



John T. Gray
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December 3, 2021

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

This submission is the AAR forecast of the first quarter 2022 All-Inclusive Index and Rail Cost Adjustment Factor, filed in Ex Parte No. 290 (Sub-No. 5) (2022-1) *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 first quarter 2022 results and compares to the previous quarter. Both quarters are shown on a 4Q\2017=100 base.

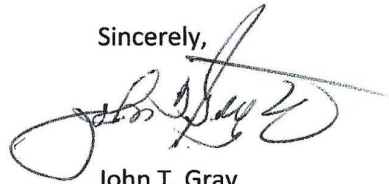
	<u>2021Q4</u>	<u>2022Q1</u>	<u>% Change</u>
All-Inclusive Index	112.7	116.0	2.9
Preliminary RCAF	1.127	1.160	2.9
Forecast Error Adjustment	0.012	-0.006	
RCAF (Unadjusted)	1.139	1.154	1.3
Productivity Adjustment Factor	2.4087	2.4135	
RCAF (Adjusted)	0.473	0.478	1.1
PAF-5	2.5534	2.5585	
RCAF-5	0.446	0.451	1.1

December 3, 2021

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 provided 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,

A handwritten signature in black ink, appearing to read "John T. Gray", with a large, stylized loop at the end.

John T. Gray

Attachments

**First Quarter 2022
All-Inclusive Index**

Ex Parte No. 290 (Sub-No. 5) (2022-1)

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

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

December 3, 2021

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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 first quarter 2022. Each year's first quarter calculation utilizes new health and welfare rates, which are listed in Appendix A on page 5. New payroll tax rates and maximum taxable earnings (Tier I, Tier II, and Unemployment Insurance) also become effective January 1, and are listed in Appendix A on page 4.

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 2020 (current) and 2019 (previous) weights are shown below. Weights calculated from 2019 data were used for the fourth quarter of 2020 through the third quarter of 2021. Beginning with the fourth quarter of 2021, weights calculated using 2020 data are used. The component with the biggest change in weight was Fuel, which decreased by 4.5 percentage points. Labor and Materials & Supplies fell by 0.2 and 0.4 percentage points, respectively. Equipment Rents was unchanged. The weight for Depreciation increased 2.6 percentage points, and Other increased by 2.3 percentage points.

Weights for RCAF's All-Inclusive Index		
	2020	2019
Labor	32.4 %	32.6 %
Fuel	9.7	14.2
Materials & Supplies	4.5	4.9
Equipment Rents	5.2	5.2
Depreciation	18.5	15.9
Interest	2.7	2.5
Other	27.0	24.7
Total	100.0	100.0

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

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

All-Inclusive Index

First Quarter 2022

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		
	2020	Previous	Current	Percent
	Weights	2021Q4	2022Q1	Change
1. Labor	32.4%	454.9	469.5	3.2 %
2. Fuel	9.7%	268.8	303.5	12.9
3. M&S	4.5%	288.8	298.2	3.3
4. Equipment Rents	5.2%	248.4	249.9	0.6
5. Depreciation	18.5%	227.9	229.0	0.5
6. Interest	2.7%	51.1	51.1	0.0
7. Other	27.0%	278.1	280.6	0.9
8. Weighted Average				
a. 1980 = 100		318.0	327.5	
b. 1980 = 100 (linked)		298.0	306.9 ¹	
c. 4Q17 = 100		112.7	116.0 ²	2.9

¹ Index80 = (Current Index / Previous Index) * the Previous Quarter Linked Index

$$= (327.5 / 318.0) \times 298.0$$

$$= 306.9$$

² To calculate the 4Q17 = 100 index:

Index4Q17 = (Current Linked Index / 4Q17 Basing Factor) * 100

$$= 306.9 \text{ divided by } 264.5 \text{ times } 100$$

$$= 116.0$$

Indexes based on other periods:

$$4Q12 \text{ based index} = 306.9 / 297.6 \times 100 = 103.1$$

$$4Q07 \text{ based index} = 306.9 / 245.9 \times 100 = 124.8$$

$$4Q02 \text{ based index} = 306.9 / 192.1 \times 100 = 159.8$$

$$4Q97 \text{ based index} = 306.9 / 173.2 \times 100 = 177.2$$

$$4Q92 \text{ based index} = 306.9 / 156.9 \times 100 = 195.6$$

Forecast vs. Actual All-Inclusive Index

Third Quarter 2021

Because of data availability, the forecast error adjustment has a two-quarter lag from each filing. As shown below, the third quarter actual index of 110.7 is 0.6 index points below the forecast value of 111.3. Therefore, the forecast error adjustment for first quarter 2022 is -0.6 index points.

	2019	Third Quarter 2021		Amt
	Weights	Forecast	Actual	Difference
1. Labor	32.6%	447.9	447.9	
2. Fuel	14.2%	254.5	270.0	
3. M&S	4.9%	277.8	277.8	
4. Equipment Rents ¹	5.2%	250.0	246.2	
5. Depreciation	15.9%	228.0	228.3	
6. Interest	2.5%	55.7	55.7	
7. Other	24.7%	278.7	267.3	
8. Weighted Average				
a. 1980 = 100		315.3	314.5	
b. 1980 = 100 (linked)		294.4	292.8 ²	
c. 4Q17 = 100 ³		111.3	110.7	-0.6

Forecast error  **-0.6 index points**

¹	2019	Third Quarter 2021	
	Weights	Forecast	Actual
Car-Hire	61.4%	211.2	211.8
Lease Rentals	38.6%	278.7	267.3
Weighted Average		237.3	233.2
Weighted Average (linked)		250.0	246.2

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

$$292.8 = 314.5 / 306.5 \times 285.4$$

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 19, 2021, the Surface Transportation Board served a decision which proposed to adopt 0.8 percent as the geometric average productivity change for the five most recent years available. Their five year rolling geometric average calculation added the year 2019 and removed the year 2014. The components of this average annual value are shown on the following table in ratio format – therefore, 1.008 is the same as an increase of 0.8 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			
2015 - 2019			
Year	Output Index (1)	Input Index (2)	Productivity Changes (3)
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
2019	0.968	0.961	1.007
Average			1.008
Previous Average (2014-2018)			1.010

Calculation of PAF and PAF-5				
For 2015-2019, use fourth root of avg. productivity change = 1.0020				
For 2014-2018, use fourth root of avg. productivity change = 1.0025				
Quarter	Year	PAF	PAF-5	
Q1	2021	2.3943	2.5343	2014-2018
Q2	2021	2.3991	2.5406	
Q3	2021	2.4039	2.5470	2015-2019
Q4	2021	2.4087	2.5534	
Q1	2022	2.4135	2.5585	

Rail Cost Adjustment Factor

First Quarter 2022

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 2021Q4	Current 2022Q1	Percent Change
All-Inclusive Index ¹	112.7	116.0	2.9
Preliminary RCAF ²	1.127	1.160	2.9
Forecast Error Adjustment ³	0.012	-0.006	
RCAF (Unadjusted) ⁴	1.139	1.154	1.3
Productivity Adjustment Factor ⁵	2.4087	2.4135	
RCAF (Adjusted) ⁶	0.473	0.478	1.1
PAF-5 ⁷	2.5534	2.5585	
RCAF-5 ⁸	0.446	0.451	1.1

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

First Quarter 2022

The first quarter 2022 Labor Index is 3.2 percent higher than the previous quarter. Increases within the Supplements portion of the index are responsible for this quarter's higher Labor Index.

Wage Rate Index

The Wage Rate Index portion of the Labor Index decreased by 0.1%.

Wage Increases: There are no national wage increases currently scheduled for the first quarter. There were a few increases for independent groups that ultimately rounded to zero and did not have an impact on the wage rate index.

Lump Sums: The first quarter lump sum rate fell 2.1%. One amount was fully amortized and removed, and it was replaced by one new similar amount.

Back Pay: The back pay rate fell from \$0.019 to zero. One amount has now been fully amortized and removed from the rate, and there is one extremely small amount remaining that rounds to zero.

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 first quarter rate is unchanged from the prior quarter.

Labor

First Quarter 2022

Supplements Index

The Supplements Index increased 7.5 percent this quarter. Health and Welfare premiums, payroll tax rates, maximum taxable earnings, and the rate for unemployment insurance, are all typically adjusted once per year, effective on January 1. All of the components of the supplements index increased in the first quarter.

Health & Welfare: The Health & Welfare rate increased 8.4 percent. Employer premiums (the amount the employer contributes for their employees' insurance) are higher in 2022. See pages 4 and 5 of this appendix for details.

Railroad Retirement: The Railroad Retirement rate increased 0.8 percent. Taxable wages fell slightly, and the maximum taxable earnings for Railroad Retirement's Tier I and Tier II both increased for 2022. Tax rates for employers did not change. Page 4 of this appendix lists tax rates and maximum taxable earnings for 2020 through 2022.

Unemployment Insurance: The Unemployment Insurance rate increased 102.4%, or 60.7 cents, because of a new unemployment insurance tax rate effective January 1. The weighted average Class I railroad rate for 2022 is 11.23%, compared to 5.69% for 2021. Basic tax rates can range from a minimum of 0.65 percent to a maximum of 12.5 percent. There was also a surcharge of 3.5 percent applied to the rate for 2022. Page 4 of this appendix lists tax rates for 2020 through 2022.

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 first quarter rate is 3.8 percent higher than last quarter.

Labor Index Calculation

As shown in Table A-1 on the next page, the 0.1 percent decrease in the Wage Rate Index and the 7.5 percent increase in the Supplements Index combined to cause the Labor Index to be 3.2 percent higher than the previous quarter. The linked first quarter 2022 Labor index is 469.5, which is 4.6 percent higher than one year ago.

Labor

First Quarter 2022

Table A-1 Labor Index

	2021Q4	2022Q1	Change	
			Percent	Amount
<u>Base Wage</u> – Straight Time & Pay For Time Not Worked	\$44.665	\$44.665	0.0%	\$0.000
Adjustments:				
Lump Sum	0.142	0.139	-2.1%	-\$0.003
Back Pay	0.019	0.000	-100.0%	-\$0.019
Other	0.118	0.118	0.0%	\$0.000
Total Wages	<u>44.944</u>	<u>44.922</u>	0.0%	-\$0.022
Health & Welfare Benefits	8.876	9.623	8.4%	\$0.747
RR Retirement & Medicare	9.315	9.385	0.8%	\$0.070
Unemployment Insurance	0.593	1.200	102.4%	\$0.607
Other	0.183	0.190	3.8%	\$0.007
Total Supplements	<u>\$18.967</u>	<u>\$20.398</u>	7.5%	\$1.431
Total Labor (as info only)	\$63.911	\$65.320		
Wage Index¹	384.6	384.4	-0.1%	
Supplements Index²	700.9	753.8	7.5%	
Total labor Index, 2020 Weights ³	477.3	492.6		
Labor Index (linked)⁴	454.9	469.5	3.2%	

¹ 1980 wage rate \$11.685

² 1980 supplements rate \$2.706

³ 2020 weights: wages, supplements 70.7% 29.3%

⁴ 2022Q1 linked Index = 2021Q4 linked x (2022Q1 / 2021Q4)
 = 454.9 x 492.6 / 477.3

Labor

First Quarter 2022

Supplement Comparisons

Health and Welfare Rates

Plan	Railroad Payment Per Employee Per Month				
	2020	2021	2022	Change	
				'20-'21	'21-'22
Group Health & Welfare	\$1,606.79	\$1,697.55	\$1,856.96	5.6%	9.4%
Early Retirement Major Medical	114.37	116.94	84.14	2.2%	-28.0%
Group Dental	63.67	63.67	75.01	0.0%	17.8%
Group Vision	8.44	8.51	8.51	0.8%	0.0%
Supplemental Sickness					
Maintenance of Way	39.94	39.94	48.22	0.0%	20.7%
Shop Crafts	61.93	87.74	98.52	41.7%	12.3%
Signalmen	38.31	45.05	62.17	17.6%	38.0%
Yardmasters	54.00	60.48	74.61	12.0%	23.4%

Railroad Retirement and Medicare

	Earnings Base			Employer Rate		
	2020	2021	2022	2020	2021	2022
Tier I	\$137,700	\$142,800	\$147,000	6.20%	6.20%	6.20%
Tier II	102,300	106,200	109,200	13.10%	13.10%	13.10%
Medicare	no limit	no limit	no limit	1.45%	1.45%	1.45%

Unemployment Insurance

Monthly Taxable Earnings Base			Weighted Avg. Class I Rate		
2020	2021	2022	2020	2021	2022
\$1,655	\$1,710	\$1,755	0.99%	5.69%	11.23%

Labor

First Quarter 2022

NATIONAL RAILWAY LABOR CONFERENCE

EMPLOYEE BENEFITS DEPARTMENT

251 – 18th Street, South, Suite 750, Arlington, VA 22202 ~~~ PHONE: (571) 336-7600

David B. Marcus
Director Employee Benefits
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November 17, 2021

Ms. Tiffany Placker (tplacker@aar.org)
Economist
Association of American Railroads
425 Third Street, SW, Suite 1000
Washington, D.C. 20024

Dear Ms. Placker:

The revised employer monthly Payment Rates which are effective January 1, 2022 are as follows:

Railroad Employees National Health & Welfare Plan & National Railway Carriers/United Transportation Union H&W Plan Non-Hospital Road	\$ 1,856.96
Railroad Employees National Early Retirement Major Medical Benefit Plan Non-Hospital Road	\$ 84.14
Aetna - National Dental Plan	\$ 75.01
Aetna - Supplemental Sickness Plans	
ShopCrafts	\$ 98.52
Signalmen	\$ 62.17
Maintenance of Way	\$ 48.22
Trustmark - Supplemental Sickness Plans Yardmasters	\$ 74.61
EyeMed - National Vision Plan	\$ 8.51

If you have any questions or need clarification, please contact me.

Very truly yours,


Eureka Norment

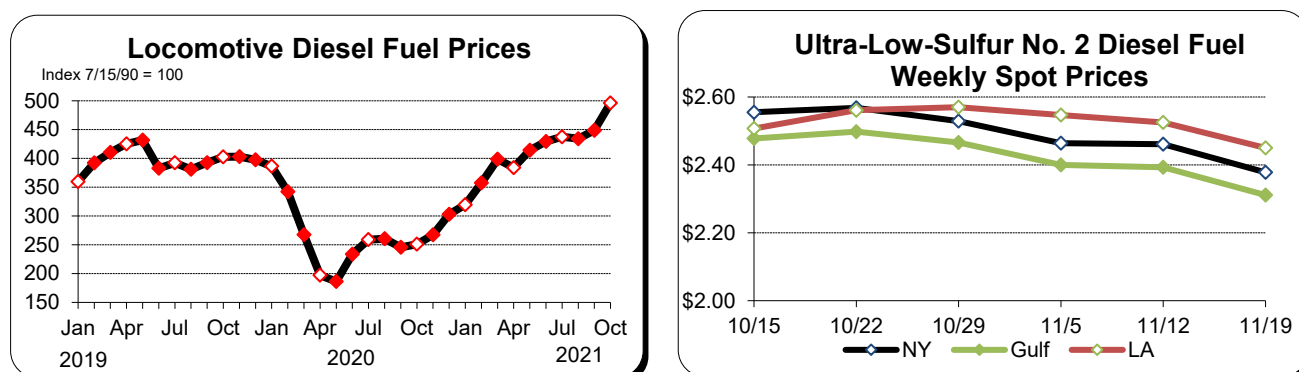
cc: Deena Beshir, AAR (dbeshir@aar.org)

Fuel

First Quarter 2022

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 hit a low point in May 2020, but has been steadily rising since then. While average prices for locomotive diesel fuel are available only through October 2021, data through four weeks of November are available for related fuel types. According to the Energy Information Administration, the daily spot price as of November 22nd for Ultra-Low-Sulfur Diesel Fuel* is an average of 5.5 percent lower than the average for October. The chart below (on left) shows the AAR's Monthly Locomotive Diesel Fuel Price Index through October 2021. 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 towards the end of November are lower than prices that actually occurred in October. Railroads that responded to the AAR's forecast survey expect prices to decrease by January (Q1) compared to prices that actually occurred for October (Q4). The first quarter 2022 forecast is 12.9 percent higher than the previous quarter forecast, but 0.9 percent lower than the prior quarter actual.

Forecast Fuel Index (1980 = 100)	303.5
Change from previous quarter forecast	12.9%
Change from previous quarter actual	-0.9%

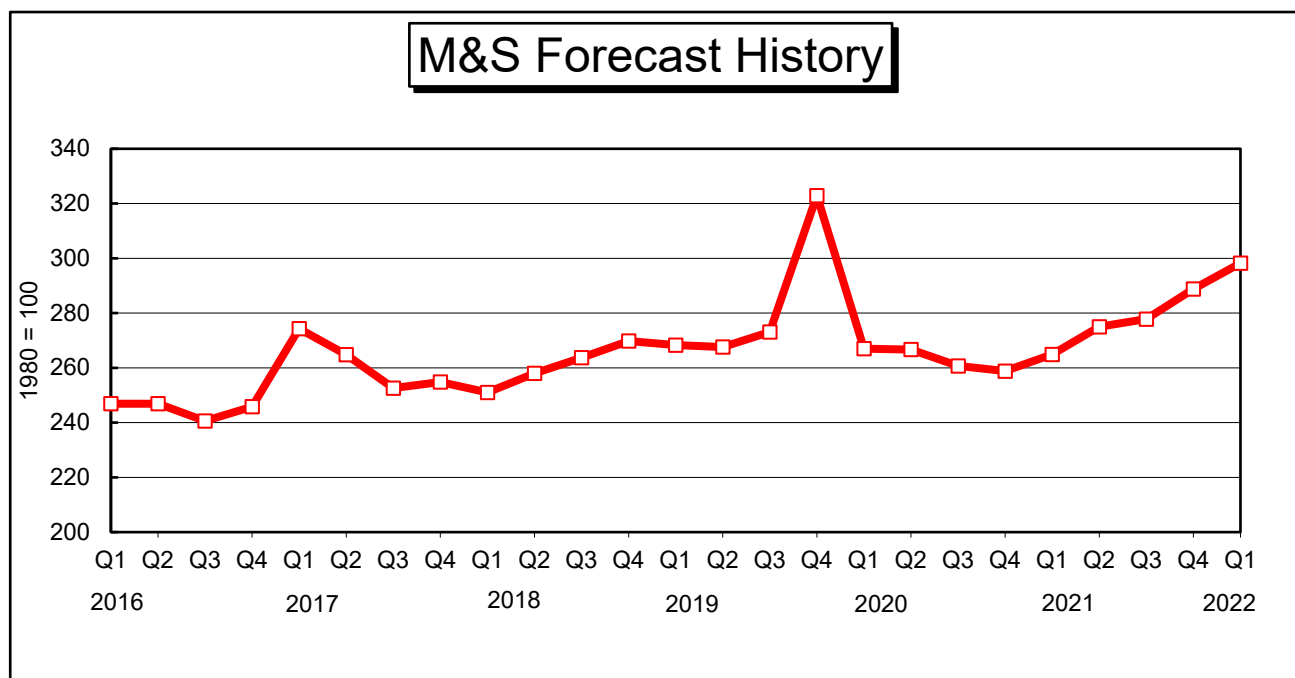
* Heating oil, Ultra-Low-Sulfur No. 2 Diesel Fuel, and locomotive diesel fuel are part of a group of closely related products, commonly labeled as distillates, that differ mostly by their sulfur content. Because of these similarities, these fuels are produced together and have similar pricing trends.

Materials & Supplies

First Quarter 2022

The first quarter 2022 Materials & Supplies Index increased 3.3 percent from the previous quarter. Prices increased for the Miscellaneous Products category.

2022Q1	Materials & Supplies Index =	298.2
2021Q4	Materials & Supplies Index =	288.8
Difference		9.4 basis points or 3.3 %



Equipment Rents

First Quarter 2022

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 calculates the Equipment Rents Index. The first quarter Car Hire portion of the Index rose 0.4 percent because of higher average rates for privately owned cars. A 0.9 percent increase in the projected PPI-LF (See Appendix G) used as a proxy for Lease Rentals, combined with the 0.4 percent increase for Car Hire, caused the Equipment Rents Index to rise 0.6 percent.

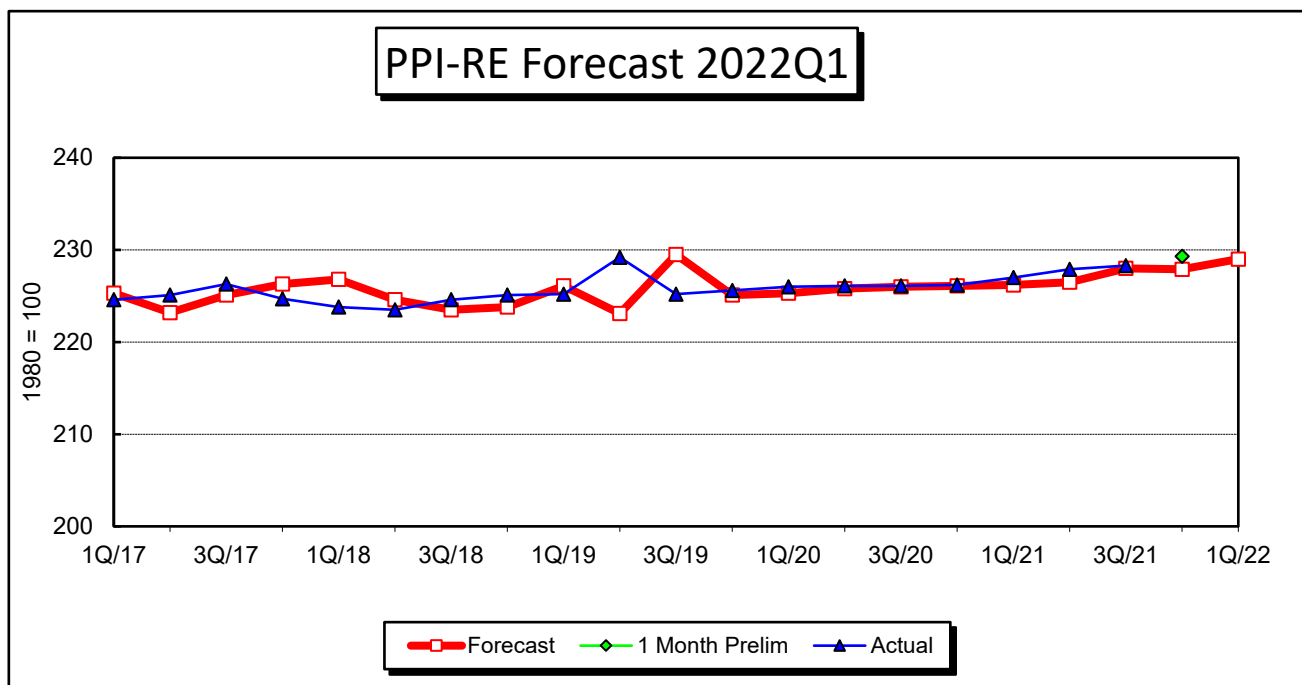
	2020			Percent
	Weight	2021Q4	2022Q1	Change
Car Hire	64.7%	209.1	209.9	0.4 %
Lease Rentals	35.3%	278.1	280.6	0.9
Weighted Average		233.5	234.9	0.6
Weighted Average (Linked)		248.4	249.9	0.6

Depreciation

First Quarter 2022

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 0.5% higher than the previous quarter's forecast.

Forecast of Depreciation Index (1982=100)	207.0
Forecast of Depreciation Index (1980=100)	229.0
Change from previous quarter forecast	0.5% = 0.48%
Change from actual first month of previous quarter	-0.1% = -0.13%
Change from same quarter of prior year (actual)	0.9%



Depreciation

First Quarter 2022

PPI RAILROAD EQUIPMENT

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 1.08 and for Box-Jenkins was 2.39. 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, Additive seasonality
NA(0.547, 0.264)

Component	Smoothing Wgt		Final Value
Level	0.5468		206.8
Seasonal	0.2645		
Seasonal Indexes			
Jan - Mar	-0.2305	0.1319	0.4736
Apr - Jun	-0.09635	-0.1165	-0.006407
Jul - Sep	0.1495	0.4345	-0.01824
Oct - Dec	0.1042	-0.4596	-0.3661

Within-Sample Statistics

Sample size	72	No. parameters	2
Mean	203.75	Std. deviation	1.4
R-square	0.65	Adj. R-square	0.64
Durbin-Watson	1.73	Ljung-Box(18)	20.9 P=0.71
Forecast error	0.84	BIC	0.88
MAPE	0.27	SMAPE	0.27
RMSE	0.83	MAD	0.56
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2021-May	206
2021-Jun	206.1
2021-Jul	206.3
2021-Aug	206.4
2021-Sep	206.4
2021-Oct	207.3

Forecasted Values

2.5 Lower	Forecast	97.5 Upper	
Date	2.5 Lower	Forecast	97.5 Upper
2021-Nov	204.658	206.385	208.112
2021-Dec	204.51	206.478	208.447
2022-Jan	204.431	206.614	208.797
2022-Feb	204.598	206.976	209.355
2022-Mar	204.759	207.318	209.877
QTR AVG	204.596	206.969	209.343

Interest

First Quarter 2022

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 2020 data, and was updated in the Q4 filing submitted on September 3, 2021. The Interest Index based on 2020 decreased from 55.7 in 2019 to 51.1 in 2020, and is the lowest in recent history.

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

2020	Interest Rate	4.01%
1980	Interest Rate	7.85%
2022Q1	Interest Index	51.1
2021Q4	Interest Index	51.1
	Percent Change	0.0%

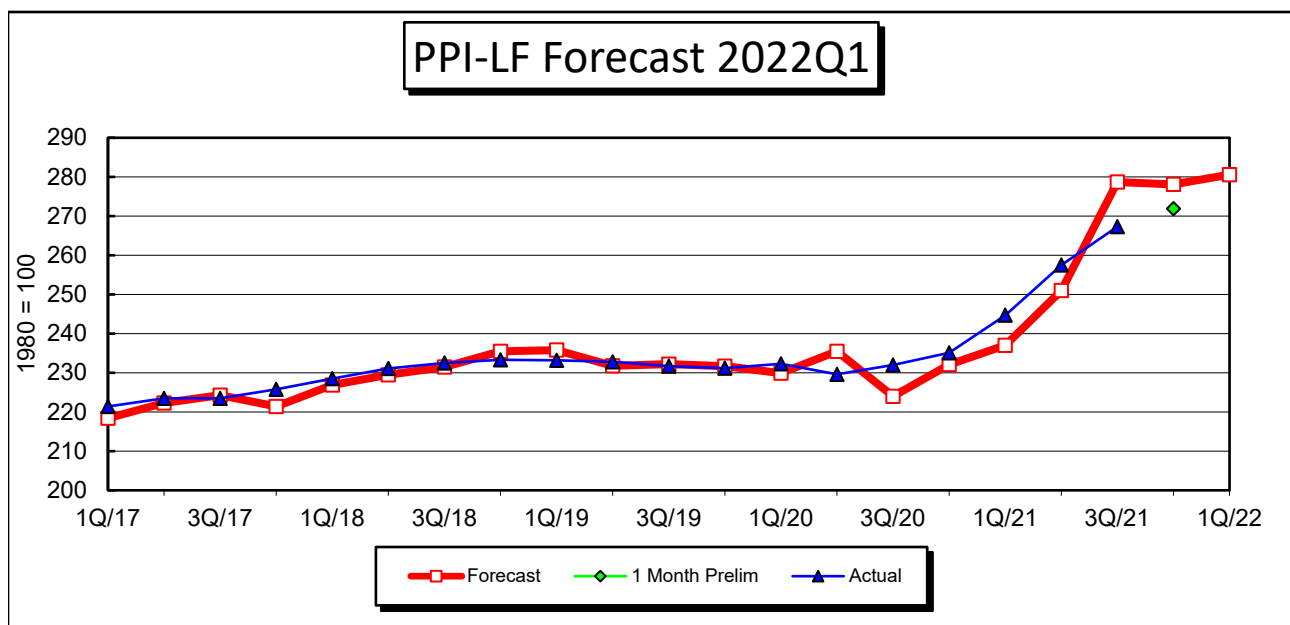
Other Expenses

First Quarter 2022

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

Like the PPI-RE, the PPI-LF is forecast using an ARIMA process on 6 years of monthly data (a sample size of 72) with the most recent available monthly data being the first month of the quarter prior to the forecast quarter. For a first quarter forecast, the most recent month of data available would be for October of the prior year. For a second quarter forecast, January would normally be the most recent month available. April and July would be the most recent months available for third and fourth quarter forecasts, respectively. The output from the forecast model is shown on page 2 of this appendix for 1982=100. The figure forecast by the model is 0.9 percent higher than the prior quarter forecast.

Forecast of Other Expense Index (1982=100)	250.3
Forecast of Other Expense Index (1980=100)	280.6
Change from previous quarter forecast	0.9%
Change from actual first month of previous quarter	3.2%
Change from same quarter of prior year (actual)	14.7%



Other Expenses

First Quarter 2022

PPI INDUSTRIAL COMMODITIES LESS FUEL AND RELATED PRODUCTS AND POWER

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 7.09 and for Box-Jenkins was 10.97.
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(0.947, 1.000, 1.000)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.9467		242.4
Trend	1		1.957
Seasonal	0.9995		
Seasonal Indexes			
Jan - Mar	1.001	0.9993	1
Apr - Jun	0.9995	0.9997	1
Jul - Sep	0.9997	1	0.9994
Oct - Dec	1	1.001	1

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	206.3	Std. deviation	11.65
R-square	1	Adj. R-square	1
Durbin-Watson	1.63	Ljung-Box(18)	19.2 P=0.62
Forecast error	0.58	BIC	0.62
MAPE	0.19	SMAPE	0.19
RMSE	0.56	MAD	0.4
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2021-May	230.5
2021-Jun	234.0
2021-Jul	236.4
2021-Aug	238.4
2021-Sep	240.3
2021-Oct	242.5

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2021-Nov	243.309	244.516	245.723
2021-Dec	243.746	246.33	248.915
2022-Jan	245.048	248.497	251.947
2022-Feb	245.92	250.058	254.195
2022-Mar	247.49	252.215	256.940
QTR AVG	246.153	250.257	254.361

Railroad and Union Abbreviations

First Quarter 2022

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.)
CMQ	Central Maine & Quebec (Part of Canadian Pacific's U.S. operations, included beginning 2021Q4.)
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 2022 Q1 RCAF

December 3, 2021

- 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 . 2022/Q1 RCAF Lump Sum Amortization summary, public version (1 page)
- 7 . 2022/Q1 RCAF Back Pay Amortization summary, public version (1 page)
- 8 . Health & Welfare worksheet (1 page) and NRLC H&W Rates for 2021 (1 page)
- 9 . Railroad Retirement spreadsheet (5 pages)
- 10 . 2022 Tax Rates and Maximum Taxable Earnings from Railroad Retirement Board
- 11 . Unemployment Insurance Tax worksheet (1 page)
- 12 . Unemployment Insurance Tax Rate for 2022 memo and RRB Maximum Taxable Earnings (2 pages)
- 13 . 2-page SAS run for 2022 Q1 Unemployment Insurance Tax
- 14 . 2 pages from EIA including spot prices for various distillates
- 15 . Summary of Materials & Supplies - "U.S. Summary by Composition Category" (1 page)
- 16 . RCAF Car Hire Forecast Spreadsheet for Equipment Rents (2 pages) plus source data page
- 17 . 6 pages of PPI-RE for Depreciation including graph page, input/output, and BLS source data
- 18 . 6 pages of PPI-LF for Other (and Lease Rentals) incl. graph page, input/output, BLS source data
- 19 . 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 2020 Benchmarks

	20 Wts.	3Q/21	3Q/21 Rebenched As Info Only	% Chg	4Q/21	% Chg	1Q/22	% Chg	2Q/22	% Chg	3Q/22	% Chg
Straight Time		\$37.189	\$37.452	0.7%	\$37.452	0.7%	\$37.452	0.0%		--		--
PFTNW		\$7.288	\$7.213	-1.0%	\$7.213	-1.0%	\$7.213	0.0%		--		--
Total		\$44.477	\$44.665	0.4%	\$44.665	0.4%	\$44.665	0.0%	\$0.000	--	\$0.000	--
Adjustments												
Lump Sum		\$0.125	\$0.146		\$0.142		\$0.139					
Back Pay		\$0.017	\$0.019		\$0.019		\$0.000					
Other		\$0.102	\$0.118		\$0.118		\$0.118					
Total Wages		\$44.721	\$44.948	0.5%	\$44.944	0.5%	\$44.922	0.0%	\$0.000	--	\$0.000	--
Pre-Tax Reduction		(\$1.395)	(\$1.440)		(\$1.440)		(\$1.440)					
Taxable Wages		\$43.326	\$43.508		\$43.504		\$43.482		\$0.000		\$0.000	
H & W		\$8.522	\$8.876	4.2%	\$8.876	4.2%	\$9.623	8.4%		--		--
RR Ret & Medicare		\$9.012	\$9.316	3.4%	\$9.315	3.4%	\$9.385	0.8%		--		--
Unemp. Insurance		\$0.569	\$0.593	4.2%	\$0.593	4.2%	\$1.200	102.4%		--		--
Other		\$0.311	\$0.362	16.4%	\$0.183	-41.2%	\$0.190	3.8%		--		--
Total		\$18.414	\$19.147	4.0%	\$18.967	3.0%	\$20.398	7.5%	\$0.000	--	\$0.000	--
Adjustments												
Total Supplements		\$18.414	\$19.147	4.0%	\$18.967	3.0%	\$20.398	7.5%	\$0.000	--	\$0.000	--
Total Labor		\$63.135	\$64.095	1.5%	\$63.911	1.2%	\$65.320	2.2%	\$0.000	--	\$0.000	--
Wage Rate Index	0.7070	382.7	384.7	0.5%	384.6	0.5%	384.4	-0.1%	0.0	--	0.0	--
Supplements Index	0.2930	680.5	707.6	4.0%	700.9	3.0%	753.8	7.5%	0.0	--	0.0	--
Total Labor Index '19 Wts.		468.8										
Total Labor Index '20 Wts.		470.0	479.3	2.0%	477.3	1.6%	492.6	3.2%	0.0	--	0.0	--
Labor Index (Linked)		447.9			454.9	1.6%	469.5	3.2%	0.0	-100.0%	#DIV/0!	--

All Inclusive Index and RCAF using 2020 Benchmarks and Weights

	20 Wts.	3Q/21	20 Wts. 3Q/21	% Chg	4Q/21	% Chg	1Q/22	% Chg	2Q/22	% Chg	3Q/22	% Chg
Labor	0.324	447.90	447.9	0.0%	454.9	1.6%	469.5	3.2%	0.0	-100.0%	#DIV/0!	--
Fuel	0.097	254.50	254.5	0.0%	268.8	5.6%	303.5	12.9%		--		--
M&S	0.045	277.80	277.8	0.0%	288.8	4.0%	298.2	3.3%		--		--
Equip. Rents	0.052	250.00	250.0	0.0%	248.4	-0.6%	249.9	0.6%	0.0	-100.0%	#DIV/0!	--
Depreciation	0.185	228.00	228.0	0.0%	227.9	0.0%	229.0	0.5%		--		--
Interest	0.027	55.70	55.7	0.0%	51.1	-8.3%	51.1	0.0%	51.1	0.0%	51.1	0.0%
Other	0.270	278.70	278.7	0.0%	278.1	-0.2%	280.6	0.9%		--		--
Weighted Avg.	1.000	315.30	314.2	-0.3%	318.0	1.2%	327.5	3.0%	1.4	-99.6%	#DIV/0!	--
Linked		294.40			298.0	1.2%	306.9	3.0%	1.3	-99.6%	#DIV/0!	--
Basing Factor												
10/1/80 basis	102.7	286.7			290.2	1.2%	298.8	3.0%	1.3	-99.6%	#DIV/0!	--
10/1/82	120.9	243.5			246.5	1.2%	253.8	3.0%	1.1	-99.6%	#DIV/0!	--
4Q/87	132.2	222.7			225.4	1.2%	232.1	3.0%	1.0	-99.6%	#DIV/0!	--
4Q/92	156.9	187.6			189.9	1.2%	195.6	3.0%	0.8	-99.6%	#DIV/0!	--
4Q/97	173.2	170.0			172.1	1.2%	177.2	3.0%	0.8	-99.5%	#DIV/0!	--
4Q/02	192.1	153.3			155.1	1.2%	159.8	3.0%	0.7	-99.6%	#DIV/0!	--
4Q/07	245.9	119.7			121.2	1.3%	124.8	3.0%	0.5	-99.6%	#DIV/0!	--
4Q/12	297.6	98.9			100.1	1.2%	103.1	3.0%	0.4	-99.6%	#DIV/0!	--
4Q/17 basis	264.5	111.3			112.7	1.3%	116.0	2.9%	0.5	-99.6%	#DIV/0!	--
Car Hire	0.647	211.20	211.2	0.0%	209.1	-1.0%	209.9	0.4%		--		--
Lease Rents	0.353	278.70	278.7	0.0%	278.1	-0.2%	280.6	0.9%	0.0	--	0.0	--
Weighted Avg Eq Rents		237.30	235.0	-1.0%	233.5	-0.6%	234.9	0.6%	0.0	--	0.0	--
Linked Equipment Rents		250.00			248.4	-0.6%	249.9	0.6%	0.0	-100.0%	#DIV/0!	--
Preliminary RCAF		1.113			1.127	1.26%	1.160	2.9%	0.005	-99.6%	#DIV/0!	--
Forecast Error Adj.		0.021			0.012		(0.006)					
RCAF Unadjusted		1.134			1.139	0.44%	1.154	1.3%	0.005	-99.6%	#DIV/0!	--
PAF		2.4039			2.4087	0.20%	2.4135	0.20%		--		--
RCAF Adjusted		0.472			0.473	0.21%	0.478	1.1%	#DIV/0!	--	#DIV/0!	--
PAF-5		2.5470			2.5534	0.25%	2.5585	0.20%		--		--
RCAF-5		0.445			0.446	0.22%	0.451	1.1%	#DIV/0!	--	#DIV/0!	--

Hourly Rate for 2022 Q1

Straight Time and Time Paid For But Not Worked

2022Q1 Straight Time Hourly Rate (from national spreadsheet)	\$37.450
No change	

Adjustments to 2020 base:

Added 2021 Q1

Miscellaneous Independents	Nothing	0.000
Soo Corp.	A few GWIs	0.001

Added 2021 Q2

Miscellaneous Independents	Nothing	0.000
Soo Corp.	Nothing	0.000

Added 2021 Q3

Miscellaneous Independents	Nothing	0.000
Soo Corp.	A few GWIs	0.001

Added 2021 Q4

Miscellaneous Independents	Nothing	0.000
Soo Corp.	A few GWIs but rounds to zero	0.000

Added 2022 Q1

Miscellaneous Independents	Nothing	0.000
Soo Corp.	A few GWIs but rounds to zero	0.000

Adjusted STHR Total	\$37.452
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Pay For Time Not Worked

PFTNW (from national spreadsheet)		\$7.213
Ratio Adj STHR to Nat STHR	37.452 / 37.450 =	1.00005

Adjusted Pay For Time Not Worked	\$7.213
---	----------------

Adjusted STHR + Adjusted Pay For Time Not Worked	\$44.665
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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, DM&E, and CMQ.

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 1Q/2022

U.S. ST Hours = 233,382,710
Wage Statistics are for 2020

Union Group	Employees	Mo. Rate	Annual \$
National ATDA (BNSF, CSX, KCS, NS, SOO, GTW, WC)	1,566	(\$228.89)	(\$4,301,300.88)
National BLET (BNSF, CSX, KCS, NS, UP, SOO, DH)	18,803	(\$228.89)	(\$51,645,824.04)
National BMWE (All except SOO, DME, DH)	19,988	(\$228.89)	(\$54,900,639.84)
National BRS (All except DME)	6,236	(\$228.89)	(\$17,128,296.48)
National IAM (BNSF, CSX, KCS, NS, SOO, UP)	5,268	(\$228.89)	(\$14,469,510.24)
National IBBM (BNSF, CSX, KCS, NS, SOO, UP, IC)	574	(\$228.89)	(\$1,576,594.32)
National IBEW (All except DME)	4,304	(\$228.89)	(\$11,821,710.72)
National NCFO (All except DME and WC)	1,675	(\$228.89)	(\$4,600,689.00)
National SMW (BNSF, CSX, KCS, NS, UP, IC)	644	(\$228.89)	(\$1,768,861.92)
National TCU (All except DME and DH)	4,107	(\$228.89)	(\$11,280,614.76)
National TCU-CAR (All except DME)	6,780	(\$228.89)	(\$18,622,490.40)
National UTU (BNSF, CSX, KCS, NS, UP, SOO, DH)	28,368	(\$228.89)	(\$77,917,818.24)
Yardmasters (BNSF, CSX, KCS, NS, UP, SOO, DH)	1,359	(\$228.89)	(\$3,732,738.12)
Misc Indep (DME, CMQ, portions of DH & SOO, portions of CN)	3,454	(\$233.30)	(\$9,669,818.40)
Total Union	103,126		(\$283,436,907.36)
All Other @ \$4,380,345.49 total per month			(\$52,564,145.88)
Total			(\$336,001,053.24)

Reduction in Wage Rate Per ST Hour	-\$1.43969985
Deduct this amount from the Wage Rate	-\$1.440

National Contracts U.S.

Straight Time Hourly Rate															Check
Weight	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTRS	OTHER	Sum
	0.219418	0.03139	0.169244	0.004842	0.050052	0.16002	0.052721	0.012743	0.041265	0.00436	0.033416	0.021306	0.010707	0.188516	1.00000
2020 Avg.	32.720	31.926	34.937	33.380	35.675	30.832	33.391	28.884	33.755	33.138	33.880	45.331	43.330	54.354	505.533
12/31/20	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	505.557
1/1/21	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	
4/1/21	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	
7/1/21	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	
10/1/21	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	
1/1/22	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	
4/1/22	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	
7/1/22	32.720	31.926	34.937	33.380	35.680	30.832	33.397	28.886	33.757	33.138	33.884	45.331	43.337	54.354	

Weighted Straight Time Hourly Rate															
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTRS	OTHER	Total
2020 Avg.	7.179	1.002	5.913	0.162	1.786	4.934	1.760	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
12/31/20	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
1/1/21	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
4/1/21	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
7/1/21	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
10/1/21	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
1/1/22	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
4/1/22	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450
7/1/22	7.179	1.002	5.913	0.162	1.786	4.934	1.761	0.368	1.393	0.144	1.132	0.966	0.464	10.247	37.450

Note: The 2020 Average and 12/31/20 Straight Time Hourly Rates are the industry rates, and include all Class I railroad employees. The rates for 1/1/21 through 7/1/22 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 2020 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	YDMSTRS	OTHER	1.00000
2020 Avg.	0.219418	0.03139	0.169244	0.004842	0.050052	0.16002	0.052721	0.012743	0.041265	0.00436	0.033416	0.021306	0.010707	0.188516	89.098
12/31/20	11.314	4.708	12.808	5.374	8.212	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.970	1.147	
1/1/21	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	
4/1/21	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	
7/1/21	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	
10/1/21	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	
1/1/22	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	
4/1/22	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	
7/1/22	11.314	4.708	12.808	5.374	8.213	4.825	4.814	4.067	5.128	4.331	5.914	7.488	8.972	1.147	

Pay For Time Not Worked Hourly Rate															
	UTU	TCU	BLET	SMWIA	BRS	BMWE	TCU-CAR	NCFO	IAM	IBBM	IBEW	ATDA	YDMSTRS	OTHER	Total
2020 Avg.	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.212
12/31/20	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
1/1/21	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
4/1/21	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
7/1/21	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
10/1/21	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
1/1/22	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
4/1/22	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213
7/1/22	2.482	0.148	2.168	0.026	0.411	0.772	0.254	0.052	0.212	0.019	0.198	0.160	0.096	0.216	7.213

U.S. National Contract

UTU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				32.72007	11.31387
12/31/20 Industry Rate				32.72007	11.31387
1/1/21			93.628%	32.72007	11.31387
4/1/21			93.628%	32.72007	11.31387
7/1/21			93.628%	32.72007	11.31387
10/1/21			93.628%	32.72007	11.31387
1/1/22			93.628%	32.72007	11.31387
4/1/22			93.628%	32.72007	11.31387
7/1/22			93.628%	32.72007	11.31387

TCU

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				31.92598	4.70821
12/31/20 Industry Rate				31.92598	4.70821
1/1/21			97.830%	31.92598	4.70821
4/1/21			97.830%	31.92598	4.70821
7/1/21			97.830%	31.92598	4.70821
10/1/21			97.830%	31.92598	4.70821
1/1/22			97.830%	31.92598	4.70821
4/1/22			97.830%	31.92598	4.70821
7/1/22			97.830%	31.92598	4.70821

BLET

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				34.93658	12.80776
12/31/20 Industry Rate				34.93658	12.80776
1/1/21			63.923%	34.93658	12.80776
4/1/21			63.923%	34.93658	12.80776
7/1/21			63.923%	34.93658	12.80776
10/1/21			63.923%	34.93658	12.80776
1/1/22			63.923%	34.93658	12.80776
4/1/22			63.923%	34.93658	12.80776
7/1/22			63.923%	34.93658	12.80776

SMWIA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				33.37959	5.37374
12/31/20 Industry Rate				33.37959	5.37374
1/1/21			100.000%	33.37959	5.37374
4/1/21			100.000%	33.37959	5.37374
7/1/21			100.000%	33.37959	5.37374
10/1/21			100.000%	33.37959	5.37374
1/1/22			100.000%	33.37959	5.37374
4/1/22			100.000%	33.37959	5.37374
7/1/22			100.000%	33.37959	5.37374

BRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				35.67541	8.21198
12/31/20 Industry Rate				35.67960	8.21295
1/1/21			98.091%	35.67960	8.21295
4/1/21			98.091%	35.67960	8.21295
7/1/21			98.091%	35.67960	8.21295
10/1/21			98.091%	35.67960	8.21295
1/1/22			98.091%	35.67960	8.21295
4/1/22			98.091%	35.67960	8.21295
7/1/22			98.091%	35.67960	8.21295

BMWE

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				30.83204	4.82474
12/31/20 Industry Rate				30.83204	4.82474
1/1/21			97.380%	30.83204	4.82474
4/1/21			97.380%	30.83204	4.82474
7/1/21			97.380%	30.83204	4.82474
10/1/21			97.380%	30.83204	4.82474
1/1/22			97.380%	30.83204	4.82474
4/1/22			97.380%	30.83204	4.82474
7/1/22			97.380%	30.83204	4.82474

U.S. National Contract

TCU-Carmen

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				33.39062	4.81360
12/31/20 Industry Rate				33.39670	4.81448
1/1/21			98.321%	33.39670	4.81448
4/1/21			98.321%	33.39670	4.81448
7/1/21			98.321%	33.39670	4.81448
10/1/21			98.321%	33.39670	4.81448
1/1/22			98.321%	33.39670	4.81448
4/1/22			98.321%	33.39670	4.81448
7/1/22			98.321%	33.39670	4.81448

NCFO

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				28.88391	4.06721
12/31/20 Industry Rate				28.88569	4.06746
1/1/21			99.060%	28.88569	4.06746
4/1/21			99.060%	28.88569	4.06746
7/1/21			99.060%	28.88569	4.06746
10/1/21			99.060%	28.88569	4.06746
1/1/22			99.060%	28.88569	4.06746
4/1/22			99.060%	28.88569	4.06746
7/1/22			99.060%	28.88569	4.06746

IAM

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				33.75459	5.12765
12/31/20 Industry Rate				33.75713	5.12804
1/1/21			98.942%	33.75713	5.12804
4/1/21			98.942%	33.75713	5.12804
7/1/21			98.942%	33.75713	5.12804
10/1/21			98.942%	33.75713	5.12804
1/1/22			98.942%	33.75713	5.12804
4/1/22			98.942%	33.75713	5.12804
7/1/22			98.942%	33.75713	5.12804

U.S. National Contract

IBBM

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				33.13831	4.33053
12/31/20 Industry Rate				33.13831	4.33053
1/1/21			93.731%	33.13831	4.33053
4/1/21			93.731%	33.13831	4.33053
7/1/21			93.731%	33.13831	4.33053
10/1/21			93.731%	33.13831	4.33053
1/1/22			93.731%	33.13831	4.33053
4/1/22			93.731%	33.13831	4.33053
7/1/22			93.731%	33.13831	4.33053

IBEW

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				33.88044	5.91369
12/31/20 Industry Rate				33.88356	5.91423
1/1/21			98.655%	33.88356	5.91423
4/1/21			98.655%	33.88356	5.91423
7/1/21			98.655%	33.88356	5.91423
10/1/21			98.655%	33.88356	5.91423
1/1/22			98.655%	33.88356	5.91423
4/1/22			98.655%	33.88356	5.91423
7/1/22			98.655%	33.88356	5.91423

ATDA

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				45.33094	7.48787
12/31/20 Industry Rate				45.33094	7.48787
1/1/21			73.011%	45.33094	7.48787
4/1/21			73.011%	45.33094	7.48787
7/1/21			73.011%	45.33094	7.48787
10/1/21			73.011%	45.33094	7.48787
1/1/22			73.011%	45.33094	7.48787
4/1/22			73.011%	45.33094	7.48787
7/1/22			73.011%	45.33094	7.48787

YDMSTRS

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				43.33045	8.97042
12/31/20 Industry Rate				43.33694	8.97177
1/1/21			65.927%	43.33694	8.97177
4/1/21			65.927%	43.33694	8.97177
7/1/21			65.927%	43.33694	8.97177
10/1/21			65.927%	43.33694	8.97177
1/1/22			65.927%	43.33694	8.97177
4/1/22			65.927%	43.33694	8.97177
7/1/22			65.927%	43.33694	8.97177

OTHER

	Percentage Increase	Cents Increase	Applicable	ST HR	PFTNW HR
2020 Industry Avg.				54.35410	1.14687
12/31/20 Industry Rate				54.35410	1.14687
1/1/21			100.000%	54.35410	1.14687
4/1/21			100.000%	54.35410	1.14687
7/1/21			100.000%	54.35410	1.14687
10/1/21			100.000%	54.35410	1.14687
1/1/22			100.000%	54.35410	1.14687
4/1/22			100.000%	54.35410	1.14687
7/1/22			100.000%	54.35410	1.14687

Check Sums

	Increase	Applicable	ST HR	PFTNW HR
2020 AVG			505.53303	89.09816
12/31/20			505.55724	
		1278.498%		
		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.

Secured Overnight Financing Rate (SOFR) [As of 11/22/21]

	LATEST	WK AGO	52-WEEK	
			HIGH	LOW
	0.05	0.05	0.11	0.01

DTCC GCF Repo Index

	LATEST	VALUE TRADED (BILLIONS)	52-WEEK	
			HIGH	LOW
Treasury	0.053	43.330	0.125	-0.008
MBS	0.057	9.150	0.131	0.002

Secondary Market

Tuesday, November 23, 2021

Fannie Mae 30-year Mortgage Yields

	LATEST	WK AGO	52-WEEK	
			HIGH	LOW
30 days	2.676	2.592	2.710	1.848
60 days	2.717	2.632	2.754	1.875

U.S. Government Rates

Tuesday, November 23, 2021

Discount Rates [Effective Date: 3/16/20]

	LATEST	WK AGO	52-WEEK	
			HIGH	LOW
	0.25	0.25	0.25	0.25

Federal Funds [Effective Date: 3/16/20]

	LATEST	WK AGO	52-WEEK	
			HIGH	LOW
Effective rate	0.08	0.08	0.10	0.05
Target rate	0.00-0.25	0.00-0.25	0.00-0.25	0.00-0.25
High	0.1600	0.1500	0.2000	0.0700
Low	0.0500	0.0500	0.0900	0.0000
Bid	0.0700	0.0700	0.7000	0.0300
Offer	0.1000	0.1000	0.1200	0.0500

Treasury Bill Auction

	LATEST	WK AGO	52-WEEK	
			HIGH	LOW
4 weeks	0.110	0.050	0.110	0.000
13 weeks	0.050	0.045	0.095	0.015
26 weeks	0.070	0.065	0.100	0.030

Weekly Survey

Thursday, November 18, 2021

Freddie Mac

52-WEEK

**RCAF Lump Sum Amortization
2022/Q1**

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hour	U.S. ST Hours
NS - BLET 2020Q4 PPI	2021Q1	2021Q2				233,382,710
NS - BLET 2021 Ave PPI	2021Q1	2021Q2				233,382,710
NS - BLET 2021 TPB	2021Q1	2021Q2				233,382,710
NS - BLET 2021Q1 PPI	2021Q2	2021Q3				233,382,710
NS - BLET 2021Q2 PPI	2021Q3	2021Q4				233,382,710
NS - BLET 2021Q3 PPI	2021Q4	2022Q1				233,382,710
Total			\$32,443,738	0.13902		

Should be slightly less
than amortized amount.

Fell out

NS - BLET 2020Q3 PPI	2020Q4	2021Q1				233,382,710
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Interest Rate

2020/Q2	1.505
2020/Q3	0.130
2020/Q4	0.100
2021/Q1	0.085
2021/Q2	0.030
2021/Q3	0.015
2021/Q4	0.055
2022/Q1	0.050
2022/Q2	
2022/Q3	
2022/Q4	
2023/Q1	

Lump Sum Adjustment for 2022/Q1	→ 0.139052 or 0.139
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**RCAF Back Pay Amortization
2022/Q1**

	Quarter of Payment	Quarter Amortization Began	Amount	Annual Per ST Hour	1 Quarter Per ST Hr.	U.S. ST Hours	
DME - all unions 2021	2021Q1	2021Q2				233,382,710	2020
Total							
							Should be slightly less than amortized amount.
Fell out							
DME - BMW	2020Q4	2021Q1				233,382,710	2020

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

2020/Q2	1.505
2020/Q3	0.130
2020/Q4	0.100
2021/Q1	0.085
2021/Q2	0.030
2021/Q3	0.015
2021/Q4	0.055
2022/Q1	0.050
2022/Q2	
2022/Q3	
2022/Q4	
2023/Q1	
2023/Q2	

Back Pay Adjustment for 2022/Q1

→ -0.00010

or

0.000

Health and Welfare 2022Q1

	Employees Receiving			Total	
	Pay 2020	Monthly Contribution 2020 Avg. 2022		2020 Avg.	2022
1. All Employees					
a. Group health	123,991	\$1,606.79	\$1,856.96	\$199,227,498.89	\$230,246,327.36
b. Group dental	123,991	63.67	75.01	7,894,506.97	9,300,564.91
c. Early retirement major medical	123,991	114.37	84.14	14,180,850.67	10,432,602.74
d. Group vision	123,991	8.44	8.51	1,046,484.04	1,055,163.41
2. Supplemental Sickness					
a. Signalmen	6,266	38.31	62.17	240,050.46	389,557.22
b. Shopcrafts	17,630	61.93	98.52	1,091,825.90	1,736,907.60
c. MOW	20,538	39.94	48.22	820,287.72	990,342.36
d. Yardmasters	1,455	54.00	74.61	78,570.00	108,557.55
3. Short-Term Disability					
a. Engineers (CSX, KCS, SOO, UP)	9,101	40.00	40.00	364,040.00	364,040.00
4. Monthly Total Premiums				224,944,114.65	254,624,063.15
5. Monthly Employee Contributions To H&W					
a. National ATDA (BNSF, CSX, KCS, NS, SOO, GTW, WC)	1,566	(\$228.89)	(\$228.89)	(\$358,441.74)	(358,441.74)
b. National BLET (BNSF, CSX, KCS, NS, UP, SOO, DH)	18,803	(\$228.89)	(\$228.89)	(\$4,303,818.67)	(4,303,818.67)
c. National BMW (All except SOO, DME, DH)	19,988	(\$228.89)	(\$228.89)	(\$4,575,053.32)	(4,575,053.32)
d. National BRS (All except DME)	6,236	(\$228.89)	(\$228.89)	(\$1,427,358.04)	(1,427,358.04)
e. National IAM (BNSF, CSX, KCS, NS, SOO, UP)	5,268	(\$228.89)	(\$228.89)	(\$1,205,792.52)	(1,205,792.52)
f. National IBBM (BNSF, CSX, KCS, NS, SOO, UP, IC)	574	(\$228.89)	(\$228.89)	(\$131,382.86)	(131,382.86)
g. National IBEW (All except DME)	4,304	(\$228.89)	(\$228.89)	(\$985,142.56)	(985,142.56)
h. National NCFO (All except DME and DH)	1,675	(\$228.89)	(\$228.89)	(\$383,390.75)	(383,390.75)
i. National SMW (BNSF, CSX, KCS, NS, UP, IC)	644	(\$228.89)	(\$228.89)	(\$147,405.16)	(147,405.16)
j. National TCU (All except DME and DH)	4,107	(\$228.89)	(\$228.89)	(\$940,051.23)	(940,051.23)
k. National TCU-CAR (All except DME)	6,780	(\$228.89)	(\$228.89)	(\$1,551,874.20)	(1,551,874.20)
l. National UTU (BNSF, CSX, KCS, NS, UP, SOO, DH)	28,368	(\$228.89)	(\$228.89)	(\$6,493,151.52)	(6,493,151.52)
m. Yardmasters (BNSF, CSX, KCS, NS, UP*, SOO, DH)	1,359	(\$228.89)	(\$228.89)	(\$311,061.51)	(\$311,061.51)
n. Misc Indep (DME, CMQ, portions of DH & SOO, portions of CN)	3,454	(\$230.17)	(\$233.30)	(\$794,992.43)	(805,826.16)
Total Major Union	103,126			(\$23,608,916.51)	(\$23,619,750.24)
All Other Employee Contributions*				(\$4,380,345.50)	(\$4,380,345.50)
6. Net Employer Monthly Payments				\$196,954,852.65	\$226,623,967.42
7. Ratio Projected Year to Base Year, Based on Net Monthly Payments					1.15064
8. H&W hourly rate for base year 2020				\$8.363	
9. H&W hourly rate for projected quarter					\$9.623

* Non-union employee contributions net of opt-outs. The \$23,608,916.51 in major union contributions, plus \$4,380,345.50 in all other employee contributions, totals to the 12-month average of the total employee contributions reported to the AAR in its WF survey.

NATIONAL RAILWAY LABOR CONFERENCE

EMPLOYEE BENEFITS DEPARTMENT

251 – 18th Street, South, Suite 750, Arlington, VA 22202 ~~~ PHONE: (571) 336-7600

David B. Marcus
Director Employee Benefits
(571) 336-7596
Email: dmarcus@rrnrlc.org

Eureka Norment
National Health Plan Manager
(571) 336-7629
Email: Enorment@rrnrlc.org

November 17, 2021

Ms. Tiffany Placker (tplacker@aar.org)
Economist
Association of American Railroads
425 Third Street, SW, Suite 1000
Washington, D.C. 20024

Dear Ms. Placker:

The revised employer monthly Payment Rates which are effective January 1, 2022 are as follows:

Railroad Employees National Health & Welfare Plan & National Railway Carriers/United Transportation Union H&W Plan Non-Hospital Road	\$ 1,856.96
Railroad Employees National Early Retirement Major Medical Benefit Plan Non-Hospital Road	\$ 84.14
Aetna - National Dental Plan	\$ 75.01
Aetna - Supplemental Sickness Plans	
ShopCrafts	\$ 98.52
Signalmen	\$ 62.17
Maintenance of Way	\$ 48.22
Trustmark - Supplemental Sickness Plans Yardmasters	\$ 74.61
EyeMed - National Vision Plan	\$ 8.51

If you have any questions or need clarification, please contact me.

Very truly yours,



Eureka Norment

cc: Deena Beshir, AAR (dbeshir@aar.org)

Railroad Retirement and Medicare for RCAF

Inputs:

RRB Earnings Distribution Year	2019	Tier I Maximum Taxable Earnings for 2022	147,000
Wage Statistics Year	2020	Tier II Maximum Taxable Earnings for 2022	109,200
Current Year	2022	Medicare Maximum Taxable Earnings for 2022	no limit
Employees Receiving Pay*	123,991	Tier I Employer Tax Rate for 2022	6.20%
* from 2020 final wage statistics		Tier II Employer Tax Rate for 2022	13.10%
		Medicare Employer Tax Rate for 2022	1.45%

USA RCAF	Wage Rate	Update Factor	Railroad Retirement Tax	Hourly Rate
2019	\$43.000			
2020	\$43.981	1.02281	\$564,946,478	\$9.281
1Q/2022	\$43.482	1.01121	\$571,253,634	\$9.385
2Q/2022		0.00000	--	\$0.000
3Q/2022		0.00000	--	\$0.000
4Q/2022		0.00000	--	\$0.000

Railroad Retirement & Medicare, U.S.

From 2019 Earnings Distribution			1Q/2022 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	\$29,625	1.335 %	1,655	\$29,957	\$7,489	\$7,489	\$7,489	\$7,489	\$12,396,836	\$12,396,836	\$12,396,836
41,700 - 43,699	\$42,987	0.321	398	43,469	10,867	10,867	10,867	10,867	4,325,272	4,325,272	4,325,272
43,700 - 45,699	\$44,680	0.588	729	45,181	11,295	11,295	11,295	11,295	8,234,964	8,234,964	8,234,964
45,700 - 47,699	\$46,762	0.374	464	47,286	11,822	11,822	11,822	11,822	5,481,961	5,481,961	5,481,961
47,700 - 49,699	\$48,651	0.427	529	49,196	12,299	12,299	12,299	12,299	6,511,647	6,511,647	6,511,647
49,700 - 51,699	\$50,543	0.908	1,126	51,110	12,777	12,777	12,777	12,777	14,385,272	14,385,272	14,385,272
51,700 - 53,699	\$52,897	0.855	1,060	53,490	13,372	13,372	13,372	13,372	14,176,479	14,176,479	14,176,479
53,700 - 55,699	\$54,523	1.122	1,391	55,134	13,784	13,784	13,784	13,784	19,175,373	19,175,373	19,175,373
55,700 - 57,699	\$56,596	1.282	1,590	57,230	14,308	14,308	14,308	14,308	22,742,855	22,742,855	22,742,855
57,700 - 59,699	\$58,698	1.656	2,053	59,356	14,839	14,839	14,839	14,839	30,468,766	30,468,766	30,468,766
59,700 - 61,699	\$60,693	2.350	2,914	61,373	15,343	15,343	15,343	15,343	44,707,223	44,707,223	44,707,223
61,700 - 63,699	\$62,631	2.457	3,046	63,333	15,833	15,833	15,833	15,833	48,235,383	48,235,383	48,235,383
63,700 - 65,699	\$64,778	3.259	4,041	65,504	16,376	16,376	16,376	16,376	66,173,350	66,173,350	66,173,350
65,700 - 67,699	\$66,760	3.686	4,570	67,508	16,877	16,877	16,877	16,877	77,133,473	77,133,473	77,133,473
67,700 - 69,699	\$68,621	3.686	4,570	69,390	17,348	17,348	17,348	17,348	79,283,644	79,283,644	79,283,644
69,700 - 71,699	\$70,651	2.885	3,577	71,443	17,861	17,861	17,861	17,861	63,890,363	63,890,363	63,890,363
71,700 - 73,699	\$72,674	3.098	3,841	73,489	18,372	18,372	18,372	18,372	70,571,883	70,571,883	70,571,883
73,700 - 75,699	\$74,697	2.244	2,782	75,534	18,884	18,884	18,884	18,884	52,540,868	52,540,868	52,540,868
75,700 - 77,699	\$76,615	3.472	4,305	77,474	19,368	19,368	19,368	19,368	83,380,549	83,380,549	83,380,549
77,700 - 79,699	\$78,710	3.632	4,503	79,592	19,898	19,898	19,898	19,898	89,608,040	89,608,040	89,608,040
79,700 - 81,699	\$80,668	3.739	4,636	81,572	20,393	20,393	20,393	20,393	94,542,696	94,542,696	94,542,696
81,700 - 83,699	\$82,706	3.526	4,372	83,633	20,908	20,908	20,908	20,908	91,409,336	91,409,336	91,409,336
83,700 - 85,699	\$84,707	3.205	3,974	85,657	21,414	21,414	21,414	21,414	85,097,845	85,097,845	85,097,845
85,700 - 87,699	\$86,537	3.098	3,841	87,507	21,877	21,877	21,877	21,877	84,033,892	84,033,892	84,033,892
87,700 - 89,699	\$88,699	2.671	3,312	89,693	22,423	22,423	22,423	22,423	74,261,521	74,261,521	74,261,521
89,700 - 91,699	\$90,625	3.312	4,107	91,641	22,910	22,910	22,910	22,910	94,082,657	94,082,657	94,082,657
91,700 - 93,699	\$92,881	2.297	2,848	93,922	23,481	23,481	23,481	23,481	66,874,278	66,874,278	66,874,278
93,700 - 95,699	\$94,749	1.816	2,252	95,811	23,953	23,953	23,953	23,953	53,933,885	53,933,885	53,933,885
95,700 - 97,699	\$96,731	2.350	2,914	97,815	24,454	24,454	24,454	24,454	71,253,265	71,253,265	71,253,265
97,700 - 99,699	\$98,711	2.030	2,517	99,817	24,954	24,954	24,954	24,954	62,810,582	62,810,582	62,810,582
99,700 - 101,699	\$100,745	1.923	2,384	101,874	25,469	25,469	25,469	25,469	60,725,907	60,725,907	60,725,907
101,700 - 103,699	\$102,687	1.976	2,450	103,838	25,960	25,960	25,960	25,960	63,602,419	63,602,419	63,602,419
103,700 - 105,699	\$104,713	2.297	2,848	105,887	26,472	26,472	26,472	26,472	75,393,312	75,393,312	75,393,312
105,700 - 107,699	\$106,735	2.137	2,650	107,931	26,983	26,983	26,983	26,983	71,496,141	71,496,141	71,496,141
107,700 - 109,699	\$108,566	2.297	2,848	109,783	27,446	27,446	27,300	27,446	78,167,471	77,752,400	78,167,471
109,700 - 111,699	\$110,604	1.603	1,988	111,844	27,961	27,961	27,300	27,961	55,574,502	54,260,817	55,574,502
111,700 - 113,699	\$112,537	1.496	1,855	113,798	28,450	28,450	27,300	28,450	52,771,344	50,638,916	52,771,344
113,700 - 115,699	\$114,692	1.549	1,921	115,978	28,994	28,994	27,300	28,994	55,687,250	52,432,942	55,687,250
\$115,700 - over	\$150,555	17.041	21,129	152,243	38,061	36,750	27,300	38,061	<u>776,502,007</u>	<u>576,830,062</u>	<u>804,195,219</u>
TOTAL	\$92,816	100.000	123,991								
Total Taxable Earnings									2,881,644,512	2,674,857,077	2,909,337,725
Employer Tax Rate									6.20%	13.10%	1.45%
Quarterly Payment									\$178,661,960	\$350,406,277	\$42,185,397

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

\$571,253,634

Railroad Retirement & Medicare, U.S.

From 2019 Earnings Distribution			2Q/2022 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	\$29,625	1.335	1,655	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,987	0.321	398	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,680	0.588	729	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,762	0.374	464	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,651	0.427	529	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,543	0.908	1,126	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,897	0.855	1,060	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,523	1.122	1,391	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,596	1.282	1,590	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,698	1.656	2,053	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,693	2.350	2,914	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,631	2.457	3,046	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,778	3.259	4,041	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,760	3.686	4,570	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,621	3.686	4,570	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,651	2.885	3,577	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,674	3.098	3,841	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,697	2.244	2,782	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,615	3.472	4,305	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,710	3.632	4,503	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,668	3.739	4,636	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,706	3.526	4,372	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,707	3.205	3,974	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,537	3.098	3,841	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,699	2.671	3,312	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,625	3.312	4,107	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,881	2.297	2,848	0	0	0	0	0	0	0	0
93,700 - 95,699	\$94,749	1.816	2,252	0	0	0	0	0	0	0	0
95,700 - 97,699	\$96,731	2.350	2,914	0	0	0	0	0	0	0	0
97,700 - 99,699	\$98,711	2.030	2,517	0	0	0	0	0	0	0	0
99,700 - 101,699	\$100,745	1.923	2,384	0	0	0	0	0	0	0	0
101,700 - 103,699	\$102,687	1.976	2,450	0	0	0	0	0	0	0	0
103,700 - 105,699	\$104,713	2.297	2,848	0	0	0	0	0	0	0	0
105,700 - 107,699	\$106,735	2.137	2,650	0	0	0	0	0	0	0	0
107,700 - 109,699	\$108,566	2.297	2,848	0	0	0	146	0	0	415,070	0
109,700 - 111,699	\$110,604	1.603	1,988	0	0	0	661	0	0	1,313,685	0
111,700 - 113,699	\$112,537	1.496	1,855	0	0	0	1,150	0	0	2,132,428	0
113,700 - 115,699	\$114,692	1.549	1,921	0	0	0	1,694	0	0	3,254,308	0
\$115,700 - over	\$150,555	17.041	21,129	0	0	1,311	10,761	0	27,693,213	227,365,157	0
TOTAL		100.000	123,991						27,693,213	234,480,648	0
									Employer Tax Rate	6.20%	13.10%
									Quarterly Payment	\$1,716,979	\$30,716,965
											\$0
									Total Tier I, Tier II, and Medicare Paid this Quarter		\$32,433,944

Railroad Retirement & Medicare, U.S.

From 2019 Earnings Distribution			3Q/2022 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	\$29,625	1.335	1,655	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,987	0.321	398	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,680	0.588	729	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,762	0.374	464	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,651	0.427	529	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,543	0.908	1,126	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,897	0.855	1,060	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,523	1.122	1,391	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,596	1.282	1,590	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,698	1.656	2,053	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,693	2.350	2,914	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,631	2.457	3,046	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,778	3.259	4,041	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,760	3.686	4,570	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,621	3.686	4,570	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,651	2.885	3,577	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,674	3.098	3,841	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,697	2.244	2,782	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,615	3.472	4,305	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,710	3.632	4,503	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,668	3.739	4,636	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,706	3.526	4,372	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,707	3.205	3,974	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,537	3.098	3,841	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,699	2.671	3,312	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,625	3.312	4,107	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,881	2.297	2,848	0	0	0	0	0	0	0	0
93,700 - 95,699	\$94,749	1.816	2,252	0	0	0	0	0	0	0	0
95,700 - 97,699	\$96,731	2.350	2,914	0	0	0	0	0	0	0	0
97,700 - 99,699	\$98,711	2.030	2,517	0	0	0	0	0	0	0	0
99,700 - 101,699	\$100,745	1.923	2,384	0	0	0	0	0	0	0	0
101,700 - 103,699	\$102,687	1.976	2,450	0	0	0	0	0	0	0	0
103,700 - 105,699	\$104,713	2.297	2,848	0	0	0	0	0	0	0	0
105,700 - 107,699	\$106,735	2.137	2,650	0	0	0	0	0	0	0	0
107,700 - 109,699	\$108,566	2.297	2,848	0	0	0	0	0	0	0	0
109,700 - 111,699	\$110,604	1.603	1,988	0	0	0	0	0	0	0	0
111,700 - 113,699	\$112,537	1.496	1,855	0	0	0	0	0	0	0	0
113,700 - 115,699	\$114,692	1.549	1,921	0	0	0	0	0	0	0	0
\$115,700 - over	\$150,555	17.041	21,129	0	0	0	0	0	0	0	0
TOTAL		100.000	123,991						0	0	0
Total Taxable Earnings									0	0	0
Employer Tax Rate									6.20%	13.10%	1.45%
Quarterly Payment									\$0	\$0	\$0
Total Tier I, Tier II, and Medicare Paid this Quarter											\$0

Railroad Retirement & Medicare, U.S.

From 2019 Earnings Distribution			4Q/2022 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	\$29,625	1.335 %	1,655	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41,700 - 43,699	\$42,987	0.321	398	0	0	0	0	0	0	0	0
43,700 - 45,699	\$44,680	0.588	729	0	0	0	0	0	0	0	0
45,700 - 47,699	\$46,762	0.374	464	0	0	0	0	0	0	0	0
47,700 - 49,699	\$48,651	0.427	529	0	0	0	0	0	0	0	0
49,700 - 51,699	\$50,543	0.908	1,126	0	0	0	0	0	0	0	0
51,700 - 53,699	\$52,897	0.855	1,060	0	0	0	0	0	0	0	0
53,700 - 55,699	\$54,523	1.122	1,391	0	0	0	0	0	0	0	0
55,700 - 57,699	\$56,596	1.282	1,590	0	0	0	0	0	0	0	0
57,700 - 59,699	\$58,698	1.656	2,053	0	0	0	0	0	0	0	0
59,700 - 61,699	\$60,693	2.350	2,914	0	0	0	0	0	0	0	0
61,700 - 63,699	\$62,631	2.457	3,046	0	0	0	0	0	0	0	0
63,700 - 65,699	\$64,778	3.259	4,041	0	0	0	0	0	0	0	0
65,700 - 67,699	\$66,760	3.686	4,570	0	0	0	0	0	0	0	0
67,700 - 69,699	\$68,621	3.686	4,570	0	0	0	0	0	0	0	0
69,700 - 71,699	\$70,651	2.885	3,577	0	0	0	0	0	0	0	0
71,700 - 73,699	\$72,674	3.098	3,841	0	0	0	0	0	0	0	0
73,700 - 75,699	\$74,697	2.244	2,782	0	0	0	0	0	0	0	0
75,700 - 77,699	\$76,615	3.472	4,305	0	0	0	0	0	0	0	0
77,700 - 79,699	\$78,710	3.632	4,503	0	0	0	0	0	0	0	0
79,700 - 81,699	\$80,668	3.739	4,636	0	0	0	0	0	0	0	0
81,700 - 83,699	\$82,706	3.526	4,372	0	0	0	0	0	0	0	0
83,700 - 85,699	\$84,707	3.205	3,974	0	0	0	0	0	0	0	0
85,700 - 87,699	\$86,537	3.098	3,841	0	0	0	0	0	0	0	0
87,700 - 89,699	\$88,699	2.671	3,312	0	0	0	0	0	0	0	0
89,700 - 91,699	\$90,625	3.312	4,107	0	0	0	0	0	0	0	0
91,700 - 93,699	\$92,881	2.297	2,848	0	0	0	0	0	0	0	0
93,700 - 95,699	\$94,749	1.816	2,252	0	0	0	0	0	0	0	0
95,700 - 97,699	\$96,731	2.350	2,914	0	0	0	0	0	0	0	0
97,700 - 99,699	\$98,711	2.030	2,517	0	0	0	0	0	0	0	0
99,700 - 101,699	\$100,745	1.923	2,384	0	0	0	0	0	0	0	0
101,700 - 103,699	\$102,687	1.976	2,450	0	0	0	0	0	0	0	0
103,700 - 105,699	\$104,713	2.297	2,848	0	0	0	0	0	0	0	0
105,700 - 107,699	\$106,735	2.137	2,650	0	0	0	0	0	0	0	0
107,700 - 109,699	\$108,566	2.297	2,848	0	0	0	0	0	0	0	0
109,700 - 111,699	\$110,604	1.603	1,988	0	0	0	0	0	0	0	0
111,700 - 113,699	\$112,537	1.496	1,855	0	0	0	0	0	0	0	0
113,700 - 115,699	\$114,692	1.549	1,921	0	0	0	0	0	0	0	0
\$115,700 - over	\$150,555	17.041	21,129	0	0	0	0	0	0	0	0
TOTAL		100.000	123,991						0	0	0
Total Taxable Earnings									0	0	0
Employer Tax Rate									6.20%	13.10%	1.45%
Quarterly Payment									\$0	\$0	\$0
Total Tier I, Tier II, and Medicare Paid this Quarter											\$0

**Tax Rates and Maximum Taxable Earnings Under Social Security,
Railroad Retirement and Railroad Unemployment Insurance Programs, Continued**

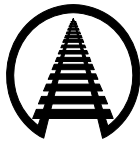
Period	Railroad Retirement					Railroad Unemployment Insurance				Unemployment Repayment	
	Maximum earnings		Tax rate (percent) [5]							Tax [6]	
	base [5]		Tier I	Tier II		Maximum monthly taxable earnings	Employer tax rate [7] (percent)	Surcharge or (pooled credit)	New employer tax rate (percent)	Maximum taxable earnings	Employer tax rate (percent)
	Tier I [9]	Tier II	Employer & employee each	Employer	Employee						
1991	53,400	39,600	7.65	16.1	4.9	765	5.55 - 12.0	...	8.00	765	4.0
1992	55,500	41,400	7.65	16.1	4.9	785	3.10 - 12.0	(3.12)	8.00	785	4.0
1993	57,600	42,900	7.65	16.1	4.9	810	0.65 - 12.0	(5.31)	7.30	810	4.0
1994	60,600	45,000	7.65	16.1	4.9	840	0.65 - 12.0	(0.22)	6.06		
1995	61,200	45,300	7.65	16.1	4.9	850	0.65 - 12.0	...	4.15		
1996	62,700	46,500	7.65	16.1	4.9	865	0.65 - 12.0	...	2.31		
1997	65,400	48,600	7.65	16.1	4.9	890	0.65 - 12.0	...	1.16		
1998	68,400	50,700	7.65	16.1	4.9	925	2.15 - 12.0	1.5	0.85		
1999	72,600	53,700	7.65	16.1	4.9	970	2.15 - 12.0	1.5	0.92		
2000	76,200	56,700	7.65	16.1	4.9	1,005	0.65 - 12.0	...	1.67		
2001	80,400	59,700	7.65	16.1	4.9	1,050	2.15 - 12.0	1.5	2.59		
2002	84,900	63,000	7.65	15.6	4.9	1,100	3.15 - 12.0	2.5	2.71		
2003	87,000	64,500	7.65	14.2	4.9	1,120	3.15 - 12.0	2.5	2.36		
2004	87,900	65,100	7.65	13.1	4.9	1,130	2.15 - 12.0	1.5	2.38		
2005	90,000	66,900	7.65	12.6	4.4	1,150	2.15 - 12.0	1.5	3.43		
2006	94,200	69,900	7.65	12.6	4.4	1,195	2.15 - 12.0	1.5	4.03		
2007	97,500	72,600	7.65	12.1	3.9	1,230	2.15 - 12.0	1.5	3.75		
2008	102,000	75,900	7.65	12.1	3.9	1,280	2.15 - 12.0	1.5	3.02		
2009	106,800	79,200	7.65	12.1	3.9	1,330	2.15 - 12.0	1.5	2.61		
2010	106,800	79,200	7.65	12.1	3.9	1,330	2.15 - 12.0	1.5	2.51		
2011	106,800	79,200	[2] 7.65	12.1	3.9	1,330	3.15 - 12.0	2.5	2.50		
2012	110,100	81,900	[2] 7.65	12.1	3.9	1,365	2.15 - 12.0	1.5	2.65		
2013	113,700	84,300	[3] 7.65	12.6	4.4	1,405	0.65 - 12.0	...	3.69		
2014	117,000	87,000	[3] 7.65	12.6	4.4	1,440	0.65 - 12.0	...	4.53		
2015	118,500	88,200	[3] 7.65	13.1	4.9	1,455	2.15 - 12.0	1.5	4.09		
2016	118,500	88,200	[3] 7.65	13.1	4.9	1,455	2.15 - 12.0	1.5	2.52		
2017	127,200	94,500	[3] 7.65	13.1	4.9	1,545	2.15 - 12.0	1.5	1.62		
2018	128,400	95,400	[3] 7.65	13.1	4.9	1,560	2.15 - 12.0	1.5	1.97		
2019	132,900	98,700	[3] 7.65	13.1	4.9	1,605	2.15 - 12.0	1.5	2.75		
2020	137,700	102,300	[3] 7.65	13.1	4.9	1,655	0.65 - 12.0	...	3.10		
2021	142,800	106,200	[3] 7.65	13.1	4.9	1,710	3.15 - 12.0	2.5	3.15		
2022	147,000	109,200	[3] 7.65	13.1	4.9	1,755	4.15 - 12.5	3.5	2.62		
2023 and later	[4]	[4]	[3] 7.65	[10]	[10]	[4]	[7]	[7]	[7]		

See footnotes at end of table.

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
			\$39.231	(2016)			
2017 Avg.	3.37%	\$18,540	\$39.599		1.009380	\$17,625.49	\$0.319
3Q/18 reb.	3.76%	\$18,720	\$42.946		1.094696	\$17,832.94	\$0.360
4Q/18	3.76%	\$18,720	\$42.976		1.095460	\$17,833.29	\$0.360
1Q/19	3.38%	\$19,260	\$42.805		1.091101	\$18,330.97	\$0.333
2Q/19	3.38%	\$19,260	\$42.756		1.089852	\$18,330.37	\$0.333
3Q/19	3.38%	\$19,260	\$43.306		1.103872	\$18,336.98	\$0.333
			\$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	\$43.572		1.100331	\$18,662.74	\$0.097
			\$41.687	(2018)			
2019 Avg.	3.38%	\$19,260	\$43.000		1.031497	\$17,742.46	\$0.318
3Q/20 reb.	0.99%	\$19,860	\$43.596		1.045794	\$18,283.51	\$0.096
4Q/20	0.99%	\$19,860	\$43.596		1.045794	\$18,283.51	\$0.096
1Q/21	5.69%	\$20,520	\$43.620		1.046369	\$18,867.16	\$0.569
2Q/21	5.69%	\$20,520	\$43.397		1.041020	\$18,863.22	\$0.569
3Q/21	5.69%	\$20,520	\$43.326		1.039317	\$18,861.96	\$0.569
			\$43.000	(2019)			
2020 Avg.	0.99%	\$19,860	\$43.981		1.022814	\$18,813.21	\$0.100
3Q/21 reb.	5.69%	\$20,520	\$43.508		1.011814	\$19,413.47	\$0.593
4Q/21	5.69%	\$20,520	\$43.504		1.011721	\$19,413.42	\$0.593
1Q/22	11.23%	\$21,060	\$43.482		1.011209	\$19,907.93	\$1.200
2Q/22					0.000000		\$0.000
3Q/22					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.



ASSOCIATION OF
AMERICAN RAILROADS

M E M O R A N D U M

TO: File
FROM: Tiffany Placker
DATE: November 23, 2021
RE: Unemployment Insurance Tax Rate for 2022

Unemployment Insurance rates for 2022 can range from a minimum of 0.65 percent to a maximum of 12.5 percent (the prior maximum was 12 percent) on monthly earnings up to \$1,755. A surcharge of 3.5 percent will be in effect for 2022, meaning the minimum tax rate is effectively 4.15 percent. Sheryl Enders at the Railroad Retirement Board said in her November e-mail that the weighted average 2022 Unemployment Insurance rate for Class I railroads is **11.23 percent** which includes Delaware and Hudson Railway (D&H) and Dakota, Minnesota & Eastern Railroad Corporation (DME).

The SAS System
TOTAL GROSS EARNINGS AND AVERAGE GROSS EARNINGS-2019 RRB File

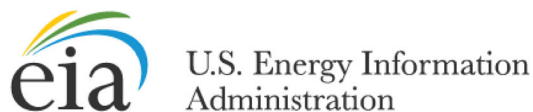
The MEANS Procedure

Variable	N	Sum	Mean
ANUAL_US	2410	45339832.42	18813.21
QTRLY_US	2410	47978104.55	19907.93

The SAS System
Factors and Caps 2020 and 2022Q1

The MEANS Procedure

Variable	N	Sum	Mean
FactorA	2410	2464.98	1.0228140
FactorQ	2410	2437.01	1.0112090
Capa	2410	47862600.00	19860.00
Capq	2410	50754600.00	21060.00



PETROLEUM & OTHER LIQUIDS

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Spot Prices

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

Period: Monthly ▼

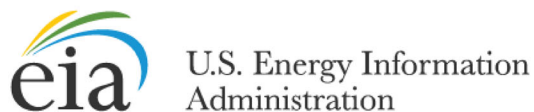
Product by Area	Graph Clear	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	View History
Crude Oil								
WTI - Cushing, Oklahoma	☐	65.17	71.38	72.49	67.73	71.65	81.48	1986-2021
Brent - Europe	☐	68.53	73.16	75.17	70.75	74.49	83.54	1987-2021
Conventional Gasoline								
New York Harbor, Regular	☐	2.116	2.167	2.257	2.235	2.284	2.500	1986-2021
U.S. Gulf Coast, Regular	☐	2.038	2.118	2.205	2.215	2.199	2.425	1986-2021
RBOB Regular Gasoline								
Los Angeles	☐	2.239	2.311	2.361	2.336	2.250	2.535	2003-2021
No. 2 Heating Oil								
New York Harbor	☐	1.834	1.911	1.947	1.878	2.053	2.382	1986-2021
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	2.024	2.121	2.127	2.068	2.201	2.523	2006-2021
U.S. Gulf Coast	☐	1.971	2.068	2.071	2.015	2.152	2.455	2006-2021
Los Angeles	☐	2.020	2.077	2.124	2.155	2.251	2.512	1996-2021
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	1.752	1.857	1.887	1.817	2.003	2.296	1990-2021
Propane								
Mont Belvieu, Texas	☐	0.816	0.965	1.090	1.115	1.291	1.454	1992-2021

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: 11/24/2021

Next Release Date: 12/1/2021



PETROLEUM & OTHER LIQUIDS

OVERVIEW

DATA

ANALYSIS & PROJECTIONS

GLOSSARY ›

FAQS ›

Spot Prices

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

Period: Weekly ▼

Product by Area	Graph Clear	10/15/21	10/22/21	10/29/21	11/05/21	11/12/21	11/19/21	View History
Crude Oil								
WTI - Cushing, Oklahoma	☐	81.18	83.48	83.84	81.79	81.93	78.99	1986-2021
Brent - Europe	☐	83.87	84.98	84.12	82.52	83.39	81.63	1987-2021
Conventional Gasoline								
New York Harbor, Regular	☐	2.502	2.567	2.549	2.495	2.430	2.378	1986-2021
U.S. Gulf Coast, Regular	☐	2.417	2.476	2.497	2.377	2.308	2.257	1986-2021
RBOB Regular Gasoline								
Los Angeles	☐	2.499	2.628	2.628	2.523	2.576	2.608	2003-2021
No. 2 Heating Oil								
New York Harbor	☐	2.412	2.421	2.388	2.337	2.316	2.239	1986-2021
Ultra-Low-Sulfur No. 2 Diesel Fuel								
New York Harbor	☐	2.555	2.568	2.529	2.464	2.461	2.378	2006-2021
U.S. Gulf Coast	☐	2.478	2.498	2.466	2.400	2.393	2.311	2006-2021
Los Angeles	☐	2.507	2.561	2.570	2.547	2.525	2.450	1996-2021
Kerosene-Type Jet Fuel								
U.S. Gulf Coast	☐	2.329	2.321	2.300	2.257	2.262	2.180	1990-2021
Propane								
Mont Belvieu, Texas	☐	1.457	1.487	1.377	1.381	1.365	1.164	1992-2021

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: 11/24/2021

Next Release Date: 12/1/2021

U.S.

Summary by Composition Category

	MS-2020		Prev. Idx	2021Q4		Calculation		Relative of Change
	MS Amount	Weight		Cur Idx		Prev. Idx	Cur Idx	
Forest Products	764,805,082	0.1690	352.71	346.40		59.61	58.54	
Metal Products	2,633,534,885	0.5820	190.04	190.72		110.60	111.00	
Misc. Products	1,126,753,341	0.2490	425.31	464.06		105.90	115.55	
Total	4,525,093,308	1.0000	276.11	285.09				1.0325
Total Linked			272.16	281.01				
'77 = 100 Link Fact.= 1.423			387.28	399.88				
'80 = 100 Link Fact.= 1.061			288.76	298.15				

As info only	Change
Forest Products	-1.79%
Metal Products	0.36%
Misc. Products	9.11%
Total ('80=100)	3.25%
Rounded 80 Indices	3.3%
Rounded 77 Indices	3.3%

Car Hire for RCAF - 2020 Weights

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

		1980	June 3Q/21	Sept. 4Q/21	Dec. 1Q/22	Mar. 2Q/22	June 3Q/22
RATE							
RR-OWNED TIME		31.00	65.00	66.00	66.00	--	--
RR-OWNED MILEAGE		4.69	6.60	6.60	6.60	--	--
PRIVATELY-OWNED CARS		25.47	55.83	55.17	55.36	--	--
AUTORACKS		47.00	84.91	85.08	85.89	--	--
INDEX							
RR-OWNED TIME		100.0	209.7	212.9	212.9	--	--
RR-OWNED MILEAGE		100.0	140.7	140.7	140.7	--	--
PRIVATELY-OWNED CARS		100.0	219.2	216.6	217.4	--	--
AUTORACKS		100.0	180.7	181.0	182.7	--	--
CAR HIRE INDEX (old wts)	2019	100.0	214.0	--	--	--	--
CAR HIRE INDEX (new wts)	2020	100.0	214.3	212.2	213.0	--	--
CAR HIRE INDEX (LINKED)		100.0	211.2	209.1	209.9	--	--

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

	2021 (first day of month)						2022 (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)	11,180	11,157	11,138	11,094	11,067	10,999								
Rate (in cents)														
Superstructures #3 - Auto Rack	94.0	95.0	95.0	95.0	95.0	95.0								
All other #1 - Time	65.0	65.0	66.0	66.0	66.0	66.0								
All other #2 - Mileage	6.6	6.6	6.6	6.6	6.6	6.6								
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	53,299	53,262	53,225	53,166	53,141	53,094								
Covered Hoppers	432,640	433,233	433,686	433,509	433,387	433,129								
Tank Cars	421,980	422,998	423,421	423,125	423,323	423,585								
Others	294,153	293,445	292,806	292,174	291,742	291,190								
Rate (in cents)														
Superstructures #1 - Time	86.0	86.0	86.0	86.0	86.0	86.0								
Superstructures #2 - Mileage	1.0	1.0	1.0	1.0	1.0	1.0								
Superstructures #3 - Auto Rack	83.0	83.0	83.0	83.0	84.0	84.0								
Covered Hoppers #2 - Mileage	45.1	45.1	45.2	45.2	45.3	45.3								
Tank Cars #2 - Mileage	88.7	88.7	86.1	86.2	86.2	86.2								
Others #1 -Time	102.0	102.0	103.0	103.0	103.0	104.0								
Others #2 - Mileage	8.5	8.5	8.5	8.5	8.6	8.6								
AVERAGE RATES														
Private Superstructures	21.21	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	31.14	31.14	31.37	31.37	31.47	31.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private Total	55.93	55.97	55.17	55.21	55.28	55.36	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Autoracks	84.91	85.08	85.08	85.07	85.90	85.89	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Car Hire Weights	"Old Wts" "New Wts"	
	2019	2020
For RCAF & RCR		
RR-owned Time	0.040	0.052
RR-owned Mileage	0.042	0.039
Privately-owned Cars	0.879	0.874
Autoracks	0.039	0.035
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2019	2020
Car Hire - U.S.	0.614	0.647
Lease Rentals - U.S.	0.386	0.353
----- 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 Process - Car Hire Rate Report

Average Car Rental Rates for 12/2021

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	10,999	110	0.059	95
Railroad	Number of Zero-Rated Vehicular Flats	126	.	.	.
Railroad	All Other Cars	364,703	66	0.066	.
Railroad	Number of Zero-Rated Other Cars	12,575	.	.	.
Railroad	Total Railroad Equipment	388,403	.	.	.
		.	.	.	.
Private	Vehicular Flats	53,094	86	0.010	84
Private	Number of Zero-Rated Vehicular Flats	41	.	.	.
Private	Covered Hoppers	433,129	0	0.453	.
Private	Number of Zero-Rated Covered Hoppers	14,374	.	.	.
Private	Tanks	423,585	0	0.862	.
Private	Number of Zero-Rated Tanks	14,833	.	.	.
Private	All Other Cars	291,190	104	0.086	.
Private	Number of Zero-Rated Other Cars	22,277	.	.	.
Private	Total Private Equipment	1,252,523	.	.	.

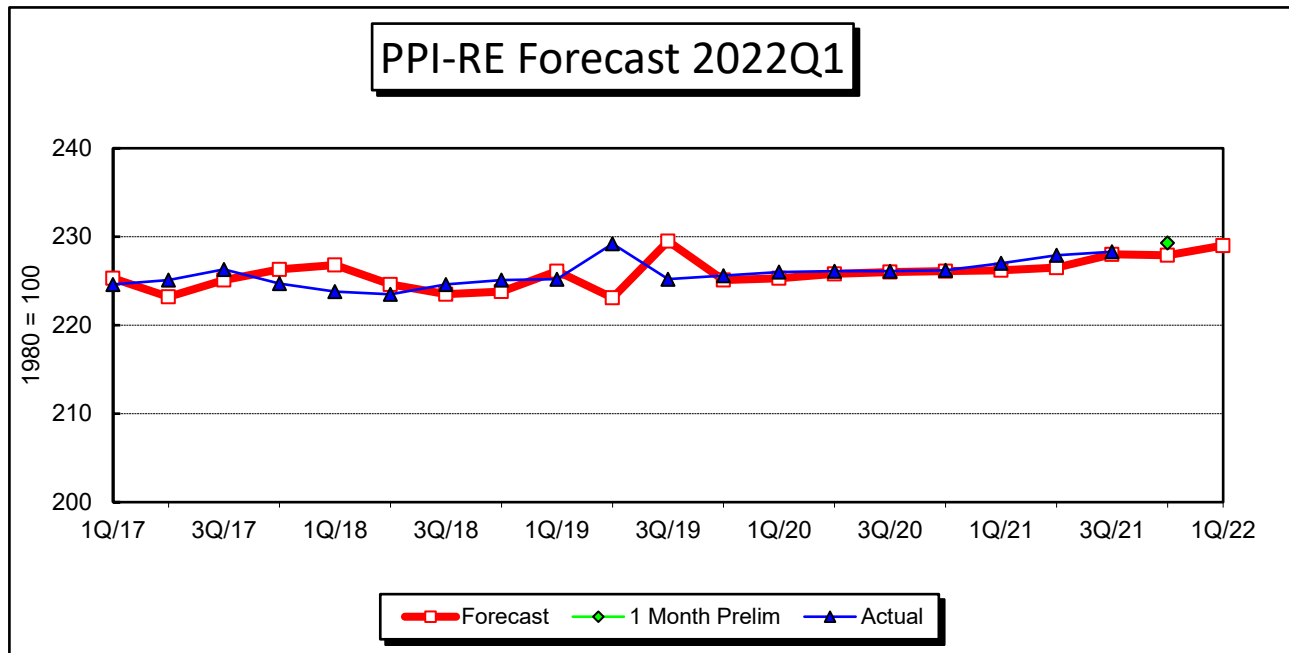
Notes
This report excludes these car types: D (Locomotives), M (MoW, EOTs, etc.), U (Containers), Z (Trailers).
All TTX equipment (including ABOX, RBOX, GONX) is contained in the Private section of report.
Equipment can be zero rated due to owners supplying incorrect or insufficient information to the 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
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	226.1	
3Q/20	226.0	226.1	
4Q/20	226.1	226.2	
1Q/21	226.2	227.0	
2Q/21	226.5	227.9	
3Q/21	228.0	228.3	
4Q/21	227.9		229.3
1Q/22	229.0		

1980 Base

	PPI-RE Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2022Q1						
Low	204.6	226.3	-0.3%			
Midpoint	207.0	229.0	0.9%	-0.1%	0.3%	0.5%
High	209.3	231.5	2.0%			



PPI RAILROAD EQUIPMENT

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 1.08 and for Box-Jenkins was 2.39.
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, Additive seasonality
NA(0.547, 0.264)

Component	Smoothing Wgt		Final Value
Level	0.5468		206.8
Seasonal	0.2645		
Seasonal Indexes			
Jan - Mar	-0.2305	0.1319	0.4736
Apr - Jun	-0.09635	-0.1165	-0.006407
Jul - Sep	0.1495	0.4345	-0.01824
Oct - Dec	0.1042	-0.4596	-0.3661

Within-Sample Statistics

Sample size	72	No. parameters	2
Mean	203.75	Std. deviation	1.4
R-square	0.65	Adj. R-square	0.64
Durbin-Watson	1.73	Ljung-Box(18)	20.9 P=0.71
Forecast error	0.84	BIC	0.88
MAPE	0.27	SMAPE	0.27
RMSE	0.83	MAD	0.56
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2021-May	206
2021-Jun	206.1
2021-Jul	206.3
2021-Aug	206.4
2021-Sep	206.4
2021-Oct	207.3

Forecasted Values

2.5 Lower	Forecast	97.5 Upper	
Date	2.5 Lower	Forecast	97.5 Upper
2021-Nov	204.658	206.385	208.112
2021-Dec	204.51	206.478	208.447
2022-Jan	204.431	206.614	208.797
2022-Feb	204.598	206.976	209.355
2022-Mar	204.759	207.318	209.877
QTR AVG	204.596	206.969	209.343

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 1.08 and for Box-Jenkins was 2.39.
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, Additive seasonality
NA(0.547, 0.264)

Component	Smoothing Wgt		Final Value
Level	0.5468		206.8
Seasonal	0.2645		
Seasonal Indexes			
Jan - Mar	-0.2305	0.1319	0.4736
Apr - Jun	-0.09635	-0.1165	-0.006407
Jul - Sep	0.1495	0.4345	-0.01824
Oct - Dec	0.1042	-0.4596	-0.3661

Within-Sample Statistics

Sample size	72	No. parameters	2
Mean	203.75	Std. deviation	1.4
R-square	0.65	Adj. R-square	0.64
Durbin-Watson	1.73	Ljung-Box(18)	20.9 P=0.71
Forecast error	0.84	BIC	0.88
MAPE	0.27	SMAPE	0.27
RMSE	0.83	MAD	0.56
MAD/Mean Ratio	0		

Historic Data

Date	Historic
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

Depreciation

2016-Jul	203.5
2016-Aug	204.4
2016-Sep	203.7
2016-Oct	203.7
2016-Nov	201.5
2016-Dec	201.8
2017-Jan	201.9
2017-Feb	204.1
2017-Mar	203.3
2017-Apr	203.4
2017-May	203.5
2017-Jun	204.6
2017-Jul	203.6
2017-Aug	204.5
2017-Sep	203.8
2017-Oct	202.8
2017-Nov	201.7
2017-Dec	201.6
2018-Jan	202.1
2018-Feb	202.1
2018-Mar	202
2018-Apr	202.1
2018-May	202.1
2018-Jun	202.1
2018-Jul	204.1
2018-Aug	204.1
2018-Sep	201.1
2018-Oct	201.3
2018-Nov	201.3
2018-Dec	201.3
2019-Jan	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	203.9
2019-Dec	204
2020-Jan	204.3
2020-Feb	204.3
2020-Mar	204.3
2020-Apr	204.4
2020-May	204.4
2020-Jun	204.4
2020-Jul	204.4
2020-Aug	204.4
2020-Sep	204.4

Depreciation

2020-Oct	204.4
2020-Nov	204.4
2020-Dec	204.6
2021-Jan	204.9
2021-Feb	204.9
2021-Mar	205.8
2021-Apr	206
2021-May	206
2021-Jun	206.1
2021-Jul	206.3
2021-Aug	206.4
2021-Sep	206.4
2021-Oct	207.3

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2021-Nov	204.658	206.385	208.112
2021-Dec	204.51	206.478	208.447
2022-Jan	204.431	206.614	208.797
2022-Feb	204.598	206.976	209.355
2022-Mar	204.759	207.318	209.877
2022-Apr	204.02	206.748	209.476
2022-May	203.841	206.728	209.615
2022-Jun	203.801	206.838	209.875
2022-Jul	203.813	206.994	210.175
2022-Aug	203.961	207.279	210.597
2022-Sep	203.376	206.826	210.276
2022-Oct	203.372	206.949	210.525



Databases, Tables & Calculators by Subject

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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: [xlsx](#)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	204.9	204.9	205.8	206.0	206.0	206.1	206.3(P)	206.4(P)	206.4(P)	207.3(P)		

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

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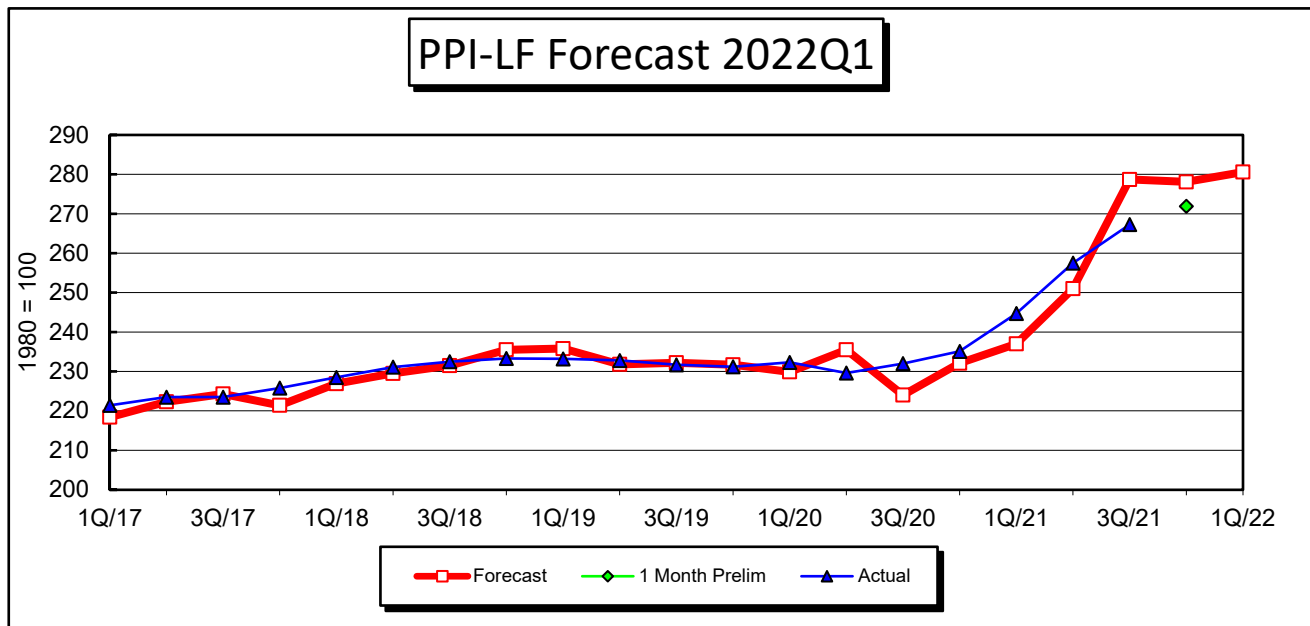
Telephone:1-202-691-5200_ Federal Relay Service:1-800-877-8339_ www.bls.gov [Contact Us](#)

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

	Forecast	Actual	1 Month Prelim
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	232.3	
2Q/20	235.5	229.6	
3Q/20	224.0	232.0	
4Q/20	232.1	235.1	
1Q/21	237.0	244.7	
2Q/21	251.0	257.5	
3Q/21	278.7	267.3	
4Q/21	278.1		271.9
1Q/22	280.6		

1980 Base

	PPI-LF Forecast		Percent Change			
	(82=100)	(80=100)	Yr Ago Actual	Latest Month Actual	2nd Prev Qtr Actual	Previous Forecast
2022Q1						
Low	246.2	276.0	12.8%			
Midpoint	250.3	280.6	14.7%	3.2%	5.0%	0.9%
High	254.4	285.2	16.6%			



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

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 7.09 and for Box-Jenkins was 10.97.
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(0.947, 1.000, 1.000)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.9467		242.4
Trend	1		1.957
Seasonal	0.9995		
Seasonal Indexes			
Jan - Mar	1.001	0.9993	1
Apr - Jun	0.9995	0.9997	1
Jul - Sep	0.9997	1	0.9994
Oct - Dec	1	1.001	1

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	206.3	Std. deviation	11.65
R-square	1	Adj. R-square	1
Durbin-Watson	1.63	Ljung-Box(18)	19.2 P=0.62
Forecast error	0.58	BIC	0.62
MAPE	0.19	SMAPE	0.19
RMSE	0.56	MAD	0.4
MAD/Mean Ratio	0		

Actual Values for the Most Recent 6 Periods:

Actual

2021-May	230.5
2021-Jun	234.0
2021-Jul	236.4
2021-Aug	238.4
2021-Sep	240.3
2021-Oct	242.5

Forecasted Values

Date	2.5 Lower	Forecast	97.5 Upper
2021-Nov	243.309	244.516	245.723
2021-Dec	243.746	246.33	248.915
2022-Jan	245.048	248.497	251.947
2022-Feb	245.92	250.058	254.195
2022-Mar	247.49	252.215	256.940
QTR AVG	246.153	250.257	254.361

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 7.09 and for Box-Jenkins was 10.97.
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(0.947, 1.000, 1.000)

Confidence limits proportional to indexes

Component	Smoothing Wgt		Final Value
Level	0.9467		242.4
Trend	1		1.957
Seasonal	0.9995		
Seasonal Indexes			
Jan - Mar	1.001	0.9993	1
Apr - Jun	0.9995	0.9997	1
Jul - Sep	0.9997	1	0.9994
Oct - Dec	1	1.001	1

Within-Sample Statistics

Sample size	72	No. parameters	3
Mean	206.3	Std. deviation	11.65
R-square	1	Adj. R-square	1
Durbin-Watson	1.63	Ljung-Box(18)	19.2 P=0.62
Forecast error	0.58	BIC	0.62
MAPE	0.19	SMAPE	0.19
RMSE	0.56	MAD	0.4
MAD/Mean Ratio	0		

Historic Data

Date	Historic
2015-Nov	192.3
2015-Dec	191.9
2016-Jan	191.9
2016-Feb	191.8
2016-Mar	192.1
2016-Apr	192.8

Other

2016-May	193.4
2016-Jun	193.7
2016-Jul	193.7
2016-Aug	194
2016-Sep	193.9
2016-Oct	194.3
2016-Nov	194.9
2016-Dec	195.6
2017-Jan	196.8
2017-Feb	197.8
2017-Mar	198.7
2017-Apr	199.3
2017-May	199.2
2017-Jun	199.4
2017-Jul	199.2
2017-Aug	199.7
2017-Sep	200
2017-Oct	200.9
2017-Nov	201.5
2017-Dec	201.7
2018-Jan	203
2018-Feb	203.8
2018-Mar	204.8
2018-Apr	205.4
2018-May	206.3
2018-Jun	207
2018-Jul	207.4
2018-Aug	207.6
2018-Sep	207.9
2018-Oct	208.7
2018-Nov	208.5
2018-Dec	207.8
2019-Jan	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	206.5
2019-Nov	206.4
2019-Dec	206.3
2020-Jan	207.2
2020-Feb	207.1
2020-Mar	207.1
2020-Apr	205.2
2020-May	204.4
2020-Jun	205
2020-Jul	205.8

Other

2020-Aug	207
2020-Sep	208.1
2020-Oct	208.7
2020-Nov	209.2
2020-Dec	211.5
2021-Jan	214.9
2021-Feb	217.5
2021-Mar	221.5
2021-Apr	225.9
2021-May	230.5
2021-Jun	234
2021-Jul	236.4
2021-Aug	238.4
2021-Sep	240.3
2021-Oct	242.5

Forecast Data

Date	2.5 Lower	Forecast	97.5 Upper
2021-Nov	243.309	244.516	245.723
2021-Dec	243.746	246.33	248.915
2022-Jan	245.048	248.497	251.947
2022-Feb	245.92	250.058	254.195
2022-Mar	247.49	252.215	256.94
2022-Apr	248.757	254.005	259.254
2022-May	250.293	256.016	261.739
2022-Jun	251.882	258.043	264.205
2022-Jul	253.369	259.94	266.512
2022-Aug	255.016	261.972	268.929
2022-Sep	256.451	263.773	271.095
2022-Oct	258.327	265.996	273.666



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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
2021	214.9	217.5	221.5	225.9	230.5	234.0	236.4(P)	238.4(P)	240.3(P)	242.5(P)		

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

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Forecast Error Calculation

	2019	Third Quarter 2021		Difference		Notes
		2021Q3	2021Q3	Pt.	Pct.	
	Weight	Forecast	Actual			
Labor	32.6%	447.9	447.9	0.0	0%	* actual=forecast
Fuel	14.2%	254.5	270.0	15.5	6%	from 1st month of quarter
M&S	4.9%	277.8	277.8	0.0	0%	* actual=forecast
Equip Rents	5.2%	250.0	246.2	-3.8	-2%	from Equipment Rents below
Depreciation	15.9%	228.0	228.3	0.3	0%	PPI-RE
Interest	2.5%	55.7	55.7	0.0	0%	* actual=forecast
Other	24.7%	278.7	267.3	-11.4	-4%	PPI-LF
Weighted Avg	100.0%					
1980 = 100		315.3	314.5			calculated
1980 = 100 (linked)		294.4	292.8			calculated
4Q17 = 100	2.645	111.3	110.7			calculated
4Q12 = 100	2.976	98.9	98.4			calculated
4Q07 = 100	2.459	119.7	119.1			calculated
4Q02 = 100	1.921	153.3	152.4			calculated
4Q97 = 100	1.732	170.0	169.1			calculated
Forecast Error		-0.6				calculated -0.006 = RCAF adj.
Prior Quarter						
1980 = 100		302.3	306.5 **			
1980 = 100 (linked)		282.3	285.4			
4Q17 = 100		106.7	107.9			calculated
4Q12 = 100		94.9	95.9			calculated
4Q07 = 100		114.8	116.1			calculated
4Q02 = 100		147.0	148.6			calculated
4Q97 = 100		163.0	164.8			calculated
Equipment Rents						
Car Hire	61.4%	211.2	211.8			from Equipment Rents/CHARM
Lease Rentals	38.6%	278.7	267.3			(equals PPI-LF from above)
Weighted Average		237.3	233.2			calculated
Linked		250.0	246.2			calculated
Prior Quarter						
Weighted Average		226.3	229.1 **			
Linked		238.4	241.9			
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)

July 2021

Monthly Report

	July 2021 Price (cents) (1)	1/1/81 Price (cents) (2)	1/91 New Method Linking Factors (3)	July 2021 Index 1/1/81=100 (4)	Linking Factor 1980=100 (5)	July 2021 1980=100 Current Index (6)
U.S.	220.93	89.34	99.415	245.84	1.096	269.45

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

(6) = (4) x (5)

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

	July 2021 1980=100 Current Index	Adjustment Factor	July 2021 1980=100 Linked Index
U.S.	269.45	1.00192	269.97 ←

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

RCAF - Depreciation

Series ID : wpu144

Not Seasonally Adjusted

Group : Transportation equipment

Item : Railroad equipment

		Forecast Year 2022			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	22Q1	22Q2	22Q3	22Q4
For Actual	→	21Q3	21Q4	22Q1	22Q2
January	2021	204.9	204.9	204.9	204.9
February	2021	204.9	204.9	204.9	204.9
March	2021	205.8	205.8	205.8	205.8
April	2021	206.0	206.0	206.0	206.0
May	2021	206.0	206.0	206.0	206.0
June	2021	206.1	206.1	206.1	206.1
July	2021	206.3			
August	2021	206.4			
September	2021	206.4			
October	2021	207.3			
November	2021				
December	2021				
January	2022				
February	2022				
March	2022				
April	2022				
May	2022				
June	2022				
July	2022				
Actual Qtr.		206.4	NA	NA	NA

1980=100

Actual Qtr.	228.3	NA	NA	NA
First Mo. next qtr.	229.3	NA	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
2021	204.9	204.9	205.8	206.0	206.0	206.1	206.3(P)	206.4(P)	206.4(P)	207.3(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 2022			
		As reported at end of month 82=100			
		Nov.	Feb.	May	Aug.
For Forecast	→	22Q1	22Q2	22Q3	22Q4
For Actual	→	21Q3	21Q4	22Q1	22Q2
January	2021	214.9	214.9	214.9	214.9
February	2021	217.5	217.5	217.5	217.5
March	2021	221.5	221.5	221.5	221.5
April	2021	225.9	225.9	225.9	225.9
May	2021	230.5	230.5	230.5	230.5
June	2021	234.0	234.0	234.0	234.0
July	2021	236.4			
August	2021	238.4			
September	2021	240.3			
October	2021	242.5			
November	2021				
December	2021				
January	2022				
February	2022				
March	2022				
April	2022				
May	2022				
June	2022				
July	2022				
Actual Qtr.		238.4	NA	NA	NA
1980=100					
Actual Qtr.		267.3	NA	NA	NA
First Mo. next qtr.		271.9	NA	NA	NA

0.892 =1980



Databases, Tables & Calculators by Subject

Change Output Options:

From: 2021 ▼

To: 2021 ▼



☐ include graphs

☐ include annual averages

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Data extracted on: November 11, 2021 (9:31:02 AM)

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
2021	214.9	217.5	221.5	225.9	230.5	234.0	236.4(P)	238.4(P)	240.3(P)	242.5(P)		

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

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Car Hire for RCAF - 2019 Weights

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

		1980	Aug 3Q/20	Nov 4Q/20	Feb 1Q/21	May 2Q/21	Aug 3Q/21
RATE							
RR-OWNED TIME		31.00	65.00	65.00	65.00	65.00	65.00
RR-OWNED MILEAGE		4.69	6.60	6.60	6.60	6.60	6.60
PRIVATELY-OWNED CARS		25.47	59.37	57.23	57.21	55.85	55.97
AUTORACKS		47.00	86.93	87.56	84.10	84.08	85.08
INDEX							
RR-OWNED TIME		100.0	209.7	209.7	209.7	209.7	209.7
RR-OWNED MILEAGE		100.0	140.7	140.7	140.7	140.7	140.7
PRIVATELY-OWNED CARS		100.0	233.1	224.7	224.6	219.3	219.7
AUTORACKS		100.0	185.0	186.3	178.9	178.9	181.0
CAR HIRE INDEX (old wts)	2018	100.0	226.7	--	--	--	--
CAR HIRE INDEX (new wts)	2019	100.0	226.4	219.1	218.7	214.0	214.5
CAR HIRE INDEX (LINKED)		100.0	223.5	216.3	215.9	211.3	211.8

Note: Indexes are rounded, rates are full float.

Car Hire Data From CHARM

	2020 (first day of month)						2021 (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)	11,533	11,511	11,471	11,454	11,286	11,313	11,335	11,342	11,323	11,284	11,232	11,215	11,180	11,157
Rate (in cents)														
Superstructures #3 - Auto Rack	96.0	96.0	96.0	96.0	95.0	95.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	95.0
All other #1 - Time	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
All other #2 - Mileage	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Private Equipment														
No. of Cars (cars with rates only)														
Superstructures (Vehicular Flats)	54,099	54,029	53,937	53,847	53,774	53,702	53,638	53,591	53,552	53,500	53,427	53,461	53,299	53,262
Covered Hoppers	433,856	434,193	434,236	434,187	433,113	433,042	432,151	432,666	432,708	433,590	433,438	433,482	432,640	433,233
Tank Cars	423,965	423,766	423,859	424,177	422,993	423,827	424,233	423,774	423,357	424,130	421,756	422,114	421,980	422,998
Others	299,225	298,544	297,753	298,033	296,888	295,883	296,327	295,521	295,229	294,524	293,923	295,284	294,153	293,445
Rate (in cents)														
Superstructures #1 - Time	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0
Superstructures #2 - Mileage	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Superstructures #3 - Auto Rack	85.0	85.0	85.0	86.0	86.0	86.0	82.0	82.0	82.0	82.0	82.0	83.0	83.0	83.0
Covered Hoppers #2 - Mileage	44.9	44.9	45.0	45.0	45.0	45.0	44.9	44.9	44.9	45.0	45.0	45.0	45.1	45.1
Tank Cars #2 - Mileage	99.1	99.1	92.6	92.7	92.8	92.8	92.4	92.5	88.3	88.4	88.6	88.6	88.7	88.7
Others #1 -Time	101.0	101.0	101.0	101.0	101.0	102.0	101.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0
Others #2 - Mileage	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
AVERAGE RATES														
Private Superstructures	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21	21.21
Private Others	30.82	30.92	30.92	30.92	30.92	31.14	30.92	31.14	31.14	31.14	31.14	31.14	31.14	31.14
Private Total	59.34	59.37	57.15	57.19	57.23	57.33	57.12	57.21	55.73	55.83	55.85	55.83	55.93	55.97
Autoracks	86.93	86.93	86.93	87.75	87.56	87.57	84.09	84.10	84.09	84.09	84.08	84.91	84.91	85.08

Car Hire Weights	"Old Wts" "New Wts"	
	2018	2019
For RCAF & RCR		
RR-owned Time	0.052	0.040
RR-owned Mileage	0.034	0.042
Privately-owned Cars	0.871	0.879
Autoracks	0.043	0.039
----- Check sum	1.000	1.000

Weights for Equipment Rents		
(not used in Car Hire calculation)		
	2018	2019
Car Hire - U.S.	0.591	0.614
Lease Rentals - U.S.	0.409	0.386
----- 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 Process - Car Hire Rate Report

Average Car Rental Rates for 08/2021

Ownership	Car Group	Car Count	Time Rate (cents/hour)	Mileage Rate (\$/mile)	Auto Rack Rate (cents/hour)
Railroad	Vehicular Flats	11,157	109	0.059	95
Railroad	Number of Zero-Rated Vehicular Flats	99	.	.	.
Railroad	All Other Cars	365,789	65	0.066	.
Railroad	Number of Zero-Rated Other Cars	13,606	.	.	.
Railroad	Total Railroad Equipment	390,651	.	.	.
		.	.	.	.
Private	Vehicular Flats	53,262	86	0.010	83
Private	Number of Zero-Rated Vehicular Flats	51	.	.	.
Private	Covered Hoppers	433,233	0	0.451	.
Private	Number of Zero-Rated Covered Hoppers	14,155	.	.	.
Private	Tanks	422,998	0	0.887	.
Private	Number of Zero-Rated Tanks	15,228	.	.	.
Private	All Other Cars	293,445	102	0.085	.
Private	Number of Zero-Rated Other Cars	21,703	.	.	.
Private	Total Private Equipment	1,254,075	.	.	.

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.

All-Inclusive Index (Actual) - 2019 Weights

	19 Wts	3Q/20 18 Wts	3Q/20 19 Wts	% Chg.	4Q/20 19 Wts	% Chg.	1Q/21 19 Wts	% Chg.	2Q/21 19 Wts	% Chg.	3Q/21 19 Wts	% Chg.
Labor	32.6%	442.8	442.8	0.0%	437.1	-1.3%	448.9	2.7%	446.6	-0.5%	447.9	0.3%
Fuel	14.2%	159.7	159.7	0.0%	154.9	-3.0%	197.2	27.3%	236.9	20.1%	270.0	14.0%
M&S	4.9%	260.7	260.7	0.0%	258.8	-0.7%	264.9	2.4%	275.0	3.8%	277.8	1.0%
Equipment Rents	5.2%	239.5	239.5	0.0%	236.1	-1.4%	239.5	1.4%	241.9	1.0%	246.2	1.8%
Depreciation	15.9%	226.1	226.1	0.0%	226.2	0.0%	227.0	0.4%	227.9	0.4%	228.3	0.2%
Interest	2.5%	57.2	57.2	0.0%	55.7	-2.6%	55.7	0.0%	55.7	0.0%	55.7	0.0%
Other	24.7%	232.0	232.0	0.0%	235.1	1.3%	244.1	3.8%	257.5	5.5%	267.3	3.8%
	1.0000											
Weighted Avg.		287.4	286.9	-0.2%	284.9	-0.7%	297.6	4.5%	306.5	3.0%	314.5	2.6%
Linked		267.2			265.3	-0.7%	277.1	4.4%	285.4	3.0%	292.8	2.6%
10/1/80	1.027	260.2			258.3	-0.7%	269.8	4.5%	277.9	3.0%	285.1	2.6%
10/1/82	1.209	221.0			219.4	-0.7%	229.2	4.5%	236.1	3.0%	242.2	2.6%
4Q/87	1.322	202.1			200.7	-0.7%	209.6	4.4%	215.9	3.0%	221.5	2.6%
4Q/92	1.569	170.3			169.1	-0.7%	176.6	4.4%	181.9	3.0%	186.6	2.6%
4Q/97	1.732	154.3			153.2	-0.7%	160.0	4.4%	164.8	3.0%	169.1	2.6%
4Q/02	1.921	139.1			138.1	-0.7%	144.2	4.4%	148.6	3.1%	152.4	2.6%
4Q/07	2.459	108.7			107.9	-0.7%	112.7	4.4%	116.1	3.0%	119.1	2.6%
4Q/12	2.976	89.8			89.1	-0.8%	93.1	4.5%	95.9	3.0%	98.4	2.6%
4Q/17	2.645	101.0			100.3	-0.7%	104.8	4.5%	107.9	3.0%	110.7	2.6%
Equipment Rents												
Car Hire	61.4%	223.5	223.5	0.0%	216.3	-3.2%	215.9	-0.2%	211.3	-2.1%	211.8	0.2%
Lease Rentals	38.6%	232.0	232.0	0.0%	235.1	1.3%	244.1	3.8%	257.5	5.5%	267.3	3.8%
	1.0000											
ER Weighted Avg		227.0	226.8	-0.1%	223.6	-1.4%	226.8	1.4%	229.1	1.0%	233.2	1.8%
ER Linked		239.5			236.1	-1.4%	239.5	1.4%	241.9	1.0%	246.2	1.8%