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The Honorable Cynthia T. Brown
Chief, Section of Administration
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Surface Transportation Board
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This submission is the AAR forecast of the second quarter 2020 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2020-2) *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 2020 results and compares to the previous quarter. Both quarters are shown on a 4Q\2017=100 base.

	<u>2020Q1</u>	<u>2020Q2</u>	<u>% Change</u>
All-Inclusive Index	106.5	105.7	-0.8
Preliminary RCAF	1.065	1.057	-0.8
Forecast Error Adjustment	-0.022	-0.006	
RCAF (Unadjusted)	1.043	1.051	0.8
Productivity Adjustment Factor	2.3705	2.3764	
RCAF (Adjusted)	0.440	0.442	0.5
PAF-5	2.5190	2.5220	
RCAF-5	0.414	0.417	0.7

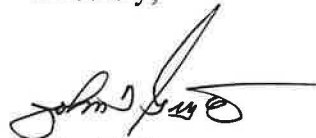
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In its October 3, 1996 decision in Ex Parte No. 290 (Sub-No. 7), *Productivity Adjustment - Implementation*, the STB noted its intent to publish, in addition to the RCAF (Unadjusted) and RCAF (Adjusted), an RCAF-5 (i.e., a calculation of the productivity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

Our quarterly non-proprietary work papers underlying this submission are e-filed herewith, in accordance with the ICC's order in Ex Parte No. 290 (Sub-No. 2), *Railroad Cost Recovery Procedures*, served February 8, 1990. We have notified Pedro Ramirez, in the STB office handling this proceeding, of our plan to e-file the submission and non-proprietary work papers. A second copy of the submission and non-proprietary work papers, plus selected highly confidential work papers, will be hand-delivered to Mr. Ramirez's Data Collection and Auditing Team. All work papers are available for STB inspection. Questions should be directed to me or Tiffany Placker (202 639-2381) of this office.

Sincerely,



John T. Gray

Attachments

**Second Quarter 2020
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2020-2)

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

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

March 5, 2020

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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 2020. The Productivity adjustment decision, served February 6, 2020, has been utilized to update productivity adjustment factors listed on page 5 herein.

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 2018 (current) and 2017 (previous) weights are shown below. Weights calculated from 2017 data were used for the fourth quarter of 2018 through the third quarter of 2019. Beginning with the fourth quarter of 2019, weights calculated using 2018 data are used. The weight for Fuel increased 3 percentage points, and Materials & Supplies' was up 0.2 percentage points. The weight for Interest stayed the same. The remaining component weights all decreased by 0.3 to 1.8 percentage points.

Weights for RCAF's All-Inclusive Index		
	2018	2017
Labor	33.0 %	34.8 %
Fuel	15.9	12.9
Materials & Supplies	5.1	4.9
Equipment Rents	5.3	5.7
Depreciation	15.0	15.7
Interest	2.1	2.1
Other	23.6	23.9
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 2020

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		
	2018 Weights	Previous 2020Q1	Current 2020Q2	Percent Change
1. Labor	33.0%	443.7	441.9	-0.4 %
2. Fuel	15.9%	250.2	231.2	-7.6
3. M&S	5.1%	267.0	266.7	-0.1
4. Equipment Rents	5.3%	240.1	239.4	-0.3
5. Depreciation	15.0%	225.3	225.8	0.2
6. Interest	2.1%	57.2	57.2	0.0
7. Other	23.6%	229.9	235.5	2.4
8. Weighted Average				
a. 1980 = 100		301.8	299.5	
b. 1980 = 100 (linked)		281.7	279.6 ¹	
c. 4Q17 = 100		106.5	105.7 ²	-0.8

¹ Index80 = (Current Index / Previous Index) * the Previous Quarter Linked Index
 = (299.5 / 301.8) x 281.7
 = 279.6

² To calculate the 4Q17 = 100 index:
 Index4Q17 = (Current Linked Index / 4Q17 Basing Factor) * 100
 = 279.6 divided by 264.5 times 100
 = 105.7

Indexes based on other periods:

- 4Q12 based index = 279.6 / 297.6 x 100 = 94.0
- 4Q07 based index = 279.6 / 245.9 x 100 = 113.7
- 4Q02 based index = 279.6 / 192.1 x 100 = 145.5
- 4Q97 based index = 279.6 / 173.2 x 100 = 161.4
- 4Q92 based index = 279.6 / 156.9 x 100 = 178.2

Forecast vs. Actual All-Inclusive Index Fourth Quarter 2019

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 107.1 is 0.6 index points below the forecast value of 107.7. Therefore, the forecast error adjustment for second quarter 2020 is -0.6 index points.

	2018	Fourth Quarter 2019		Amt
	Weights	Forecast	Actual	Difference
1. Labor	33.0%	443.8	443.8	
2. Fuel	15.9%	249.9	248.5	
3. M&S	5.1%	322.9	322.9	
4. Equipment Rents ¹	5.3%	240.7	241.5	
5. Depreciation	15.0%	225.1	225.6	
6. Interest	2.1%	57.2	57.2	
7. Other	23.6%	231.7	231.2	
8. Weighted Average				
a. 1980 = 100		305.1	304.8	
b. 1980 = 100 (linked)		284.8	283.4 ²	
c. 4Q17 = 100 ³		107.7	107.1	-0.6

Forecast error —————→ **-0.6 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 (2018) weights.

¹	2018	Fourth Quarter 2019	
	Weights	Forecast	Actual
Car-Hire	59.1%	226.7	227.3
Lease Rentals	40.9%	231.7	231.2
Weighted Average		228.7	228.9
Weighted Average (linked)		240.7	241.5

² Linked actual index = (actual index / previous actual index) x previous linked actual index.
 283.4 = 304.8 / 301.6 x 280.4

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

Productivity

On February 6, 2020, the Surface Transportation Board served a decision which proposed to adopt 1.0 percent as the geometric average productivity change for the five most recent years available. Their five year rolling geometric average calculation added the year 2018 and removed the year 2013. The components of this average annual value are shown on the following table in ratio format – therefore, 1.010 is the same as an increase of 1.0 percent. Productivity changes are calculated by multiplying each of the five productivity changes together and taking the result to the one-fifth power. The productivity adjustment factors (PAF) for each quarter are calculated by increasing the previous quarter's PAF by quarterly versions of the annual rate, which are the fourth root of the geometric average annual growth rate. The difference between the PAF and the PAF-5 is the timing of the five-year productivity trend.

Comparison of Output, Input, & Productivity			
2014 - 2018			
Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
2014	1.055	1.036	1.018
2015	0.913	0.972	0.939
2016	0.955	0.941	1.015
2017	1.045	0.992	1.053
2018	1.032	1.004	1.028
Average			1.010
Previous Average (2013-2017)			1.005

Calculation of PAF and PAF-5			
For 2014-2018, use fourth root of avg. productivity change = 1.0025			
For 2013-2017, use fourth root of avg. productivity change = 1.0012			
Quarter	Year	PAF	PAF-5
Q1	2020	2.3705	2.5190
Q2	2020	2.3764	2.5220
Q3	2020	2.3823	2.5250
Q4	2020	2.3883	2.5280
Q1	2021	2.3943	2.5343

Rail Cost Adjustment Factor

Second Quarter 2020

Four RCAF values are presented in this filing. Two are not modified for productivity (Preliminary RCAF and RCAF Unadjusted), and two incorporate a productivity calculation (RCAF Adjusted and RCAF-5). The All-Inclusive Index and all four RCAF values, plus the percent change for each, are shown below. Note that beginning with the 2018Q1 index, the All-Inclusive Index was rebased to a 2017Q4=100 basis as required in the applicable statute.

	Previous 2020Q1	Current 2020Q2	Percent Change
All-Inclusive Index ¹	106.5	105.7	-0.8
Preliminary RCAF ²	1.065	1.057	-0.8
Forecast Error Adjustment ³	<u>-0.022</u>	<u>-0.006</u>	
RCAF (Unadjusted) ⁴	1.043	1.051	0.8
Productivity Adjustment Factor ⁵	<u>2.3705</u>	<u>2.3764</u>	
RCAF (Adjusted) ⁶	0.440	0.442	0.5
PAF-5 ⁷	2.5190	2.5220	
RCAF-5 ⁸	0.414	0.417	0.7

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 2020

The second quarter 2020 Labor Index is 0.4 percent lower than the previous quarter.

Wage Rate Index

The Wage Rate Index portion of the Labor Index fell 0.5%, mostly as a result of lower rates for lump sums.

Wage Increases: No national agreement, independent agreement, or non-union wage increases are currently scheduled for the second quarter.

Lump Sums: The second quarter lump sum rate decreased by 21 cents. Four amounts were fully amortized and removed (three annual and one quarterly), but they were replaced by four new amounts (also three annual and one quarterly). Two of the new annual lump sum amounts (performance bonuses) were quite a bit smaller than they were last year.

Back Pay: The back pay rate decreased by 0.001 cents. One tiny amount was fully amortized and removed, but it was replaced by another, also tiny, amount.

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. The second quarter rate is unchanged from last quarter.

Labor

Second Quarter 2020

Supplements Index

The Supplements Index decreased by 0.3 percent, mostly the result of the "Other" fringe benefits category.

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

Railroad Retirement: The Railroad Retirement rate decreased by 0.3 percent because of lower taxable wages.

Unemployment Insurance: The Unemployment Insurance rate was unchanged from the prior 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 9.8 percent lower than last quarter.

Labor Index Calculation

As shown in Table A-1 on the next page, the 0.5 percent decrease in the Wage Rate Index and the 0.3 percent decrease in the Supplements Index combined to cause the Labor Index to fall 0.4 percent from the previous quarter. The linked second quarter 2020 Labor index is 441.9, which is 0.5 percent higher than one year ago.

Labor

Second Quarter 2020

Table A-1 Labor Index

	2020Q1	2020Q2	Change	
			Percent	Amount
<u>Base Wage</u> – Straight Time & Pay For Time Not Worked	\$44.456	\$44.456	0.0%	\$0.000
Adjustments:				
Lump Sum	0.546	0.334	-38.8%	-\$0.212
Back Pay	0.015	0.014	-6.7%	-\$0.001
Other	0.204	0.204	0.0%	\$0.000
Total Wages	<u>45.221</u>	<u>45.008</u>	-0.5%	-\$0.213
Health & Welfare Benefits	8.078	8.078	0.0%	\$0.000
RR Retirement & Medicare	9.330	9.298	-0.3%	-\$0.032
Unemployment Insurance	0.097	0.097	0.0%	\$0.000
Other	0.225	0.203	-9.8%	-\$0.022
Total Supplements	<u>\$17.730</u>	<u>\$17.676</u>	-0.3%	-\$0.054
Total Labor (as info only)	\$62.951	\$62.684		
Wage Index¹	387.0	385.2	-0.5%	
Supplements Index²	655.2	653.2	-0.3%	
Total labor Index, 2018 Weights ³	464.8	462.9		
Labor Index (linked)⁴	443.7	441.9	-0.4%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

³ 2018 weights: wages, supplements 71.0% 29.0%

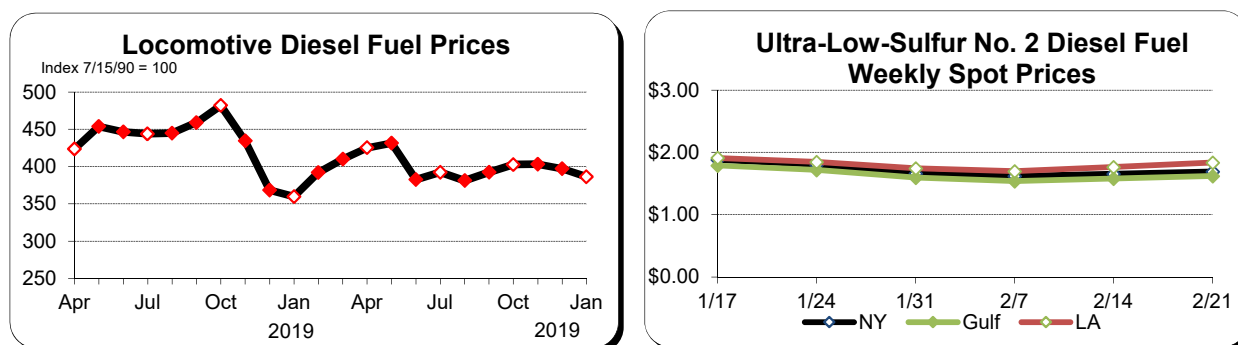
⁴ 2020Q2 linked Index = 2020Q1 linked x (2020Q2 / 2020Q1)
 = 443.7 x 462.9 / 464.8

Fuel

Second Quarter 2020

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 falling slightly since November 2019. While average prices for locomotive diesel fuel are available only through January 2020, 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 24 for Ultra-Low-Sulfur Diesel Fuel* is about 10 percent lower than the average for January. The chart below (on left) shows the AAR's Monthly Locomotive Diesel Fuel Price Index through January 2020. The second chart (on right) shows recent spot prices for Ultra-Low-Sulfur No. 2 Diesel Fuel as reported by the Energy Information Administration.



Using information from the EIA, prices declined slightly in January from December. Railroads that responded to the AAR's forecast survey expect further decreases by April (Q2) compared to prices that actually occurred for January (Q1). The second quarter 2020 forecast is 7.6 percent lower than the previous quarter forecast, and 3% lower than the prior quarter actual.

Forecast Fuel Index (1980 = 100)	231.2
Change from previous quarter forecast	-7.6%
Change from previous quarter actual	-3.0%

* 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

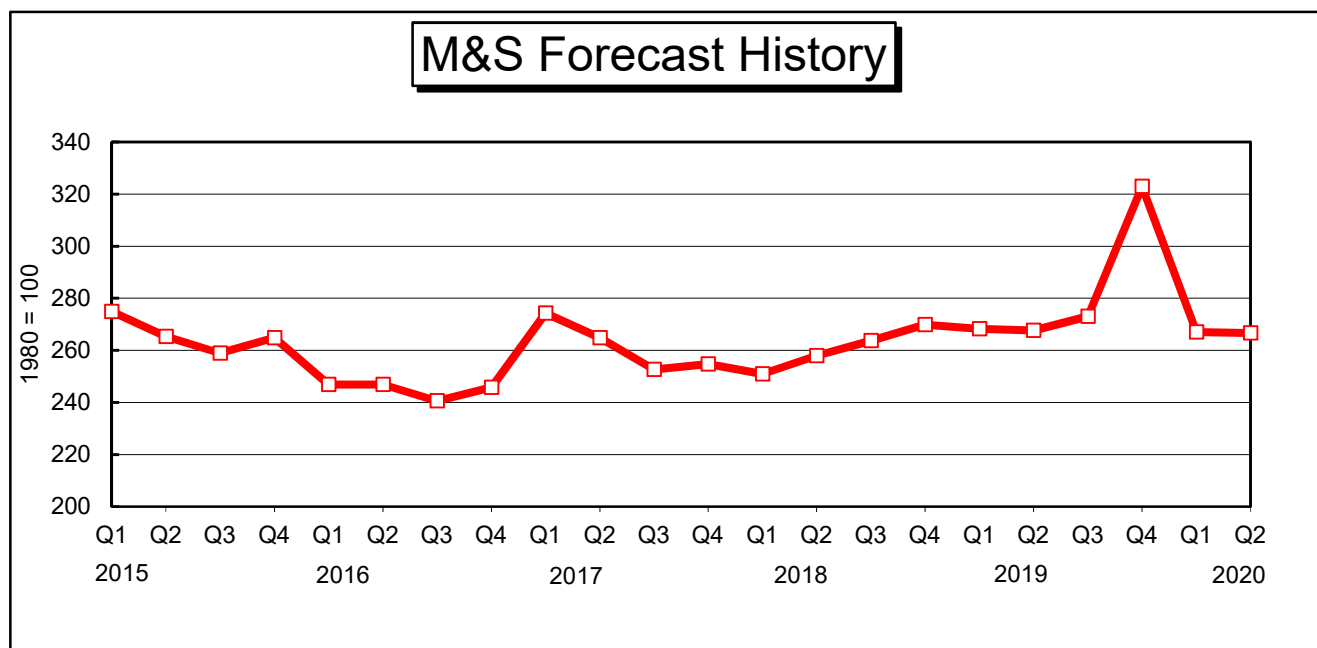
Second Quarter 2020

The second quarter 2020 Materials & Supplies Index fell 0.1 percent from the previous quarter. Prices decreased for Forest Products.

2020Q2 Materials & Supplies Index = 266.7

2020Q1 Materials & Supplies Index = 267.0

Difference	-0.3 basis points
	or
	-0.1 %



Equipment Rents

Second Quarter 2020

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 fell 2.2 percent. The projected PPI-LF (See Appendix G) used as a proxy for Lease Rentals, rose 2.4 percent. Combined, these changes caused the Equipment Rents Index to fall 0.3 percent.

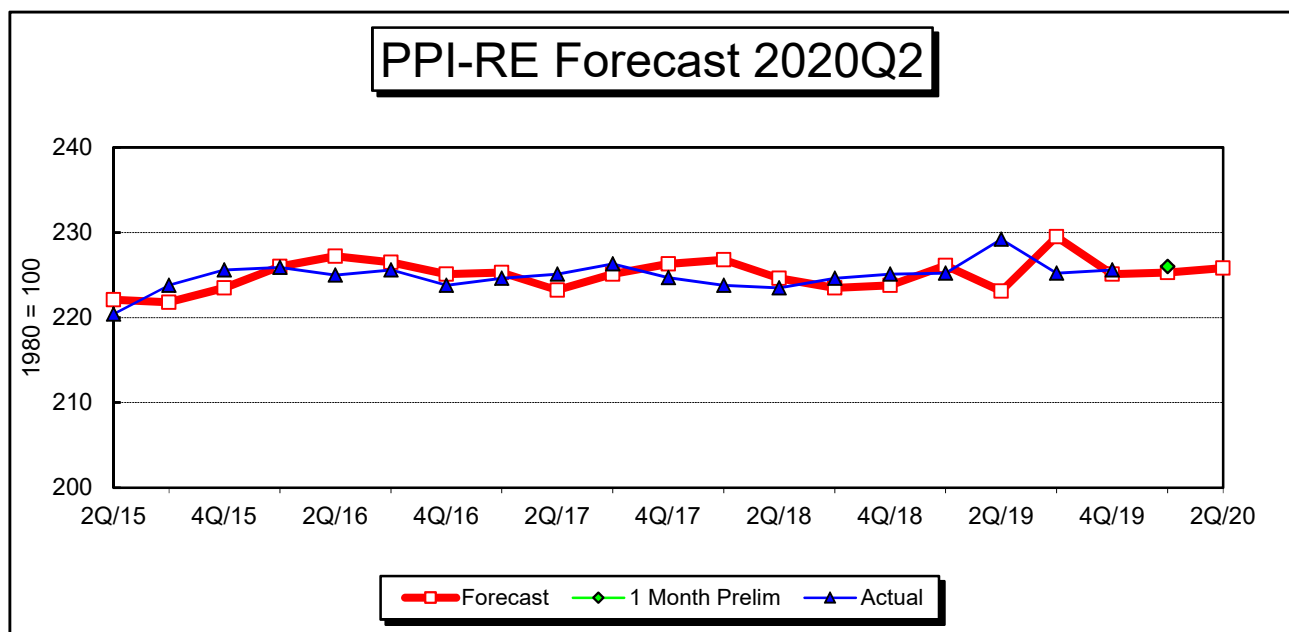
	2018			Percent
	Weight	2020Q1	2020Q2	Change
Car Hire	59.1%	226.8	221.8	-2.2 %
Lease Rentals	40.9%	229.9	235.5	2.4
Weighted Average		228.1	227.4	-0.3
Weighted Average (Linked)		240.1	239.4	-0.3

Depreciation

Second Quarter 2020

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 0.2% higher than the previous quarter's forecast.

Forecast of Depreciation Index (1982=100)	204.1
Forecast of Depreciation Index (1980=100)	225.8
Change from previous quarter forecast	0.2%
Change from actual first month of previous quarter	-0.1% = -0.09%
Change from same quarter of prior year (actual)	-1.5%



Depreciation

Second Quarter 2020

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 1.10 and for Box-Jenkins was 1.14.
 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

Exponential smoothing: No trend, Multiplicative seasonality

NM(0.732, 0.401)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.7316		204.3
Seasonal	0.4014		
Seasonal Indexes			
Jan - Mar	0.9998	1.002	1.002
Apr - Jun	0.9983	0.9988	0.9998
Jul - Sep	1.001	1.002	0.999
Oct - Dec	1.001	0.9989	0.9987

Within-Sample Statistics

Sample size	72	No. parameters	2
Mean	202.12	Std. deviation	2.24
R-square	0.83	Adj. R-square	0.82
Durbin-Watson	1.94	Ljung-Box(18)	14.9 P=0.33
Forecast error	0.94	BIC	0.99
MAPE	0.32	SMAPE	0.32
RMSE	0.93	MAD	0.64
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2019-Aug	203.5
2019-Sep	203.7
2019-Oct	203.7
2019-Nov	204
2019-Dec	203.9
2020-Jan	204.3

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2020-Feb	202.744	204.685	206.625
2020-Mar	202.215	204.619	207.023
2020-Apr	201.158	203.945	206.732
2020-May	200.923	204.049	207.176
2020-Jun	200.836	204.269	207.702
QTR AVG	200.972	204.088	207.203

Interest

Second Quarter 2020

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 2018 data, and was updated in the Q4 filing submitted on September 5, 2019. The Interest Index based on 2018 decreased to 57.2 from 62.4 in 2017, and is the lowest in recent history. It is close to the 2015 level, which reached 57.5.

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

2018	Interest Rate	4.49%
1980	Interest Rate	7.85%
2020Q2	Interest Index	57.2
2020Q1	Interest Index	57.2
	Percent Change	0.0%

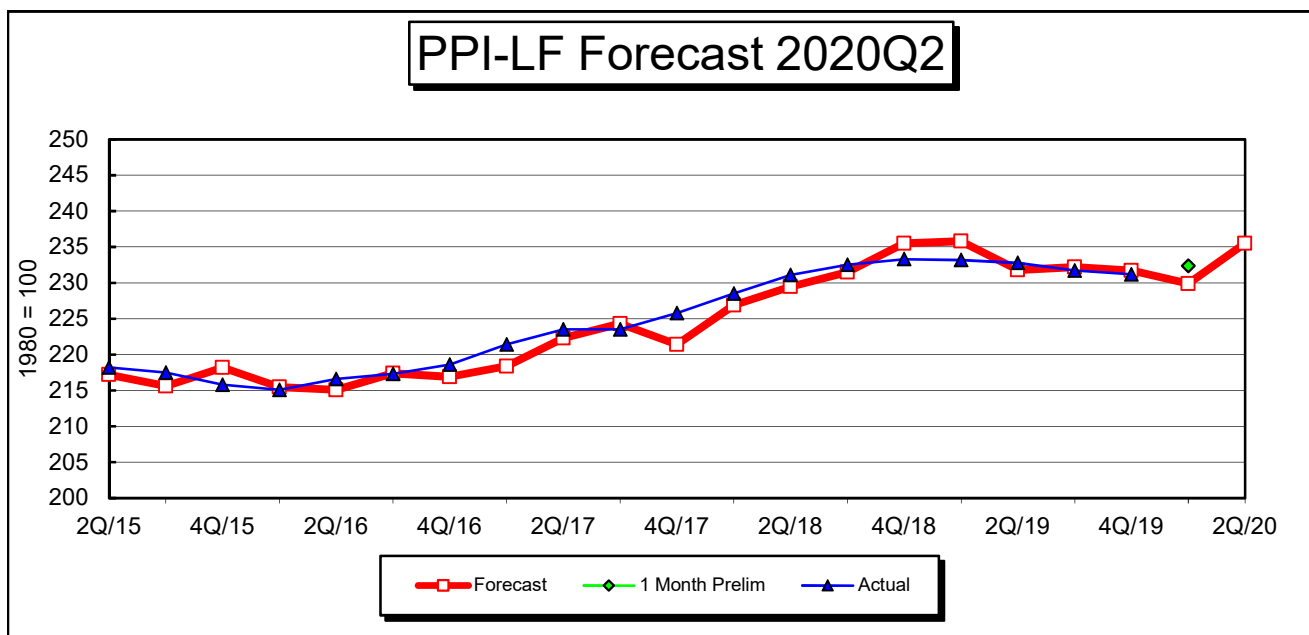
Other Expenses

Second Quarter 2020

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 2.4 percent higher than the prior quarter forecast.

Forecast of Other Expense Index (1982=100)	210.1
Forecast of Other Expense Index (1980=100)	235.5
Change from previous quarter forecast	2.4%
Change from actual first month of previous quarter	1.3%
Change from same quarter of prior year (actual)	1.2%



Other Expenses

Second Quarter 2020

PPI INDUSTRIAL COMMODITIES LESS FUELS AND RELATED PRODUCTS AND POWER

Using rule-based logic I have narrowed down the choice to exponential smoothing or Box-Jenkins
I will perform an out-of-sample test to select between these two approaches
The cumulative MAD for Exponential smoothing was 1.39 and for Box-Jenkins was 2.06.
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(0.862, 0.987, 0.903)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.8625		207
Trend	0.9873		0.8201
Seasonal	0.9035		
Seasonal Indexes			
Jan - Mar	1.002	1	0.9999
Apr - Jun	0.9994	0.9992	0.9994
Jul - Sep	0.9996	0.9998	0.9994
Oct - Dec	1.001	1.001	0.9998

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	199.9	Std. deviation	5.64
R-square	1	Adj. R-square	1
Durbin-Watson	1.76	Ljung-Box(18)	22.3 P=0.78
Forecast error	0.37	BIC	0.4
MAPE	0.15	SMAPE	0.15
RMSE	0.36	MAD	0.3
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Date	Actual
2019-Aug	206.5
2019-Sep	206.1
2019-Oct	206.3
2019-Nov	206.1
2019-Dec	206.1
2020-Jan	207.3

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2020-Feb	207.003	207.78	208.556
2020-Mar	207.049	208.589	210.129
2020-Apr	207.271	209.306	211.341
2020-May	207.642	210.073	212.504
2020-Jun	208.159	210.93	213.700
QTR AVG	207.691	210.103	212.515

Railroad and Union Abbreviations

Second Quarter 2020

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 2020 Q2 RCAF

March 5, 2020

- 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 . 2020/Q2 RCAF Lump Sum Amortization summary, public version (1 page)
- 7 . 2020/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 2020 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 2018 Benchmarks

	18 Wts.	3Q/19	3Q/19 Rebench As Info Only	% Chg	4Q/19	% Chg	1Q/20	% Chg	2Q/20	% Chg	3Q/20	% Chg
Straight Time		\$36.629	\$36.930	0.8%	\$36.930	0.8%	\$37.224	0.8%	\$37.224	0.0%		--
PFTNW		\$7.143	\$7.223	1.1%	\$7.223	1.1%	\$7.232	0.1%	\$7.232	0.0%		--
Total		\$43.772	\$44.153	0.9%	\$44.153	0.9%	\$44.456	0.7%	\$44.456	0.0%	\$0.000	--
Adjustments												
Lump Sum		\$0.539	\$0.542		\$0.544		\$0.546		\$0.334			
Back Pay		\$0.153	\$0.154		\$0.140		\$0.015		\$0.014			
Other		\$0.204	\$0.205		\$0.205		\$0.204		\$0.204			
Total Wages		\$44.668	\$45.054	0.9%	\$45.042	0.8%	\$45.221	0.4%	\$45.008	-0.5%	\$0.000	--
Pre-Tax Reduction		(\$1.362)	(\$1.382)		(\$1.382)		(\$1.382)		(\$1.382)			
Taxable Wages		\$43.306	\$43.672		\$43.660		\$43.839		\$43.626		\$0.000	
H & W		\$8.302	\$8.167	-1.6%	\$8.167	-1.6%	\$8.078	-1.1%	\$8.078	0.0%		--
RR Ret & Medicare		\$9.202	\$9.206	0.0%	\$9.204	0.0%	\$9.330	1.4%	\$9.298	-0.3%		--
Unemp. Insurance		\$0.333	\$0.321	-3.6%	\$0.321	-3.6%	\$0.097	-69.8%	\$0.097	0.0%		--
Other		\$0.303	\$0.305	0.7%	\$0.149	-50.8%	\$0.225	51.0%	\$0.203	-9.8%		--
Total		\$18.140	\$17.999	-0.8%	\$17.841	-1.6%	\$17.730	-0.6%	\$17.676	-0.3%	\$0.000	--
Adjustments												
Total Supplements		\$18.140	\$17.999	-0.8%	\$17.841	-1.6%	\$17.730	-0.6%	\$17.676	-0.3%	\$0.000	--
Total Labor		\$62.808	\$63.053	0.4%	\$62.883	0.1%	\$62.951	0.1%	\$62.684	-0.4%	\$0.000	--
Wage Rate Index	0.7100	382.3	385.6	0.9%	385.5	0.8%	387.0	0.4%	385.2	-0.5%	0.0	--
Supplements Index	0.2900	670.4	665.2	-0.8%	659.3	-1.7%	655.2	-0.6%	653.2	-0.3%	0.0	--
Total Labor Index '17 Wts.		470.2										
Total Labor Index '18 Wts.		465.8	466.7	0.2%	464.9	-0.2%	464.8	0.0%	462.9	-0.4%	0.0	--
Labor Index (Linked)		444.7			443.8	-0.2%	443.7	0.0%	441.9	-0.4%	0.0	-100.0%

All Inclusive Index and RCAF using 2018 Benchmarks and Weights

	18 Wts.	3Q/19	18 Wts. 3Q/19	% Chg	4Q/19	% Chg	1Q/20	% Chg	2Q/20	% Chg	3Q/20	% Chg
Labor	0.330	444.70	444.7	0.0%	443.8	-0.2%	443.7	0.0%	441.9	-0.4%	0.0	-100.0%
Fuel	0.159	269.00	269.0	0.0%	249.9	-7.1%	250.2	0.1%	231.2	-7.6%		--
M&S	0.051	273.10	273.1	0.0%	322.9	18.2%	267.0	-17.3%	266.7	-0.1%		--
Equip. Rents	0.053	238.00	238.0	0.0%	240.7	1.1%	240.1	-0.2%	239.4	-0.3%	0.0	-100.0%
Depreciation	0.150	229.50	229.5	0.0%	225.1	-1.9%	225.3	0.1%	225.8	0.2%		--
Interest	0.021	62.40	62.4	0.0%	57.2	-8.3%	57.2	0.0%	57.2	0.0%	57.2	0.0%
Other	0.236	232.20	232.2	0.0%	231.7	-0.2%	229.9	-0.8%	235.5	2.4%		--
Weighted Avg.	1.000	309.20	306.6	-0.8%	305.1	-0.5%	301.8	-1.1%	299.5	-0.8%	1.2	-99.6%
Linked		286.20			284.8	-0.5%	281.7	-1.1%	279.6	-0.7%	1.1	-99.6%
	Basing Factor											
10/1/80 basis	102.7	278.7			277.3	-0.5%	274.3	-1.1%	272.2	-0.8%	1.1	-99.6%
10/1/82	120.9	236.7			235.6	-0.5%	233.0	-1.1%	231.3	-0.7%	0.9	-99.6%
4Q/87	132.2	216.5			215.4	-0.5%	213.1	-1.1%	211.5	-0.8%	0.8	-99.6%
4Q/92	156.9	182.4			181.5	-0.5%	179.5	-1.1%	178.2	-0.7%	0.7	-99.6%
4Q/97	173.2	165.2			164.4	-0.5%	162.6	-1.1%	161.4	-0.7%	0.6	-99.6%
4Q/02	192.1	149.0			148.3	-0.5%	146.6	-1.1%	145.5	-0.8%	0.6	-99.6%
4Q/07	245.9	116.4			115.8	-0.5%	114.6	-1.0%	113.7	-0.8%	0.4	-99.6%
4Q/12	297.6	96.2			95.7	-0.5%	94.7	-1.0%	94.0	-0.7%	0.4	-99.6%
4Q/17 basis	264.5	108.2			107.7	-0.5%	106.5	-1.1%	105.7	-0.8%	0.4	-99.6%
Car Hire	0.591	221.80	221.8	0.0%	226.7	2.2%	226.8	0.0%	221.8	-2.2%		--
Lease Rents	0.409	232.20	232.2	0.0%	231.7	-0.2%	229.9	-0.8%	235.5	2.4%	0.0	--
Weighted Avg Eq Rents		225.90	226.1	0.1%	228.7	1.1%	228.1	-0.3%	227.4	-0.3%	0.0	--
Linked Equipment Rents		238.00			240.7	1.1%	240.1	-0.2%	239.4	-0.3%	0.0	-100.0%
Preliminary RCAF		1.082			1.077	-0.46%	1.065	-1.1%	1.057	-0.8%	0.004	-99.6%
Forecast Error Adj.		(0.025)			(0.002)		(0.022)		(0.006)			
RCAF Unadjusted		1.057			1.075	1.70%	1.043	-3.0%	1.051	0.8%	0.004	-99.6%
PAF		2.3649			2.3677	0.12%	2.3705	0.12%	2.3764	0.25%		--
RCAF Adjusted		0.447			0.454	1.57%	0.440	-3.1%	0.442	0.5%	#DIV/0!	--
PAF-5		2.5185			2.5160	-0.10%	2.5190	0.12%	2.5220	0.12%		--
RCAF-5		0.420			0.427	1.67%	0.414	-3.0%	0.417	0.7%	#DIV/0!	--

Hourly Rate for 2020 Q2

Straight Time and Time Paid For But Not Worked

2020Q2 Straight Time Hourly Rate (from national spreadsheet) \$37.130

No change

Adjustments to 2018 base:

Added 2019 Q1

Miscellaneous Independents	Non-Union GWI	0.005
Soo Corp.	Non-Union GWI but rounds to zero	0.000

Added 2019 Q2

Miscellaneous Independents	nothing	0.000
Soo Corp.	nothing	0.000

Added 2019 Q3

Miscellaneous Independents	GWIs and one new agreement	0.080
Soo Corp.	new agreements	0.003

Added 2019 Q4

Miscellaneous Independents	Nothing	0.000
Soo Corp.	One GWI but rounds to zero	0.000

Added 2020 Q1

Miscellaneous Independents	3% GWI for non-union	0.006
Soo Corp.	3% GWI for non-union but rounds to zero	0.000

Added 2020 Q2

Miscellaneous Independents	Nothing	0.000
Soo Corp.	Nothing	0.000

Adjusted STHR Total **\$37.224**

Pay For Time Not Worked

PFTNW (from national spreadsheet)		\$7.214
Ratio Adj STHR to Nat STHR	37.224 / 37.130 =	1.00253

Adjusted Pay For Time Not Worked **\$7.232**

Adjusted STHR + Adjusted Pay For Time Not Worked **\$44.456**

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/2020

U.S. ST Hours =

285,497,928

Wage Statistics are for 2018

Union Group	Employees	Mo. Rate	Annual \$
National ATDA (BNSF, CSX, KCS, NS, SOO, GTW, WC)	1,656	(\$228.89)	(\$4,548,502.08)
National BLET (BNSF, CSX, KCS, NS, UP, SOO, DH)	23,971	(\$228.89)	(\$65,840,666.28)
National BMW (All except SOO, DME, DH)	21,655	(\$228.89)	(\$59,479,355.40)
National BRS (All except DME)	7,076	(\$228.89)	(\$19,435,507.68)
National IAM (BNSF, CSX, KCS, NS, SOO, UP)	6,610	(\$228.89)	(\$18,155,554.80)
National IBBM (BNSF, CSX, KCS, NS, SOO, UP, IC)	1,318	(\$228.89)	(\$3,620,124.24)
National IBEW (All except DME)	5,379	(\$228.89)	(\$14,774,391.72)
National NCFO (All except DME and WC)	2,272	(\$228.89)	(\$6,240,456.96)
National SMW (BNSF, CSX, KCS, NS, UP, IC)	866	(\$228.89)	(\$2,378,624.88)
National TCU (All except DME and DH)	4,775	(\$228.89)	(\$13,115,397.00)
National TCU-CAR (All except DME)	8,539	(\$228.89)	(\$23,453,900.52)
National UTU (BNSF, CSX, KCS, NS, UP, SOO, DH)	36,101	(\$228.89)	(\$99,157,894.68)
Yardmasters (BNSF, CSX, KCS, NS, UP, SOO, DH)	1,561	(\$228.89)	(\$4,287,567.48)
Misc Indep (DME, portions of DH & SOO, portions of CN)	4,125	(\$232.25)	(\$11,496,217.92)
Total Union	125,904		(\$345,984,161.64)
All Other @ \$4,050,907.61 total per month			(\$48,610,891.32)
Total			(\$394,595,052.96)

Reduction in Wage Rate Per ST Hour	-\$1.38212931
Deduct this amount from the Wage Rate	-\$1.382

National Contracts U.S.

Straight Time Hourly Rate															Check Sum
Weight	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	
	0.24449	0.03049	0.17941	0.00541	0.04706	0.13965	0.05431	0.01429	0.04154	0.00811	0.03429	0.01485	0.01027	0.17583	1.00000
2018 Avg.	30.135	30.582	33.975	31.924	33.683	29.499	32.100	26.348	32.339	29.660	32.109	42.094	42.896	53.146	480.492
12/31/18	30.486	30.952	34.475	32.950	34.103	30.421	32.491	26.675	32.340	30.581	33.137	42.453	43.714	53.146	487.924
1/1/19	30.486	30.952	34.475	32.950	34.103	30.421	32.491	26.675	32.340	30.581	33.137	42.453	43.714	54.474	
4/1/19	30.486	30.952	34.475	32.950	34.103	30.421	32.491	26.675	32.340	30.581	33.137	42.453	43.714	54.474	
7/1/19	31.341	31.859	35.137	33.938	35.109	31.310	33.452	27.471	33.302	31.469	34.120	43.264	44.578	54.474	
10/1/19	31.341	31.859	35.137	33.938	35.109	31.310	33.452	27.471	33.302	31.469	34.120	43.264	44.578	54.474	
1/1/20	31.341	31.859	35.137	33.938	35.109	31.310	33.452	27.471	33.302	31.469	34.120	43.264	44.578	56.108	
4/1/20	31.341	31.859	35.137	33.938	35.109	31.310	33.452	27.471	33.302	31.469	34.120	43.264	44.578	56.108	
7/1/20	31.341	31.859	35.137	33.938	35.109	31.310	33.452	27.471	33.302	31.469	34.120	43.264	44.578	56.108	

Weighted Straight Time Hourly Rate																Total
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER		
2018 Avg.	7.368	0.933	6.096	0.173	1.585	4.120	1.743	0.377	1.343	0.241	1.101	0.625	0.440	9.344		35.488
12/31/18	7.453	0.944	6.185	0.178	1.605	4.248	1.765	0.381	1.343	0.248	1.136	0.630	0.449	9.344		35.911
1/1/19	7.453	0.944	6.185	0.178	1.605	4.248	1.765	0.381	1.343	0.248	1.136	0.630	0.449	9.578		36.145
4/1/19	7.453	0.944	6.185	0.178	1.605	4.248	1.765	0.381	1.343	0.248	1.136	0.630	0.449	9.578		36.145
7/1/19	7.662	0.972	6.304	0.184	1.652	4.373	1.817	0.393	1.383	0.255	1.170	0.642	0.458	9.578		36.842
10/1/19	7.662	0.972	6.304	0.184	1.652	4.373	1.817	0.393	1.383	0.255	1.170	0.642	0.458	9.578		36.842
1/1/20	7.662	0.972	6.304	0.184	1.652	4.373	1.817	0.393	1.383	0.255	1.170	0.642	0.458	9.865		37.130
4/1/20	7.662	0.972	6.304	0.184	1.652	4.373	1.817	0.393	1.383	0.255	1.170	0.642	0.458	9.865		37.130
7/1/20	7.662	0.972	6.304	0.184	1.652	4.373	1.817	0.393	1.383	0.255	1.170	0.642	0.458	9.865		37.130

Note: The 2018 Average and 12/31/18 Straight Time Hourly Rates are the industry rates, and include all Class I railroad employees. The rates for 1/1/19 through 7/1/20 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 2018 are not shown on this page and are handled separately.

National Contracts U.S.

Pay For Time Not Worked Hourly Rate															Check Sum
Weight	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	1.00000
2018 Avg.	10.703	4.462	11.190	4.649	6.223	5.080	4.539	3.481	4.957	3.644	4.748	7.222	7.449	1.480	79.827
12/31/18	10.827	4.516	11.354	4.799	6.300	5.239	4.594	3.524	4.957	3.757	4.900	7.284	7.591	1.480	
1/1/19	10.827	4.516	11.354	4.799	6.300	5.239	4.594	3.524	4.957	3.757	4.900	7.284	7.591	1.517	
4/1/19	10.827	4.516	11.354	4.799	6.300	5.239	4.594	3.524	4.957	3.757	4.900	7.284	7.591	1.517	
7/1/19	11.131	4.649	11.572	4.943	6.486	5.392	4.730	3.630	5.105	3.866	5.046	7.423	7.741	1.517	
10/1/19	11.131	4.649	11.572	4.943	6.486	5.392	4.730	3.630	5.105	3.866	5.046	7.423	7.741	1.517	
1/1/20	11.131	4.649	11.572	4.943	6.486	5.392	4.730	3.630	5.105	3.866	5.046	7.423	7.741	1.562	
4/1/20	11.131	4.649	11.572	4.943	6.486	5.392	4.730	3.630	5.105	3.866	5.046	7.423	7.741	1.562	
7/1/20	11.131	4.649	11.572	4.943	6.486	5.392	4.730	3.630	5.105	3.866	5.046	7.423	7.741	1.562	

Pay For Time Not Worked Hourly Rate															
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTR	OTHER	Total
2018 Avg.	2.617	0.136	2.008	0.025	0.293	0.709	0.247	0.050	0.206	0.030	0.163	0.107	0.076	0.260	6.926
12/31/18	2.647	0.138	2.037	0.026	0.296	0.732	0.250	0.050	0.206	0.030	0.168	0.108	0.078	0.260	7.027
1/1/19	2.647	0.138	2.037	0.026	0.296	0.732	0.250	0.050	0.206	0.030	0.168	0.108	0.078	0.267	7.033
4/1/19	2.647	0.138	2.037	0.026	0.296	0.732	0.250	0.050	0.206	0.030	0.168	0.108	0.078	0.267	7.033
7/1/19	2.721	0.142	2.076	0.027	0.305	0.753	0.257	0.052	0.212	0.031	0.173	0.110	0.079	0.267	7.206
10/1/19	2.721	0.142	2.076	0.027	0.305	0.753	0.257	0.052	0.212	0.031	0.173	0.110	0.079	0.267	7.206
1/1/20	2.721	0.142	2.076	0.027	0.305	0.753	0.257	0.052	0.212	0.031	0.173	0.110	0.079	0.275	7.214
4/1/20	2.721	0.142	2.076	0.027	0.305	0.753	0.257	0.052	0.212	0.031	0.173	0.110	0.079	0.275	7.214
7/1/20	2.721	0.142	2.076	0.027	0.305	0.753	0.257	0.052	0.212	0.031	0.173	0.110	0.079	0.275	7.214

U.S. National Contract

UTU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				30.13517	10.70276
12/31/18 Industry Rate				30.48602	10.82737
1/1/19			93.469%	30.48602	10.82737
4/1/19			93.469%	30.48602	10.82737
7/1/19	3.00%		93.469%	31.34087	11.13097
10/1/19			93.469%	31.34087	11.13097
1/1/20			93.469%	31.34087	11.13097
4/1/20			93.469%	31.34087	11.13097
7/1/20			93.469%	31.34087	11.13097

TCU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				30.58208	4.46244
12/31/18 Industry Rate				30.95175	4.51638
1/1/19			97.758%	30.95175	4.51638
4/1/19			97.758%	30.95175	4.51638
7/1/19	3.00%		97.758%	31.85949	4.64884
10/1/19			97.758%	31.85949	4.64884
1/1/20			97.758%	31.85949	4.64884
4/1/20			97.758%	31.85949	4.64884
7/1/20			97.758%	31.85949	4.64884

BLET

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				33.97515	11.18960
12/31/18 Industry Rate				34.47547	11.35438
1/1/19			63.977%	34.47547	11.35438
4/1/19			63.977%	34.47547	11.35438
7/1/19	3.00%		63.977%	35.13716	11.57230
10/1/19			63.977%	35.13716	11.57230
1/1/20			63.977%	35.13716	11.57230
4/1/20			63.977%	35.13716	11.57230
7/1/20			63.977%	35.13716	11.57230

U.S. National Contract

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SMWIA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				31.92371	4.64935
12/31/18 Industry Rate				32.94967	4.79877
1/1/19			100.000%	32.94967	4.79877
4/1/19			100.000%	32.94967	4.79877
7/1/19	3.00%		100.000%	33.93816	4.94274
10/1/19			100.000%	33.93816	4.94274
1/1/20			100.000%	33.93816	4.94274
4/1/20			100.000%	33.93816	4.94274
7/1/20			100.000%	33.93816	4.94274

BRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				33.68276	6.22277
12/31/18 Industry Rate				34.10302	6.30041
1/1/19			98.316%	34.10302	6.30041
4/1/19			98.316%	34.10302	6.30041
7/1/19	3.00%		98.316%	35.10887	6.48624
10/1/19			98.316%	35.10887	6.48624
1/1/20			98.316%	35.10887	6.48624
4/1/20			98.316%	35.10887	6.48624
7/1/20			98.316%	35.10887	6.48624

BMWE

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				29.49933	5.07980
12/31/18 Industry Rate				30.42113	5.23853
1/1/19			97.438%	30.42113	5.23853
4/1/19			97.438%	30.42113	5.23853
7/1/19	3.00%		97.438%	31.31039	5.39166
10/1/19			97.438%	31.31039	5.39166
1/1/20			97.438%	31.31039	5.39166
4/1/20			97.438%	31.31039	5.39166
7/1/20			97.438%	31.31039	5.39166

U.S. National Contract

TCU-Carmen

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				32.10002	4.53907
12/31/18 Industry Rate				32.49132	4.59440
1/1/19			98.528%	32.49132	4.59440
4/1/19			98.528%	32.49132	4.59440
7/1/19	3.00%		98.528%	33.45170	4.73021
10/1/19			98.528%	33.45170	4.73021
1/1/20			98.528%	33.45170	4.73021
4/1/20			98.528%	33.45170	4.73021
7/1/20			98.528%	33.45170	4.73021

NCFO

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				26.34843	3.48125
12/31/18 Industry Rate				26.67508	3.52441
1/1/19			99.402%	26.67508	3.52441
4/1/19			99.402%	26.67508	3.52441
7/1/19	3.00%		99.402%	27.47055	3.62951
10/1/19			99.402%	27.47055	3.62951
1/1/20			99.402%	27.47055	3.62951
4/1/20			99.402%	27.47055	3.62951
7/1/20			99.402%	27.47055	3.62951

IAM

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				32.33934	4.95706
12/31/18 Industry Rate				32.33983	4.95714
1/1/19			99.146%	32.33983	4.95714
4/1/19			99.146%	32.33983	4.95714
7/1/19	3.00%		99.146%	33.30175	5.10458
10/1/19			99.146%	33.30175	5.10458
1/1/20			99.146%	33.30175	5.10458
4/1/20			99.146%	33.30175	5.10458
7/1/20			99.146%	33.30175	5.10458

U.S. National Contract

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				29.66028	3.64402
12/31/18 Industry Rate				30.58075	3.75711
1/1/19			96.824%	30.58075	3.75711
4/1/19			96.824%	30.58075	3.75711
7/1/19	3.00%		96.824%	31.46904	3.86624
10/1/19			96.824%	31.46904	3.86624
1/1/20			96.824%	31.46904	3.86624
4/1/20			96.824%	31.46904	3.86624
7/1/20			96.824%	31.46904	3.86624

IBEW

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				32.10928	4.74834
12/31/18 Industry Rate				33.13696	4.90031
1/1/19			98.880%	33.13696	4.90031
4/1/19			98.880%	33.13696	4.90031
7/1/19	3.00%		98.880%	34.11993	5.04567
10/1/19			98.880%	34.11993	5.04567
1/1/20			98.880%	34.11993	5.04567
4/1/20			98.880%	34.11993	5.04567
7/1/20			98.880%	34.11993	5.04567

ATDA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				42.09443	7.22247
12/31/18 Industry Rate				42.45332	7.28405
1/1/19			63.658%	42.45332	7.28405
4/1/19			63.658%	42.45332	7.28405
7/1/19	3.00%		63.658%	43.26406	7.42315
10/1/19			63.658%	43.26406	7.42315
1/1/20			63.658%	43.26406	7.42315
4/1/20			63.658%	43.26406	7.42315
7/1/20			63.658%	43.26406	7.42315

U.S. National Contract

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YDMSTRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				42.89594	7.44850
12/31/18 Industry Rate				43.71385	7.59052
1/1/19			65.873%	43.71385	7.59052
4/1/19			65.873%	43.71385	7.59052
7/1/19	3.00%		65.873%	44.57771	7.74053
10/1/19			65.873%	44.57771	7.74053
1/1/20			65.873%	44.57771	7.74053
4/1/20			65.873%	44.57771	7.74053
7/1/20			65.873%	44.57771	7.74053

OTHER

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2018 Industry Avg.				53.14559	1.47970
12/31/18 Industry Rate				53.14559	1.47970
1/1/19	2.50%		100.000%	54.47423	1.51669
4/1/19			100.000%	54.47423	1.51669
7/1/19			100.000%	54.47423	1.51669
10/1/19			100.000%	54.47423	1.51669
1/1/20	3.00%		100.000%	56.10846	1.56219
4/1/20			100.000%	56.10846	1.56219
7/1/20			100.000%	56.10846	1.56219

Check Sums

	Increase	Applicable	ST HR	PFTNW HR
2018 AVG			480.49151	79.82713
12/31/18			487.92375	
		1273.270%		
		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.

Borrowing Benchmarks | WSJ.com/bonds

Money Rates

February 24, 2020

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	Chg From (%)		
level	Dec. '19	Jan. '20	

U.S. consumer price index

All items	257.971	0.39	2.5
Core	266.004	0.40	2.3

International rates

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

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

Policy Rates

Euro zone	0.00	0.00	0.00	0.00
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	Latest	Week ago	-52-Week-High	-52-Week-Low
Switzerland	0.50	0.50	0.50	0.50
Britain	0.75	0.75	0.75	0.75
Australia	0.75	0.75	1.50	0.75

Overnight repurchase

U.S.	1.57	1.60	3.40	1.50
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U.S. government rates

Discount

2.25	2.25	3.00	2.25
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Federal funds

Effective rate	1.6000	1.6000	2.4800	1.4700
High	1.6500	1.6300	3.0000	1.5200
Low	1.5800	1.5000	2.4400	0.5000
Bid	1.6000	1.5800	2.4400	1.4000

VangdDivApp	VIG	126.01	-2.62	0.1
VangdFTSEDevMk	VEA	41.62	-3.90	-5.5
VangdFTSE EM	VWO	41.70	-3.52	-6.2
VangdFTSE Europe	VKG	55.55	-4.31	-5.2
VangdFTSEAWxUS	VEU	50.84	-3.69	-5.4
VangdGrowth	VUG	189.89	-3.62	4.2
VangdHlthCr	VHT	189.58	-3.19	-1.1
VangdHlthDiv	VYM	90.92	-2.70	-3.0
VangdIntermBd	BIV	89.86	0.38	3.0
VangdInttrCorpBd	VCIT	93.60	0.15	2.5
VangdLC	VV	148.71	-3.38	0.6
VangdMC	VO	178.82	-2.91	0.4
VangdMC Val	VOE	117.04	-2.77	-1.8
VangdMBS	VMBS	53.62	-0.01	0.9
VangdRealEst	VNQ	98.21	-1.37	5.8
VangdS&P500ETF	VOO	296.24	-3.34	0.1
VangdST Bond	BSV	81.45	0.25	1.0
VangdSTCpBd	VCSH	81.78	0.11	0.9
VangdSC	VB	163.43	-2.97	-1.3
VangdTotalBd	BND	86.07	0.31	2.6
VangdTotalIntBd	BNDX	57.95	0.16	2.4
VangdTotalIntStk	VXUS	52.54	-3.70	-5.7
VangdTotalStk	VTI	164.30	-3.29	0.4
VangdTotalWrld	VT	79.07	-3.43	-2.4
VangdValue	VTV	116.36	-3.06	-2.9

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 21	Week Ended Feb 14	-52-Week-High	-52-Week-Low
Federal funds (effective)	1.58	1.58	2.44	1.54

Commercial paper

Nonfinancial				
1-month	1.55	1.55	2.46	1.55
2-month	1.57	1.56	2.48	1.54
3-month	1.58	1.56	2.50	1.54
Financial				
1-month	1.58	1.58	2.47	1.55
2-month	1.59	1.60	2.47	1.55
3-month	1.60	1.61	2.50	1.60

Discount window primary credit

2.25	2.25	3.00	2.25
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Treasury yields at constant maturities

1-month	1.61	1.58	2.48	1.51
3-month	1.58	1.58	2.47	1.54

	Week Ended Feb 21	Week Ended Feb 14	-52-Week-High	-52-Week-Low
6-month	1.55	1.56	2.53	1.55
1-year	1.46	1.48	2.55	1.46
2-year	1.39	1.42	2.51	1.39
3-year	1.35	1.40	2.49	1.35
5-year	1.37	1.42	2.50	1.37
7-year	1.46	1.51	2.60	1.45
10-year	1.52	1.59	2.70	1.50
20-year	1.82	1.90	2.91	1.79

Treasury yields (secondary market)

1-month	1.58	1.55	2.43	1.48
3-month	1.55	1.55	2.41	1.51
6-month	1.51	1.52	2.46	1.51

TIPS

5-year	-0.26	-0.21	0.69	-0.26
7-year	-0.20	-0.15	0.71	-0.20
10-year	-0.11	-0.07	0.77	-0.11
20-year	0.11	0.17	0.94	0.11
Long-term avg	0.21	0.28	1.05	0.21

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;

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

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

Treasury	1.614	30.300	6.007	1.549
MBS	1.638	81.350	6.699	1.568

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 October 31, 2019.

Other prime rates aren't directly comparable; lending practices vary widely by location; **Discount rate** is effective October 31, 2019.

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.

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

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**RCAF Lump Sum Amortization
2020/Q2**

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hour	U.S. ST Hours
NS - BLET 2019Q1 PPI	2019Q2	2019Q3				285,497,928
NS - BLET 2019Q2 PPI	2019Q3	2019Q4				285,497,928
NS - BLET 2019Q3 PPI	2019Q4	2020Q1				285,497,928
CSX - BLET 2020	2020Q1	2020Q2				285,497,928
NS - BLET 2019Q4 PPI	2020Q1	2020Q2				285,497,928
NS - BLET 2020 Ave PPI	2020Q1	2020Q2				285,497,928
NS - BLET 2020 TPB	2020Q1	2020Q2				285,497,928
Total			\$94,425,927	0.33074		

Should be slightly less
than amortized amount.

Fell out

CSX - BLET 2019	2019Q1	2019Q2				285,497,928
NS - BLET 2018Q4 PPI	2019Q1	2019Q2				285,497,928
NS - BLET 2019 Ave PPI	2019Q1	2019Q2				285,497,928
NS - BLET 2019 TPB	2019Q1	2019Q2				285,497,928

Interest Rate

2018/Q3	1.880
2018/Q4	2.080
2019/Q1	2.370
2019/Q2	2.405
2019/Q3	2.335
2019/Q4	1.950
2020/Q1	1.560
2020/Q2	1.505
2020/Q3	
2020/Q4	
2021/Q1	
2021/Q2	

Lump Sum Adjustment for 2020/Q2 → **0.333894**
or
0.334

RCAF Back Pay Amortization 2020/Q2

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hr.	U.S. ST Hours	
WC BLET	2019Q2	2019Q3				285,497,928	2018
CP Railroads (3 amounts)	2019Q2	2019Q3				285,497,928	2018
DME - all unions 2020	2020Q1	2020Q2				285,497,928	2018
Total			\$4,040,498	0.01415246			

Should be slightly less
than amortized amount.

Fell out

DME - all unions 2019	2019Q4	2019Q2				285,497,928	2018
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Notes:

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

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

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

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

Interest Rate

2018/Q2	1.570
2018/Q3	1.880
2018/Q4	2.080
2019/Q1	2.370
2019/Q2	2.405
2019/Q3	2.335
2019/Q4	1.950
2020/Q1	1.560
2020/Q2	1.505
2020/Q3	
2020/Q4	
2021/Q1	
2021/Q2	

Back Pay Adjustment for 2020/Q2	→ 0.01431 or 0.014
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Health and Welfare 2020Q2

	Employees Receiving				
	Pay 2018	Monthly Contribution		Total 2018 Avg.	Total 2020
		2018 Avg.	2020		
1. All Employees					
a. Group health	149,541	\$1,584.71	\$1,606.79	\$236,979,118.11	\$240,280,983.39
b. Group dental	149,541	63.67	63.67	9,521,275.47	9,521,275.47
c. Early retirement major medical	149,541	135.96	114.37	20,331,594.36	17,103,004.17
d. Group vision	149,541	8.44	8.44	1,262,126.04	1,262,126.04
2. Supplemental Sickness					
a. Signalmen	7,106	44.34	38.31	315,080.04	272,230.86
b. Shopcrafts	22,779	75.48	61.93	1,719,358.92	1,410,703.47
c. MOW	22,231	51.63	39.94	1,147,786.53	887,906.14
d. Yardmasters	1,662	34.22	54.00	56,873.64	89,748.00
3. Short-Term Disability					
a. Engineers (CSX, KCS, SOO, UP)	11,604	40.00	40.00	464,160.00	464,160.00
4. Monthly Total Premiums				271,797,373.11	271,292,137.54
5. Monthly Employee Contributions To H&W					
a. National ATDA (BNSF, CSX, KCS, NS, SOO, GTW, WC)	1,656	(\$228.89)	(\$228.89)	(\$379,041.84)	(379,041.84)
b. National BLET (BNSF, CSX, KCS, NS, UP, SOO, DH)	23,971	(\$228.89)	(\$228.89)	(\$5,486,722.19)	(5,486,722.19)
c. National BMWE (All except SOO, DME, DH)	21,655	(\$228.89)	(\$228.89)	(\$4,956,612.95)	(4,956,612.95)
d. National BRS (All except DME)	7,076	(\$228.89)	(\$228.89)	(\$1,619,625.64)	(1,619,625.64)
e. National IAM (BNSF, CSX, KCS, NS, SOO, UP)	6,610	(\$228.89)	(\$228.89)	(\$1,512,962.90)	(1,512,962.90)
f. National IBBM (BNSF, CSX, KCS, NS, SOO, UP, IC)	1,318	(\$228.89)	(\$228.89)	(\$301,677.02)	(301,677.02)
g. National IBEW (All except DME)	5,379	(\$228.89)	(\$228.89)	(\$1,231,199.31)	(1,231,199.31)
h. National NCFO (All except DME and WC)	2,272	(\$228.89)	(\$228.89)	(\$520,038.08)	(520,038.08)
i. National SMW (BNSF, CSX, KCS, NS, UP, IC)	866	(\$228.89)	(\$228.89)	(\$198,218.74)	(198,218.74)
j. National TCU (All except DME and DH)	4,775	(\$228.89)	(\$228.89)	(\$1,092,949.75)	(1,092,949.75)
k. National TCU-CAR (All except DME)	8,539	(\$228.89)	(\$228.89)	(\$1,954,491.71)	(1,954,491.71)
l. National UTU (BNSF, CSX, KCS, NS, UP, SOO, DH)	36,101	(\$228.89)	(\$228.89)	(\$8,263,157.89)	(8,263,157.89)
m. Yardmasters (BNSF, CSX, KCS, NS, UP*, SOO, DH)	1,561	(\$228.89)	(\$228.89)	(\$357,297.29)	(\$357,297.29)
n. Misc Indep (DME, portions of DH & SOO, portions of CN)	4,125	(\$236.04)	(\$232.25)	(\$973,649.16)	(958,018.16)
Total Major Union	125,904			(\$28,847,644.47)	(\$28,832,013.47)
All Other Employee Contributions*				(\$4,050,907.61)	(\$4,050,907.61)
6. Net Employer Monthly Payments				\$238,898,821.03	\$238,409,216.46
7. Ratio Projected Year to Base Year, Based on Net Monthly Payments					0.99795
8. H&W hourly rate for base year 2018				\$8.095	
9. H&W hourly rate for projected quarter					\$8.078

* Non-union employee contributions net of opt-outs. The \$28,847,644.47 in major union contributions, plus \$4,050,907.61 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	2017
Wage Statistics Year	2018
Current Year	2020
Employees Receiving Pay*	149,535

* from 2018 final wage statistics

Tier I Maximum Taxable Earnings for 2020	137,700
Tier II Maximum Taxable Earnings for 2020	102,300
Medicare Maximum Taxable Earnings for 2020	no limit
Tier I Employer Tax Rate for 2020	6.20%
Tier II Employer Tax Rate for 2020	13.10%
Medicare Employer Tax Rate for 2020	1.45%

USA RCAF	Wage Rate	Update Factor	Railroad Retirement Tax	Hourly Rate
2017	\$39.599			
2018	\$41.687	1.05273	\$641,848,453	\$8.823
1Q/2020	\$43.839	1.10707	\$678,730,838	\$9.330
2Q/2020	\$43.626	1.10169	\$676,398,949	\$9.298
3Q/2020		0.00000	--	\$0.000
4Q/2020		0.00000	--	\$0.000

Railroad Retirement & Medicare, U.S.

From 2017 Earnings Distribution			1Q/2020 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtlly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$31,475	1.660 %	2,482	\$34,845	\$8,711	\$8,711	\$8,711	\$8,711	\$21,623,855	\$21,623,855	\$21,623,855	
41,700 - 43,699	\$42,620	0.519	776	47,183	11,796	11,796	11,796	11,796	9,154,615	9,154,615	9,154,615	
43,700 - 45,699	\$44,998	0.622	930	49,816	12,454	12,454	12,454	12,454	11,583,582	11,583,582	11,583,582	
45,700 - 47,699	\$46,876	0.622	930	51,895	12,974	12,974	12,974	12,974	12,067,025	12,067,025	12,067,025	
47,700 - 49,699	\$48,766	1.349	2,017	53,988	13,497	13,497	13,497	13,497	27,226,284	27,226,284	27,226,284	
49,700 - 51,699	\$50,781	1.400	2,093	56,218	14,055	14,055	14,055	14,055	29,423,110	29,423,110	29,423,110	
51,700 - 53,699	\$52,592	1.452	2,171	58,223	14,556	14,556	14,556	14,556	31,604,257	31,604,257	31,604,257	
53,700 - 55,699	\$54,898	1.660	2,482	60,776	15,194	15,194	15,194	15,194	37,715,850	37,715,850	37,715,850	
55,700 - 57,699	\$56,779	2.645	3,955	62,859	15,715	15,715	15,715	15,715	62,154,518	62,154,518	62,154,518	
57,700 - 59,699	\$58,870	3.423	5,119	65,173	16,293	16,293	16,293	16,293	83,398,880	83,398,880	83,398,880	
59,700 - 61,699	\$60,742	4.720	7,058	67,246	16,811	16,811	16,811	16,811	118,656,182	118,656,182	118,656,182	
61,700 - 63,699	\$62,627	3.942	5,895	69,333	17,333	17,333	17,333	17,333	102,173,322	102,173,322	102,173,322	
63,700 - 65,699	\$64,677	3.786	5,661	71,602	17,901	17,901	17,901	17,901	101,342,068	101,342,068	101,342,068	
65,700 - 67,699	\$66,692	3.942	5,895	73,833	18,458	18,458	18,458	18,458	108,805,198	108,805,198	108,805,198	
67,700 - 69,699	\$68,700	3.060	4,576	76,056	19,014	19,014	19,014	19,014	87,003,645	87,003,645	87,003,645	
69,700 - 71,699	\$70,623	3.683	5,507	78,185	19,546	19,546	19,546	19,546	107,648,297	107,648,297	107,648,297	
71,700 - 73,699	\$72,775	3.008	4,498	80,567	20,142	20,142	20,142	20,142	90,598,150	90,598,150	90,598,150	
73,700 - 75,699	\$74,738	3.008	4,498	82,740	20,685	20,685	20,685	20,685	93,041,904	93,041,904	93,041,904	
75,700 - 77,699	\$76,763	3.890	5,817	84,982	21,246	21,246	21,246	21,246	123,583,595	123,583,595	123,583,595	
77,700 - 79,699	\$78,725	3.164	4,731	87,154	21,789	21,789	21,789	21,789	103,088,075	103,088,075	103,088,075	
79,700 - 81,699	\$80,598	3.579	5,352	89,228	22,307	22,307	22,307	22,307	119,383,759	119,383,759	119,383,759	
81,700 - 83,699	\$82,569	2.697	4,033	91,410	22,852	22,852	22,852	22,852	92,163,138	92,163,138	92,163,138	
83,700 - 85,699	\$84,600	2.334	3,490	93,658	23,415	23,415	23,415	23,415	81,720,403	81,720,403	81,720,403	
85,700 - 87,699	\$86,775	2.905	4,344	96,066	24,017	24,017	24,017	24,017	104,327,798	104,327,798	104,327,798	
87,700 - 89,699	\$88,659	2.282	3,412	98,152	24,538	24,538	24,538	24,538	83,733,212	83,733,212	83,733,212	
89,700 - 91,699	\$90,624	3.164	4,731	100,327	25,082	25,082	25,082	25,082	118,669,465	118,669,465	118,669,465	
91,700 - 93,699	\$92,723	1.712	2,560	102,651	25,663	25,663	25,575	25,663	65,697,753	65,473,003	65,697,753	
93,700 - 95,699	\$94,692	2.178	3,257	104,831	26,208	26,208	25,575	26,208	85,355,291	83,294,509	85,355,291	
95,700 - 97,699	\$96,822	2.178	3,257	107,189	26,797	26,797	25,575	26,797	87,275,272	83,294,509	87,275,272	
97,700 - 99,699	\$98,526	2.127	3,181	109,076	27,269	27,269	25,575	27,269	86,731,653	81,344,087	86,731,653	
99,700 - 101,699	\$100,754	1.971	2,947	111,542	27,886	27,886	25,575	27,886	82,187,961	75,378,089	82,187,961	
101,700 - 103,699	\$102,783	1.660	2,482	113,788	28,447	28,447	25,575	28,447	70,613,650	63,484,337	70,613,650	
103,700 - 105,699	\$104,707	1.608	2,405	115,918	28,980	28,980	25,575	28,980	69,682,070	61,495,671	69,682,070	
105,700 - 107,699	\$106,517	1.452	2,171	117,922	29,481	29,481	25,575	29,481	64,009,558	55,529,673	64,009,558	
107,700 - 109,699	\$108,702	0.519	776	120,341	30,085	30,085	25,575	30,085	23,348,779	19,848,416	23,348,779	
109,700 - 111,699	\$110,815	1.400	2,093	122,680	30,670	30,670	25,575	30,670	64,207,516	53,541,007	64,207,516	
111,700 - 113,699	\$112,625	0.622	930	124,684	31,171	31,171	25,575	31,171	28,992,420	23,787,504	28,992,420	
113,700 - 115,699	\$114,744	1.193	1,784	127,030	31,758	31,758	25,575	31,758	56,653,887	45,624,586	56,653,887	
\$115,700 - over	\$166,017	12.864	19,236	183,793	45,948	34,425	25,575	45,948	<u>662,205,579</u>	<u>491,965,365</u>	<u>883,868,949</u>	
TOTAL	\$87,722	100.000	149,535						Total Taxable Earnings	3,408,851,576	3,165,950,941	3,630,514,946
									Employer Tax Rate	6.20%	13.10%	1.45%
									Quarterly Payment	\$211,348,798	\$414,739,573	\$52,642,467
Total Tier I, Tier II, and Medicare Paid this Quarter											\$678,730,838	

Railroad Retirement & Medicare, U.S.

From 2017 Earnings Distribution			2Q/2020 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtlly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$31,475	1.660	2,482	\$34,676	\$8,669	\$8,669	\$8,669	\$8,669	\$21,518,791	\$21,518,791	\$21,518,791	
41,700 - 43,699	\$42,620	0.519	776	46,954	11,739	11,739	11,739	11,739	9,110,136	9,110,136	9,110,136	
43,700 - 45,699	\$44,998	0.622	930	49,574	12,394	12,394	12,394	12,394	11,527,301	11,527,301	11,527,301	
45,700 - 47,699	\$46,876	0.622	930	51,643	12,911	12,911	12,911	12,911	12,008,395	12,008,395	12,008,395	
47,700 - 49,699	\$48,766	1.349	2,017	53,725	13,431	13,431	13,431	13,431	27,094,000	27,094,000	27,094,000	
49,700 - 51,699	\$50,781	1.400	2,093	55,945	13,986	13,986	13,986	13,986	29,280,152	29,280,152	29,280,152	
51,700 - 53,699	\$52,592	1.452	2,171	57,940	14,485	14,485	14,485	14,485	31,450,702	31,450,702	31,450,702	
53,700 - 55,699	\$54,898	1.660	2,482	60,481	15,120	15,120	15,120	15,120	37,532,600	37,532,600	37,532,600	
55,700 - 57,699	\$56,779	2.645	3,955	62,553	15,638	15,638	15,638	15,638	61,852,528	61,852,528	61,852,528	
57,700 - 59,699	\$58,870	3.423	5,119	64,857	16,214	16,214	16,214	16,214	82,993,671	82,993,671	82,993,671	
59,700 - 61,699	\$60,742	4.720	7,058	66,919	16,730	16,730	16,730	16,730	118,079,669	118,079,669	118,079,669	
61,700 - 63,699	\$62,627	3.942	5,895	68,996	17,249	17,249	17,249	17,249	101,676,893	101,676,893	101,676,893	
63,700 - 65,699	\$64,677	3.786	5,661	71,254	17,814	17,814	17,814	17,814	100,849,678	100,849,678	100,849,678	
65,700 - 67,699	\$66,692	3.942	5,895	73,474	18,369	18,369	18,369	18,369	108,276,548	108,276,548	108,276,548	
67,700 - 69,699	\$68,700	3.060	4,576	75,686	18,922	18,922	18,922	18,922	86,580,921	86,580,921	86,580,921	
69,700 - 71,699	\$70,623	3.683	5,507	77,805	19,451	19,451	19,451	19,451	107,125,268	107,125,268	107,125,268	
71,700 - 73,699	\$72,775	3.008	4,498	80,176	20,044	20,044	20,044	20,044	90,157,962	90,157,962	90,157,962	
73,700 - 75,699	\$74,738	3.008	4,498	82,338	20,585	20,585	20,585	20,585	92,589,842	92,589,842	92,589,842	
75,700 - 77,699	\$76,763	3.890	5,817	84,569	21,142	21,142	21,142	21,142	122,983,141	122,983,141	122,983,141	
77,700 - 79,699	\$78,725	3.164	4,731	86,731	21,683	21,683	21,683	21,683	102,587,202	102,587,202	102,587,202	
79,700 - 81,699	\$80,598	3.579	5,352	88,794	22,199	22,199	22,199	22,199	118,803,710	118,803,710	118,803,710	
81,700 - 83,699	\$82,569	2.697	4,033	90,966	22,741	22,741	22,741	22,741	91,715,347	91,715,347	91,715,347	
83,700 - 85,699	\$84,600	2.334	3,490	93,203	23,301	23,301	23,301	23,301	81,323,349	81,323,349	81,323,349	
85,700 - 87,699	\$86,775	2.905	4,344	95,600	23,900	23,900	23,900	23,900	103,820,902	103,820,902	103,820,902	
87,700 - 89,699	\$88,659	2.282	3,412	97,675	24,419	24,419	24,419	24,419	83,326,379	83,326,379	83,326,379	
89,700 - 91,699	\$90,624	3.164	4,731	99,840	24,960	24,960	24,960	24,960	118,092,888	118,092,888	118,092,888	
91,700 - 93,699	\$92,723	1.712	2,560	102,152	25,538	25,538	25,538	25,538	65,378,549	65,378,549	65,378,549	
93,700 - 95,699	\$94,692	2.178	3,257	104,322	26,080	26,080	26,080	26,080	84,940,577	84,940,577	84,940,577	
95,700 - 97,699	\$96,822	2.178	3,257	106,668	26,667	26,667	26,667	26,667	86,851,228	86,851,228	86,851,228	
97,700 - 99,699	\$98,526	2.127	3,181	108,546	27,136	27,136	27,136	27,136	86,310,251	86,310,251	86,310,251	
99,700 - 101,699	\$100,754	1.971	2,947	111,000	27,750	27,750	27,750	27,750	81,788,635	81,788,635	81,788,635	
101,700 - 103,699	\$102,783	1.660	2,482	113,235	28,309	28,309	28,309	28,309	70,270,561	70,270,561	70,270,561	
103,700 - 105,699	\$104,707	1.608	2,405	115,355	28,839	28,839	28,839	28,839	69,343,507	69,343,507	69,343,507	
105,700 - 107,699	\$106,517	1.452	2,171	117,349	29,337	29,337	29,337	29,337	63,698,555	63,698,555	63,698,555	
107,700 - 109,699	\$108,702	0.519	776	119,756	29,939	29,939	29,939	29,939	23,235,335	23,235,335	23,235,335	
109,700 - 111,699	\$110,815	1.400	2,093	122,084	30,521	30,521	30,521	30,521	63,895,552	63,895,552	63,895,552	
111,700 - 113,699	\$112,625	0.622	930	124,078	31,020	31,020	31,020	31,020	28,851,555	28,851,555	28,851,555	
113,700 - 115,699	\$114,744	1.193	1,784	126,413	31,603	31,603	31,603	31,603	56,378,624	56,378,624	56,378,624	
\$115,700 - over	\$166,017	12.864	19,236	182,900	45,725	34,425	25,575	45,725	662,205,579	491,965,365	879,574,506	
TOTAL		100.000	149,535						Total Taxable Earnings	3,395,506,482	3,156,418,729	3,612,875,409
									Employer Tax Rate	6.20%	13.10%	1.45%
									Quarterly Payment	\$210,521,402	\$413,490,854	\$52,386,693

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

\$676,398,949

Railroad Retirement & Medicare, U.S.

From 2017 Earnings Distribution			3Q/2020 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$31,475	1.660 %	2,482	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
41,700 - 43,699	\$42,620	0.519	776	0	0	0	0	0	0	0	0	
43,700 - 45,699	\$44,998	0.622	930	0	0	0	0	0	0	0	0	
45,700 - 47,699	\$46,876	0.622	930	0	0	0	0	0	0	0	0	
47,700 - 49,699	\$48,766	1.349	2,017	0	0	0	0	0	0	0	0	
49,700 - 51,699	\$50,781	1.400	2,093	0	0	0	0	0	0	0	0	
51,700 - 53,699	\$52,592	1.452	2,171	0	0	0	0	0	0	0	0	
53,700 - 55,699	\$54,898	1.660	2,482	0	0	0	0	0	0	0	0	
55,700 - 57,699	\$56,779	2.645	3,955	0	0	0	0	0	0	0	0	
57,700 - 59,699	\$58,870	3.423	5,119	0	0	0	0	0	0	0	0	
59,700 - 61,699	\$60,742	4.720	7,058	0	0	0	0	0	0	0	0	
61,700 - 63,699	\$62,627	3.942	5,895	0	0	0	0	0	0	0	0	
63,700 - 65,699	\$64,677	3.786	5,661	0	0	0	0	0	0	0	0	
65,700 - 67,699	\$66,692	3.942	5,895	0	0	0	0	0	0	0	0	
67,700 - 69,699	\$68,700	3.060	4,576	0	0	0	0	0	0	0	0	
69,700 - 71,699	\$70,623	3.683	5,507	0	0	0	0	0	0	0	0	
71,700 - 73,699	\$72,775	3.008	4,498	0	0	0	0	0	0	0	0	
73,700 - 75,699	\$74,738	3.008	4,498	0	0	0	0	0	0	0	0	
75,700 - 77,699	\$76,763	3.890	5,817	0	0	0	0	0	0	0	0	
77,700 - 79,699	\$78,725	3.164	4,731	0	0	0	0	0	0	0	0	
79,700 - 81,699	\$80,598	3.579	5,352	0	0	0	0	0	0	0	0	
81,700 - 83,699	\$82,569	2.697	4,033	0	0	0	0	0	0	0	0	
83,700 - 85,699	\$84,600	2.334	3,490	0	0	0	0	0	0	0	0	
85,700 - 87,699	\$86,775	2.905	4,344	0	0	0	0	0	0	0	0	
87,700 - 89,699	\$88,659	2.282	3,412	0	0	0	0	0	0	0	0	
89,700 - 91,699	\$90,624	3.164	4,731	0	0	0	0	0	0	0	0	
91,700 - 93,699	\$92,723	1.712	2,560	0	0	0	51	0	0	130,297	0	
93,700 - 95,699	\$94,692	2.178	3,257	0	0	0	1,138	0	0	3,706,850	0	
95,700 - 97,699	\$96,822	2.178	3,257	0	0	0	2,314	0	0	7,537,482	0	
97,700 - 99,699	\$98,526	2.127	3,181	0	0	0	3,255	0	0	10,353,731	0	
99,700 - 101,699	\$100,754	1.971	2,947	0	0	0	4,486	0	0	13,220,418	0	
101,700 - 103,699	\$102,783	1.660	2,482	0	0	0	5,606	0	0	13,915,538	0	
103,700 - 105,699	\$104,707	1.608	2,405	0	0	0	6,668	0	0	16,034,236	0	
105,700 - 107,699	\$106,517	1.452	2,171	0	0	0	7,668	0	0	16,648,768	0	
107,700 - 109,699	\$108,702	0.519	776	0	0	0	8,874	0	0	6,887,282	0	
109,700 - 111,699	\$110,815	1.400	2,093	0	0	0	10,041	0	0	21,021,055	0	
111,700 - 113,699	\$112,625	0.622	930	0	0	0	11,041	0	0	10,268,967	0	
113,700 - 115,699	\$114,744	1.193	1,784	0	0	0	12,211	0	0	21,783,338	0	
\$115,700 - over	\$166,017	12.864	19,236	0	0	22,823	25,575	0	439,032,297	491,965,365	0	
TOTAL		100.000	149,535				Total Taxable Earnings		439,032,297	633,473,325	0	
							Employer Tax Rate		6.20%	13.10%	1.45%	
							Quarterly Payment		\$27,220,002	\$82,985,006	\$0	

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

\$110,205,008

Railroad Retirement & Medicare, U.S.

From 2017 Earnings Distribution			4Q/2020 Updated Using Earnings Distribution & Wage Statistics, plus Current Wage Rates with Current Tax Info									
Earnings Groups	Avg Ann. Earnings	% of Total Employees	Employees Recvg. Pay	Annual Earnings	Avg Qtly Earnings	Tier I Taxable	Tier II Taxable	Medicare Taxable	Total Taxable Earnings (Taxable x Employees)			
									Tier I	Tier II	Medicare	
\$0 - 41,699	\$31,475	1.660 %	2,482	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,620	0.519	776	0	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,998	0.622	930	0	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,876	0.622	930	0	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,766	1.349	2,017	0	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,781	1.400	2,093	0	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,592	1.452	2,171	0	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,898	1.660	2,482	0	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,779	2.645	3,955	0	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,870	3.423	5,119	0	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,742	4.720	7,058	0	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,627	3.942	5,895	0	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,677	3.786	5,661	0	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,692	3.942	5,895	0	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,700	3.060	4,576	0	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,623	3.683	5,507	0	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,775	3.008	4,498	0	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,738	3.008	4,498	0	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,763	3.890	5,817	0	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,725	3.164	4,731	0	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,598	3.579	5,352	0	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,569	2.697	4,033	0	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,600	2.334	3,490	0	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,775	2.905	4,344	0	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,659	2.282	3,412	0	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,624	3.164	4,731	0	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,723	1.712	2,560	0	0	0	0	0	0	0	0	0
93,700 - 95,699	\$94,692	2.178	3,257	0	0	0	0	0	0	0	0	0
95,700 - 97,699	\$96,822	2.178	3,257	0	0	0	0	0	0	0	0	0
97,700 - 99,699	\$98,526	2.127	3,181	0	0	0	0	0	0	0	0	0
99,700 - 101,699	\$100,754	1.971	2,947	0	0	0	0	0	0	0	0	0
101,700 - 103,699	\$102,783	1.660	2,482	0	0	0	0	0	0	0	0	0
103,700 - 105,699	\$104,707	1.608	2,405	0	0	0	0	0	0	0	0	0
105,700 - 107,699	\$106,517	1.452	2,171	0	0	0	0	0	0	0	0	0
107,700 - 109,699	\$108,702	0.519	776	0	0	0	0	0	0	0	0	0
109,700 - 111,699	\$110,815	1.400	2,093	0	0	0	0	0	0	0	0	0
111,700 - 113,699	\$112,625	0.622	930	0	0	0	0	0	0	0	0	0
113,700 - 115,699	\$114,744	1.193	1,784	0	0	0	0	0	0	0	0	0
\$115,700 - over	\$166,017	12.864	19,236	0	0	0	14,948	0	0	287,547,360	0	0
TOTAL		100.000	149,535				Total Taxable Earnings		0	287,547,360		0
							Employer Tax Rate		6.20%	13.10%		1.45%
							Quarterly Payment		\$0	\$37,668,704		\$0

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

\$37,668,704

RCAF Unemployment Insurance Tax

	Unemployment Ins.			RRB	Factor	Avg. Ann.	Un. Ins.
	Tax	Earnings	Hourly	Sample	To Update	Taxable	Hourly
	Rate	Base	Earnings	Year	RRB Sample	Earnings	Rate
			\$38.866	(2014)			
2015 Avg.	2.31%	\$17,460	\$39.887		1.016721	\$16,460.37	\$0.208
3Q/16 reb.	2.73%	\$17,460	\$39.731		1.012745	\$16,458.00	\$0.246
4Q/16	2.73%	\$17,460	\$39.703		1.012031	\$16,457.57	\$0.246
1Q/17	3.37%	\$18,540	\$39.736		1.012872	\$17,436.31	\$0.321
2Q/17	3.37%	\$18,540	\$39.738		1.012923	\$17,436.34	\$0.321
3Q/17	3.37%	\$18,540	\$39.775		1.013867	\$17,436.97	\$0.321
			\$39.887	(2015)			
2016 Avg.	2.73%	\$17,460	\$39.231		0.990707	\$16,664.96	\$0.247
3Q/17 reb.	3.37%	\$18,540	\$39.154		0.988762	\$17,655.72	\$0.323
4Q/17	3.37%	\$18,540	\$39.156		0.988813	\$17,655.75	\$0.323
1Q/18	3.76%	\$18,720	\$40.555		1.024142	\$17,843.78	\$0.364
2Q/18	3.76%	\$18,720	\$40.961		1.034395	\$17,850.31	\$0.364
3Q/18	3.76%	\$18,720	\$42.431		1.071517	\$17,873.30	\$0.365
			\$39.231	(2016)			
2017 Avg.	3.37%	\$18,540	\$39.599		1.000000	\$17,625.49	\$0.319
3Q/18 reb.	3.76%	\$18,720	\$42.946		1.084522	\$17,832.94	\$0.360
4Q/18	3.76%	\$18,720	\$42.976		1.085280	\$17,833.29	\$0.360
1Q/19	3.38%	\$19,260	\$42.805		1.080962	\$18,330.97	\$0.333
2Q/19	3.38%	\$19,260	\$42.756		1.079724	\$18,330.37	\$0.333
3Q/19	3.38%	\$19,260	\$43.306		1.093613	\$18,336.98	\$0.333
			\$39.599	(2017)			
2018 Avg.	3.76%	\$18,720	\$41.687		1.052729	\$17,600.87	\$0.347
3Q/19 reb.	3.38%	\$19,260	\$43.672		1.102856	\$18,120.16	\$0.321
4Q/19	3.38%	\$19,260	\$43.660		1.102553	\$18,119.99	\$0.321
1Q/20	0.99%	\$19,860	\$43.839		1.107073	\$18,666.82	\$0.097
2Q/20	0.99%	\$19,860	\$43.626		1.101694	\$18,663.57	\$0.097
3Q/20	0.99%	\$19,860			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	2516	44283780.22	17600.87
QTRLY_US	2516	46957532.00	18663.57

The MEANS Procedure

Variable	N	Sum	Mean
FactorA	2516	2648.67	1.0527290
FactorQ	2516	2771.86	1.1016940
Capa	2516	47099520.00	18720.00
Capq	2516	49967760.00	19860.00



PETROLEUM & OTHER LIQUIDS

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Spot Prices

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

Period: Weekly ▼

Product by Area	Graph Clear	01/17/20	01/24/20	01/31/20	02/07/20	02/14/20	02/21/20	View History
Crude Oil								
WTI - Cushing, Oklahoma	☐	58.29	56.15	52.69	50.36	50.83	53.14	1986-2020
Brent - Europe	☐	64.11	62.20	58.57	54.59	55.33	58.64	1987-2020
Conventional Gasoline								
New York Harbor, Regular	☐	1.694	1.629	1.545	1.523	1.594	1.675	1986-2020
U.S. Gulf Coast, Regular	☐	1.620	1.552	1.473	1.444	1.489	1.484	1986-2020
RBOB Regular Gasoline								
Los Angeles	☐	1.875	1.855	1.880	1.871	1.890	1.938	2003-2020
No. 2 Heating Oil								
New York Harbor	☐	1.859	1.773	1.645	1.594	1.629	1.657	1986-2020
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	1.881	1.799	1.662	1.622	1.660	1.692	2006-2020
U.S. Gulf Coast	☐	1.791	1.717	1.596	1.541	1.582	1.622	2006-2020
Los Angeles	☐	1.913	1.847	1.746	1.700	1.764	1.838	1996-2020
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	1.796	1.717	1.589	1.499	1.544	1.579	1990-2020
Propane								
Mont Belvieu, Texas	☐	0.437	0.409	0.402	0.380	0.385	0.422	1992-2020

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: 2/26/2020

Next Release Date: 3/4/2020



U.S. Energy Information
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PETROLEUM & OTHER LIQUIDS

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Spot Prices

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

Period: Monthly ▼

Product by Area	Graph	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	View History
	Clear							
Crude Oil								
WTI - Cushing, Oklahoma	☐	54.81	56.95	53.96	57.03	59.88	57.52	1986-2020
Brent - Europe	☐	59.04	62.83	59.71	63.21	67.31	63.82	1987-2020
Conventional Gasoline								
New York Harbor, Regular	☐	1.694	1.726	1.728	1.724	1.713	1.663	1986-2020
U.S. Gulf Coast, Regular	☐	1.690	1.681	1.646	1.636	1.630	1.592	1986-2020
RBOB Regular Gasoline								
Los Angeles	☐	1.809	2.059	2.219	1.919	1.659	1.844	2003-2020
No. 2 Heating Oil								
New York Harbor	☐	1.795	1.919	1.920	1.915	1.966	1.837	1986-2020
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	1.824	1.935	1.937	1.933	1.988	1.856	2006-2020
U.S. Gulf Coast	☐	1.788	1.895	1.876	1.838	1.899	1.777	2006-2020
Los Angeles	☐	1.869	2.997	2.065	2.109	1.963	1.913	1996-2020
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	1.800	1.874	1.861	1.824	1.893	1.777	1990-2020
Propane								
Mont Belvieu, Texas	☐	0.405	0.448	0.466	0.533	0.496	0.429	1992-2020

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: 2/26/2020

Next Release Date: 3/4/2020

U.S.

Summary by Composition Category

	MS-2018		Prev. Idx	2020Q1		Calculation		Relative of Change
	MS Amount	Weight		Cur Idx		Prev. Idx	Cur Idx	
Forest Products	585,399,423	0.1065	394.29	346.90		41.99	36.94	
Metal Products	3,538,047,604	0.6438	165.47	167.47		106.53	107.82	
Misc. Products	1,372,228,909	0.2497	387.98	402.06		96.88	100.39	
Total	5,495,675,936	1.0000	245.40	245.15				0.9990
Total Linked			251.65	251.40				
'77 = 100 Link Fact.= 1.423			358.10	357.74				
'80 = 100 Link Fact.= 1.061			267.00	266.74				

As info only	Change
Forest Products	-12.02%
Metal Products	1.21%
Misc. Products	<u>3.63%</u>
Total ('80=100)	-0.10%
Rounded 80 Indices	-0.1%
Rounded 77 Indices	-0.1%

Car Hire for RCAF - 2018 Weights

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

	1980	June 3Q/19	Sept. 4Q/19	Dec. 1Q/20	Mar. 2Q/20	June 3Q/20
RATE						
RR-OWNED TIME	31.00	65.00	65.00	64.00	64.00	--
RR-OWNED MILEAGE	4.69	6.70	6.70	6.60	6.60	--
PRIVATELY-OWNED CARS	25.47	58.88	60.29	60.37	58.98	--
AUTORACKS	47.00	86.19	87.75	89.40	85.10	--
INDEX						
RR-OWNED TIME	100.0	209.7	209.7	206.5	206.5	--
RR-OWNED MILEAGE	100.0	142.9	142.9	140.7	140.7	--
PRIVATELY-OWNED CARS	100.0	231.2	236.7	237.0	231.6	--
AUTORACKS	100.0	183.4	186.7	190.2	181.1	--
CAR HIRE INDEX (old wts) 2017	100.0	222.6	--	--	--	--
CAR HIRE INDEX (new wts) 2018	100.0	225.0	230.0	230.1	225.0	--
CAR HIRE INDEX (LINKED)	100.0	221.8	226.7	226.8	221.8	--

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

Note: Indexes are rounded, rates are full float.

Car Hire Data From CHARM

	2019 (first day of month)						2020 (first day of month)							
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Railroad Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	11,391	11,521	11,621	11,664	11,637	11,621	11,591	11,584	11,584					
Rate (in cents)														
Superstructures #3 - Auto Rack	93.0	95.0	96.0	96.0	96.0	96.0	95.0	95.0	95.0					
All other #1 - Time	65.0	65.0	65.0	64.0	64.0	64.0	65.0	64.0	64.0					
All other #2 - Mileage	6.7	6.7	6.7	6.6	6.6	6.6	6.6	6.6	6.6					
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	55,167	55,067	54,971	54,827	54,762	54,764	54,679	54,675	54,545					
Covered Hoppers	429,934	429,978	430,640	431,428	431,319	431,271	431,181	431,928	432,117					
Tank Cars	412,471	413,545	414,888	415,980	417,650	418,946	419,807	420,151	420,683					
Others	297,834	297,537	298,118	298,567	299,072	299,144	299,807	299,402	299,469					
Rate (in cents)														
Superstructures #1 - Time	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0					
Superstructures #2 - Mileage	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0					
Superstructures #3 - Auto Rack	85.0	86.0	86.0	86.0	87.0	88.0	82.0	83.0	83.0					
Covered Hoppers #2 - Mileage	45.6	45.5	45.5	45.6	45.6	45.0	44.5	44.6	44.6					
Tank Cars #2 - Mileage	98.6	98.7	102.0	102.1	102.3	102.4	102.0	102.1	98.7					
Others #1 -Time	100.0	101.0	101.0	101.0	101.0	101.0	101.0	101.0	101.0					
Others #2 - Mileage	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4					
AVERAGE RATES														
Private Superstructures	21.61	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	0.00	0.00	0.00	0.00	0.00
Private Others	30.60	30.82	30.82	30.82	30.82	30.82	30.82	30.82	30.82	0.00	0.00	0.00	0.00	0.00
Private Total	59.04	59.12	60.29	60.38	60.50	60.37	60.07	60.15	58.98	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	86.37	87.56	87.75	87.75	88.58	89.40	84.27	85.10	85.10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Car Hire Weights	"Old Wts" New Wts"	
	2017	2018
For RCAF & RCR		
RR-owned Time	0.073	0.052
RR-owned Mileage	0.049	0.034
Privately-owned Cars	0.822	0.871
Autoracks	0.056	0.043
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2017	2018
Car Hire - U.S.	0.605	0.591
Lease Rentals - U.S.	0.395	0.409
----- 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 03/2020

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	11,584	107	0.060	95
Railroad	Number of Zero-Rated Vehicular Flats	63	.	.	.
Railroad	All Other Cars	391,812	64	0.066	.
Railroad	Number of Zero-Rated Other Cars	15,898	.	.	.
Railroad	Total Railroad Equipment	419,357	.	.	.
		.	.	.	.
Private	Vehicular Flats	54,545	86	0.010	83
Private	Number of Zero-Rated Vehicular Flats	107	.	.	.
Private	Covered Hoppers	432,117	0	0.446	.
Private	Number of Zero-Rated Covered Hoppers	14,646	.	.	.
Private	Tanks	420,683	0	0.987	.
Private	Number of Zero-Rated Tanks	13,545	.	.	.
Private	All Other Cars	299,469	101	0.084	.
Private	Number of Zero-Rated Other Cars	22,579	.	.	.
Private	Total Private Equipment	1,257,691	.	.	.

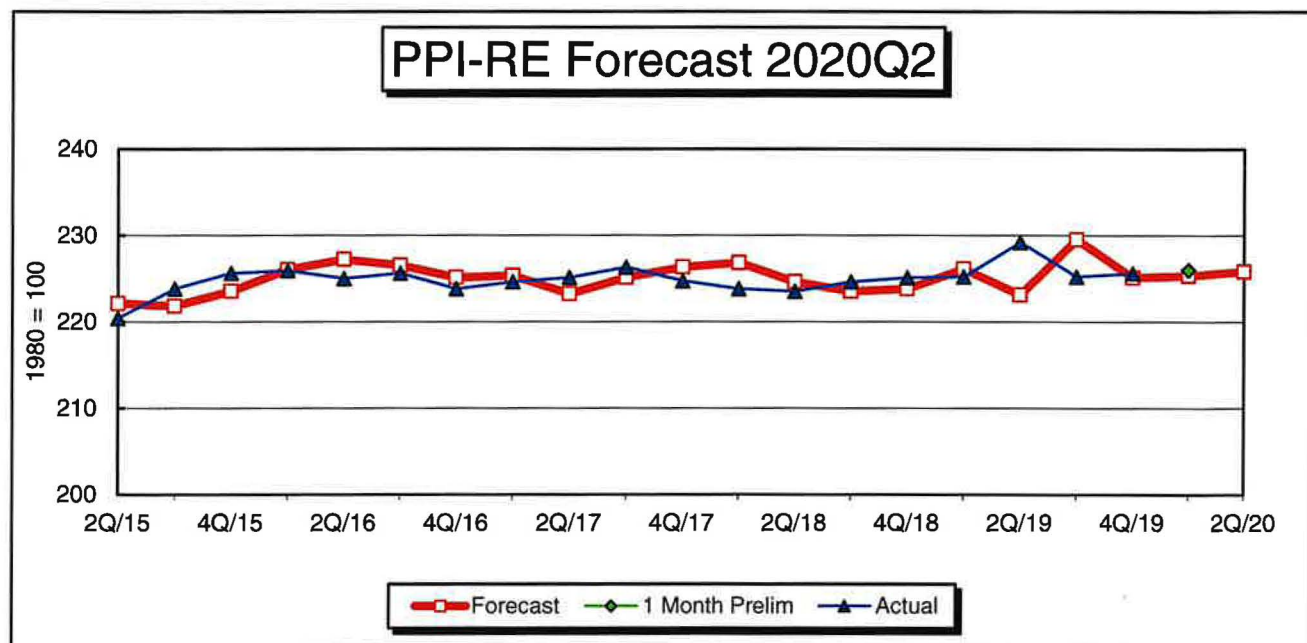
Notes
This report excludes these car types: D (Locomotives), M (MoW, EOTs, etc.), U (Containers), Z (Trailers).
All TTX equipment (including ABOX, RBOX, GONX) is contained in the Private section of report.
Equipment can be zero rated due to owners supplying incorrect or insufficient information to the 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/15	222.1	220.4	
3Q/15	221.8	223.8	
4Q/15	223.5	225.6	
1Q/16	226.0	225.9	
2Q/16	227.2	225.0	
3Q/16	226.5	225.6	
4Q/16	225.1	223.8	
1Q/17	225.3	224.6	
2Q/17	223.2	225.1	
3Q/17	225.1	226.3	
4Q/17	226.3	224.7	
1Q/18	226.8	223.8	
2Q/18	224.6	223.5	
3Q/18	223.5	224.6	
4Q/18	223.8	225.1	
1Q/19	226.1	225.2	
2Q/19	223.1	229.2	
3Q/19	229.5	225.2	
4Q/19	225.1	225.6	
1Q/20	225.3		226.0
2Q/20	225.8		

1980 Base

	PPI-RE Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2020Q2						
Low	201.0	222.3	-3.0%			
Midpoint	204.1	225.8	-1.5%	-0.1%	0.1%	0.2%
High	207.2	229.2	0.0%			



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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
2019	202.1	203.1	206.5	203.4	203.4	203.4	203.5	203.5	203.7	203.7(P)	204.0(P)	203.9(P)
2020	204.3(P)											

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

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2/19/2020

Depreciation

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 1.10 and for Box-Jenkins was 1.14. 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

Exponential smoothing: No trend, Multiplicative seasonality

NM(0.732, 0.401)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.7316		204.3
Seasonal	0.4014		
Seasonal Indexes			
Jan - Mar	0.9998	1.002	1.002
Apr - Jun	0.9983	0.9988	0.9998
Jul - Sep	1.001	1.002	0.999
Oct - Dec	1.001	0.9989	0.9987

Within-Sample Statistics

Sample size	72	No. parameters	2
Mean	202.12	Std. deviation	2.24
R-square	0.83	Adj. R-square	0.82
Durbin-Watson	1.94	Ljung-Box(18)	14.9 P=0.33
Forecast error	0.94	BIC	0.99
MAPE	0.32	SMAPE	0.32
RMSE	0.93	MAD	0.64
MAD/Mean Ratio	0		

Depreciation

Historic Data

Date	Historic
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

Depreciation

2017-Aug	204.5
2017-Sep	203.8
2017-Oct	202.8
2017-Nov	201.7
2017-Dec	201.6
2018-Jan	202.1
2018-Feb	202.1
2018-Mar	202
2018-Apr	202.1
2018-May	202.1
2018-Jun	202.1
2018-Jul	204.1
2018-Aug	204.1
2018-Sep	201.1
2018-Oct	201.3
2018-Nov	201.3
2018-Dec	201.3
2019-Jan	202.1
2019-Feb	203.1
2019-Mar	206.5
2019-Apr	203.4
2019-May	203.4
2019-Jun	203.4
2019-Jul	203.5
2019-Aug	203.5
2019-Sep	203.7
2019-Oct	203.7
2019-Nov	204
2019-Dec	203.9
2020-Jan	204.3

Forecast Data

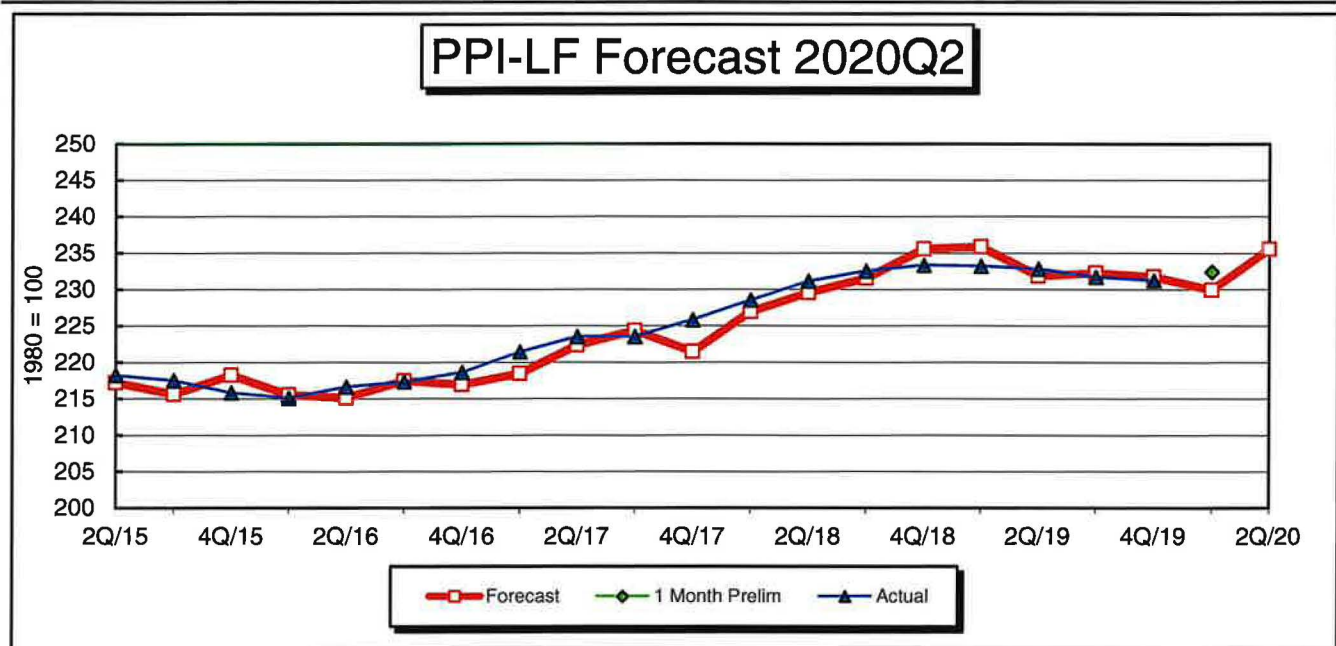
Date	2.5 Lower	Forecast	97.5 Upper
2020-Feb	202.744	204.685	206.625
2020-Mar	202.215	204.619	207.023
2020-Apr	201.158	203.945	206.732
2020-May	200.923	204.049	207.176
2020-Jun	200.836	204.269	207.702
2020-Jul	200.721	204.436	208.15
2020-Aug	200.74	204.717	208.694
2020-Sep	199.878	204.099	208.319
2020-Oct	199.966	204.419	208.871
2020-Nov	199.408	204.08	208.752
2020-Dec	199.149	204.03	208.912
2021-Jan	199.186	204.269	209.352

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

	Forecast	Actual	1 Month Prelim
2Q/15	217.2	218.2	
3Q/15	215.6	217.5	
4Q/15	218.2	215.8	
1Q/16	215.5	215.1	
2Q/16	215.1	216.6	
3Q/16	217.4	217.3	
4Q/16	216.9	218.6	
1Q/17	218.4	221.4	
2Q/17	222.3	223.5	
3Q/17	224.3	223.5	
4Q/17	221.4	225.8	
1Q/18	226.9	228.5	
2Q/18	229.5	231.1	
3Q/18	231.5	232.5	
4Q/18	235.5	233.3	
1Q/19	235.8	233.2	
2Q/19	231.8	232.8	
3Q/19	232.2	231.7	
4Q/19	231.7	231.2	
1Q/20	229.9		232.4
2Q/20	235.5		

1980 Base

	PPI-LF Forecast		Yr Ago Actual	Percent Change		
	(82=100)	(80=100)		Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2020Q2						
Low	207.7	232.8	0.0%			
Midpoint	210.1	235.5	1.2%	1.3%	1.9%	2.4%
High	212.5	238.2	2.3%			



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PPI Commodity Data**Series Id:** WPU03T15M05

Not Seasonally Adjusted

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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	208.3	208.2	208.4	208.2	207.7	207.1	206.9	206.5	206.1	206.3(P)	206.1(P)	206.1(P)
2020	207.3(P)											

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

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2/19/2020

Forecast Report for PPILF

Description: PPILF

Expert Analysis

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

The cumulative MAD for Exponential smoothing was 1.39 and for Box-Jenkins was 2.06.
The rolling out-of-sample test used a maximum horizon of 12 and generated 78 forecasts for each meth

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

Model Details**Expert selection**

Multiplicative Winters: Linear trend, Multiplicative seasonality

LM(0.862, 0.987, 0.903)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.8625		207
Trend	0.9873		0.8201
Seasonal	0.9035		
Seasonal Indexes			
Jan - Mar	1.002	1	0.9999
Apr - Jun	0.9994	0.9992	0.9994
Jul - Sep	0.9996	0.9998	0.9994
Oct - Dec	1.001	1.001	0.9998

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	199.9	Std. deviation	5.64
R-square	1	Adj. R-square	1
Durbin-Watson	1.76	Ljung-Box(18)	22.3 P=0.78
Forecast error	0.37	BIC	0.4
MAPE	0.15	SMAPE	0.15
RMSE	0.36	MAD	0.3
MAD/Mean Ratio	0		

Other

Historic Data

Date	Historic
------	----------

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

Other

2018-Feb

203.8

Other

2018-Mar	204.8
2018-Apr	205.4
2018-May	206.3
2018-Jun	207
2018-Jul	207.4
2018-Aug	207.6
2018-Sep	207.9
2018-Oct	208.7
2018-Nov	208.5
2018-Dec	207.8
2019-Jan	208.3
2019-Feb	208.2
2019-Mar	208.4
2019-Apr	208.2
2019-May	207.7
2019-Jun	207.1
2019-Jul	206.9
2019-Aug	206.5
2019-Sep	206.1
2019-Oct	206.3
2019-Nov	206.1
2019-Dec	206.1
2020-Jan	207.3

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2020-Feb	207.003	207.78	208.556
2020-Mar	207.049	208.589	210.129
2020-Apr	207.271	209.306	211.341
2020-May	207.642	210.073	212.504
2020-Jun	208.159	210.93	213.7
2020-Jul	208.737	211.81	214.884
2020-Aug	209.309	212.658	216.007
2020-Sep	209.788	213.391	216.994
2020-Oct	210.761	214.602	218.443
2020-Nov	211.265	215.33	219.395
2020-Dec	211.665	215.943	220.22
2021-Jan	212.667	217.147	221.627

Forecast Error Calculation

	2018 Weight	Fourth Quarter 2019		Difference		Notes
		2019Q4 Forecast	2019Q4 Actual	Pt.	Pct.	
Labor	33.0%	443.8	443.8	0.0	0%	* actual=forecast
Fuel	15.9%	249.9	248.5	-1.4	-1%	from 1st month of quarter
M&S	5.1%	322.9	322.9	0.0	0%	* actual=forecast
Equip Rents	5.3%	240.7	241.5	0.8	0%	from Equipment Rents below
Depreciation	15.0%	225.1	225.6	0.5	0%	PPI-RE
Interest	2.1%	57.2	57.2	0.0	0%	
Other	23.6%	231.7	231.2	-0.5	0%	PPI-LF
Weighted Avg	100.0%					
1980 = 100		305.1	304.8			calculated
1980 = 100 (linked)		284.8	283.4			calculated
4Q17 = 100	2.645	107.7	107.1			calculated
4Q12 = 100	2.976	95.7	95.2			calculated
4Q07 = 100	2.459	115.8	115.3			calculated
4Q02 = 100	1.921	148.3	147.5			calculated
4Q97 = 100	1.732	164.4	163.6			calculated
Forecast Error		-0.6				calculated -0.006 = RCAF adj.
<u>Prior Quarter</u>						
1980 = 100		306.6	301.6 **			Re-calculated using new weights
1980 = 100 (linked)		286.2	280.4			
4Q17 = 100		108.2	106.0			calculated
4Q12 = 100		96.2	94.2			calculated
4Q07 = 100		116.4	114.0			calculated
4Q02 = 100		149.0	146.0			calculated
4Q97 = 100		165.2	161.9			calculated
Equipment Rents						
Car Hire	59.1%	226.7	227.3			from Equipment Rents/CHARM
Lease Rentals	40.9%	231.7	231.2			(equals PPI-LF from above)
Weighted Average		228.7	228.9			calculated
Linked		240.7	241.5			calculated
<u>Prior Quarter</u>						
Weighted Average		226.1	226.4 **			Re-calculated using new weights
Linked		238.0	238.9			
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 2019

Monthly Report

	October 2019 Price (cents) (1)	1/1/81 Price (cents) (2)	1/91 New Method Linking Factors (3)	October 2019 Index 1/1/81=100 (4)	Linking Factor 1980=100 (5)	October 2019 1980=100 Current Index (6)
U.S.	203.34	89.34	99.415	226.27	1.096	247.99

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

(6) = (4) x (5)

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

	October 2019 1980=100 Current Index	Adjustment Factor	October 2019 1980=100 Linked Index
U.S.	247.99	1.00192	248.47 ←

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

Car Hire for RCAF - 2018 Weights

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

		1980	Aug 3Q/19	Nov 4Q/19	Feb 1Q/20	May 2Q/20	Aug 3Q/20
RATE							
RR-OWNED TIME		31.00	65.00	64.00	--	--	--
RR-OWNED MILEAGE		4.69	6.70	6.60	--	--	--
PRIVATELY-OWNED CARS		25.47	59.12	60.50	--	--	--
AUTORACKS		47.00	87.56	88.58	--	--	--
INDEX							
RR-OWNED TIME		100.0	209.7	206.5	--	--	--
RR-OWNED MILEAGE		100.0	142.9	140.7	--	--	--
PRIVATELY-OWNED CARS		100.0	232.1	237.5	--	--	--
AUTORACKS		100.0	186.3	188.5	--	--	--
CAR HIRE INDEX (old wts)	2017	100.0	223.5	--	--	--	--
CAR HIRE INDEX (new wts)	2018	100.0	225.9	230.5	--	--	--
CAR HIRE INDEX (LINKED)		100.0	222.8	227.3	--	--	--

Note: Indexes are rounded, rates are full float.

Car Hire Data From CHARM

	2019 (first day of month)						2020 (first day of month)							
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Railroad Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	11,391	11,521	11,621	11,664	11,637	11,621								
Rate (in cents)														
Superstructures #3 - Auto Rack	93.0	95.0	96.0	96.0	96.0	96.0								
All other #1 - Time	65.0	65.0	65.0	64.0	64.0	64.0								
All other #2 - Mileage	6.7	6.7	6.7	6.6	6.6	6.6								
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	55,167	55,067	54,971	54,827	54,762	54,764								
Covered Hoppers	429,934	429,978	430,640	431,428	431,319	431,271								
Tank Cars	412,471	413,545	414,888	415,980	417,650	418,946								
Others	297,834	297,537	298,118	298,567	299,072	299,144								
Rate (in cents)														
Superstructures #1 - Time	86.0	86.0	86.0	86.0	86.0	86.0								
Superstructures #2 - Mileage	1.4	1.0	1.0	1.0	1.0	1.0								
Superstructures #3 - Auto Rack	85.0	86.0	86.0	86.0	87.0	88.0								
Covered Hoppers #2 - Mileage	45.6	45.5	45.5	45.6	45.6	45.0								
Tank Cars #2 - Mileage	98.6	98.7	102.0	102.1	102.3	102.4								
Others #1 -Time	100.0	101.0	101.0	101.0	101.0	101.0								
Others #2 - Mileage	8.4	8.4	8.4	8.4	8.4	8.4								
AVERAGE RATES														
Private Superstructures	21.61	21.21	21.21	21.21	21.21	21.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Others	30.60	30.82	30.82	30.82	30.82	30.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Total	59.04	59.12	60.29	60.38	60.50	60.37	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	86.37	87.56	87.75	87.75	88.58	89.40	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Car Hire Weights	"Old Wts" New Wts"	
	2017	2018
For RCAF & RCR		
RR-owned Time	0.073	0.052
RR-owned Mileage	0.049	0.034
Privately-owned Cars	0.822	0.871
Autoracks	0.056	0.043
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2017	2018
Car Hire - U.S.	0.605	0.591
Lease Rentals - U.S.	0.395	0.409
----- 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 12/2019

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	11,621	107	0.060	96
Railroad	Number of Zero-Rated Vehicular Flats	84	.	.	.
Railroad	All Other Cars	398,330	64	0.066	.
Railroad	Number of Zero-Rated Other Cars	15,823	.	.	.
Railroad	Total Railroad Equipment	425,858	.	.	.
		.	.	.	.
Private	Vehicular Flats	54,764	86	0.010	88
Private	Number of Zero-Rated Vehicular Flats	131	.	.	.
Private	Covered Hoppers	431,271	0	0.450	.
Private	Number of Zero-Rated Covered Hoppers	15,089	.	.	.
Private	Tanks	418,946	0	1.024	.
Private	Number of Zero-Rated Tanks	12,149	.	.	.
Private	All Other Cars	299,144	101	0.084	.
Private	Number of Zero-Rated Other Cars	24,931	.	.	.
Private	Total Private Equipment	1,256,425	.	.	.

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 2020			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	20Q1	20Q2	20Q3	20Q4
For Actual	→	19Q3	19Q4	20Q1	20Q2
January	2019	202.1	202.1	202.1	202.1
February	2019	203.1	203.1	203.1	203.1
March	2019	206.5	206.5	206.5	206.5
April	2019	203.4	203.4	203.4	203.4
May	2019	203.4	203.4	203.4	203.4
June	2019	203.4	203.4	203.4	203.4
July	2019	203.5	203.5		
August	2019	203.5	203.5		
September	2019	203.7	203.7		
October	2019	203.7	203.7		
November	2019		204.0		
December	2019		203.9		
January	2020		204.3		
February	2020				
March	2020				
April	2020				
May	2020				
June	2020				
July	2020				
Actual Qtr.		203.6	203.9	NA	NA

1980=100

Actual Qtr.	225.2	225.6	NA	NA
First Mo. next qtr.	225.3	226.0	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

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Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	202.1	203.1	206.5	203.4	203.4	203.4	203.5	203.5	203.7	203.7(P)	204.0(P)	203.9(P)
2020	204.3(P)											

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

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RCAF - Other

Series ID : wpu03t15m05

Not Seasonally Adjusted

Group : Industrial Commodities less fuels

Item : Industrial commodities less fuels

		Forecast Year 2020			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	20Q1	20Q2	20Q3	20Q4
For Actual	→	19Q3	19Q4	20Q1	20Q2
January	2019	208.3	208.3	208.3	208.3
February	2019	208.2	208.2	208.2	208.2
March	2019	208.4	208.4	208.4	208.4
April	2019	208.2	208.2	208.2	208.2
May	2019	207.7	207.7	207.7	207.7
June	2019	207.1	207.1	207.1	207.1
July	2019	207.3	206.9		
August	2019	206.8	206.5		
September	2019	206.1	206.1		
October	2019	206.3	206.3		
November	2019		206.1		
December	2019		206.1		
January	2020		207.3		
February	2020				
March	2020				
April	2020				
May	2020				
June	2020				
July	2020				
Actual Qtr.		206.7	206.2	NA	NA

1980=100

Actual Qtr.	231.7	231.2	NA	NA
First Mo. next qtr.	231.3	232.4	NA	NA

0.892 =1980



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United States Department of Labor

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PPI Commodity Data

Series Id: WPU03T15M05

Not Seasonally Adjusted

Series Title: PPI Commodity data for Industrial commodities less fuels, not seasonally adjusted

Group: Industrial Commodities less fuels

Item: Industrial commodities less fuels

Base Date: 198200

Download: .xlsx

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	208.3	208.2	208.4	208.2	207.7	207.1	206.9	206.5	206.1	206.3(P)	206.1(P)	206.1(P)
2020	207.3(P)											

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

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All-Inclusive Index (Actual) - 2018 Weights

	18 Wts	3Q/19 17 Wts	3Q/19 18 Wts	% Chg.	4Q/19 18 Wts	% Chg.	1Q/20 18 Wts	% Chg.	2Q/20 18 Wts	% Chg.	3Q/20 18 Wts	% Chg.
Labor	33.0%	444.7	444.7	0.0%	443.8	-0.2%		NA		NA		NA
Fuel	15.9%	242.0	242.0	0.0%	248.5	2.7%		NA		NA		NA
M&S	5.1%	273.1	273.1	0.0%	322.9	18.2%		NA		NA		NA
Equipment Rents	5.3%	238.9	238.9	0.0%	241.5	1.1%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA
Depreciation	15.0%	225.2	225.2	0.0%	225.6	0.2%		NA		NA		NA
Interest	2.1%	62.4	62.4	0.0%	57.2	-8.3%	57.2	0.0%	57.2	0.0%	57.2	0.0%
Other	23.6%	231.7	231.7	0.0%	231.2	-0.2%		NA		NA		NA
	<u>1.0000</u>											
Weighted Avg.		305.0	301.6	-1.1%	304.8	1.1%	1.2	NA	#DIV/0!	NA	#DIV/0!	NA
Linked		280.4			283.4	1.1%	1.1	NA	#DIV/0!	NA	#DIV/0!	NA
10/1/80	1.027	273.0			275.9	1.1%	1.1	NA	#DIV/0!	NA	#DIV/0!	NA
10/1/82	1.209	231.9			234.4	1.1%	0.9	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/87	1.322	212.1			214.4	1.1%	0.8	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/92	1.569	178.7			180.6	1.1%	0.7	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/97	1.732	161.9			163.6	1.1%	0.6	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/02	1.921	146.0			147.5	1.0%	0.6	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/07	2.459	114.0			115.3	1.1%	0.4	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/12	2.976	94.2			95.2	1.1%	0.4	NA	#DIV/0!	NA	#DIV/0!	NA
4Q/17	2.645	106.0			107.1	1.0%	0.4	NA	#DIV/0!	NA	#DIV/0!	NA

Equipment Rents

Car Hire	59.1%	222.8	222.8	0.0%	227.3	2.0%		NA		NA		NA
Lease Rentals	40.9%	231.7	231.7	0.0%	231.2	-0.2%	0.0	NA	0.0	NA	0.0	NA
	1.0000											
ER Weighted Avg		226.3	226.4	0.0%	228.9	1.1%	0.0	NA	0.0	NA	0.0	NA
ER Linked		238.9			241.5	1.1%	0.0	NA	#DIV/0!	NA	#DIV/0!	NA

<i>Impact/Check of weight change</i>	<u>17 Wts</u>	<u>18 Wts</u>
Labor	140.970	146.751
Fuel	50.578	38.478
Material & Supplies	14.201	13.928
Equipment Rents	12.901	12.662
Depreciation	28.375	33.780
Interest	0.936	1.310
Other	52.596	54.681
Weighted Avg.	300.557	301.590
ER Weighted Avg.	226.6715	226.4401

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