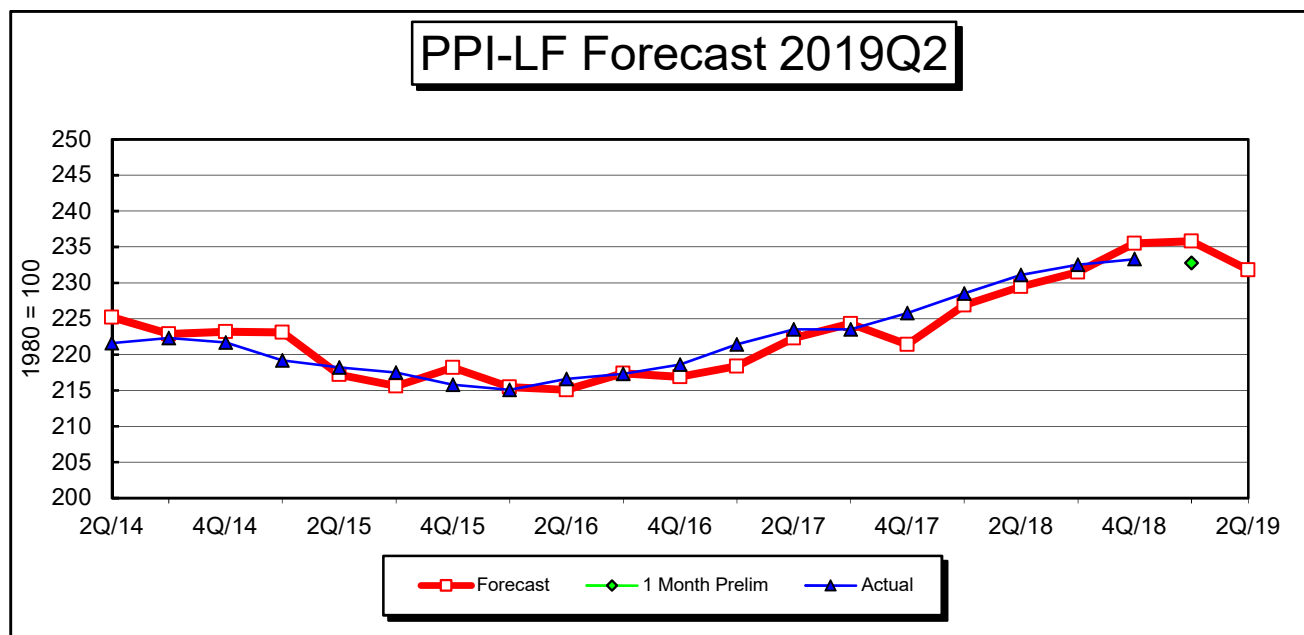
Other Expenses

Second 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 1.7 percent lower than the prior quarter forecast.

Forecast of Other Expense Index (1982=100)	206.8
Forecast of Other Expense Index (1980=100)	231.8
Change from previous quarter forecast	-1.7%
Change from actual first month of previous quarter	-0.4%
Change from same quarter of prior year (actual)	0.3%



Other Expenses

Second 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 2.02 and for Box-Jenkins was 2.08.
The rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each method.
Based on the lower MAD, I will use Exponential Smoothing.

Expert selection

Multiplicative Winters: Linear trend, Multiplicative seasonality

LM(0.930, 0.826, 0.996)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.9304		207.5
Trend	0.8261		-0.1718
Seasonal	0.9965		
Seasonal Indexes			
Jan - Mar	1.001	0.9999	0.9997
Apr - Jun	0.9998	0.9996	0.9998
Jul - Sep	0.9997	1	0.9995
Oct - Dec	1.001	1.001	0.9998

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	197.99	Std. deviation	4.68
R-square	0.99	Adj. R-square	0.99
Durbin-Watson	1.79	Ljung-Box(18)	22.4 P=0.79
Forecast error	0.37	BIC	0.4
MAPE	0.15	SMAPE	0.15
RMSE	0.37	MAD	0.3
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Date	Actual
2018-Aug	207.6
2018-Sep	207.9
2018-Oct	208.3
2018-Nov	208.3
2018-Dec	207.6
2019-Jan	207.7

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2019-Feb	206.561	207.345	208.129
2019-Mar	205.575	207.12	208.665
2019-Apr	204.932	206.972	209.012
2019-May	204.323	206.759	209.195
2019-Jun	203.863	206.639	209.415
QTR AVG	204.373	206.790	209.207

Railroad and Union Abbreviations

Second 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 Q2 RCAF

March 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)
5. Wall Street Journal - 13 week Treasury Bill Rate from recent auction (a.k.a. 3-Mo. T-Bill)
6. 2019/Q2 RCAF Lump Sum Amortization summary, public version (1 page)
7. 2019/Q2 RCAF Back Pay Amortization summary, public version (1 page)
8. Health & Welfare worksheet (1 page)
9. Railroad Retirement spreadsheet (5 pages)
10. Unemployment Insurance Tax worksheet (1 page)
11. 2-page SAS run for 2019 Q2 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)

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%		--
PFTNW	\$6.839	\$6.933	1.4%	\$6.936	1.4%	\$6.956	0.3%	\$6.956	0.0%		--
Total	\$41.993	\$42.457	1.1%	\$42.473	1.1%	\$42.813	0.8%	\$42.813	0.0%	\$0.000	--
Adjustments											
Lump Sum	\$0.390	\$0.401		\$0.400		\$0.399		\$0.539			
Back Pay	\$1.232	\$1.268		\$1.283		\$0.773		\$0.584			
Other	\$0.177	\$0.182		\$0.182		\$0.182		\$0.182			
Total Wages	\$43.792	\$44.308	1.2%	\$44.338	1.2%	\$44.167	-0.4%	\$44.118	-0.1%	\$0.000	--
Pre-Tax Reduction	(\$1.361)	(\$1.362)		(\$1.362)		(\$1.362)		(\$1.362)			
Taxable Wages	\$42.431	\$42.946		\$42.976		\$42.805		\$42.756		\$0.000	
H & W	\$8.101	\$8.229	1.6%	\$8.229	1.6%	\$8.302	0.9%	\$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%		--
Unemp. Insurance	\$0.365	\$0.360	-1.4%	\$0.360	-1.4%	\$0.333	-7.5%	\$0.333	0.0%		--
Other	\$0.288	\$0.297	3.1%	\$0.146	-49.3%	\$0.234	60.3%	\$0.212	-9.4%		--
Total	\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$0.000	--
Adjustments											
Total Supplements	\$17.621	\$17.950	1.9%	\$17.804	1.0%	\$17.993	1.1%	\$17.963	-0.2%	\$0.000	--
Total Labor	\$61.413	\$62.258	1.4%	\$62.142	1.2%	\$62.160	0.0%	\$62.081	-0.1%	\$0.000	--
Wage Rate Index	0.6950	374.8	1.2%	379.4	1.2%	378.0	-0.4%	377.6	-0.1%	0.0	--
Supplements Index	0.3050	651.2	1.9%	657.9	1.0%	664.9	1.1%	663.8	-0.2%	0.0	--
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%	0.0	--
Labor Index (Linked)	434.3			439.2	1.1%	440.3	0.3%	439.7	-0.1%	0.0	-100.0%

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	% Chg
Labor	0.350	434.30	434.3	0.0%	439.2	1.1%	440.3	0.3%	439.7	-0.1%	0.0	-100.0%	
Fuel	0.130	291.00	291.0	0.0%	283.9	-2.4%	256.8	-9.5%	259.2	0.9%			
M&S	0.049	263.70	263.7	0.0%	269.8	2.3%	268.3	-0.6%	267.6	-0.3%			
Equip. Rents	0.052	230.50	230.5	0.0%	236.4	2.6%	236.7	0.1%	237.5	0.3%	0.0	-100.0%	
Depreciation	0.158	223.50	223.5	0.0%	223.8	0.1%	226.1	1.0%	223.1	-1.3%			
Interest	0.021	60.50	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%	
Other	0.240	231.50	231.5	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%			
Weighted Avg.	1.000	306.60	306.9	0.1%	309.3	0.8%	306.6	-0.9%	305.2	-0.5%	1.3	-99.6%	
Linked		283.60			285.8	0.8%	283.3	-0.9%	282.0	-0.5%	1.2	-99.6%	
Basing Factor													
10/1/80 basis	102.7	276.1			278.3	0.8%	275.9	-0.9%	274.6	-0.5%	1.2	-99.6%	
10/1/82	120.9	234.6			236.4	0.8%	234.3	-0.9%	233.3	-0.4%	1.0	-99.6%	
4Q/87	132.2	214.5			216.2	0.8%	214.3	-0.9%	213.3	-0.5%	0.9	-99.6%	
4Q/92	156.9	180.8			182.2	0.8%	180.6	-0.9%	179.7	-0.5%	0.8	-99.6%	
4Q/97	173.2	163.7			165.0	0.8%	163.6	-0.8%	162.8	-0.5%	0.7	-99.6%	
4Q/02	192.1	147.6			148.8	0.8%	147.5	-0.9%	146.8	-0.5%	0.6	-99.6%	
4Q/07	245.9	115.3			116.2	0.8%	115.2	-0.9%	114.7	-0.4%	0.5	-99.6%	
4Q/12	297.6	95.3			96.0	0.7%	95.2	-0.8%	94.8	-0.4%	0.4	-99.6%	
4Q/17 basis	264.5	107.2			108.1	0.8%	107.1	-0.9%	106.6	-0.5%	0.5	-99.5%	
Car Hire	0.615	210.40	210.4	0.0%	216.9	3.1%	217.2	0.1%	221.1	1.8%			
Lease Rents	0.385	231.50	231.5	0.0%	235.5	1.7%	235.8	0.1%	231.8	-1.7%	0.0		
Weighted Avg Eq Rents		219.20	218.5	-0.3%	224.1	2.6%	224.4	0.1%	225.2				
Linked Equipment Rents		230.50			236.4	2.6%	236.7	0.1%	237.5				
Preliminary RCAF	1.072	1.072			1.081	0.84%	1.071	-0.9%	1.066				
Forecast Error Adj.	(0.011)				(0.002)		(0.013)		(0.003)				
RCAF Unadjusted	1.061				1.079	1.70%	1.058	-1.9%	1.063				
PAF	2.3641				2.3617	-0.10%	2.3593	-0.10%	2.3593				
RCAF Adjusted	0.449				0.457	1.78%	0.448	-2.0%	0.451				
PAF-5	2.5298				2.5260	-0.15%	2.5235	-0.10%	2.5235				
RCAF-5	0.419				0.427	1.91%	0.419	-1.9%	0.421				

According to an STB Decision released 3/4/2019, the Board has not yet issued the productivity change for the 2013-2017 averaging period. The STB suggested the AAR might choose to use last year's productivity factors, so in 2019Q2, the same factors were used as in 2019Q1.

Hourly Rate for 2019 Q2

Straight Time and Time Paid For But Not Worked

2019Q2 Straight Time Hourly Rate (from national spreadsheet) \$35.750
 No change

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

Adjusted STHR Total **\$35.857**

Pay For Time Not Worked

PFTNW (from national spreadsheet)		\$6.935
Ratio Adj STHR to Nat STHR	35.857 / 35.750 =	1.00299

Adjusted Pay For Time Not Worked **\$6.956**

Adjusted STHR + Adjusted Pay For Time Not Worked **\$42.813**

Notes:

1. 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.
2. 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 2Q/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	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	

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	7.173	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

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 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
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
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	10.284	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

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
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
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
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
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
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
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
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
7/1/19	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

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			94.268%	30.79522	10.28449

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			97.817%	31.87136	4.70430

\$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			62.576%	33.88284	11.65291

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			100.000%	32.39626	4.84761

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			98.368%	33.78598	7.09272

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			97.469%	29.86971	5.58250

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			98.637%	31.85267	4.60545

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			99.477%	26.98428	3.58553

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			95.374%	32.31237	5.23554

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.				29.36225	4.48340
12/31/17 Industry Rate		\$31.225 adjusted to remove COLAs received by 1 RR.		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			95.453%	31.20784	4.76520

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			98.937%	32.81030	5.36781

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			66.619%	43.63040	6.87750

U.S. National Contract

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			66.411%	42.30674	8.17029

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.

KEY TO CODES: A=ask; B=bid; BP=country elevator bids to producers; C=corrected; E=Manfra, Tordella & Brooks; G=ICE; H=Hurley Brokerage; M=monthly; N=nominal; n.a.=not quoted or not available; R=SNL Energy; S=Platts-TSI; T=Cotlook Limited; U=USDA; W=weekly; Z=not quoted. *Data as of 2/22 Source: WSJ Market Data Group

Borrowing Benchmarks | wsj.com/bonds

Money Rates

February 25, 2019

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.

Inflation			
	Jan. Index level	Chg From (%)	Dec '18 Jan '18

U.S. consumer price index			
All items	251.712	0.19	1.6
Core	260.122	0.40	2.2

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

Prime rates			
U.S.	5.50	5.50	5.50 4.50
Canada	3.95	3.95	3.95 3.45
Japan	1.475	1.475	1.475 1.475

	Week Latest	ago	-52-Week-High Low
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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.	2.44	2.51	3.23	1.44

U.S. government rates				
	Week Latest	ago	-52-Week-High	Low
Discount	3.00	3.00	3.00	2.00

Discount				
	3.00	3.00	3.00	2.00

Federal funds				
Effective rate	2.4500	2.4300	2.4600	1.3700

	Week Latest	ago	-52-Week-High Low
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High	2.6000	2.6000	2.6500	1.5625
Low	2.3000	2.3000	2.4000	1.2500
Bid	2.3600	2.3900	2.4000	1.3300
Offer	2.4000	2.4100	2.4300	1.3600

Treasury bill auction				
4 weeks	2.390	2.395	2.400	1.380
13 weeks	2.405	2.400	2.465	1.645
26 weeks	2.455	2.450	2.505	1.830

Secondary market				
Fannie Mae				
30-year mortgage yields				
30 days	3.981	4.013	4.607	3.948
60 days	3.994	4.029	4.632	3.963

Other short-term rates				
	Week Latest	ago	-52-Week-High	Low

Call money				
	4.25	4.25	4.25	3.25

Commercial paper (AA financial)				
90 days	2.51	2.46	2.80	1.79

Libor				
One month	2.47913	2.48475	2.52238	1.64800
Three month	2.63863	2.64363	2.82375	1.98419
Six month	2.69313	2.75538	2.90788	2.20113
One year	2.88313	2.90713	3.14413	2.46938

Euro Libor				
One month	-0.412	-0.413	-0.390	-0.422
Three month	-0.337	-0.347	-0.324	-0.389
Six month	-0.295	-0.288	-0.288	-0.334
One year	-0.161	-0.166	-0.161	-0.259

Euro interbank offered rate (Euribor)				
One month	-0.366	-0.368	-0.362	-0.372
Three month	-0.309	-0.308	-0.306	-0.329
Six month	-0.230	-0.232	-0.230	-0.273
One year	-0.108	-0.108	-0.108	-0.192

	Value Latest	-52-Week-Traded High Low
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DTCC GCF Repo Index				
Treasury	2.446	36.360	5.149	1.449
MBS	2.463	72.100	4.434	1.448

	Open Settle	Implied Change Interest Rate
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DTCC GCF Repo Index Futures				
Treasury Feb	97.528	-0.002	76	2.473
Treasury Mar	97.500	0.015	44	2.500
Treasury Apr	97.530	0.010	38	2.470

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.

Global Government Bonds: May

Yields and spreads over or under U.S. Treasuries of selected other countries; arrows indicate whether

Coupon (%)	Maturity, in years	Country/ Latest(▲)	-2	-1	0	1	2	3	4	5	Yield (%)
2.500	U.S. 2	2.512	▲								2
2.625	10	2.675	▲								2
5.750	Australia 2	1.722	▲								1
3.250	10	2.096	▼								2
0.000	France 2	-0.455	▼								-0
0.750	10	0.525	▲								0
0.000	Germany 2	-0.549	▲								-0
0.250	10	0.113	▲								0
3.750	Italy 2	0.610	▼								0
2.800	10	2.767	▼								2
0.100	Japan 2	-0.171	▲								-0
0.100	10	-0.035	▲								-0
0.050	Spain 2	-0.192	▼								-0
1.400	10	1.163	▼								1
2.000	U.K. 2	0.766	▲								0
4.250	10	1.068	▲								1

Corporate Debt

Price moves by a company's debt in the credit market that same company's share price.

Investment-grade spreads that tightened

Issuer	Symbol	Coupon (%)	Maturity
GE	GE	5.000	Jan. 21
Selective Insurance	SIGI	6.700	Nov. 1
Citigroup	C	5.900	Feb. 15
Goldman Sachs	GS	5.250	July 27
Kraft Heinz Foods	KHC	4.625	Jan. 30
Credit Agricole	ACAFP	6.875	Sept. 23
JPMorgan Chase	JPM	2.550	March 1
AT&T	T	3.600	Feb. 17

...And spreads that widened the most

Citigroup	C	5.875	March 27
Altria	MO	9.950	Nov. 10
JPMorgan Chase	JPM	6.125	April 30
Biogen	BIIB	3.625	Sept. 15
John Deere Capital	DE	2.800	March 6
General Motors Financial	GM	3.150	June 30
Verizon Communications	VZ	1.750	Aug. 15
Toyota Motor Credit	TOYOTA	3.300	Jan. 12

High-yield issues with the biggest price

Issuer	Symbol	Coupon (%)	Maturity
Communications Sales & Leasing	UNIT	8.250	Oct. 15
Windstream Services	WIN	10.500	June 30
Multi-Color	LABL	4.875	Nov. 1
Noble Holding International	NE	7.750	Jan. 15
Opal Acquisition	ONECAL	10.000	Oct. 1
Adient Global Holdings	ADNT	4.875	Aug. 15
Bombardier	BBDBCN	7.500	Dec. 1
Rackspace Hosting	RAX	8.625	Nov. 15

...And with the biggest price decreases

Windstream Services	WIN	7.500	June 1
Denbury Resources	DNR	4.625	July 15
Qwest	CTL	6.875	Sept. 15
Frontier Communications	FTR	7.125	Jan. 15
California Resources	CRC	8.000	Dec. 15
SM Energy	SM	6.750	Sept. 15
Noble Holding International	NE	7.875	Feb. 1
PBF Holding	PBFENE	7.000	Nov. 15

*Estimated spread over 2-year, 3-year, 5-year, 10-year or 30-year hot-run Note: Data are for the most active issue of bonds with maturities of two y

Key Interest Rates

Data are annualized on a 360-day basis. Treasury yields are per annum, on actively traded noninflation and inflation-indexed issues that are adjusted to constant maturities. Data are from weekly Federal Reserve release H.15.

	Week Ended Feb 22	Feb 15	-52-Week-High	-52-Week-Low
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Federal funds (effective)				
	2.40	2.40	2.40	1.41

Commercial paper				
Nonfinancial				
1-month	2.43	2.42	2.50	1.56
2-month	2.46	2.46	2.53	1.65
3-month	2.49	2.49	2.57	1.74
Financial				
1-month	2.43	2.40	2.47	1.57
2-month	2.46	2.43	2.56	1.73
3-month	2.49	2.46	2.78	1.87

Discount window primary credit				
	3.00	3.00	3.00	2.00

Conventional mortgages				
	n.a.	n.a.	n.a.	n.a.

Treasury yields at constant maturities				
1-month	2.43	2.43	2.43	1.38
3-month	2.45	2.44	2.45	1.64
6-month	2.51	2.51	2.56	1.85
1-year	2.55	2.55	2.73	2.02
2-year	2.50	2.51	2.94	2.24
3-year	2.47	2.49	3.02	2.40
5-year	2.48	2.49	3.06	2.47
7-year	2.56	2.58	3.14	2.54
10-year	2.66	2.67	3.21	2.65
20-year	2.86	2.86	3.34	2.82

Treasury yields (secondary market)				
1-month	2.39	2.39	2.39	1.36
3-month	2.41	2.39	2.41	1.62
6-month	2.45	2.45	2.49	1.81

TIPS				
5-year	0.69	0.76	1.14	0.57
7-year	0.71	0.79	1.14	0.68
10-year	0.77	0.83	1.15	0.70
20-year	0.93	0.98	1.25	0.78
Long-term avg	1.02	1.07	1.30	0.80

Interest rate swaps				
1-year	n.a.	n.a.	n.a.	n.a.
2-year	n.a.	n.a.	n.a.	n.a.
3-year	n.a.	n.a.	n.a.	n.a.
4-year	n.a.	n.a.	n.a.	n.a.
5-year	n.a.	n.a.	n.a.	n.a.
7-year	n.a.	n.a.	n.a.	n.a.
10-year	n.a.	n.a.	n.a.	n.a.
30-year	n.a.	n.a.	n.a.	n.a.

Corporate bonds, Moody's seasoned				
Aaa	n.a.	n.a.	n.a.	n.a.
Baa	n.a.	n.a.	n.a.	n.a.

State and local bonds				
	n.a.	n.a.	n.a.	n.a.

Eurodollars				
1 month	n.a.	n.a.	n.a.	n.a.
3 month	n.a.	n.a.	n.a.	n.a.
6 month	n.a.	n.a.	n.a.	n.a.

Notes on data:

Federal funds rate is an average for the seven days ended Wednesday, weighted according to rates on broker trades; **Commercial paper rates** are discounted offer rates interpolated from sales by discounted averages of dealer bid rates on nationally traded certificates of deposit; **Discount window primary credit rate** is charged for discounts made and advances extended under the Federal Reserve's primary credit discount window program; **rate** is average for seven days ended Wednesday; **Inflation-indexed long-term TIPS** average is indexed and is based on the unweighted average bid yields for all TIPS with remaining terms to maturity of 10 years or more; **Swap rates** are International Swaps and Derivatives Association (ISDA(R)) mid-market par rates for a fixed-rate payer, who in return receives three-month Libor, and are based on rates collected at 11:00 a.m. ET by Garban InterCapital PLC; Source is Reuters; **Moody's triple-A** rates are averages of industrial bonds only; **Muni rates** are Thursday quotes based on the Bond Buyer Index for general obligation, 20 years to maturity, mixed quality debt; **Mortgage rates** are contract rates on commitments for fixed-rate first mortgages

Sources: Federal Reserve; for additional information on these rate data and their derivation, please see, www.federalreserve.gov/releases/h15/data.htm

**RCAF Lump Sum Amortization
2019/Q2**

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hour	U.S. ST Hours
NS - BLET 2018Q1 PPI	2018Q2	2018Q3				287,199,489
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
Total			\$152,591,069	0.53131		

Should be slightly less
than amortized amount.

Fell out

CSX - BLET 2018	2018Q1	2018Q2				287,199,489
KCS 2018Q2	2017Q4	2018Q2				287,199,489
NS - BLET 2017Q4 PPI	2018Q1	2018Q2				287,199,489
NS - BLET 2018 Ave PPI	2018Q1	2018Q2				287,199,489
NS - BLET 2018 TPB	2018Q1	2018Q2				287,199,489

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	
2019/Q4	

Lump Sum Adjustment for 2019/Q2 → **0.539294**
or
0.539

**RCAF Back Pay Amortization
2019/Q2**

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hr.	U.S. ST Hours	
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 BMWE 2018	2018Q2	2018Q3	\$76,685,654	0.26701180	1.06805	287,199,489	2017
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
Total			\$165,422,090	0.57598323			

Should be slightly less
than amortized amount.

Fell out

National BRC (TCU-CAR)	2018Q2	2018Q2	\$28,888,465	0.10058676	0.40235	287,199,489	2017
National TCU 2018	2018Q2	2018Q2	\$16,365,434	0.05698281	0.22793	287,199,489	2017
National NCFO 2017	2018Q2	2018Q2	\$6,257,945	0.02178954	0.08716	287,199,489	2017
DME - all unions 2018	2018Q1	2018Q2	(\$50,289)	-0.00017510	-0.00070	287,199,489	2017
UP Yardmasters 2018	2018Q2	2018Q2	\$2,072,248	0.00721536	0.02886	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

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	
2019/Q4	

Back Pay Adjustment for 2019/Q2

→ **0.58417**
or
0.584

Health and Welfare 2019Q2

	Employees Receiving				
	Pay 2017	Monthly Contribution 2017 Avg. 2019		Total 2017 Avg.	Total 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 BMW (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 Rate	Update Factor	Railroad Retirement Tax	Hourly 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		0.00000	--	\$0.000
4Q/2019		0.00000	--	\$0.000

hourly rate from SUPPL2016.xlsx

Rate = Taxable Rate

Railroad Retirement & Medicare, U.S.

1Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
From 2016 Earnings Distribution					Total Taxable Earnings (Taxable x Employees)				
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees	Recvg. Pay	Annual Earnings	Avg Qly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable
\$0 - 41,699	\$30,262	2.166	%	3,256	\$33,019	\$8,255	\$8,255	\$8,255	\$8,255
41,700 - 43,699	\$42,903	0.591		888	46,812	11,703	11,703	11,703	11,703
43,700 - 45,699	\$44,763	0.935		1,405	48,841	12,210	12,210	12,210	12,210
45,700 - 47,699	\$46,647	1.379		2,073	50,897	12,724	12,724	12,724	12,724
47,700 - 49,699	\$48,750	1.034		1,554	53,191	13,298	13,298	13,298	13,298
49,700 - 51,699	\$50,730	2.068		3,109	55,352	13,838	13,838	13,838	13,838
51,700 - 53,699	\$52,751	1.379		2,073	57,557	14,389	14,389	14,389	14,389
53,700 - 55,699	\$54,804	1.723		2,590	59,797	14,949	14,949	14,949	14,949
55,700 - 57,699	\$56,791	2.806		4,218	61,965	15,491	15,491	15,491	15,491
57,700 - 59,699	\$58,815	3.299		4,959	64,173	16,043	16,043	16,043	16,043
59,700 - 61,699	\$60,675	4.628		6,957	66,203	16,551	16,551	16,551	16,551
61,700 - 63,699	\$62,661	4.628		6,957	68,370	17,092	17,092	17,092	17,092
63,700 - 65,699	\$64,649	4.825		7,253	70,539	17,635	17,635	17,635	17,635
65,700 - 67,699	\$66,673	4.530		6,809	72,747	18,187	18,187	18,187	18,187
67,700 - 69,699	\$68,534	3.447		5,182	74,778	18,694	18,694	18,694	18,694
69,700 - 71,699	\$70,724	3.988		5,995	77,167	19,292	19,292	19,292	19,292
71,700 - 73,699	\$72,852	2.905		4,367	79,489	19,872	19,872	19,872	19,872
73,700 - 75,699	\$74,718	2.462		3,701	81,525	20,381	20,381	20,381	20,381
75,700 - 77,699	\$76,600	3.644		5,478	83,578	20,895	20,895	20,895	20,895
77,700 - 79,699	\$78,723	3.151		4,737	85,895	21,474	21,474	21,474	21,474
79,700 - 81,699	\$80,708	3.299		4,959	88,061	22,015	22,015	22,015	22,015
81,700 - 83,699	\$82,622	2.757		4,144	90,149	22,537	22,537	22,537	22,537
83,700 - 85,699	\$84,690	2.314		3,478	92,405	23,101	23,101	23,101	23,101
85,700 - 87,699	\$86,732	2.905		4,367	94,633	23,658	23,658	23,658	23,658
87,700 - 89,699	\$88,666	3.348		5,033	96,744	24,186	24,186	24,186	24,186
89,700 - 91,699	\$90,699	2.708		4,071	98,962	24,740	24,740	24,740	24,740
91,700 - 93,699	\$92,738	1.526		2,294	101,187	25,297	25,297	25,297	25,297
93,700 - 95,699	\$94,689	1.822		2,739	103,315	25,829	25,829	25,829	25,829
95,700 - 97,699	\$96,618	1.428		2,147	105,420	26,355	26,355	26,355	26,355
97,700 - 99,699	\$98,600	1.822		2,739	107,583	26,896	26,896	26,896	26,896
99,700 - 101,699	\$100,896	1.871		2,812	110,088	27,522	27,522	27,522	27,522
101,700 - 103,699	\$102,684	1.526		2,294	112,039	28,010	28,010	28,010	28,010
103,700 - 105,699	\$104,566	1.231		1,850	114,092	28,523	28,523	28,523	28,523
105,700 - 107,699	\$106,714	1.625		2,443	116,436	29,109	29,109	29,109	29,109
107,700 - 109,699	\$108,748	1.329		1,998	118,655	29,664	29,664	29,664	29,664
109,700 - 111,699	\$110,767	0.788		1,195	120,858	30,215	30,215	30,215	30,215
111,700 - 113,699	\$112,607	0.886		1,332	122,866	30,716	30,716	30,716	30,716
113,700 - 115,699	\$114,747	1.034		1,554	125,201	31,300	31,300	31,300	31,300
\$115,700 - over	\$168,229	10.193		15,322	183,555	45,889	45,889	45,889	45,889
TOTAL	\$84,275	100.000		150,320					
					Total Taxable Earnings	3,261,529,964	3,047,505,702	3,455,565,054	3,455,565,054
					Employer Tax Rate	6.20%	13.10%	1.45%	1.45%
					Quarterly Payment	\$202,214,858	\$399,223,247	\$50,105,693	\$50,105,693
					Total Tier I, Tier II, and Medicare Paid this Quarter			\$651,543,798	\$651,543,798

Railroad Retirement & Medicare, U.S.

From 2016 Earnings Distribution				2Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees	Recvg. Pay	Annual Earnings	Avg Qly 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	\$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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	75,342,106
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	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	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	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	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	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	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	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	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	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	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	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	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	69,398,122
101,700 - 103,699	\$102,684	1.526		2,294	111,910	27,978	27,978	27,978	27,978	56,601,568	56,601,568	56,601,568	56,601,568
103,700 - 105,699	\$104,566	1.231		1,850	113,962	28,490	28,490	28,490	28,490	45,659,587	45,659,587	45,659,587	45,659,587
105,700 - 107,699	\$106,714	1.625		2,443	116,303	29,076	29,076	29,076	29,076	60,273,623	60,273,623	60,273,623	60,273,623
107,700 - 109,699	\$108,748	1.329		1,998	118,519	29,630	29,630	29,630	29,630	49,294,550	49,294,550	49,294,550	49,294,550
109,700 - 111,699	\$110,767	0.788		1,185	120,720	30,180	30,180	30,180	30,180	29,228,070	29,228,070	29,228,070	29,228,070
111,700 - 113,699	\$112,607	0.886		1,332	122,725	30,681	30,681	30,681	30,681	32,863,034	32,863,034	32,863,034	32,863,034
113,700 - 115,699	\$114,747	1.034		1,554	125,057	31,264	31,264	31,264	31,264	38,352,570	38,352,570	38,352,570	38,352,570
\$115,700 - over	\$168,229	10.193		15,322	183,345	45,836	33,225	24,675	45,836	509,077,357	509,077,357	378,073,252	702,307,576
TOTAL		100.000		150,320			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				3Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees	Recvg. Pay	Annual Earnings	Avg 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	\$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	0	0	0	0	0	0
91,700 - 93,699	\$92,738	1.526		2,294	0	0	0	103	0	0	417,581	0	0
93,700 - 95,699	\$94,689	1.822		2,739	0	0	0	1,214	0	0	2,785,518	0	0
95,700 - 97,699	\$96,618	1.428		2,147	0	0	0	2,278	0	0	6,239,287	0	0
97,700 - 99,699	\$98,600	1.822		2,739	0	0	0	3,330	0	0	7,147,754	0	0
99,700 - 101,699	\$100,896	1.871		2,812	0	0	0	4,411	0	0	12,079,645	0	0
101,700 - 103,699	\$102,684	1.526		2,294	0	0	0	5,662	0	0	15,925,370	0	0
103,700 - 105,699	\$104,566	1.231		1,850	0	0	0	6,637	0	0	15,225,113	0	0
105,700 - 107,699	\$106,714	1.625		2,443	0	0	0	7,663	0	0	14,180,665	0	0
107,700 - 109,699	\$108,748	1.329		1,998	0	0	0	8,835	0	0	21,580,221	0	0
109,700 - 111,699	\$110,767	0.788		1,185	0	0	0	9,944	0	0	19,864,839	0	0
111,700 - 113,699	\$112,607	0.886		1,332	0	0	0	11,044	0	0	13,082,364	0	0
113,700 - 115,699	\$114,747	1.034		1,554	0	0	0	12,048	0	0	16,045,507	0	0
\$115,700 - over	\$168,229	10.193		15,322	0	0	0	13,214	0	0	20,539,379	0	0
TOTAL		100.000		150,320			25,275	24,675	0	387,265,309	387,265,309	543,186,494	0
											6.20%	13.10%	1.45%
										\$24,010,449	\$71,157,431	\$0	\$0

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

\$95,167,880

Railroad Retirement & Medicare, U.S.

From 2016 Earnings Distribution			4Q/2019 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info												
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees	Recvg. Pay	Annual Earnings	Avg Qtrly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			Tier I	Tier II	Medicare
					\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0 - 41,699	\$30,262	2.166 %	3,256	888	0	0	0	0	0	0	0	0	0	0	0
41,700 - 43,699	\$42,903	0.591	888	1,405	0	0	0	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,763	0.935	1,405	2,073	0	0	0	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,647	1.379	2,073	1,554	0	0	0	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,750	1.034	1,554	3,109	0	0	0	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,730	2.068	3,109	2,073	0	0	0	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,751	1.379	2,073	2,590	0	0	0	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,804	1.723	2,590	4,218	0	0	0	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,791	2.806	4,218	4,959	0	0	0	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,815	3.299	4,959	6,957	0	0	0	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,675	4.628	6,957	6,957	0	0	0	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,661	4.628	6,957	7,253	0	0	0	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,649	4.825	7,253	6,809	0	0	0	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,673	4.530	6,809	5,182	0	0	0	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,534	3.447	5,182	5,995	0	0	0	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,724	3.988	5,995	4,367	0	0	0	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,852	2.905	4,367	3,701	0	0	0	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,718	2.462	3,701	5,478	0	0	0	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,600	3.644	5,478	4,737	0	0	0	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,723	3.151	4,737	4,959	0	0	0	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,708	3.299	4,959	4,144	0	0	0	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,622	2.757	4,144	3,478	0	0	0	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,690	2.314	3,478	4,367	0	0	0	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,732	2.905	4,367	5,033	0	0	0	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,666	3.348	5,033	4,071	0	0	0	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,699	2.708	4,071	2,294	0	0	0	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,738	1.526	2,294	2,739	0	0	0	0	0	0	0	0	0	0	0
93,700 - 95,699	\$94,689	1.822	2,739	2,147	0	0	0	0	0	0	0	0	0	0	0
95,700 - 97,699	\$96,618	1.428	2,147	2,739	0	0	0	0	0	0	0	0	0	0	0
97,700 - 99,699	\$98,600	1.822	2,739	2,812	0	0	0	0	0	0	0	0	0	0	0
99,700 - 101,699	\$100,896	1.871	2,812	2,294	0	0	0	0	0	0	0	0	0	0	0
101,700 - 103,699	\$102,684	1.526	2,294	1,850	0	0	0	0	0	0	0	0	0	0	0
103,700 - 105,699	\$104,566	1.231	1,850	2,443	0	0	0	0	0	0	0	0	0	0	0
105,700 - 107,699	\$106,714	1.625	2,443	1,998	0	0	0	0	0	0	0	0	0	0	0
107,700 - 109,699	\$108,748	1.329	1,998	1,185	0	0	0	0	0	0	0	0	0	0	0
109,700 - 111,699	\$110,767	0.788	1,185	1,332	0	0	0	0	0	0	0	0	0	0	0
111,700 - 113,699	\$112,607	0.886	1,332	1,554	0	0	0	0	0	0	0	0	0	0	0
113,700 - 115,699	\$114,747	1.034	1,554	15,322	0	0	0	0	0	0	0	0	0	0	0
\$115,700 - over	\$168,229	10.193	15,322		0	0	0	17,700	0	0	271,200,268	13.10%	271,200,268	1.45%	\$0
TOTAL		100.000	150,320					Total Taxable Earnings		0	271,200,268		0		0
								Employer Tax Rate		6.20%	13.10%				1.45%
								Quarterly Payment		\$0	\$35,527,235		\$0		\$0

RCAF Unemployment Insurance Tax

	<u>Unemployment Ins.</u>			RRB	Factor	Avg. Ann.	Un. Ins.
	<u>Tax</u>	<u>Earnings</u>	Hourly	Sample	To Update	Taxable	Hourly
	<u>Rate</u>	<u>Base</u>	<u>Earnings</u>	<u>Year</u>	<u>RRB Sample</u>	<u>Earnings</u>	<u>Rate</u>
			\$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					0.000000		\$0.000

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

The MEANS Procedure

Variable	N	Sum	Mean
ANUAL_US	2573	45350374.36	17625.49
QTRLY_US	2573	47164037.01	18330.37

The MEANS Procedure

Variable	N	Sum	Mean
FactorA	2573	2597.13	1.0093800
FactorQ	2573	2804.19	1.0898520
Capa	2573	47703420.00	18540.00
Capq	2573	49555980.00	19260.00



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Spot Prices

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

Period: Weekly ▾

Product by Area	Graph Clear	01/18/19	01/25/19	02/01/19	02/08/19	02/15/19	02/22/19	View History
Crude Oil								
WTI - Cushing, Oklahoma		51.92	52.88	53.63	53.53	53.88	56.74	1986-2019
Brent - Europe		59.83	61.34	61.38	61.71	63.36	66.58	1987-2019
Conventional Gasoline								
New York Harbor, Regular		1.448	1.429	1.413	1.474	1.530	1.648	1986-2019
U.S. Gulf Coast, Regular		1.382	1.383	1.363	1.431	1.498	1.507	1986-2019
RBOB Regular Gasoline								
Los Angeles		1.667	1.670	1.645	1.862	1.837	1.837	2003-2019
No. 2 Heating Oil								
New York Harbor		1.852	1.858	1.851	1.871	1.914	1.984	1986-2019
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor		1.878	1.884	1.879	1.903	1.945	2.015	2006-2019
U.S. Gulf Coast		1.805	1.828	1.838	1.848	1.885	1.962	2006-2019
Los Angeles		1.829	1.827	1.812	1.852	1.897	2.032	1996-2019
Kerosene-Type Jet Fuel								
U.S. Gulf Coast		1.812	1.822	1.842	1.861	1.896	1.978	1990-2019
Propane								
Mont Belvieu, Texas		0.681	0.680	0.677	0.653	0.647	0.700	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: 2/27/2019

Next Release Date: 3/6/2019



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Spot Prices

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

Period: Monthly ▾

Product by Area	Graph Clear	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	View History
Crude Oil								
WTI - Cushing, Oklahoma	☐	68.06	70.23	70.75	56.96	49.52	51.38	1986-2019
Brent - Europe	☐	72.53	78.89	81.03	64.75	57.36	59.41	1987-2019
Conventional Gasoline								
New York Harbor, Regular	☐	2.077	2.093	2.028	1.625	1.449	1.425	1986-2019
U.S. Gulf Coast, Regular	☐	2.053	2.045	1.969	1.546	1.357	1.353	1986-2019
RBOB Regular Gasoline								
Los Angeles	☐	2.078	2.224	2.254	1.739	1.597	1.607	2003-2019
No. 2 Heating Oil								
New York Harbor	☐	2.125	2.225	2.313	2.033	1.784	1.819	1986-2019
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	2.153	2.252	2.332	2.048	1.801	1.846	2006-2019
U.S. Gulf Coast	☐	2.114	2.210	2.282	1.962	1.687	1.774	2006-2019
Los Angeles	☐	2.205	2.293	2.369	2.055	1.793	1.812	1996-2019
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	2.118	2.189	2.249	1.945	1.696	1.784	1990-2019
Propane								
Mont Belvieu, Texas	☐	0.974	1.057	0.959	0.745	0.677	0.665	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: 2/27/2019

Next Release Date: 3/6/2019

U.S.

Summary by Composition Category

	MS-2017		Prev. Idx	2019Q1		Calculation		Relative of Change
	MS Amount	Weight		Cur Idx		Prev. Idx	Cur Idx	
Forest Products	630,135,452	0.1217	322.68	343.94		39.27	41.86	
Metal Products	3,250,749,429	0.6278	177.00	175.42		111.12	110.13	
Misc. Products	1,296,926,484	0.2505	394.75	385.79		98.88	96.64	
Total	5,177,811,365	1.0000	249.27	248.63				0.9974
Total Linked			252.83	252.17				
'77 = 100 Link Fact.= 1.423			359.78	358.84				
'80 = 100 Link Fact.= 1.061			268.25	267.55				

As info only	Change
Forest Products	6.59%
Metal Products	-0.89%
Misc. Products	<u>-2.27%</u>
Total ('80=100)	-0.26%
Rounded 80 Indices	-0.3%
Rounded 77 Indices	-0.3%

Car Hire for RCAF

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	--
RR-OWNED MILEAGE	4.69	6.60	6.70	6.70	6.70	--
PRIVATELY-OWNED CARS	25.47	55.51	57.27	57.30	58.58	--
AUTORACKS	47.00	84.84	87.00	87.67	83.67	--
INDEX						
RR-OWNED TIME	100.0	206.5	206.5	206.5	209.7	--
RR-OWNED MILEAGE	100.0	140.7	142.9	142.9	142.9	--
PRIVATELY-OWNED CARS	100.0	217.9	224.8	225.0	230.0	--
AUTORACKS	100.0	180.5	185.1	186.5	178.0	--
CAR HIRE INDEX (old wts) 2016	100.0	209.1	--	--	--	--
CAR HIRE INDEX (new wts) 2017	100.0	211.5	218.0	218.3	222.2	--
CAR HIRE INDEX (LINKED)	100.0	210.4	216.9	217.2	221.1	--

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

Note: Indexes are rounded, rates are full float.

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				
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
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
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!
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!

"Old Wts" New Wts"		
	2016	2017
For RCAF & RCR	0.091	0.004
RR-owned Time	0.058	0.053
RR-owned Mileage	0.762	0.883
Privately-owned Cars	0.089	0.060
Autoracks	1.000	1.000
----- Check sum		

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2016	2017
Car Hire - U.S.	0.583	0.615
Lease Rentals - U.S.	0.417	0.385
----- 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	.	.	.

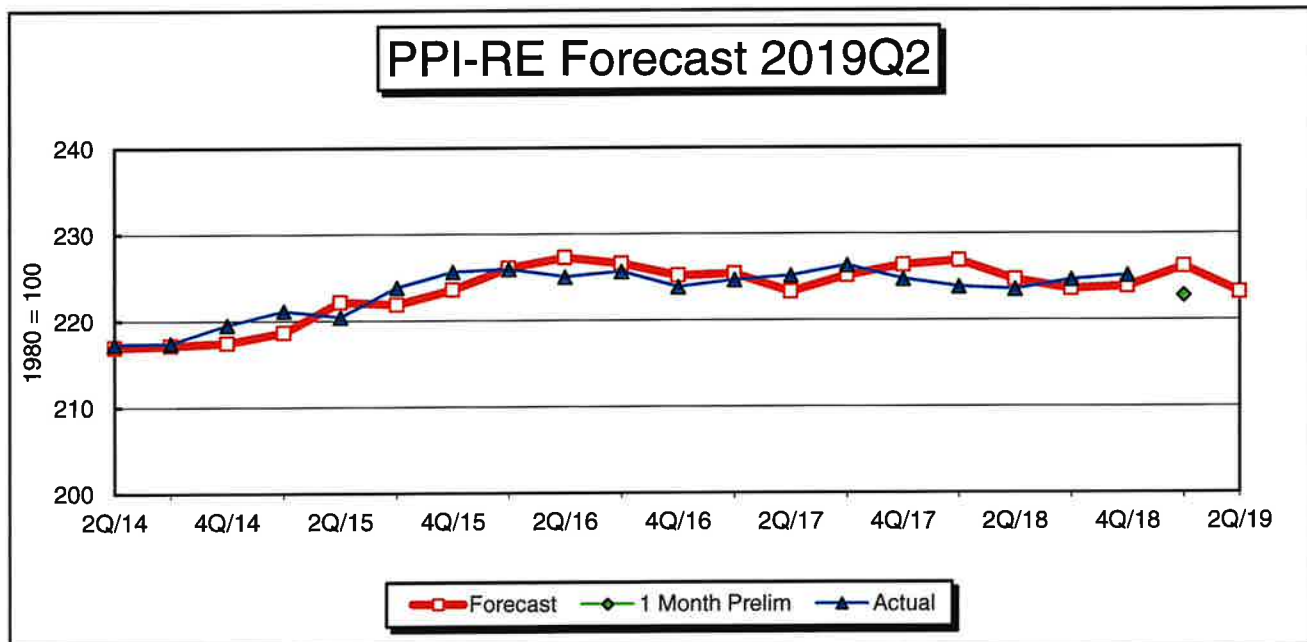
Notes
This report excludes these car types: D (Locomotives), M (MoW, EOTs, etc.), U (Containers), Z (Trailers).
All TTX equipment (including ABOX, RBOX, GONX) is contained in the Private section of report.
Equipment can be zero rated due to owners supplying incorrect or insufficient information to the 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.

PPI-RE Forecast (for Depreciation Component)

	Forecast	Actual	1 Month Prelim
2Q/14	216.9	217.3	
3Q/14	217.1	217.4	
4Q/14	217.4	219.5	
1Q/15	218.6	221.1	
2Q/15	222.1	220.4	
3Q/15	221.8	223.8	
4Q/15	223.5	225.6	
1Q/16	226.0	225.9	
2Q/16	227.2	225.0	
3Q/16	226.5	225.6	
4Q/16	225.1	223.8	
1Q/17	225.3	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		222.8
2Q/19	223.1		

1980 Base

	PPI-RE Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2019Q2						
Low	198.5	219.6	-1.7%			
Midpoint	201.7	223.1	-0.2%	0.1%	-0.9%	-1.3%
High	204.9	226.7	1.4%			



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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	204.6(P)	204.6(P)	201.3(P)
2019	201.4(P)											

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

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2/14/2019

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 1.42 and for Box-Jenkins was 1.40.
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, 1)

Term	Coefficient	Std. Error	t-Statistic	Significance
b[1]	0.3341	0.1149	2.908	0.9951

Within-Sample Statistics

Sample size	72	No. parameters	1
Mean	200.84	Std. deviation	3.17
R-square	0.89	Adj. R-square	0.89
Durbin-Watson	1.98	Ljung-Box(18)	8.6 P=0.03
Forecast error	1.07	BIC	1.09
MAPE	0.38	SMAPE	0.38
RMSE	1.06	MAD	0.77
MAD/Mean Ratio	0		

Historic Data

Date	Historic
2013-Feb	195.2
2013-Mar	195.8
2013-Apr	195.2
2013-May	198.1
2013-Jun	196.3
2013-Jul	195.4
2013-Aug	194.5
2013-Sep	194.6
2013-Oct	195.1
2013-Nov	195.2
2013-Dec	196.9
2014-Jan	196
2014-Feb	197.4
2014-Mar	196.8
2014-Apr	196.2
2014-May	196.7
2014-Jun	196.8
2014-Jul	197.8
2014-Aug	197.9
2014-Sep	198.3
2014-Oct	199.3

2014-Nov	199.9
2014-Dec	199.5
2015-Jan	200.8
2015-Feb	200.5
2015-Mar	199.5
2015-Apr	200.5
2015-May	200
2015-Jun	201.4
2015-Jul	201.6
2015-Aug	202.8
2015-Sep	202.8
2015-Oct	204.4
2015-Nov	203.9
2015-Dec	204.5
2016-Jan	204
2016-Feb	204.2
2016-Mar	203.3
2016-Apr	203
2016-May	203.5
2016-Jun	203.5
2016-Jul	203.5
2016-Aug	204.4
2016-Sep	203.7
2016-Oct	203.7
2016-Nov	201.5
2016-Dec	201.8
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	204.6
2018-Nov	204.6
2018-Dec	201.3
2019-Jan	201.4

Forecast Data

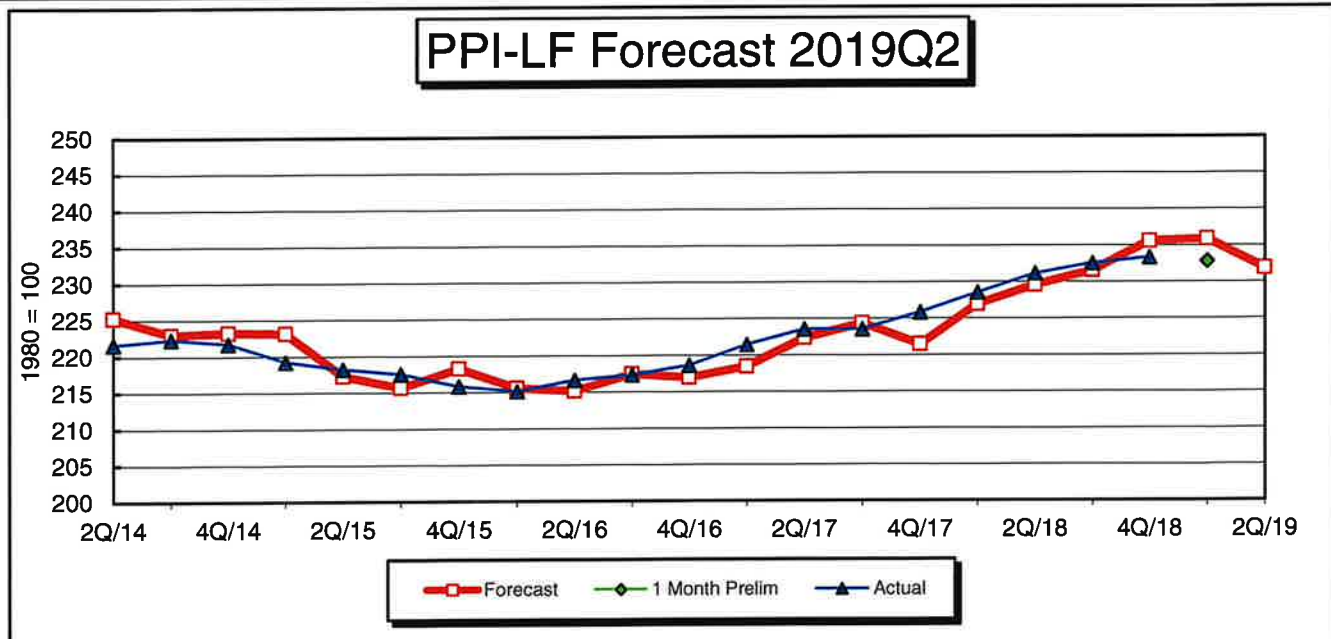
Date	2.5 Lower	Forecast	97.5 Upper
2019-Feb	199.611	201.703	203.795
2019-Mar	199.189	201.703	204.217
2019-Apr	198.829	201.703	204.577
2019-May	198.509	201.703	204.897
2019-Jun	198.219	201.703	205.187
2019-Jul	197.95	201.703	205.456
2019-Aug	197.7	201.703	205.706
2019-Sep	197.465	201.703	205.941
2019-Oct	197.242	201.703	206.164
2019-Nov	197.029	201.703	206.377
2019-Dec	196.826	201.703	206.58
2020-Jan	196.631	201.703	206.775

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

	Forecast	Actual	1 Month Prelim
2Q/14	225.2	221.6	
3Q/14	222.9	222.3	
4Q/14	223.2	221.7	
1Q/15	223.1	219.2	
2Q/15	217.2	218.2	
3Q/15	215.6	217.5	
4Q/15	218.2	215.8	
1Q/16	215.5	215.1	
2Q/16	215.1	216.6	
3Q/16	217.4	217.3	
4Q/16	216.9	218.6	
1Q/17	218.4	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		232.8
2Q/19	231.8		

1980 Base

	PPI-LF Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2019Q2						
Low	204.4	229.1	-0.9%			
Midpoint	206.8	231.8	0.3%	-0.4%	-0.6%	-1.7%
High	209.2	234.5	1.5%			



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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	208.3(P)	208.3(P)	207.6(P)
2019	207.7(P)											

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

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2/14/2019

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 2.02 and for Box-Jenkins was 2.08.
The rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each method.

Based on the lower MAD, I will use Exponential Smoothing.

Model Details

Expert selection

Multiplicative Winters: Linear trend, Multiplicative seasonality

LM(0.930, 0.826, 0.996)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.9304		207.5
Trend	0.8261		-0.1718
Seasonal	0.9965		
Seasonal Indexes			
Jan - Mar	1.001	0.9999	0.9997
Apr - Jun	0.9998	0.9996	0.9998
Jul - Sep	0.9997	1	0.9995
Oct - Dec	1.001	1.001	0.9998

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	197.99	Std. deviation	4.68
R-square	0.99	Adj. R-square	0.99
Durbin-Watson	1.79	Ljung-Box(18)	22.4 P=0.79
Forecast error	0.37	BIC	0.4
MAPE	0.15	SMAPE	0.15
RMSE	0.37	MAD	0.3
MAD/Mean Ratio	0		

Historic Data

Date	Historic
2013-Feb	196.1
2013-Mar	196.1
2013-Apr	195.9
2013-May	195.5
2013-Jun	195.4
2013-Jul	195.2
2013-Aug	195.3
2013-Sep	195.1
2013-Oct	195.4
2013-Nov	195.5
2013-Dec	195.9
2014-Jan	197.2

2014-Feb	197.6
2014-Mar	197.3
2014-Apr	197.7
2014-May	197.6
2014-Jun	197.7
2014-Jul	198.2
2014-Aug	198.4
2014-Sep	198.3
2014-Oct	198.2
2014-Nov	197.4
2014-Dec	196.7
2015-Jan	196
2015-Feb	195.4
2015-Mar	195
2015-Apr	194.8
2015-May	194.9
2015-Jun	195.2
2015-Jul	194.9
2015-Aug	193.9
2015-Sep	193.1
2015-Oct	192.9
2015-Nov	192.3
2015-Dec	191.9
2016-Jan	191.9
2016-Feb	191.8
2016-Mar	192.1
2016-Apr	192.8
2016-May	193.4
2016-Jun	193.7
2016-Jul	193.7
2016-Aug	194
2016-Sep	193.9
2016-Oct	194.3
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	208.3
2018-Nov	208.3
2018-Dec	207.6
2019-Jan	207.7

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2019-Feb	206.561	207.345	208.129
2019-Mar	205.575	207.12	208.665
2019-Apr	204.932	206.972	209.012
2019-May	204.323	206.759	209.195
2019-Jun	203.863	206.639	209.415
2019-Jul	203.361	206.44	209.52
2019-Aug	203.004	206.359	209.714
2019-Sep	202.452	206.062	209.671
2019-Oct	202.268	206.115	209.963
2019-Nov	201.873	205.945	210.017
2019-Dec	201.307	205.591	209.876
2020-Jan	201.15	205.637	210.123

Forecast Error Calculation

	Fourth Quarter 2018			Difference		Notes
	2017	2018Q4	2018Q4 Actual	Pt.	Pct.	
	Weight	Forecast				
Labor	35.0%	439.2	439.2	0.0	0%	* actual=forecast
Fuel	13.0%	283.9	297.4	13.5	5%	from 1st month of quarter
M&S	4.9%	269.8	269.8	0.0	0%	* actual=forecast
Equip Rents	5.2%	236.4	235.9	-0.5	0%	from Equipment Rents below
Depreciation	15.8%	223.8	225.1	1.3	1%	PPI-RE
Interest	2.1%	62.4	62.4	0.0	0%	* actual=forecast
Other	24.0%	235.5	233.3	-2.2	-1%	PPI-LF
Weighted Avg	100.0%					
1980 = 100		309.3	310.7			calculated
1980 = 100 (linked)		285.8	285.2			calculated
4Q17 = 100	2.645	108.1	107.8			calculated
4Q12 = 100	2.976	96.0	95.8			calculated
4Q07 = 100	2.459	116.2	116.0			calculated
4Q02 = 100	1.921	148.8	148.5			calculated
4Q97 = 100	1.732	165.0	164.7			calculated
Forecast Error		-0.3				calculated
						-0.003 = RCAF adj.
Prior Quarter						
1980 = 100		306.9	305.2 **			Re-calculated using new weights
1980 = 100 (linked)		283.6	280.2			
4Q17 = 100		107.2	105.9			calculated
4Q12 = 100		95.3	94.2			calculated
4Q07 = 100		115.3	113.9			calculated
4Q02 = 100		147.6	145.9			calculated
4Q97 = 100		163.7	161.8			calculated
Equipment Rents						
Car Hire		216.9	217.1			from Equipment Rents/CHARM
Lease Rentals	61.5%	235.5	233.3			(equals PPI-LF from above)
Weighted Average	38.5%	224.1	223.3			calculated
Linked		236.4	235.9			calculated
Prior Quarter						
Weighted Average		218.5	219.4 **			Re-calculated using new weights
Linked		230.5	231.8			
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)

October 2018

Monthly Report

	October 2018 Price (cents) (1)	1/1/81 Price (cents) (2)	1/91 New Method Linking Factors (3)	October 2018 Index 1/1/81=100 (4)	Linking Factor 1980=100 (5)	October 2018 1980=100 Current Index (6)
U.S.	243.42	89.34	99.415	270.87	1.096	296.87

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

(6) = (4) x (5)

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

	October 2018 1980=100 Current Index	Adjustment Factor	October 2018 1980=100 Linked Index
U.S.	296.87	1.00192	297.44 ←

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

Car Hire for RCAF

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	--	--	--
	RR-OWNED MILEAGE	4.69	6.70	6.70	--	--	--
	PRIVATELY-OWNED CARS	25.47	55.66	57.29	--	--	--
	AUTORACKS	47.00	86.16	87.67	--	--	--
INDEX							
	RR-OWNED TIME	100.0	206.5	206.5	--	--	--
	RR-OWNED MILEAGE	100.0	142.9	142.9	--	--	--
	PRIVATELY-OWNED CARS	100.0	218.5	224.9	--	--	--
	AUTORACKS	100.0	183.3	186.5	--	--	--
	CAR HIRE INDEX (old wts)	2016	100.0	209.9	--	--	--
	CAR HIRE INDEX (new wts)	2017	100.0	212.3	--	--	--
	CAR HIRE INDEX (LINKED)		100.0	211.2	--	--	--

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								
Superstructures (Vehicular Flats)														
Rate (in cents)	86.0	87.0	87.0	87.0	86.0	86.0								
Superstructures #3 - Auto Rack	64.0	64.0	64.0	64.0	64.0	64.0								
All other #1 - Time	6.6	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								
Superstructures (Vehicular Flats)	421,139	422,430	423,225	424,175	425,349	426,465								
Covered Hoppers	405,718	405,541	405,949	406,278	406,924	407,122								
Tank Cars	291,908	291,714	292,215	292,904	295,029	295,548								
Others														
Rate (in cents)	84.0	84.0	84.0	84.0	84.0	84.0								
Superstructures #1 - Time	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								
Superstructures #3 - Auto Rack	46.2	46.2	46.2	46.3	46.3	46.3								
Covered Hoppers #2 - Mileage	89.9	90.0	94.6	94.7	94.7	94.8								
Tank Cars #2 - Mileage	89.0	90.0	90.0	90.0	90.0	90.0								
Others #1 - Time	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Others	27.96	28.18	28.28	28.28	28.28	28.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Total	55.58	55.66	57.27	57.33	57.29	57.30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	86.00	86.16	87.00	87.00	87.67	87.67	#DIV/0!	#DIV/0!	#DIV/0!	#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	0.004
RR-owned Mileage	0.058	0.053
Privately-owned Cars	0.762	0.883
Autoracks	0.089	0.060
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2016	2017
Car Hire - U.S.	0.583	0.615
Lease Rentals - U.S.	0.417	0.385
----- 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 12/2018

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	10,867	110	0.064	86
Railroad	Number of Zero-Rated Vehicular Flats	64	.	.	.
Railroad	All Other Cars	412,500	64	0.067	.
Railroad	Number of Zero-Rated Other Cars	15,821	.	.	.
Railroad	Total Railroad Equipment	439,252	.	.	.
		.	.	.	.
Private	Vehicular Flats	55,158	84	0.014	88
Private	Number of Zero-Rated Vehicular Flats	123	.	.	.
Private	Covered Hoppers	426,465	0	0.463	.
Private	Number of Zero-Rated Covered Hoppers	13,495	.	.	.
Private	Tanks	407,122	0	0.948	.
Private	Number of Zero-Rated Tanks	9,441	.	.	.
Private	All Other Cars	295,548	90	0.083	.
Private	Number of Zero-Rated Other Cars	24,821	.	.	.
Private	Total Private Equipment	1,232,173	.	.	.

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		
May	2018	202.1	202.1		
June	2018	202.1	202.1		
July	2018	202.4	204.1		
August	2018	202.4	204.1		
September	2018	204.1	201.1		
October	2018	204.6	204.6		
November	2018		204.6		
December	2018		201.3		
January	2019		201.4		
February	2019				
March	2019				
April	2019				
May	2019				
June	2019				
July	2019				
Actual Qtr.		203.0	203.5	NA	NA

1980=100

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

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	204.6(P)	204.6(P)	201.3(P)
2019	201.4(P)											

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

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2/14/2019

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		
May	2018	206.3	206.3		
June	2018	207.0	207.0		
July	2018	207.5	207.4		
August	2018	207.4	207.6		
September	2018	207.4	207.9		
October	2018	208.3	208.3		
November	2018		208.3		
December	2018		207.6		
January	2019		207.7		
February	2019				
March	2019				
April	2019				
May	2019				
June	2019				
July	2019				
Actual Qtr.		207.4	208.1	NA	NA
1980=100					
Actual Qtr.		232.5	233.3	NA	NA
First Mo. next qtr.		233.5	232.8	NA	NA

0.892 =1980

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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	208.3(P)	208.3(P)	207.6(P)
2019	207.7(P)											

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

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2/14/2019

All-Inclusive Index (Actual)

	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	35.0%	434.3	434.3	0.0%	439.2	1.1%		NA		NA		NA
Fuel	13.0%	274.0	274.0	0.0%	297.4	8.5%		NA		NA		NA
M&S	4.9%	263.7	263.7	0.0%	269.8	2.3%		NA		NA		NA
Equipment Rents	5.2%	231.8	231.8	0.0%	235.9	1.8%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA
Depreciation	15.8%	224.6	224.6	0.0%	225.1	0.2%		NA		NA		NA
Interest	2.1%	60.5	60.5	0.0%	62.4	3.1%	62.4	0.0%	62.4	0.0%	62.4	0.0%
Other	24.0%	232.5	232.5	0.0%	233.3	0.3%		NA		NA		NA
	1.0000											
Weighted Avg.		305.3	305.2	0.0%			1.3	NA	#DIV/0!	NA	#DIV/0!	NA
Linked		280.2			285.2	1.8%	1.2	NA	#DIV/0!	NA	#DIV/0!	NA
10/1/80	1.027	272.8			277.7	1.8%	1.2	NA	#DIV/0!	NA	#DIV/0!	NA
10/1/82	1.209	231.8			235.9	1.8%	1.0	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/87	1.322	212.0			215.7	1.7%	0.9	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/92	1.569	178.6			181.8	1.8%	0.8	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/97	1.732	161.8			164.7	1.8%	0.7	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/02	1.921	145.9			148.5	1.8%	0.6	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/07	2.459	113.9			116.0	1.8%	0.5	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/12	2.976	94.2			95.8	1.7%	0.4	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/17	2.645	105.9			107.8	1.8%	0.5	NA	#DIV/0!	NA	#DIV/0!	NA

Equipment Rents

Car Hire	61.5%	211.2	211.2	0.0%	217.1	2.8%		NA		NA		NA
Lease Rentals	38.5%	232.5	232.5	0.0%	233.3	0.3%	0.0	NA	0.0	NA	0.0	NA
	1.0000											
ER Weighted Avg		220.1	219.4	-0.3%	223.3	1.8%	0.0	NA	0.0	NA	0.0	NA
ER Linked		231.8			235.9	1.8%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA

Impact/Check of weight change

	16 Wts	17 Wts
Labor	137.673	152.005
Fuel	57.266	35.620
Material & Supplies	13.712	12.921
Equipment Rents	12.517	12.054
Depreciation	28.300	35.487
Interest	0.908	1.271
Other	52.778	55.800
Weighted Avg.	303.153	305.157
ER Weighted Avg.	220.4655	219.4005

As info only